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018	YP_009109694.1	-
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022	YP_009182100.1	-
023	NP_705927.1	-
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031	YP_006732334.1	-
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044	YP_004347415.1	-
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056 YP_009508411.1 - - - - -
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058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - -
061 NP_041734.1 - - - - -
062 NP_056895.1 - - - - -
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064 YP_002519387.1 - - - - -
065 YP_595725.1 - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 PDQIAYIILTWEDLIRNPPAWVKPFLPSCPLSQSTLLPLKTSKDRASTQPS -
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095 NP_068729.1 - - - - -
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103 NP_569153.1 - - - - -
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105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - -
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 - - - - -
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
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115 YP_009121747.1 - - - - -
116 YP_009113237.2 - - - - -
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118 NP_955579.1 - - - - -

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126 YP_009513249.1 - - - - -
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130 NP_057860.1 - - - - -
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132 NP_777317.1 - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
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139 YP_233107.1 - - - - -
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142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - -
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146 YP_002321513.1 - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
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061 NP_041734.1 - - - - -
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065 YP_595725.1 - - - - -
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117 YP_009508408.1 - - - - -
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122 NP_040563.1  - - - - -
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133 NP_054716.1  - - - - -
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065 YP_595725.1 - - - - -
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018 YP_009109694.1 - - - - -
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020 NP_955619.1  - - - - -
021 YP_224289.1  - - - - -

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025 YP_004442830.1 - - - - -
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 - - - - -
029 YP_001931961.1 - - - - -
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056 YP_009508411.1 - - - - -
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058 YP_009508410.1 - - - - -
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061 NP_041734.1 - - - - -
062 NP_056895.1 - - - - -
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065 YP_595725.1 - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 D P N G P P T W Q S S L F P L R T V N R T V Q Y W P F S A S D L Y N W K T H N P S F S Q E P Q A L T
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - - M G A R N S V L R G K K A D E L E K V R L R P G G K K K Y R L K H I V W A A N
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071 YP_003987465.1 - - - - -
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073 YP_009345071.1 - - - - -
074 YP_009508582.1 - - - - -
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076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 - - - - -
079 NP_542258.1 - - - - -
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091 YP_007761644.1 - - - - -
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093 NP_758808.1 - - - - -
094 YP_009345075.1 - - - - -
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101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 - - - - -
104 NP_043924.1 - - - - -
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106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - -
109 YP_009508409.1 - - - - -
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112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 P V G F A G A M A E A R E K G D L T F T - - - - - F P V
115 YP_009121747.1 - - - - -
116 YP_009113237.2 - - - - -
117 YP_009508408.1 - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - -
120 YP_004442833.1 - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 D R E Y L T S Y N M P Q E E D E N D P A P T Q E Q I W T A A E Q L N R E Q F P S G G G G P Y Q L R G
124 NP_057933.2 P P V A D S T T S Q A F P L R A G G N G Q L Q Y W P F S S S D L Y N W K N N N P S F S E D P G K L T
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127 YP_223871.1 - - - - -
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129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
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137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - -
140 YP_009109692.1 - - - - -
141 NP_057849.4 - - - - - M G A R A S V L S G G E L D R W E K I R L R P G G K K K Y K L K H I V W A S R
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143 YP_009506267.1 - - - - -
144 NP_039820.1 - - - - -
145 NP_056790.1 - - - - -
146 YP_002321513.1 - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 M I L G K S G E L K T W G L V L G A L K A A R E E Q V T S E Q A K F W L G L G G G R V S P P G P E C
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006 NP_040939.1 - - - - -
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010 YP_009268869.1 - - - - -
011 YP_009506251.1 - - - - -
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019 NP_789739.1 - - - - -
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023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
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056 YP_009508411.1 - - - - -
057 YP_009140788.1 - - - - -
058 YP_009508410.1 - - - - -
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061 NP_041734.1 - - - - -
062 NP_056895.1 - - - - - M G N S P S Y N P P A G I S P S D W L N L R Q S A Q R L N P R P S
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074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - - M G N S P S Y N P P A G I S P S D W L N L R Q S A Q R L N P R P S
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079 NP_542258.1 - - - - -
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081 YP_009508566.1 - - - - -
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086 YP_004442827.1 - - - - -
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090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
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108 YP_006495799.1 - - - - -
109 YP_009508409.1 - - - - -
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113 NP_619548.1 - - - - -
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122 NP_040563.1 - - - - -
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124 NP_057933.2 A L I E S V L I T H Q P T W D D C Q Q L L G T L L T G E E K Q R V L L E A R K A V R G D D G R P T Q
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126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
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129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - - MGQIFSRASAPIPRPPRGLAAHHWLNFLQAAYRLEPGPS
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 T E T V D G Q G Q A W R H H N G F D F A V I K E L K T A A S Q Y G A T A P Y T L A I V E S V A D N W
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137 NP_659397.1 - - - - -
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139 YP_233107.1 - - - - -
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147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
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150 NP_056886.1 I E K P A T E R R I D K G E E V G E T T V Q R D A K M A P E E T A T P K T V G T S C Y H C G T A I G
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016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
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021 YP_224289.1 - - - - -
022 YP_009182100.1 - - - - -
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
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058 YP_009508410.1 - - - - -
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065 YP_595725.1 - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 L P N E I D E G F P L T R P D W D - - - - -
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075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
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103 NP_569153.1 - - - - -
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106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
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109 YP_009508409.1 - - - - -
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113 NP_619548.1 - - - - -
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127 YP_223871.1 - - - - -
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129 NP_044929.1 - - - - -
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132 NP_777317.1 - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
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137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - -
140 YP_009109692.1 - - - - -
141 NP_057849.4 Q R I E I K D T K E A L D K I E E E Q N K S K K K A Q Q A A A D T G H S N Q V S Q N - - Y P I V Q N
142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - -
144 NP_039820.1 - - - - -
145 NP_056790.1 - - - - -
146 YP_002321513.1 - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 C N C A T A S A P P P P Y V G S G L Y P S L A G V G E Q Q G Q G G D T P P G A E Q S R A E P G H A G
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056 YP_009508411.1 - - - - -
057 YP_009140788.1 - - - - -
058 YP_009508410.1 - - - - -
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060 YP_008992013.1 - - - - -
061 NP_041734.1 - - - - -
062 NP_056895.1 - - - - - R V P L V L A T L N E V L S N D E G A P G A S A P E E Q P P P Y D P P A I L P I I
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065 YP_595725.1 - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - - Y E T A P G R E S L R I Y R Q A L L A G L K G A G K R P T N L A K V R T I I
068 NP_041186.1 - - - - -
069 NP_663784.1 A G G N Y V H V P L S P R T L N A W V K L V E E K K F G A E V V P G F Q A L S E G C T P Y D I N Q M
070 YP_009508443.1 - - - - -

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074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - - R V P L V L A T L N E V L S N D E G A P G A S A P E E Q P P P Y D P P A I L P I I
078 YP_233110.1 - - - - -
079 NP_542258.1 - - - - -
080 YP_009130664.1 - - - - -
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 - - - - -
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 - - - - -
087 YP_009408594.1 - - - - -
088 YP_009508561.1 - - - - -
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091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - -
094 YP_009345075.1 - - - - -
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - - F A T P A G R E H L R L Y R Q L L L A G L R G A A R R P T N L A Q V K Q V V
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103 NP_569153.1 - - - - -
104 NP_043924.1 - - - - - M A S N K W F V Y S D E P T K V I L K R D K S K E K D E T K K K K I K T E Q N S D A A Y E
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106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - -
109 YP_009508409.1 - - - - -
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111 NP_045937.2 - - - - -
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
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116 YP_009113237.2 - - - - -
117 YP_009508408.1 - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - -
120 YP_004442833.1 - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 H V T M N V I M K T A G L D H L P G P T P P E V Y T G P L W A E L R R N Y P T E R D Y A A L S S F L
124 NP_057933.2 - - - - - Y T T Q A G R N H L V H Y R Q L L L A G L Q N A G R S P T N L A K V K G I T
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126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 - - - - -
129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - - T Q A Q I P S R P A P P P P S S S T H D P P D S D P Q I P P P Y V E P T A P Q V L P V M H
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132 NP_777317.1 - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 T G S G N Y S S T D A Q M Q Y D P G L F A Q I Q A A A T K A W R K L P V K G D P G A S L T G V K Q G
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137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - -
140 YP_009109692.1 - - - - -
141 NP_057849.4 I Q G Q M V H Q A I S P R T L N A W V K V V E E K A F S P E V I P M F S A L S E G A T P Q D L N T M
142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - -

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148 YP_001956722.2 - - - - -
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150 NP_056886.1 Q A P G P A L T D W A R V R E E L A S T G P P V V A M P V V I K T E G P A W T P L E P K L I T R L A
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016 YP_001931967.1 - - - - -
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022 YP_009182100.1 - - - - -
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
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035 NP_955577.1 - - - - -
036 YP_003208050.1 - - - - - M P E A A A
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043 YP_002117531.1 - - - - -
044 YP_004347415.1 - - - - -
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049 NP_040840.1 - - - - -
050 YP_004222728.1 - - - - -
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055 NP_955564.1 - - - - -
056 YP_009508411.1 - - - - -
057 YP_009140788.1 - - - - -
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - -
061 NP_041734.1 - - - - -
062 NP_056895.1 S E G N R N R H R A W A L R E L Q D I K K E I E N K A P G S Q V W I Q T L R L A I L Q A D P T P A D

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064 YP_002519387.1 - - - - -
065 YP_595725.1 - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 QGKEESPAAFMERLLEGFRMYT - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 LNCVGDHQAAMQIIREIINEEAADWDSQHPPIPG-PLPAGQLRDPGRGSDIA
070 YP_009508443.1 - - - - -
071 YP_003987465.1 - - - - -
072 NP_861410.1 - - - - -
073 YP_009345071.1 - - - - -
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 SEGNNRNRHRAWALRELQDIKKEIENKAPGSQVWIQTLRLAILQADPTPAD
078 YP_233110.1 - - - - -
079 NP_542258.1 - - - - -
080 YP_009130664.1 - - - - -
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
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088 YP_009508561.1 - - - - -
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090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - -
094 YP_009345075.1 - - - - -
095 NP_068729.1 - - - - -
096 NP_047255.1 QGKEETPAAFLERLKEAYRMYT - - - - -
097 YP_006273075.1 - - - - -
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102 YP_009508556.1 - - - - -
103 NP_569153.1 - - - - -
104 NP_043924.1 TPGTAPVQKPLLETTPEAELEKVLKGLEEWGYKALEKKRDPELWNPNQEG
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - -
109 YP_009508409.1 - - - - -
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111 NP_045937.2 - - - - -
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 NEESYETFISRLEEAVYRMMPRGEGSDILIKQLAWENANSLCQDLIRPIR
115 YP_009121747.1 - - - - -
116 YP_009113237.2 - - - - -
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120 YP_004442833.1 - - - - -
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122 NP_040563.1 - - - - -
123 YP_443922.1 MNPGE GPAEYLDRAKTTWRTVHGEPHDASETSLNMWKEVVINGTTPAPVKA
124 NP_057933.2 QGPNESP SFAFLERLKEAYRRYT - - - - -
125 YP_009116631.1 - - - - -
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127 YP_223871.1 - - - - -
128 NP_127504.1 - - - - -
129 NP_044929.1 - - - - -
130 NP_057860.1 PHGAPPNHRPWQMKDLQAIKQEVSQAAPGSPQFMQTIRLAVQQFDPTAKD
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 PDEPFADFVHRLITTAGRIFGSAEAGVDYVKQLAYENANPACQAAIRPYR
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139 YP_233107.1  - - - - -
140 YP_009109692.1 - - - - -
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142 NP_049560.1  - - - - -
143 YP_009506267.1 - - - - -
144 NP_039820.1  - - - - -
145 NP_056790.1  - - - - -
146 YP_002321513.1 - - - - -
147 NP_955591.1  - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1  - - - - -
150 NP_056886.1  D T V R T K G L R S P I T M A E V E A L M S S P L L P H D V T N L M R V I L G P A P Y A L W M D A W
151 NP_041261.1  - - - - -

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017 YP_002455786.1 - - - - -
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019 NP_789739.1   - - - - -
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021 YP_224289.1   - - - - -
022 YP_009182100.1 - - - - -
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026 NP_758887.1   - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1   - - - - -
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030 YP_241114.1   - - - - -
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033 YP_001036293.1 - - - - -
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039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1   - - - - -
042 YP_009507248.1 - - - - -
043 YP_002117531.1 - - - - -
044 YP_004347415.1 - - - - -
045 NP_056891.1   K K T D L T G Y I R L C S D I G P S Y Q Q G L A M A A A F S G Q T V K D F L - - - - - N N K N K
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048 YP_009165750.1 - - - - -
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050 YP_004222728.1 - - - - -
051 YP_009506264.1 - - - - -
052 YP_567050.1   - - - - -
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054 NP_056803.1   - - - - -

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058 YP_009508410.1 - - - - -
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060 YP_008992013.1 - - - - -
061 NP_041734.1 - - - - -
062 NP_056895.1 L E Q L C Q Y I A S P V D Q T A H M T S L T A A I A A A E A A N T L Q G F N P Q N G T L T Q Q S A Q
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065 YP_595725.1 - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - - P F T P E A P E H K A T V A M S F I D Q A A S D I K G K L Q R L D G I Q T Y G L Q E L V
068 NP_041186.1 - - - - -
069 NP_663784.1 G T T S T V D E Q I Q W M Y R P Q N P V P V G N I Y R R W I Q I G L Q K C V R K Y N P T N I L D I K
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071 YP_003987465.1 - - - - -
072 NP_861410.1 - - - - -
073 YP_009345071.1 - - - - -
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
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079 NP_542258.1 - - - - -
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082 YP_006607892.1 - - - - -
083 YP_009506270.1 - - - - -
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 - - - - -
087 YP_009408594.1 - - - - -
088 YP_009508561.1 - - - - -
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090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - -
094 YP_009345075.1 - - - - -
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - - P Y D P E D P G Q A A S V I L S F I Y Q S S P D I R N K L Q R L E G L Q G F T L S D L L
097 YP_006273075.1 - - - - -
098 YP_009508888.1 - - - - -
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100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 - - - - -
104 NP_043924.1 L D E Y L F R G W V Q G G L A D S K K A L E K N M E K F V P L F V V T M S Q A V P Y W R Q T M Q A R
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - -
109 YP_009508409.1 - - - - -
110 NP_687035.1 G T T S S I Q E Q I E W T F N A N P R I D V G A Q Y R K W V I L G L Q K V V Q M Y N P Q K V L D I R
111 NP_045937.2 - - - - - M G N S S S T P P P S A L K N S D L F K T M L R T Q Y S G S V K T R R I N Q
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 K T G T I Q D Y I R A C L D A S P A V V Q G M A Y A A A M R G Q K Y S T F V K Q T Y G G G K G G Q G
115 YP_009121747.1 - - - - -
116 YP_009113237.2 - - - - - M S L R F E E S I Q S L Y N T E R L G L I Q L L D L S Q
117 YP_009508408.1 - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - -
120 YP_004442833.1 - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 K L R Q T V G L C S K S K A E F C S H V H H H I S Q H H K D A G G A E S E I K A L Q V Q L L K L Q L
124 NP_057933.2 - - - - - P Y D P E D P G Q E T N V S M S F I W Q S A P D I G R K L E R L E D L K N K T L G D L V
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126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
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128 NP_127504.1 - - - - -
129 NP_044929.1 - - - - -
130 NP_057860.1 L Q D L L Q Y L C S S L V A S L H H Q Q L D S L I S E A E T R - G I T G Y N P L A G P L R V Q A N N
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 K K T D L T G Y I R L C S D I G P S Y Q Q G L A M A A A F S G Q T V K D F L - - - - - N N K N K
136 NP_569150.1 - - - - -
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - -
140 YP_009109692.1 - - - - -
141 NP_057849.4 G T T S T L Q E Q I G W M T - N N P P I P V G E I Y K R W I I L G L N K I V R M Y S P T S I L D I R
142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - -
144 NP_039820.1 - - - - -
145 NP_056790.1 - - - - -
146 YP_002321513.1 - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 G V Q L Q T V I A A A T R D P R H P A N G Q G R G E R T N L N R L K G L A D G M V G N P Q G Q A A L
151 NP_041261.1 - - - - -

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005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 - - - - - M S T T T T Q
009 YP_003284237.1 - - - - - M S T R G
010 YP_009268869.1 - - - - -
011 YP_009506251.1 - - - - - M S Q T R -
012 NP_955611.1 - - - - -
013 YP_008567619.1 - - - - -
014 NP_149413.1 - - - - - M
015 YP_004442824.1 - - - - - M A S R P
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 - - - - - M T T R R S S L P
022 YP_009182100.1 - - - - -
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 - - - - - M A F T G
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 - - - - - M A S Y R R P
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - -
032 YP_009041481.1 - - - - - M S Q T -
033 YP_001036293.1 - - - - - M S R
034 YP_605811.1 - - - - - M A S R P
035 NP_955577.1 - - - - -
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037 NP_789740.1 - - - - -
038 YP_004442839.1 - - - - - M A S R P
039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - -
042 YP_009507248.1 - - - - -
043 YP_002117531.1 - - - - - M S R -
044 YP_004347415.1 - - - - -
045 NP_056891.1 E K G G C C F K C G K K G H F A K N C H E H A H N N A E P K V P G L C P R C K R G K H W A N E C K S
046 YP_009513242.1 - - - - -

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051 YP_009506264.1 - - - - - M A N R G
052 YP_567050.1 - - - - -
053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -
055 NP_955564.1 - - - - -
056 YP_009508411.1 - - - - - M S L
057 YP_009140788.1 - - - - - M S S S R S R
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - -
061 NP_041734.1 - - - - - M S R A R P -
062 NP_056895.1 P N A G D L R S Q Y Q N L W L Q A W K N L P T R P S V Q P W S T I V Q G P A E S Y V E F V N R L Q I
063 YP_009109689.1 R E A E K V Y N K R E T P E E R E A R L I K E Q E E R E - - - - - D R R D R K R D K H L
064 YP_002519387.1 - - - - -
065 YP_595725.1 - - - - - M
066 YP_009508551.1 - - - - -
067 YP_001497148.1 R E A E K V Y N K R E T P E E K E A R L A K E Q E A R E - - - - - E R R D R K R D K H L
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069 NP_663784.1 Q G P K E P F Q S Y V D R F Y K S L R A E Q T D P A V K N W M T Q T L L I Q N A N P D C K L V L K G
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071 YP_003987465.1 - - - - - M M N - -
072 NP_861410.1 - - - - -
073 YP_009345071.1 - - - - - M T S R
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
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079 NP_542258.1 - - - - -
080 YP_009130664.1 - - - - - M E M T T S T T A
081 YP_009508566.1 - - - - -
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083 YP_009506270.1 - - - - - M A Q R P
084 NP_042513.1 - - - - -
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086 YP_004442827.1 - - - - - M A F Q G
087 YP_009408594.1 - - - - - M V V C H
088 YP_009508561.1 - - - - -
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090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - - M S L - - - A V R
094 YP_009345075.1 - - - - - M S S Q T R T T T Q A
095 NP_068729.1 - - - - -
096 NP_047255.1 K E A E K I Y N K R E T P E E R E E R L W Q R Q E E R D K K R H - - - - - K E M T K V L
097 YP_006273075.1 - - - - - M N R S R
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
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101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 - - - - - M S T S R A R
104 NP_043924.1 N Q N G K K Q K N R I A E L E K E V A D L T S A G R G A D Q V I A G M D K E L K K T A E K Y Q A K L
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - - M T T R -
109 YP_009508409.1 - - - - -
110 NP_687035.1 Q G P K E P F Q D Y V D R F Y K A L R A E Q A P Q D V K N W M T Q T L L I Q N A N P D C K L I L K G
111 NP_045937.2 D I K K Q Y P L W P D Q G T C A T K H W E Q A V L I P L D S V S E E T A K V L N F L R V K I Q A R K
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 A E G P V C F S C G K T G H I R K D C K D E K G S K R A P - - P G L C P R C K K G Y H W K S E C K S
115 YP_009121747.1 - - - - - M S F G R M P S V L
116 YP_009113237.2 E P K V L N K D L S N N I D F A I K H I V L Q S R V L L K H F H S I A T R Q E A L E K M S R Y G S R
117 YP_009508408.1 - - - - - M S L
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - - M S R T R T E T R A

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122 NP_040563.1 - - - - -
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124 NP_057933.2 R E A E K I F N K R E T P E E R E E R I R R E T E E K E E R R R T E D E Q K E K E R D R R R H R E M
125 YP_009116631.1 - - - - - M S R S -
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 - - - - -
129 NP_044929.1 - - - - -
130 NP_057860.1 P Q Q Q G L R R E Y Q Q L W L A A F A A L P G S A K D P S W A S I L Q G L E E P Y H A F V E R L N I
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - - M T R P
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
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136 NP_569150.1 - - - - - M A Q R P
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - - M T T Q R A H L P
140 YP_009109692.1 - - - - -
141 NP_057849.4 Q G P K E P F R D Y V D R F Y K T L R A E Q A S Q E V K N W M T E T L L V Q N A N P D C K T I L K A
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143 YP_009506267.1 - - - - - M E R
144 NP_039820.1 - - - - - M A T R R L
145 NP_056790.1 - - - - -
146 YP_002321513.1 - - - - - M S S S R T Q T L E
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 L R P G E L V A I T A S A L Q A F R E V A R L A E P A G P W A D I M Q G P S E S F V D F A N R L I K
151 NP_041261.1 - - - - -

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006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
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009 YP_003284237.1 R V T G T S - - S Q T V T E P G Q P - - - - L V E D Q I R D Y - - - - -
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011 YP_009506251.1 - - T H Q M P S V T T T V N E Q G - - - E G P L F E D Q V R N Y - - - - -
012 NP_955611.1 - - - - -
013 YP_008567619.1 - - - - M A Q A Q A K - - - - - T L V E D Q I T Q Y - - - - -
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017 YP_002455786.1 - - - - -
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020 NP_955619.1 - - - - -
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031 YP_006732334.1 - - - - -
032 YP_009041481.1 - Q T V T T P - - - - - V V E D Q I R D Y - - - - -
033 YP_001036293.1 T A T Q - - E V S T S Q - - - - - R Q F E D Q I R D Y - - - - -
034 YP_605811.1 R V S G S T T R T - M V A E P G V P - - - - L V D D Q I R E Y - - - - -
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036 YP_003208050.1 G A P K K E P R T T S P A E R R R R V G P K A Q K E E K A Q D W S V L D D G N F L A S L W E P E D W
037 NP_789740.1 - - - - -
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074 YP_009508582.1 - - - - -
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082 YP_006607892.1 - - - - -
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097 YP_006273075.1 T V T Q Q L P A V S T R R R E E I N - R D Q P L F E D Q I R D Y - - - - -
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 T V I E Q L P P A T T A R V E E R D - - N T P L Y D D Q I R D Y - - - - -
104 NP_043924.1 E E L E E Q L A A M T V E K E E L E S Q V E G L K E S L V E A E T K K V S L M E V L T M P T R S K G
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 T R T E Q V P R A T S T R P S S R G - E A S S T L D D Q I R G Y - - - - -
109 YP_009508409.1 - - - - -
110 NP_687035.1 L G M N P T L E E M L I A C Q G V G G P Q H K A K L M V E M M S N G Q N M V Q V G P Q K K G - - - P
111 NP_045937.2 G E T A R Q M T A H T I K K L I V G T I D K N K Q Q T E I L Q K T D E S D E E M D T T N T M L F I A

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112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 KFDKDG NPLP PLETNA ENSK NLVKGQ SPSP AQKGDGVK GSGLNPEAPP FT
115 YP_009121747.1 GRSATTQTQTDLP - - - - - TQEDQIRGY - - - - -
116 YP_009113237.2 SRTMVQQPAVTERVTEGSDGRIP LAEDQIRSY - - - - -
117 YP_009508408.1 VTRTREVGSTSA - - - - - PTHEDQIRDY - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 PIRDGEGTSGNTP - - - - - TFEDQIRSY - - - - -
120 YP_004442833.1 - - RRLGTGSTTVLEDGT - - - - - VLSDQIRNY - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 PPPLSPQYPQAYPGYGYPPRGP PQAGGHWGSR YMNNGACYN CGQPGHQAR
124 NP_057933.2 SKLLATVVSQGKQDRQGGERRRS QL - - - - - DRDQCAYCKEKGHWAK
125 YP_009116631.1 HTRLQAPPATERATSSSD - SGTPTLEDQIRGY - - - - -
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 - - - - -
129 NP_044929.1 - - - - -
130 NP_057860.1 ALDNGLP EGT PKDPI LRSLAYS NANK ECQKLLQ ARGHTNS PLGDM LRACQ
131 NP_040973.1 - - - - -
132 NP_777317.1 RIEGPVSRT - ETAEAGAP - - - - - LVDDQIREY - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 KTDNQGNPIPPHQGNRVEG - - - - - PAPGPETSLWGS QLCSSQQKQP
136 NP_569150.1 RITGSRT - - - TTAEEGTP - - - - - LIDDQIREY - - - - -
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 SINGTEVAS - TSRQPGTP - - - - - LVEDQIRDY - - - - -
140 YP_009109692.1 - - - - -
141 NP_057849.4 LGPAATLEEMMTACQGVGGPGHKARVLAEAMS QVTNSATIMMQRGNFRNQ
142 NP_049560.1 - - - - -
143 YP_009506267.1 PQTS - TTLATTP - - - - - SVFEDQVRDY - - - - -
144 NP_039820.1 PAVTQTDGSR TATESGVP - - - - - EYEDQIRSY - - - - -
145 NP_056790.1 - - - - -
146 YP_002321513.1 ETRTPSLFYQPSAPPEEGEERPISYNDQIRDY - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 AVEGSDLPPSARAPVIIDCFRQKSQPD IQQLIR TAPSTLTTPGEI IKYVL
151 NP_041261.1 - - - - -

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001 YP_004442836.1 - - - - -
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003 YP_009508537.1 - - - - -
004 YP_004732983.2 - - - - -
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 - - - - -
009 YP_003284237.1 - - - - -
010 YP_009268869.1 - - - - -
011 YP_009506251.1 - - - - -
012 NP_955611.1 - - - - -
013 YP_008567619.1 - - - - -
014 NP_149413.1 - - - - -
015 YP_004442824.1 - - - - -
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - - VQPKKPPPNQPCFR CGKAGHWSRDCTQPRPPPGPCPLC
021 YP_224289.1 - - - - -
022 YP_009182100.1 - - - - -
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 - - - - -
026 NP_758887.1 - - - - - FFRE
027 YP_009508406.1 - - - - -
028 YP_610965.1 - - - - -
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -

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031 YP_006732334.1  - - - - -
032 YP_009041481.1  - - - - -
033 YP_001036293.1  - - - - -
034 YP_605811.1     - - - - -
035 NP_955577.1     - - - - - N L G D Q E S Q G Q D P P P - - - - -
036 YP_003208050.1  A C P C S P I A E S P A Q M G P I S A R T I Q G P P K R P T T R E S A Q E P I E E C C F M M R Q G S
037 NP_789740.1     - - - - -
038 YP_004442839.1  - - - - -
039 YP_009507791.1  - - - - -
040 YP_004581513.1  - - - - -
041 NP_043933.1     - - - - -
042 YP_009507248.1  - - - - -
043 YP_002117531.1  - - - - -
044 YP_004347415.1  - - - - -
045 NP_056891.1     I S K L T R A T P G S A G L D L C S T S H T V L T P E M G P Q A L S T G I Y G P L P P N T F G L I L
046 YP_009513242.1  - - - - -
047 YP_009352866.1  - - - - -
048 YP_009165750.1  - - - - -
049 NP_040840.1     - - - - -
050 YP_004222728.1  - - - - -
051 YP_009506264.1  - - - - -
052 YP_567050.1     - - - - -
053 YP_009508571.1  - - - - -
054 NP_056803.1     - - - - -
055 NP_955564.1     - - - - -
056 YP_009508411.1  - - - - -
057 YP_009140788.1  - - - - -
058 YP_009508410.1  - - - - -
059 NP_040333.1     - - - - - T L D D Q G G Q G Q E P P P - - - - -
060 YP_008992013.1  - - - - - M
061 NP_041734.1     - - - - -
062 NP_056895.1     H W A P K V K Q P A I L V H T P G P K M P G P - - - - - R Q P A P K R P P P G P C Y R C
063 YP_009109689.1  D C P K R P R D Q K K P A P V L T L G E D S E Q G C Q G S G A P P - - - - -
064 YP_002519387.1  - - - - -
065 YP_595725.1     - - - - -
066 YP_009508551.1  - - - - -
067 YP_001497148.1  D C P K R P R D S K K S T P V L T L G E E S E E G R Q G S G A P P - - - - -
068 NP_041186.1     - - - - -
069 NP_663784.1     R K A I R Y W N C G K E G H S A R Q C R A P R R Q G C W K C G K P G H I M A N C P E R Q A G F F R V
070 YP_009508443.1  - - - - -
071 YP_003987465.1  - - - - -
072 NP_861410.1     - - - - -
073 YP_009345071.1  - - - - -
074 YP_009508582.1  - - - - -
075 NP_569141.1     - - - - -
076 YP_002916057.1  - - - - -
077 NP_777384.2     H W A P K V K Q P A I L V H T P G P K M P G P - - - - - R Q P A P K R P P P G P C Y R C
078 YP_233110.1     - - - - -
079 NP_542258.1     - - - - -
080 YP_009130664.1  - - - - -
081 YP_009508566.1  - - - - -
082 YP_006607892.1  - - - - -
083 YP_009506270.1  - - - - -
084 NP_042513.1     - - - - -
085 YP_006907834.1  - - - - -
086 YP_004442827.1  - - - - -
087 YP_009408594.1  - - - - -
088 YP_009508561.1  - - - - -
089 NP_056907.1     A W T P K D K A R V L V V Q P R K P P P T Q P C F R C G K T G H W S R D C T L P R P P P G P C P L C
090 YP_002308474.1  - - - - -
091 YP_007761644.1  - - - - -
092 NP_040550.1     - - - - -
093 NP_758808.1     - - - - -
094 YP_009345075.1  - - - - -
095 NP_068729.1     - - - - -
096 NP_047255.1     D C P K R P R K K P A N - - - S T L I N L G D Q E S Q G Q D P P P - - - - -
097 YP_006273075.1  - - - - -
098 YP_009508888.1  - - - - -
099 NP_395469.1     - - - - -
100 YP_009508546.1  - - - - -
101 NP_056762.1     - - - - -
102 YP_009508556.1  - - - - -
103 NP_569153.1     - - - - -

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104 NP_043924.1 P K K R G P D L K Q I R S L H V M A D S L G M D S D G I D W D W L A R Q A W D Y E G D E D P H V K E
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106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - -
109 YP_009508409.1 - - - - -
110 NP_687035.1 R G P L K C F N C G K F G H M Q R E C K A P R Q I K C F K C G K I G H M A K D C K N G Q A N F F R V
111 NP_045937.2 R N K R E R I A Q Q Q Q A D L A A Q Q Q V L L L Q R E Q Q R E Q R E K D I K K R D E K K K K L L P D
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 I H D L P R G T P G S A G L D L S S Q K D L I L S L E D G V S L V P T L V K G T L P E G T T G L I I
115 YP_009121747.1 - - - - -
116 YP_009113237.2 - - - - -
117 YP_009508408.1 - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - -
120 YP_004442833.1 - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 N C P L P Q T D S Q R R F L L N R S Q G Q A G R G R G Q P R G P L R A P Q P I P A P Y S P A G P S L
124 NP_057933.2 D C P K K P R G P R G P R P Q T S L L T L D D Q G - Q G Q E P P P - - - - -
125 YP_009116631.1 - - - - -
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - - G R Q G S S A L R - - - - -
128 NP_127504.1 - - - - -
129 NP_044929.1 - - - - -
130 NP_057860.1 A W T P K D K T K V L V V Q P K K P P P N Q P C F R C G K A G H W S R D C T Q P R P P P G P C P L C
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 I S K L T R A T P G S A G L D L C S T S H T V L T P E M G P Q A L S T G I Y G P L P P N T F G L I L
136 NP_569150.1 - - - - -
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - -
140 YP_009109692.1 - - - - - T L G E D S E Q G C Q G S G A P P - - - - -
141 NP_057849.4 R K I V K C F N C G K E G H T A R N C R A P R K K G C W K C G K E G H Q M K D C - - - - - T E R Q
142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - -
144 NP_039820.1 - - - - -
145 NP_056790.1 - - - - - G S Q G S D P L P - - - - -
146 YP_002321513.1 - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 D R Q K T A P L T D Q G I A A M S S A I Q P L I M A V V N R E R D G Q T G S G G R A R G L C Y T C
151 NP_041261.1 - - - - -

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001 YP_004442836.1 - - - - - R S S R R A A Y E A Q R V A R Q A G N I I G R I V - - G R Q P R E H T L S M
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004 YP_004732983.2 - - - - - R R M A R A R Y L A E Q R I R R S F S R N Y R - - - - - E T L E R
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - - M S Q L W K E R T Y A K R M Q R
007 YP_003864102.1 - - - - -
008 YP_009002585.1 - - - - - R N S Q R R A Y T T Q R A V R R L R R R I T G - - - - R Q P Y Q E T L E Q
009 YP_003284237.1 - - - - - R R A Q R A R H E A A R V A R N I G N I G R T I V - - G R Q P R E H T L A L
010 YP_009268869.1 - - - - -
011 YP_009506251.1 - - - - - R R N Q R R L F N L R K K A R R A Q K A L T G S - - - - R S R H Q E T L E Q
012 NP_955611.1 - - - - -
013 YP_008567619.1 - - - - - R Q N Q R R M H N L R Q A V R R L T N - - S Q A - - - S T S G Q E I I E Q
014 NP_149413.1 - - - - - R R S Q H L K H E L S R K T A K A L S W V K - T T - - D D N P R E Q T L E M
015 YP_004442824.1 - - - - - R N S H R A A Y E A Q R L T R Q A G N I V G R I V - - G R Q P R E H T L S M
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 Q D P T H W K R D C P R L K P T I P E P E P E E D A L L L D L P A D I P H P K N L H R G G G L T S P
021 YP_224289.1 - - - - - R A S A R R R Y E A Q R V A R N I G N V G R R L I - - G R Q T R E D T L A L
022 YP_009182100.1 - - - - -

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026 NP_758887.1 Y P L G Q W Q T Q E L P G - - - - D A I - - - - D P N G P S N A R D G R P S R E N A V R L H E E R
027 YP_009508406.1 - - - - -
028 YP_610965.1 - - - - - R A N A R L R H D A Q R - - - Q L Q R V R R T L T G R Q - - G Y R R T L E Q
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - -
032 YP_009041481.1 - - - - - R R M Q R A R H E A Q R I L P P I L G G R R R R - - - - Q I Q G P R R I E E
033 YP_001036293.1 - - - - - R L G A R R R Y N L R Q G L N K F K N V L T L G - - - - T - Y Y A P T L E Q
034 YP_605811.1 - - - - - R T A A R A A Y E A Q R I A R R T G N I I G R I V - - G R Q P R E H T L A M
035 NP_955577.1 - - - - - E P R I T L K I G G Q P V T F L V D T
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037 NP_789740.1 - - - - - L Q G - - - - K A R - - - - E F S S E Q T R A N S P T R R E L Q V W G R D N N
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040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - -
042 YP_009507248.1 - - - - -
043 YP_002117531.1 - - - - - R R G Q R R R Y E A Q R V A R N L Q N I G R T I V - - G A R P R E H T L A L
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045 NP_056891.1 G R S S I T M K G L Q V Y P G V I D N D Y T G E I K I M A K A V N N I V T V S Q G N R I A Q L I L L
046 YP_009513242.1 - - - - - M D P L Q L L Q P L E A E I K G T K L K A H W D S
047 YP_009352866.1 - - - - - R R M Q R A R H E A Q R R L P P I L G G R R R - - - - D R Q G P Q R I E E
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - - M P S L W K K R T Y A K G L P -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 - - - - - R R A Q R A R Y E A Q R V A R S L G N I G R T I V - - G R Q P R E H T L A L
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053 YP_009508571.1 - - - - - M N P L Q L L Q P L Q A E V K G N K L I A H W D S
054 NP_056803.1 - - - - - M N P L Q L L Q P L P A E V K G T K L L A H W D S
055 NP_955564.1 - - - - -
056 YP_009508411.1 - - - - - R L G Q R R R H N L Q Q G M K K L S A K L F G G - - - - P - Y S R - T L E Q
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058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - - E P R I T L R V G G Q P V T F L V D T
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065 YP_595725.1 - - - - - R R A Q H A K H E A Q R I A G Q A L A F L R - V T - - S D D P R E K T L E M
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067 YP_001497148.1 - - - - - E P R L T L S V G G H P T T F L V D T
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069 NP_663784.1 G P T G K E A S Q L P R D P S P S G A D T N S T S G R S S S G T V G E I Y A A R E K A E G A E G E T
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073 YP_009345071.1 - - - - - R T G Q R R R Y N W A R Q A R R L R N R I R R - - - - S P R Q P E T L E T
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076 YP_002916057.1 - - - - -
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085 YP_006907834.1 - - - - -
086 YP_004442827.1 - - - - - S R G Q R I K H E M Q N I V A R P T A L F K R I T - - G G S A S E K T L E M
087 YP_009408594.1 - - - - -
088 YP_009508561.1 - - - - - M A Q T - - - N I P V E I K G T Q L N G F W D T
089 NP_056907.1 K D P S H W K R D C P Q F K P P P T E E E P L L L D L P S D A I A T E E K K L - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - - R N M Q R V R H T A E R A A R R I F P G R - - - - - F N R T L E S
094 YP_009345075.1 - - - - - R R A R R T M W N A S R - - - Q L T G R R N - - - - - N L R T L E Q
095 NP_068729.1 - - - - -

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096 NP_047255.1 - - - - - E P R I T L K I G G Q P V T F L V D T
097 YP_006273075.1 - - - - - R R N Q R R R F V A E Q A V R R T M G R M R G - - - - - R R Y N Q T L E Q
098 YP_009508888.1 - - - - - M S L Q H L L Q P L E A E V K G T K L K A H W D S
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - - M N P L Q L L Q P L P A E I K G T K L L A H W D S
101 NP_056762.1 - - - - - M S L R P F T G T S R T I T Q D S T S E S N I K K G K N S T K R E L I E E
102 YP_009508556.1 - - - - - M D P L Q L L Q P L E A E I K G T K L K A H W D S
103 NP_569153.1 - - - - - R Q W Q R R R H N M G - - - - - R R W N Q L I G - - - - - R - P Y N Q T L E Q
104 NP_043924.1 A E E E A W R E R Q T S Q P S Q P S Q L R P F V A A G N G H R E D Q W R P L T V T E L P A A V T A V
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - - R Q T A R L R H N V R R R L R S L S P G G F R - - - - - N T L E Q
109 YP_009508409.1 - - - - -
110 NP_687035.1 W P L G R S E T K K F C A - - - - - I Q R R H S W S G T N S P P N G N S L R S S K E A P P A V C R E G
111 NP_045937.2 T T Q K V E Q T D I G E A S S S D A S A Q K P I S T D N N P D L K V D G V L T R S Q H T T V P S N I
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 G R S S N Y K K G L E V L P G V I D S D F Q G E I K V M V K A A K N A V I I H K G E R I A Q L L L L
115 YP_009121747.1 - - - - - R T N A R R M Y N L N Q A V R S R L G R R - - - - - Y R R N L E T
116 YP_009113237.2 - - - - - R R N A R R R Y N V Q N A A R R I T A R L S N - - - - - R P Y T R T L E Q
117 YP_009508408.1 - - - - - R L G A R R R Y N M G L K A Q K L V K T L S R G - - - - - K - F Y N P T L E Q
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - - R N I Q R V K H Q A G R - - - - - K L K Q L R G - - - - - Q H S R S L E S
120 YP_004442833.1 - - - - - R N G Q R A L Y E A Q N I V A R P N A I F K R I F - - - - - G G S E T E K T L E M
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - - T A K M L P L W Q T W P P S K K L Q V K K R E V L L
123 YP_443922.1 P F Q G M Y D D N T P W E X R C P P P P E A E V Q R Y S V Y T E P T V S C Q I E G V N H R F L V D T
124 NP_057933.2 - - - - - E P R I T L K V G G Q P V T F L V D T
125 YP_009116631.1 - - - - - R R S A R M R H Q A Q Q R L R R T F G R D F R - - - - - N T I E R
126 YP_009513249.1 - - - - - M D L L K P L T V E R K G V K I K G Y W D S
127 YP_223871.1 - - - - - E P R L K V K V G G Q I I D F L V D T
128 NP_127504.1 - M T S P S D Y Q S N S S L A T T Y S N A P K L S K A L S N K Y D Y L Y E V D I L K E N Q K I S D T
129 NP_044929.1 - - - - - M P A L R P L Q V E I K G N H L K G Y W D S
130 NP_057860.1 Q D P T H W K R D C P R L K P T I P E P E P E E D A L L L D L P A D I P H P K N L H R G G G L T S P
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - - R S I R R T A Y E A R R R A G M A G R T M G R M L - - - - - G Q Q P S N R A A P S
133 NP_054716.1 - - - - - M Q A L Q P L Q V Q I K G N S L K G F Y D T
134 YP_001856242.1 - - - - -
135 NP_954565.2 G R S S I T M K G L Q V Y P G V I D N D Y T G E I K I M A K A V N N I V T V S Q G N R I A Q L I L L
136 NP_569150.1 - - - - - R S S R R A A Y E A Q R I A R Q T G N I I G R V V - - - - - G R Q P R E H T L S M
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - - R R S A R A R Y E A Q R M G R N L V N I G R T I I - - - - - G R R P R E H T L A L
140 YP_009109692.1 - - - - - E P R L T L S V G G H P T T F L V D T
141 NP_057849.4 A N F L R E D L A F L Q G - - - - - K A R - - - - - E F S S E Q T R A N S P T R R E L Q V W G R D N N
142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - - R L G A R R R Y N M S Q A A Q K L A K T L T F G - - - - - K - Y S Q P T L E Q
144 NP_039820.1 - - - - - R N D Q R R R H I W A G R G R R L L S I M P - - - - - G V S S S E R T L E M
145 NP_056790.1 - - - - - E P R V T L T V E G T P I E F L V D T
146 YP_002321513.1 - - - - - R R M R R M G Y E T I R A I R Q P L N R I F A R - - - - - R R E A L L S
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - - M D P L Q L L Q P L E A E I K G T K L K A H W D S
149 NP_056902.1 - - - - - M Q K C S K K R E A R G S R E A P E T N F P D T T E E S A Q Q I C C T R D S S D S K S V P
150 NP_056886.1 G S P G H Y Q A Q C P K K R K S G N S R E R C Q L C N G M G H N A K Q C R K R D G N Q G Q R P G K G
151 NP_041261.1 - - - - -

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001 YP_004442836.1 V V N P N S E L S R S L A H R A R T V P G E V L Y M T Q R D S P - V N R V Y R N R T E E R M - L V T
002 NP_056728.1 - - - - -
003 YP_009508537.1 Q A D I T C V P K D L L Q E E E P V R Q Q N V T T I H G T Q E E D V Y Y V N L K I D G R R I N T E V
004 YP_004732983.2 R L D P E A E L Q L S R R R R A N L V P A E V L Y S L N Y N E P - Q N R V Y Q H Y E E V R S - - H V
005 YP_009508407.1 - - - - -
006 NP_040939.1 K E R H K G K T A G K R E E G D T C G A V R S S Y G - - - - - I T S A P P M V Q V R I G S Q Q R N L L
007 YP_003864102.1 - - - - -
008 YP_009002585.1 E V D P Q A D L Q M S M Q E R A R L V P A E V L Y R S R R D T I - H H R V Y S H R S E E A I - L C T
009 YP_003284237.1 L M N P E V E L Q R S M Q E R A R T V P A E V L Y M T R R D D I - H H R V Y H H R S E E R M - L V L
010 YP_009268869.1 - - - - - S N I T A G K Q Q E G A T C G A V R A P Y V - - - - - V T E A P P K I D I K V G T N W K K V L
011 YP_009506251.1 E I D P Q V T L R L S M Q E R A R L V P A E V L Y R S R R D T V - H H R V Y T H R S E E S I - L C V
012 NP_955611.1 - - - - -
013 YP_008567619.1 S L D P Q K Q L M R S M T Q R A S I V P A E V L Y H S R K D D V - N H K V Y I H R S E E A L - S V T
014 NP_149413.1 V M S P E A E L E R S L K K R A R A F P A E V I Y S P R R D D I - H H R V F V G S S S Q D V - M I V

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015 YP_004442824.1 VVNPDSSELSRSLAHRARTVPAEVL YMTQRDSP-VNRVYRNRTEERM-LVT
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 PTLQQVLFPNQDPTSILPVIPLDPARRPV IKAQIDTQTSHPKTIEA- - - - L
021 YP_224289.1 LMDPEVELQSRMSRERARTVPAEVL YMSRRDDV-HHRVYHFRSEERM-MVS
022 YP_009182100.1 - - - - -
023 NP_705927.1 - - - - -
024 YP_009508577.1 GAQITCIP EAFLEKEEIP IGEAQIKTLHG TKLQSVYYLKFKVLGRKVEAEV
025 YP_004442830.1 VLDPEAELEKSMKRRRAKAFPAEVVYAPRSDNK-LHKVFQGRTSQDI-MVV
026 NP_758887.1 ATAESGKQTGKEREGSIRGS- - - - LQLPQFSLWNRPTTVVEIEGQKVEAL
027 YP_009508406.1 - - - - -
028 YP_610965.1 HIDPNEQLQLSQKKKAAIVPAEVL YDDGWHST-VHKVYQHYDEQRVLVLE
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - -
032 YP_009041481.1 ELDPNMEL SASSRRRATMVPAEVL YSTG DTRV-RNRVYEHYSEQRG- - LI
033 YP_001036293.1 QVDPERTLQLSAIKRASMI PAEVL YHARPDTV-NHKVYMHWS E EAD-LIV
034 YP_605811.1 VVDPNSELERSLAHRARTI PAEVL YMTQRGEP-TNRVYRNRTEERM-LVT
035 NP_955577.1 GAQH SVL TRPDGPLSDRTALVQGATG-SKNYRWT TDRRVQLATGKVTHSF
036 YP_003208050.1 ELDP EAEIQLSQRRRANMVPAEVL YE EGSSTRLHRVYQHYSEERILST-
037 NP_789740.1 SPSEAG- - - - ADRQGTVS- - - - - FNFPPQVTLWQRPLVTIKIGGQLKEAL
038 YP_004442839.1 IVDPNSELERSLAHRARTI PAEVL YMTQRGEP-TNRVYRNRTEERM-LVT
039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - -
042 YP_009507248.1 -MIPARSSKLVRIPI NATDGEVLVEEQMFCNCIVHECVTMVKDGRGYVEL
043 YP_002117531.1 LMDPEAE LTRSMQERARTVPAEVL YMTRRDDI-HHRVY YHRSEERL-LII
044 YP_004347415.1 - - - - -
045 NP_056891.1 PLIETDNKVQQPYRGQGSF-GSSDIYWVQPITCQKPSLT LWLDDKMFTGL
046 YP_009513242.1 GATITCIP EAFLEDEQPIQTMLIKTIHG EKQQNVYYLT FKI QGRKVEAEV
047 YP_009352866.1 EINPNRELSASSRRRAS MVPAEVL YNSGDTNV-RNRVYEHYSEQRG- - LI
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - AEETAGKQQEGATCGAVRAPYV- - - - VTEAPPKIEIKVGTRWKKLL
050 YP_004222728.1 - - - - -
051 YP_009506264.1 LMDPDVELQRSMSE RARTVPAEVL YMTRRDDV-HHRVYHHRSEERM-LVL
052 YP_567050.1 - - - - -
053 YP_009508571.1 GASITCIP ESFLEEETPIKKTIIKTIHG QKEQKVYYLT FKVNGRKVEAEV
054 NP_056803.1 GATITCIP ESFLEDEQPIKQT LIKTIHG EKQQNVYYLT FKVKG RKVEAEV
055 NP_955564.1 - - - - - HWVQEISDSRPMLHIY LNGRRFLGL
056 YP_009508411.1 QVDPEKTLQVSMYQRASLVPAEVL YHARPDTI-HHKVYLHWSEEAV-LVI
057 YP_009140788.1 TIDPEEELSQSMQERANLVPAEVL YRTRRDNI-NHQVYNHRSE EAM-LCV
058 YP_009508410.1 - - - - -
059 NP_040333.1 GAQH SVLTQNPGPLSDKSAWVQGATG-GKRYRWT TDRRVHLATGKVTHSF
060 YP_008992013.1 TYPLISPYHLYKRPN SFTRS-IRTLISTKRPHPK EYIQSSRLDQCAL KAT
061 NP_041734.1 EIDPQTTLRLSMQERARLVPAEVL YRSRRDTV-HHRVYTHRSEESV-LCV
062 NP_056895.1 PQT VTPITDPLSEAELECLLSIPLARSRPSVAVYLSGPWLQPSQNQA LML
063 YP_009109689.1 GAQH SVLTKANGPLSSRTSWVQGATG-RKM HKW TNRRRTVNLGQGMVTHSF
064 YP_002519387.1 - - - - -
065 YP_595725.1 LMQPDVELTRSMKKRARA FPAEVL YGPRSDDI-HHKVFQGS SSQDI-LLI
066 YP_009508551.1 GATITCIP ESFLEDEQPIKKT LIKTIHG EKQQNVYYVT FKVKG RKVEAEV
067 YP_001497148.1 GAQH SVLTKANGPLSSRTSWVQGATG-RKI HKW TNRRRTVDLGQGT VTHSF
068 NP_041186.1 - - - - -
069 NP_663784.1 IQRGDGGLAAPRAERDTSQRGDRGLAAPQFSLWKRPVVTAYIEDQPVEVL
070 YP_009508443.1 QVDPEKTLQLSSVQRASLVPAEILYHARTDTV-NHKVYMHWS EESD-LII
071 YP_003987465.1 VIDPEAE LQRSMSE RARTVPAEVL YMTRRDNI-HHRVY YFRCEERM-RVL
072 NP_861410.1 - - - - -
073 YP_009345071.1 QIDPQAE L SMSLQRRASIVPAEVL YHSRQDDI-NHRVYQHWSEEAV-NCI
074 YP_009508582.1 GAQITCIP EAFLEKEEIP IGEAQIKTLHG TKLQPVYYLKFKILGRKVEAEV
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 PQT VTPITDPLSEAELECLLSIPLARSRPSVAVYLSGPWLQPSQNQA LML
078 YP_233110.1 VVDPNSELERSLAHRARTI PAEVL YMTQRGEP-TNRVYRNRTEERM-LVT
079 NP_542258.1 - - - - -
080 YP_009130664.1 QIDPQVHLRNSMQERAAIVPAEVL YHSRC DDE-HHRVYVHRSE EAL-LCT
081 YP_009508566.1 GAQITCIP QVYLEQEKP IGHV IETVNGKTQRDAYYIKL KINGKKIETE V
082 YP_006607892.1 - - - - -
083 YP_009506270.1 VVDPNSELERSLAHRARTVPGEVLYMTQRDSP-VNRVYRNR TGERM-LVT
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 ILDP EAELEKSMKRRRAKAFPAEVVYAPRYDNK-LHKVFQGRSSQDI-MVV
087 YP_009408594.1 PVD SHDLPEIPDDQDSEQFLAILTFTGDPQYLLPDPVYDTS SD- - - - -

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088 YP_009508561.1 GAQITTCIPQSSFLLEDEQPIGTTDIETIHGKQKQKLYLKFVKVLGRKVEAEV
089 NP_056907.1 -PGGGDVISPQQISM L PVI PLEQQHQPLLDVQVSIAGAPPRPTQA - - - - L
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 QINPEAEIRLSQQORRAAMVPAEVL YNTSPSTR-NQKVYQHYSEERILCTG
094 YP_009345075.1 EIDPEAQLRLSTQQRAGIVPAEVL YRNGWSEER-AHRVYRHYSEERIMLTN
095 NP_068729.1 - - - - -
096 NP_047255.1 GAQHSVLTRPDGPLSDRTALVQGATG-SKNYRWTTDRRVQLATGKVTHSF
097 YP_006273075.1 IVDPEVELNQSMQERANLVP AEVL YRSRRDNI-NHQIYNHRSEEAM-LCV
098 YP_009508888.1 GTTITTCIPTVFLTDEIPIKDVLIKTIHGERRQPAYYLTTFKINGRQVQAEV
099 NP_395469.1 - - - - -
100 YP_009508546.1 GATITCVPESFLEDEQPIKQTLIKTIHGEEKQKQVYYLTTFKIKGRKVEAEV
101 NP_056762.1 VDVNQEEVENFDWKKLSG IKPNKLYEKNWQEKVKLKQQSIVSAYKEEAISV
102 YP_009508556.1 GATITTCIPEAFLEDEQPIQTMLIKTIHGEEKRQNVYYLTTFKIQGRKVEAEV
103 NP_569153.1 VVDPEVALQLSMQERARLVPAEVL YRSRTDDR-HHQVYIHKSEEAI-LCV
104 NP_043924.1 GGAWDPTRETGSARWKKIVKAAEAIGWGTGDVCQVVTAMSPSPSWADVPEI
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 QLSPNQELALSRRRRANLVP AEVL YTHNNNEV-VNRRVYQHYEERSA--HV
109 YP_009508409.1 - - - - -
110 NP_687035.1 TAPERGERTDKETEGERSG - - - - GCFLELPLWRRP MKRVIIEGTPVQAL
111 NP_045937.2 TIKKDGTSVQYQHPIRNYPTGEGNLTAQVRNPF RP LELQQLRKDCPALPE
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 PYLKLPNPVIKEERGSEGF GSTSHVHWVQEISDSRPMLHIYLNRRFLGL
115 YP_009121747.1 ELDPDQQLEVSRQRRAE LVP AEVL YGSNSQTV-RHRVYQHYSEQRI LCTE
116 YP_009113237.2 EVDPEATLRLSMQERARLVPAEVL YRSRSDDV-NHRVYIHRDEEAV-LCT
117 YP_009508408.1 QVEPEKTLQLSSVQRASLVPAEVL YHSRPDTV-NHKVYMHWSEESD-LII
118 NP_955579.1 - - - - -
119 YP_009229919.1 RIDPDAQQLQISRRRRSDMVPAEVL YEAQRDNPIHRVYQHYSEERRIRVTE
120 YP_004442833.1 VMDVEAELEKSMKRRARAFPAEVL VYSPRRDNK-LHKVFQGRASQDL-MVV
121 NP_862833.2 - - - - -
122 NP_040563.1 CPLWAE EPTTEQFSPEQHEFCDP ICTPSYIRLDKQPF IKVF IGGRWVKGL
123 YP_443922.1 GCTYSAIKT-MQPLSMDSIQVVGVS GRPETQLKTQPL LFRWGPSTVRHQF
124 NP_057933.2 GAQHSVL TQNPGPLSDKSAWVQGATG-GKRYRWTTDRKVHLATGKVTHSF
125 YP_009116631.1 QLDPD AE LSLSRRRRANLVP AEVL YAHNGQEP-VNRRVYEHYSEL SA--HV
126 YP_009513249.1 QADITCVPKDLLQGE E PVRQQNVTTIHGTQEGDVYYVNLKIDGRRINTEV
127 YP_223871.1 GATHSVVQKPVGPM SKESVAIIGATGNIRNYPKSEGR LVDLGRGLVTHSF
128 NP_127504.1 YLPLLN PYS AFAKRSVTPWSQIRSLVQSKPRHVKEYVAASKLDQHPVFAT
129 NP_044929.1 GAEITCVP AIYIIEEQPVGKKLITTIHNEKEHDVYYVEMKIEKRKVQCEV
130 NP_057860.1 PTLQQVLPNQDPTSILPVIPLDPARRPVIKAQIDTQTSHPKTIEA - - - - L
131 NP_040973.1 - - - - -
132 NP_777317.1 IVNPDEELERSL TRRARTIPAEVL YLAQRREV-DNRVYRNMTEERM-LIT
133 NP_054716.1 GAEITCVP AI FLIEEEP I GERTIQTIHGITKEKVYYLTTFKIQGRKLAAEV
134 YP_001856242.1 - - - - -
135 NP_954565.2 PLIETDNKVQQPYRGQGSF-GSSDIYWVQPITCQKPSLTLWLDDKMFTGL
136 NP_569150.1 VVDPNSEL SRS LAHRARTVPGEVL YMTQRDSP-VNRIYRNRTEERM-LVT
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -MGKMGSKRTVVAGATG-SKVYPWTTKRL LKIGQKQVTHSF
139 YP_233107.1 LMDPEVELRRSMQERARTVP AEVL YMTRRDDI-HHRVYHYRSEEEM-LIT
140 YP_009109692.1 GAQHSVLTKANGPLSSRTSWVQGATG-RKM HKW TNRRTVNLGQGMVTHSF
141 NP_057849.4 SPSEAG - - -ADRQGTVS - - - - -FNFPQVTLWQRPLVTIKIGGQLKEAL
142 NP_049560.1 - - - - -
143 YP_009506267.1 QVDPEKTLQLSSMQRASLVPAEVL YHSRPDTV-NHKVYMHWSEESD-LVV
144 NP_039820.1 QMNPEVQLQRSMNHRAEAVPAEVL YRTFHGSV-NHRVYSHRSEERM-MVV
145 NP_056790.1 GAEHSVL TQPMGKVGSRRTVVEGATG-SKVYPWTTKRL LKIGHKQVTHSF
146 YP_002321513.1 PEQVSRRLQRS GSRRPEAVPAEVL YTAGQDSA-QTRVYESVAEESI-LVI
147 NP_955591.1 - - - - -
148 YP_001956722.2 GATITCVPQAFLEEEVPIKNIWIKTIHGEEKQPVYYLTTFKIQGRKVEAEV
149 NP_056902.1 RSERNKKGIQCQGE GSSRGSQPGQFVGVTYNLEKRPTTIVLINDTPLNL
150 NP_056886.1 LSSGPWP GPPEPPAVSLAMTMEHKDRPLVRVILTNTGSHPVKQRSVYITAL
151 NP_041261.1 - - - - -

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001 YP_004442836.1 NG-QQDRSFIYPESFEELVNAGFEYIHLGV LQVRLQIMHRTYAGTMALVV
002 NP_056728.1 - - - - -
003 YP_009508537.1 IGTALDYAII TPGDAPWILKKPLELT - - - - -
004 YP_004732983.2 IDRQQDFRFIEEQSYRTL VQEGMQHIHPGMLMVRIQVLRHVDAGISAMIV
005 YP_009508407.1 - - - - -
006 NP_040939.1 FDTGADR TIVRWHEGSGNPAGRIKLQGI GGIV - - - - -

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007 YP_003864102.1 - - - - -
008 YP_009002585.1 DGNQVDRFTFIQPESMEALQRTGISFIHIGIMQVRLQILHRQNEGTMALV
009 YP_003284237.1 RNDQQDRFTFIQQESYEALAQAGLEYIHLGVLQVRFQILHRRYAGTVAFV
010 YP_009268869.1 VDTGADRTIVRYHDNSGIPGTGRICKLQGGIGII - - - - -
011 YP_009506251.1 GGNQVDRFTFIQPSSLERLQRTGMSFIHIGILQVRIQILHRQEEGTMALV
012 NP_955611.1 - - - - -
013 YP_008567619.1 EGNQVDRFTFIQEESHKKLVKSGIKFIHLGVLQVRLQILHRKEEGTLALV
014 NP_149413.1 DDNQIDMTYIKEESFEKLEQAGFRYIHLGAMAIRIQPLHAAWSGKLA FIV
015 YP_004442824.1 NG - QQDRFTFIYPESFEELVNAGFEYIHLGVLQVRLQIMHRTYAGTIALV
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 LDTGADMTVLPIALFSSNTPLKNTSVLGAGGQ - - - - -
021 YP_224289.1 DADQQDRFTFISEESFERLQQAGLTYIHLGVLQVRFQILHRTFAGTMALLV
022 YP_009182100.1 - - - - -
023 NP_705927.1 - - - - -
024 YP_009508577.1 TTSPFDYVVIISPSDIPWYKQP PLELT - - - - -
025 YP_004442830.1 DDNQIDMTFIREETFEQLERAGLRYIHLGTLQVRIQPLHQRWSGTMAFIA
026 NP_758887.1 LDTGADDTVIKDLDLKG - - - - - NWKPKQIIGGIG - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 - GQQVELLPFINEQSYRQLLSSGFQHIHVGMLVLRVHALHSRHAGTMALLC
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - -
032 YP_009041481.1 VNNQEDFRFIQESSYNTLRNSGYEHMHVGMMMMRVLT LHR TYTGVTALVT
033 YP_001036293.1 NN - QHDS TFI RPESYLELRKANMQFIHIGLMQVRIQV LHR RHEAGTMALIV
034 YP_605811.1 HG - QQDR TFI LPESYEELREAGFEYIHLGVLQVRIQIMHRSYAGTMALV
035 NP_955577.1 LYVPECPPYPL LGRD L LTKLKAQIHFTGEGANV - - - - -
036 YP_003208050.1 - GEQVELLPFVTRRSYERLQRTGYQQIHLGLVLIRVHT LHR RDAGVKALV
037 NP_789740.1 LDTGADDTVLEEMSLPG - - - - - RWKPKMIGGIG - - - - -
038 YP_004442839.1 QG - QQDR SFILQESYEAL LEAGFEYIHLGVLQVRIQIMHRSYAGTMALV
039 YP_009507791.1 - - - - - MQGVGGTN - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - -
042 YP_009507248.1 ENPTPNVDVIFYLDQPASAE LFN I KCTQVEQS Q - - - - -
043 YP_002117531.1 GNTQVDRFTFIPQQSYEALSKEHMEYIHLGVIQVRLQILHRKFAGTLALIS
044 YP_004347415.1 - - - - -
045 NP_056891.1 IDTGADV T I I K L E D W P P N W P I T D T L T N L R G I G - - - - -
046 YP_009513242.1 L A S P Y D Y I L L N P S D V P W L M K K P L Q L T - - - - -
047 YP_009352866.1 V N S Q E D F R Y I Q E S S Y N T L R N S G Y E H I H I G M M M V R V L T L H R T H A G V K A L V T
048 YP_009165750.1 - - - - -
049 NP_040840.1 V D T G A D K T I V T S H D M S G I P K G R I I L Q G I G G I I - - - - -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 A N D Q Q D R T F I V R E S Y E A L E R A G F E Y V H L E V M Q V R F Q I L H R R F A G T L A F I V
052 YP_567050.1 - - - - -
053 YP_009508571.1 I A S P Y D Y I L L S P M D V P W L V Q K P L Q L T - - - - -
054 NP_056803.1 I A S P Y E Y I L L S P T D V P W L T Q Q P L Q L T - - - - -
055 NP_955564.1 L D T G A D K T C I A G R D W P A N W P I H Q T E S S L Q G L G - - - - -
056 YP_009508411.1 Q G - Q Y D S T F I K T E S Y E A L Q R A G M Q F I H I G L M Q V R I Q V L H R L E A G T M A L V A
057 YP_009140788.1 G - E Q Q D R S F I Q P D S F Q E L Q R S G M Q F I H L G V L Q V R I Q I L H R A D E G T M A L V
058 YP_009508410.1 - - - - -
059 NP_040333.1 L H V P D C P Y P L L G R D L L T K L K A Q I H F E G S G A Q V - - - - -
060 YP_008992013.1 S A E Q Y V T L E I P S E L I S N W K R E G Y T H L H L G G I R L I L T L H G R K G L P V T A R V A
061 NP_041734.1 G G S Q V D R A F I Q P E S L E Q L Q R T G M S F I H I G I L Q V R I Q I L H R Q E E G T M A L V
062 NP_056895.1 V D T G A E N T V L P Q N W L V R D Y P R I P A A V L G A G G V - - - - -
063 YP_009109689.1 L V V P E C P Y P L L G R D L L T K L G A Q I H F S E A G A Q V - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 D D N Q L D M T F I K E E T F E Q L E Q A G L R Y I H P G I L A V R I Q P L H P D W S G K L V F I V
066 YP_009508551.1 I A S P Y E Y I L L S P T D V P W L T Q Q P L Q L T - - - - -
067 YP_001497148.1 L V V P E C P Y P L L G R D L L T K L G A Q I H F S E T G A Q V - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 L D T G A D D S I V A G I E L G D N - - - - - Y T P K I V G G I G - - - - -
070 YP_009508443.1 N G - Q H D S T F I R P E S F Q V L Q R S G M Q F I H I G L M Q V R I Q V L H R L E A G T M A M V V
071 YP_003987465.1 D S D Q Q D R T F I T P E A F E H L K E A G F E Y I H L G I L Q V R F Q I L H R R Y A G T M A F I A
072 NP_861410.1 - - - - -
073 YP_009345071.1 D G Q Q I D R T L V T M E S Y S T L N R A G F R Y I H I G V I Q V R L Q I L H R R E M G T L A Y V V
074 YP_009508582.1 T T S P F D Y V I I S P S D I P W Y K P Q P L E L T - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 V D T G A E N T V L P Q N W L V R D Y P R I P A A V L G A G G V - - - - -
078 YP_233110.1 H G - Q Q D R T F I L P E S Y E E L R E A G F E Y I H L G V L Q V R I Q I M H R T Y D G T M A L V
079 NP_542258.1 - - - - -
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080 YP_009130664.1 DNQQQDRIFIQEESFKQLQRSRMQFIHIGVQLRIQALHRHDEGTLALVV
081 YP_009508566.1 IPSPFYSYALITPNDIPWFKPGGIELT-----
082 YP_006607892.1 -----
083 YP_009506270.1 NG-QQDRSFIIYPESEFEELVAAGFEYIHLGVLQVRLQIMHRTYAGTMALVV
084 NP_042513.1 -----
085 YP_006907834.1 -----
086 YP_004442827.1 DDNQLDMTFIKEETFEQLERAGLRYSIHIGALQVRIQPLHQKWYGTMAFLA
087 YP_009408594.1 --SDSDSDTESTTSDGPLPDLGPPDHVWATDPRPSYAVWEENRSGNCPKA
088 YP_009508561.1 TSSTLAYVILAPIDIPWYKPTPLELT-----
089 NP_056907.1 LDTGADLTLVLPQALAPESVSVSDTTVLGAGGQ-----
090 YP_002308474.1 -----
091 YP_007761644.1 -----
092 NP_040550.1 -----
093 NP_758808.1 QNQQLNLPFINESSYRALRESGQQHLHIGLIMIRVHPLHRRNAGTTALIV
094 YP_009345075.1 PNQQRELRVITDQSYQKLREEGQHVHCGLV MIRVHALHRKQAGVMVLVV
095 NP_068729.1 -----
096 NP_047255.1 LYVPECPYPPLLGRDLLTKLKAQIHFTGEGANV-----
097 YP_006273075.1 G-EQQDRMFIQPN SFQELQRSQMFIHIGVLQVRLQILHRADGGTMALVV
098 YP_009508888.1 IASPYDYILLCPADV PWLQQQPLQLT-----
099 NP_395469.1 -----
100 YP_009508546.1 IASPYEYILLSP TDVPWLTQQPLQLT-----
101 NP_056762.1 THNAYTTTLFPPQEV IKNVKNQGKLYYHIGMMAIGVKGLHRRKIGTKVMIM
102 YP_009508556.1 LASPYDYILLNPSDVPWLMKKPLQLT-----
103 NP_569153.1 DGDQVDRLLIQPESAEQLSRSGMSFIHMGIVQVRIQILHRQHEGTTALVV
104 NP_043924.1 RNRVATEKEIKAWLMKQGPGGGQGLLEFTKL RQGPTENPSNYLEKALELY
105 YP_009243641.1 -----
106 YP_004300274.1 -----
107 NP_056848.1 -----
108 YP_006495799.1 VDRQMDLRFIEEESYRRLVDEGLQFIHLMGMVRIHMLHRNSAGIEAMIV
109 YP_009508409.1 -----
110 NP_687035.1 LDTGADDTIIQEKDLHFPPHKPWR SKVVGIG-----
111 NP_045937.2 GIPQLAEWLTQTMAIYN CDEADVEQLARVIFPTPVRQIAGVINGHAAANT
112 NP_612577.1 -----
113 NP_619548.1 -----
114 NP_056880.1 LDTGADKTCIAGR DWPANWPIHQTESSLQGLG-----
115 YP_009121747.1 ENQ-TDLRLCNRQSYQSLRESGMQH IHLGMFMIRILTMHRRGAGTTALIV
116 YP_009113237.2 GDAQVDRALIQPPQSAERLLQSGYSFIHIGIIQARIQILHRSQEGTMALVL
117 YP_009508408.1 NG-QHDSTFIRPESYQLLQRSGMQFIHIGLMQVRVQVLHRLEAGTMAMIV
118 NP_955579.1 -----
119 YP_009229919.1 EGEQEDLRFITEPSYGT LRREGFQHIHLGLMMVVRVHGLHARHAGTQVLVV
120 YP_004442833.1 DDNQMDMTFIKEETFEQLERAGLRYSIHIGALQVRIQPLHQRWSGKMAFLA
121 NP_862833.2 -----
122 NP_040563.1 VDTGADEVVLKNIHWDRIKGYPGTPIKQIGVN-----
123 YP_443922.1 LYCPNCPINLLGRDLLCRLGCFINLTEDGVEVSINSPKSGRVLLLP SLPV
124 NP_057933.2 LHVDPDCPYPLLGRDLLTKLKAQIHFE GSGAQV-----
125 YP_009116631.1 VDRQQDFRFIEEASYQRLTREGMQFIHVGMAMVRIQMLHRTDAGISALVV
126 YP_009513249.1 IGTTLDYAIIITPGDVPWILKKPLELT-----
127 YP_223871.1 LVIPECPDPLLGRDLLQKL RATISFTGGGPPE-----
128 NP_127504.1 GEEQFVTLHIPEEFASHWKSHQFTHIHFGAVKIALTYHGRKGQPVVARLA
129 NP_044929.1 IATALDYVLVAPVDIPWYKPGPLELT-----
130 NP_057860.1 LDTGADMTVLPIALFSSNTPLKNTSVLGAGGQ-----
131 NP_040973.1 -----
132 NP_777317.1 DG-QQNRTFIRPESYSTLVASGYEYIHLGVLQVRIQTMHRAFA GTMALVV
133 NP_054716.1 IGTQLDYVIIAPSDIPWYKKYELELT-----
134 YP_001856242.1 -----
135 NP_954565.2 IDTGADVTTIKLEDWPPNWPITDTLTNLRGIG-----
136 NP_569150.1 NG-QQDRSFIIYQESFEELASAGFEYIHLGVLQVRIQIMHRTYAGTMALIV
137 NP_659397.1 -----
138 YP_009513211.1 LVIPECPAPPLLGRDLLTKLKAQIQFSTEGPQV-----
139 YP_233107.1 GSDQQDRFTFITEESYEH LAQAEIEYIHLGILQVRFQILHRRYAGTMALLV
140 YP_009109692.1 LVVPECPYPPLLGRDLLTKLGAQIH FSEAGA QV-----
141 NP_057849.4 LDTGADDTVLEEMSLPG---RWKPKMIGGIG-----
142 NP_049560.1 -----
143 YP_009506267.1 NR-QYDSTFIRPESYTTLMKSGMQFIHIGLMQVRIQILHRAEAGT LAMIV
144 NP_039820.1 NGSQVDRSFIQESSFEVLSRTGIEFIHIGVMLVRIQILHRKFFAGT MALIV
145 NP_056790.1 LVIPECPAPPLLGRDLLTKLKAQIQFSAEGPQV-----
146 YP_002321513.1 GETQRDLLFM EPQSLQEIRRQNF RHIIHIGMVI IKIRPLHTDARGTSALLV
147 NP_955591.1 -----
148 YP_001956722.2 ISSPYDYILVSPSDIPWLMKKPLQLT-----
149 NP_056902.1 LDTGADTSVLTTAHYNRLKYRGRKYQGTGIIG-----
150 NP_056886.1 LD SGADITII SEEDWPTDWPVME AANPQIHGI-----
151 NP_041261.1 -----

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001	YP_004442836.1	FRDTRWTQEGD-EDRSIIAAMEADLSQG-HQLIYVIPDIMMTI	K	D	F	Y	Q	H	V
002	NP_056728.1	-----	-	-	-	-	-	-	-
003	YP_009508537.1	-----	-	-	-	-	-	-	-
004	YP_004732983.2	FRDTRWNDER-----QIIISAMTVDMARG-AQLVYAIPDLMMSSI	H	D	F	Y	H	H	L
005	YP_009508407.1	-----	-	-	-	-	-	-	-
006	NP_040939.1	-----	-	-	-	-	-	-	-
007	YP_003864102.1	-----	-	-	-	-	-	-	-
008	YP_009002585.1	FRDTRWNGDQ-----SIFATMEVDLTEG-RQIIYVVPDMMTI	G	D	F	A	R	N	I
009	YP_003284237.1	FRDTRWNE-DD-----RSIIAAMEVDLAEG-NQLVYVIPDIMMTI	K	D	F	Y	R	H	I
010	YP_009268869.1	-----	-	-	-	-	-	-	-
011	YP_009506251.1	FRDNRWAGDQ-----AIFAQMEVDLTGK-SQLVVFVVPDMMTI	G	D	F	A	R	N	V
012	NP_955611.1	-----	-	-	-	-	-	-	-
013	YP_008567619.1	FRDNRWKGDGK-----GIIATMEVDLTGK-CQMVYIIPDIMMTV	N	D	F	Y	H	N	I
014	NP_149413.1	LRDVRNSP-----PTTLGAMEVDLSKG-AQLIYVLPNFMCTI	K	D	F	Y	H	G	I
015	YP_004442824.1	FRDTRWTQEGE-EDRSIIAAMEADLSQG-HQLIYVIPDIMMTI	R	D	F	Y	Q	H	V
016	YP_001931967.1	-----	-	-	-	-	-	-	-
017	YP_002455786.1	-----	-	-	-	-	-	-	-
018	YP_009109694.1	-----	-	-	-	-	-	-	-
019	NP_789739.1	-----	-	-	-	-	-	-	-
020	NP_955619.1	-----	-	-	-	-	-	-	-
021	YP_224289.1	FRDTRWTA-DD-----RSIISAMEVDLAEG-NQLIYVIPNIMMTI	G	D	F	Y	R	H	I
022	YP_009182100.1	-----	-	-	-	-	-	-	-
023	NP_705927.1	-----	-	-	-	-	-	-	-
024	YP_009508577.1	-----	-	-	-	-	-	-	-
025	YP_004442830.1	FQDTRSQP-----ATVIAAMEVDLSKG-AQMIYIIPDFMTTI	G	D	F	Y	Q	G	I
026	NP_758887.1	-----	-	-	-	-	-	-	-
027	YP_009508406.1	-----	-	-	-	-	-	-	-
028	YP_610965.1	LRDTRWKSSR-----GIIGSMEVDLTAG-SQLVYVVPDILLSV	Q	D	F	Y	N	H	I
029	YP_001931961.1	-----	-	-	-	-	-	-	-
030	YP_241114.1	-----	-	-	-	-	-	-	-
031	YP_006732334.1	-----	-	-	-	-	-	-	-
032	YP_009041481.1	FRDTRWHGEL-----SILGQMELDLSEG-SQLVFTTPNLLCSI	H	D	F	Y	H	H	I
033	YP_001036293.1	FRDCSWKGRR-----STIARMEVDLTGK-SQLVYIAPNITKKL	T	D	F	Y	N	N	I
034	YP_605811.1	FRDTRWTQENH-QGRSIIATMEADLSQG-HQLIYVIPDIMMTI	R	D	F	Y	Q	H	I
035	NP_955577.1	-----	-	-	-	-	-	-	-
036	YP_003208050.1	FRDTRWRDDR-----SIIGSMEIDL SIG-TQLAYIAPDMMSSI	H	D	F	Y	N	H	V
037	NP_789740.1	-----	-	-	-	-	-	-	-
038	YP_004442839.1	FRDTRWTQEDA-EDRSIIAAMEADLSQG-HQLIYVIPDIMMTI	R	D	F	Y	Q	H	I
039	YP_009507791.1	-----	-	-	-	-	-	-	-
040	YP_004581513.1	-----	-	-	-	-	-	-	-
041	NP_043933.1	-----	-	-	-	-	-	-	-
042	YP_009507248.1	-----	-	-	-	-	-	-	-
043	YP_002117531.1	FRDTRWAGDDD-----RQLISVMEVDLSEG-CQLIYVIPDMMLTL	K	D	F	Y	R	H	I
044	YP_004347415.1	-----	-	-	-	-	-	-	-
045	NP_056891.1	-----	-	-	-	-	-	-	-
046	YP_009513242.1	-----	-	-	-	-	-	-	-
047	YP_009352866.1	FRDTRWQGEL-----SILGQMELDLSEG-SQPVFPTAPNLMCSI	H	D	F	F	H	H	I
048	YP_009165750.1	-----	-	-	-	-	-	-	-
049	NP_040840.1	-----	-	-	-	-	-	-	-
050	YP_004222728.1	-----	-	-	-	-	-	-	-
051	YP_009506264.1	FRDTRWHE-DD-----TSIIAAMEVDLAEG-NQLVYVIPDIMMTI	K	D	F	Y	R	H	I
052	YP_567050.1	-----	-	-	-	-	-	-	-
053	YP_009508571.1	-----	-	-	-	-	-	-	-
054	NP_056803.1	-----	-	-	-	-	-	-	-
055	NP_955564.1	-----	-	-	-	-	-	-	-
056	YP_009508411.1	FRDCSWKGRR-----SIIAKMEIDL SKG-SQLVYVAPDITKRV	A	D	F	Y	R	N	I
057	YP_009140788.1	FRDNRWQGDQ-----SIFAIAEVDLTRG-SQIVYVIPDMMTI	G	D	F	Y	R	N	V
058	YP_009508410.1	-----	-	-	-	-	-	-	-
059	NP_040333.1	-----	-	-	-	-	-	-	-
060	YP_008992013.1	LLDTRFKQFQD-----AVIGTVLTTLHAG-SVLLTFYPNFNLSL	Q	D	P	N	L	P	T
061	NP_041734.1	FRDNRWSGDQ-----SIFAQMEIDLTKG-SQLVVFVIPDMMTI	G	D	F	A	R	N	V
062	NP_056895.1	-----	-	-	-	-	-	-	-
063	YP_009109689.1	-----	-	-	-	-	-	-	-
064	YP_002519387.1	-----	-	-	-	-	-	-	-
065	YP_595725.1	FRDIRDNP-----PRVLGAMEIDL SKG-PQMVYVINSFMTTI	K	D	F	F	H	G	I
066	YP_009508551.1	-----	-	-	-	-	-	-	-
067	YP_001497148.1	-----	-	-	-	-	-	-	-
068	NP_041186.1	-----	-	-	-	-	-	-	-
069	NP_663784.1	-----	-	-	-	-	-	-	-
070	YP_009508443.1	FRDCSWKGKR-----SIIARMEVDLSKG-SQLVYIAPNIIKKL	A	D	F	Y	N	N	I

071	YP_003987465.1	YRDTRWD--NR---KSIIATMEVDLSEG-NQIVYIIPDMMTTI	RDCYEHI
072	NP_861410.1	-----	-----
073	YP_009345071.1	FRDNRLLGdq-----AILAQMEVSLADGGHQMIYVVPDIMMTI	GDFYRNI
074	YP_009508582.1	-----VKLPVQ	DFKKELI
075	NP_569141.1	-----	-----
076	YP_002916057.1	-----	-----
077	NP_777384.2	-----SRNRYNWLQGPLT	LALKPEG
078	YP_233110.1	FRDTRWTQENH-QDRSIIATMEADLSQG-HQLIYVIPDIMMTI	RDFYQHI
079	NP_542258.1	-----	-----
080	YP_009130664.1	FRDNRWPDdR-----SLFATMEVDLSQG-SQLVYVIPNTMMTI	GDFYNNV
081	YP_009508566.1	-----EKLPIQ	DYKDNIV
082	YP_006607892.1	-----	-----
083	YP_009506270.1	FRDTRWTQEGE-EDRSIIAAMEADLSQG-HQLIYVIPDIMMTI	RDFYQHV
084	NP_042513.1	-----	-----
085	YP_006907834.1	-----	-----
086	YP_004442827.1	FQDTRSQP-----AKVIAAMEIDLKSG-AQMVYITPDMFTTI	GDFYQGI
087	YP_009408594.1	FWRS-YQPPA-----SYLDPVPDPSTAS-WGPDFDEP---LV	PPEGGGE
088	YP_009508561.1	-----IKLPVQ	DLKNTLV
089	NP_056907.1	-----TSSQFKLLQSPLC	VYLPFRR
090	YP_002308474.1	-----	-----
091	YP_007761644.1	-----	-----
092	NP_040550.1	-----	-----
093	NP_758808.1	PRDIRWNDDR-----SIIGTMEIDLKSG-SQIVYIAPNIMLSV	EDFYRNI
094	YP_009345075.1	IRDSRWGSDPR-----GILGQMEIDLSTG-TELVFFVVPDQMMTI	KDFYDHF
095	NP_068729.1	-----	-----
096	NP_047255.1	-----VGPKGLPLQVLT	QLEEEYR
097	YP_006273075.1	FRDNRWQGDQ-----SIFAISEVDLTRG-SQIVYVIPDTMMI	GDFYRNV
098	YP_009508888.1	-----VLVPLE	QYKERIL
099	NP_395469.1	-----	-----
100	YP_009508546.1	-----ILVPLQ	EYQDRIL
101	NP_056762.1	FYDDSFgKAR-----EASIGSIEMDMNAGCGVFYSCPDFAKY	IKDLSHL
102	YP_009508556.1	-----VLVPLQ	DYQDRLL
103	NP_569153.1	FRDNRWQGDQ-----SIFATMEIDLTKG-MQMVYIIPDTMMTV	RDFCRNV
104	NP_043924.1	LDSQPGDRDGNKDDPAFLQQAATQGLLPWLKKAVILGGKNTSWQ	EMTSFCQ
105	YP_009243641.1	-----	-----
106	YP_004300274.1	-----	-----
107	NP_056848.1	-----	-----
108	YP_006495799.1	FRDTRWTDdR-----QVIASMSVDMTHG-SQLVYVIPDAMLSI	HDFYNHI
109	YP_009508409.1	-----	-----
110	NP_687035.1	-----GGIHVKEYQGVQV	QLED---
111	NP_045937.2	AAKIQNYVTACRQHYPACDWTGIIQAFTYKPPQTAHEYVKHAEI	IFKNNS
112	NP_612577.1	-----	-----
113	NP_619548.1	-----	-----
114	NP_056880.1	-----MACGVARSSQPLRW	QHEDK-
115	YP_009121747.1	LRDTRWGDDR-----QIIGTMEVDLSAG-TQLVYVMPDMVLSI	DDFHNHI
116	YP_009113237.2	FRDTRWTGDR-----SIFATMEVDLTEG-SQLTYAIPNTMMTI	RDFCNHV
117	YP_009508408.1	FRDCSWKGKR-----STIARMEVDLSKG-SQLVYVAPNIIKRL	ADFYNNI
118	NP_955579.1	-----TL	QLEEEYR
119	YP_009229919.1	LRDTRWPdER-----QVIGTMEVDMSTG-TQLVYVVPDIMMSI	EDFYEH I
120	YP_004442833.1	FQDTRSQP-----ATIIAAMEVDLSKG-AQMIYITPDMFTTI	GDFYQGI
121	NP_862833.2	-----	-----
122	NP_040563.1	-----GVNVAKRKTHVEW	RFKD---
123	YP_443922.1	PPLSLTQEVYWLKCTQTGPSTPAIQFQFNTWRRLIYALHPYKT	PLPEVHC
124	NP_057933.2	-----MGPMGQPLQVLT	LNIEDEHR
125	YP_009116631.1	FRDTRWSDDR-----QVIGSMSVDMTRG-AQLVYIIPNQMMSI	HDFYNNI
126	YP_009513249.1	-----IKLDLEE	QQGTLL
127	YP_223871.1	-----IRTEGKLLV--TAP	LEEEYR
128	NP_127504.1	LLDTRYLEYQH---ANLGTAEITLNAG-TVFITLTFPNFTMSL	SDANLST
129	NP_044929.1	-----IKIDVES	SQKHTLI
130	NP_057860.1	-----TQDHFKLTSLPVL	IRLPFRT
131	NP_040973.1	-----	-----
132	NP_777317.1	FRDTRWTREVSGEDRSIIAAMEVDLSRG-HQLIYVIPNIIMTI	RDFYQHI
133	NP_054716.1	-----IKIDIQ	KQQEQLL
134	YP_001856242.1	-----	-----
135	NP_954565.2	-----QSNPNKQSSKYL	TWRDKENN
136	NP_569150.1	FRDTRWTQEGE-EGRSIIGAMEADLSQG-HQLIYVIPDIMMTI	RDFYQHV
137	NP_659397.1	-----	-----
138	YP_009513211.1	-----TWED-RPAMCLVL	NLEEEYR
139	YP_233107.1	FRDTRWNSDDR-----SIIAAMEVDLSEG-NQLIYIMPDMMMTI	KDFYRHI
140	YP_009109692.1	-----LDRDGGPIQILTV	SLQDEHR
141	NP_057849.4	-----GFIKVRQYDQILI	EICG---
142	NP_049560.1	-----	-----
143	YP_009506267.1	FRDCSWRGRR-----SMIAKMEVDLTKG-SQMVYIAPNLIKRL	TDFYNNI

001	YP_004442836.1	QISILTKGYQG--FQ-GEANLLITRSCRCRLTNVPNVGFAYNIQKVVEYL
002	NP_056728.1	-----
003	YP_009508537.1	NNSILS-----
004	YP_004732983.2	QVSITTRGYGTG-WVGGESNLIVTRSLTGRI TN TSQANFN YQIEGVADYL
005	YP_009508407.1	-----
006	NP_040939.1	TRKGTIVVLPQS-----
007	YP_003864102.1	-----
008	YP_009002585.1	QISILTRGYSN--WQNGEANLLVTRGIVGRLSNTPNVAFAYEIGNVTDYL
009	YP_003284237.1	QISIKTKGYDT--WEGGEANLLITRSITSRLSNTPNVGFAYKIERVAEYL
010	YP_009268869.1	RIEGTIVVLPSS-----
011	YP_009506251.1	QLSILTRGYDN--WQNGEANLLVTRSM TGRLSNTPNVAFACQIASATDYL
012	NP_955611.1	-----
013	YP_008567619.1	HISVLTRGYEG--WQHGEANLLVTRGMIGRLSNTPNVGFAYDIQEVVDYF
014	NP_149413.1	QLSIKTKGYEG--WQ-GEANLHLERLITGRLSNTSNVAFKYKIDGVTAYL
015	YP_004442824.1	QISVLTKGYNG--FQ-GEANLLITRSCRCRLTNVPNVGFAYNIQKVVEYL
016	YP_001931967.1	-----
017	YP_002455786.1	-----
018	YP_009109694.1	LFDIPV-----
019	NP_789739.1	-----
020	NP_955619.1	TPIVLTSCLVDTKNNWA-----IIG-
021	YP_224289.1	QISIRTRGYDS--WEGGEANLLITRSVTARLSNTSNVGFAYRIDRVAEYL
022	YP_009182100.1	-----
023	NP_705927.1	-----
024	YP_009508577.1	NKANIN-----
025	YP_004442830.1	QLSIKTKGYNN--WR-GEANLHLERMVTARLSSTSN TGFEIKIDKV VQFI
026	NP_758887.1	--KTTHASVLVGP-----
027	YP_009508406.1	-----
028	YP_610965.1	EVVVMTHGYQD--WVDGESNLLITKALVGRLTNTSYAHFKYNVEGVADYL
029	YP_001931961.1	-----
030	YP_241114.1	-----
031	YP_006732334.1	-----
032	YP_009041481.1	QVAIIITRGYDT--WVAGESNLLITRGLVARVTNSSSVSGFRFGIEGV LNYF
033	YP_001036293.1	QVSILTKGYDD--YQNSEANLLITKGMIGRLSNTSNVGFAYTVDGVAEYF
034	YP_605811.1	QISILTKGYEG--FQ-GEANLLITRSCRCRLSNVPNVGFQYNIQNVVEFL
035	NP_955577.1	LFEPES-----
036	YP_003208050.1	EVVVA TRGYEE--WQGGESNLLITRGLVGRLTNTSHASFNYNVEQVAEHL
037	NP_789740.1	--HKAIGTVLVGP-----
038	YP_004442839.1	QISILTKGYNG--FQ-GESNLLVTRSCRCRLSNVPNVGFQYNIQNVVEFL
039	YP_009507791.1	ICNGKICVIPQNN-----
040	YP_004581513.1	-----
041	NP_043933.1	-----
042	YP_009507248.1	RTDHLN-----
043	YP_002117531.1	QVSIQTKGYDT--WTNGEANLLVTRSC TARLSNTPNVGFNYKTERVAEYL
044	YP_004347415.1	-----
045	NP_056891.1	SGLIKPFVIPNLPVNLWGRD LLSQMKIMMCSPNDIVTAQMLAQGYSPGKG
046	YP_009513242.1	KQTTLP-----
047	YP_009352866.1	QVAVNTMEYDT--WIAGESNLLITRGLVARITNSSSVSGFRFGIEGV LNYF
048	YP_009165750.1	-----
049	NP_040840.1	IIRGTIVVLATS-----
050	YP_004222728.1	-----
051	YP_009506264.1	QISIRTKGYDS--WQGGEANILITRSITARLSNTPNVGFAYRIEQVAEYL
052	YP_567050.1	-----
053	YP_009508571.1	EKTALS-----
054	NP_056803.1	NKTALP-----
055	NP_955564.1	SGIIHPFVIPTLPFTLWGRDIMKDIKVR-----
056	YP_009508411.1	QISVMTKGYED--YTNSEANLLITKSMVGRLSNTSNVGFQYSVSGIADYF
057	YP_009140788.1	QISIQT TGYES--WQNGEANLLITRGMTGRLSNTPNVGFAYRISHVTDYL
058	YP_009508410.1	-----
059	NP_040333.1	LHETSK-----
060	YP_008992013.1	TLKVQVQ-IQGAEQISTAKIATLHHQLVYRLQNHALDLP TPEHHSDTLMV
061	NP_041734.1	QLSILTRGYEN--WQNGEANLLITRGMTGRLSNTPNVAFAYQIASATDYL
062	NP_056895.1	PFITIPKILVDTFDKWQ-----ILG

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063 YP_009109689.1 LFDIPV-----
064 YP_002519387.1 -----
065 YP_595725.1 QLTVKVKGYEG--WQ-GEANLHIERLITARLSNTTNVYFKYKVEGVASF I
066 YP_009508551.1 SKTALP-----
067 YP_001497148.1 LFETPV-----
068 NP_041186.1 -----
069 NP_663784.1 --KRV RATIMTGD-----
070 YP_009508443.1 QISILTKGYDD--YHNSEANLLITKGLVGRLSNTSNVGFVYSISGIADYF
071 YP_003987465.1 QISIRTI GYDD--DWN GESNLLITRGM TARLSNTPNVGFAYNISRVADYL
072 NP_861410.1 -----
073 YP_009345071.1 QISIQTRGYGN--WRNAEANLLVTRGLVGRLSNTSNVGF EYSISNVTDYL
074 YP_009508582.1 NKANIN-----
075 NP_569141.1 -----
076 YP_002916057.1 -----
077 NP_777384.2 PFITIPKILVDTFDKWQ-----ILG-
078 YP_233110.1 QISILTKGYEG--FQ-GEANLLITRSCRCRLSNVPNVGFQYNIQNVVEFL
079 NP_542258.1 -----
080 YP_009130664.1 QVSI LTRGYEA--WR-GEANLLITRGLVGRLSNTPNVGFAYEVQSVVDYL
081 YP_009508566.1 KRADIT-----
082 YP_006607892.1 -----
083 YP_009506270.1 QISVLTKGYQG--FQ-GEANLLITRSCRCRLTNVPNVGFAYNIQKVVEYL
084 NP_042513.1 -----
085 YP_006907834.1 -----
086 YP_004442827.1 QLSIKTKGYIN--WR-GEANLHLERMITARLSSTSN TGFEIKIDKVVQYM
087 YP_009408594.1 HCVAA TRAENE--ILDDNDALFSEHDLFG-----HDL SYDPD--QDLF
088 YP_009508561.1 SQANIG-----
089 NP_056907.1 APVTLPSCLVD TNSKWA-----IIGR
090 YP_002308474.1 -----
091 YP_007761644.1 -----
092 NP_040550.1 -----
093 NP_758808.1 QLAIQ TQGYEN--WNSAESNLLISRALIGRLTND SFTGFQYNISNVAEYL
094 YP_009345075.1 QLVVKVKGYDS--WIGGEANLLITKV FVGRLSNTSNTAFRYAVDDLGEYL
095 NP_068729.1 -----
096 NP_047255.1 LFEPE S-----
097 YP_006273075.1 QISIQ TSGYEN--WQNGEANLLITRGMTGR LSNTPNVGFAYRISHVTDYL
098 YP_009508888.1 KETALE-----
099 NP_395469.1 -----
100 YP_009508546.1 NK TALP-----
101 NP_056762.1 KIGIQ T LGYEN---YEGKNLSVAIKTIGRLT TN IQSKYKINVKDIVEQI
102 YP_009508556.1 KQ TALP-----
103 NP_569153.1 QISILTKGYGN--WQNGEANLLVTRGIVGR LSNTPNVAFAYQIQNVTDYL
104 NP_043924.1 RLWLVRDQFADKTGVSKARPIVRNEGPRPQQGH SKIVFGGNCRCNCGKAGH
105 YP_009243641.1 -----
106 YP_004300274.1 -----
107 NP_056848.1 -----
108 YP_006495799.1 QVSIQ TRGYNGG-WTG GDSNMIVTRSLIGRL TNQSTTNFGYQIQGVTDYL
109 YP_009508409.1 -----
110 NP_687035.1 --KIITGSILIGS-----
111 NP_045937.2 GLEWQHATVP PFINMVVQGLPPKVTRSLMSGNP DWSTKTIPQIIPLMQHLY
112 NP_612577.1 -----
113 NP_619548.1 -----
114 NP_056880.1 SGI IHPFV IPTLPFTLWGRDIMKDIKVR-----
115 YP_009121747.1 QIAIQ THGYSD--WQGGESNLLITVGLVGR ISNTSYTG FQYNVENVDHL
116 YP_009113237.2 EISVLTRGYEE--WN-GEANLLITRGLVGR LTNNTSNAGFAYS IQNVTDYL
117 YP_009508408.1 QISILTKGYED--YQNSEANLLITKGLIGRL SNNTSNIGFAYSIDGIADYF
118 NP_955579.1 LFEPE S-----
119 YP_009229919.1 QLAIQ TRGYEG--WQ-GESNLI VTTALVGR LTNNTSYASFRYNVQNVAEHL
120 YP_004442833.1 QLSIKTKGYNN--WR-GEANLHLERMV TARLSSTSN TGFEIKIDKVIQYM
121 NP_862833.2 -----
122 NP_040563.1 --KTGIIDVLFSD-----
123 YP_443922.1 TMNVT D-----
124 NP_057933.2 LHETS K-----
125 YP_009116631.1 QVSIQ TRGYGTG-WEGGDSNM IITRSLVGR LTNNTSITSFEYRIDNVTDYL
126 YP_009513249.1 NNSILS-----
127 YP_223871.1 LFLEAP-----
128 NP_127504.1 ALKIQVQ-IQGAP LTKDSIQATLHYQIAWRV QNHAMDLTLP GGEEALFLK
129 NP_044929.1 TESTLS-----
130 NP_057860.1 TPIVL TSCLVDTKNNWA-----IIG-
131 NP_040973.1 -----VLEDNS-----
132 NP_777317.1 QMSILTKGYTG--FQ-GEANLLVTRSCRCRL TSVPNAGFAFN IQRVVEYL
133 NP_054716.1 HTTNLS-----
134 YP_001856242.1 -----
135 NP_954565.2 SGLIKPFV IPNLPVNLWGRDLLSQMKIMMC SPNDIVTAQMLA QGYSPGKG

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136	NP_569150.1	QISILTKGYQG--FQ-GEANLLITRSCRCRLTNVPNVGFAYNIQRVVEYL
137	NP_659397.1	--
138	YP_009513211.1	LHEKPV-----
139	YP_233107.1	QMSIQTRGYDS--WTGAEANLLITRSITSRLSNTFPNVGFQVVKVAEYL
140	YP_009109692.1	LFDIPV-----
141	NP_057849.4	--HKAIGTVLVGP-----
142	NP_049560.1	-----
143	YP_009506267.1	QISILTKGYDD--YQNSEANLLITKGLVGRLSNTSNVGFAYSISGITDYF
144	NP_039820.1	QICVMTKGYDG--WQ-GEDNLLITRGLTGRLSNTSNVGFAYDVKAMVEHL
145	NP_056790.1	LHEKPV-----
146	YP_002321513.1	QLAIQTRGYESWVGQNAEANIGLSRQVIGRLSNDNVDRYSYNTTAVTDLL
147	NP_955591.1	LHETSK-----
148	YP_001956722.2	KQTMLT-----
149	NP_056902.1	KGRHIKTRMLVAD-----
150	NP_056886.1	DGSLERPLLLFPVAVMRGSI LG-----
151	NP_041261.1	--

001	YP_004442836.1	NSKGV	KAIQAQKLSTKKFQGTEWNIKPS-NVVVP-MQPASMITRVNYDSS
002	NP_056728.1	- - - - -	- - - - -
003	YP_009508537.1	- - - - -	- - - - -
004	YP_004732983.2	ASHGV	QSIPGQPWRDINQEG-SWNLRPSSIQAAPT-QVPTGLVSRQSATGN
005	YP_009508407.1	- - - - -	- - - - -
006	NP_040939.1	- - - - -	- - - - -
007	YP_003864102.1	- - - - -	- - - - -
008	YP_009002585.1	TSQGV	QAIAGRRYDSRELQNQQWIILRPPQVERLP-QAPKNVDTRNLIDGS
009	YP_003284237.1	RSKGV	KAINATKHSAKQFQGGEWTLKPS-RVVVP-MQPSMNTSTKYDGS
010	YP_009268869.1	- - - - -	- - - - -
011	YP_009506251.1	ASHGV	KAIAGKKVNLLQQLRNQQQWVLRRPPQADVLP-MQPRSVEETRNLDIGS
012	NP_955611.1	- - - - -	- - - - -
013	YP_008567619.1	ITHGV	NALPGAKEYDTTRLQGGQWILKKP-ELIVP-TRPGHINSKDLVDGT
014	NP_149413.1	KTNGI	KAIDA KKESTKKIRGGEWNIQPS-TVEVV-MEPRDMMQSQNFDTGT
015	YP_004442824.1	NSKGV	KAIQAPKLDTKKFRTDWNIKPS-EVVVP-MEPTRMITRVNYDSS
016	YP_001931967.1	- - - - -	- - - - -
017	YP_002455786.1	- - - - -	- - - - -
018	YP_009109694.1	- - - - -	- - - - -
019	NP_789739.1	- - - - -	- - - - -
020	NP_955619.1	- - - - -	- - - - -
021	YP_224289.1	RTKGV	RAIDATKHDAARRFQHGEWNLRRPS-TAVVP-VQPTSITSAVNYDRS
022	YP_009182100.1	- - - - -	- - - - -
023	NP_705927.1	- - - - -	- - - - -
024	YP_009508577.1	- - - - -	- - - - -
025	YP_004442830.1	RTNGI	KAIEAEKKS VKQFQGGKEWNIQPI-KVEVA-MKPNKMTITDEYDNS
026	NP_758887.1	- - - - -	- - - - -
027	YP_009508406.1	- - - - -	- - - - -
028	YP_610965.1	ASNGI	VALAGQRHTTTELQGLDWNLKPK-QSTAP-VQPQEVTYNNRLDGS
029	YP_001931961.1	- - - - -	- - - - -
030	YP_241114.1	- - - - -	- - - - -
031	YP_006732334.1	- - - - -	- - - - -
032	YP_009041481.1	NSRGV	MAIKAQRIRSTVPQ RGI AWE LR P SSI PR PI - QAPTNAVIRETTTRGT
033	YP_001036293.1	ITHGV	QALKGM PMT TDD LQGSTLWN IKPS -RI I VP - SQPTQAE DRE LAD GS
034	YP_605811.1	KSKGV	KALNATK LSTRRFQGS EWN IRPS -EV VVP -MQPTTM I VRV NYD SS
035	NP_955577.1	- - - - -	- - - - -
036	YP_003208050.1	SSHGI	VALPGRRH SADAHNGEMWSIRPP-RSNSV-RNPREVQISNR LDGS
037	NP_789740.1	- - - - -	- - - - -
038	YP_004442839.1	KSKGV	KALNATKISTKKFQGG EWN IKPS -EV VVP -MQPTRMI TRV NYD SS
039	YP_009507791.1	- - - - -	- - - - -
040	YP_004581513.1	- - - - -	- - - - -
041	NP_043933.1	- - - - -	- - - - -
042	YP_009507248.1	- - - - -	- - - - -
043	YP_002117531.1	HSGV	QAINATQHNA LKL RNTEWH LQPS -QATA P-MQPQT VQTV GRYDGS
044	YP_004347415.1	- - - - -	- - - - -
045	NP_056891.1	L GKKE	NG ILHP IPNQ GQSNKKGF GNFLTA A ID IL APQQCAEP ITWKSD E-
046	YP_009513242.1	- - - - -	- - - - -
047	YP_009352866.1	NSKGV	MAIKARPRSTLAQRGIAWE LR P TS I PR PI - QAPTS AVV RET SRGN
048	YP_009165750.1	- - - - -	- - - - -
049	NP_040840.1	- - - - -	- - - - -
050	YP_004222728.1	- - - - -	- - - - -
051	YP_009506264.1	RSKGV	KAINATKKS ARQ FQGG EW LL RPS -QV VVP -MQPSSL TTST RYD GT
052	YP_567050.1	- - - - -	- - - - -
053	YP_009508571.1	- - - - -	- - - - -
054	NP_056803.1	- - - - -	- - - - -

055	NP_955564.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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001	YP_004442836.1	RSIRFGDYQASTST--APPRYNNDGDSDEI-----
002	NP_056728.1	-----
003	YP_009508537.1	-----
004	YP_004732983.2	ISLRFTGFGDQVQTVETEEESGMTDTGERVTHYALVG-----
005	YP_009508407.1	-----
006	NP_040939.1	-----
007	YP_003864102.1	-----
008	YP_009002585.1	ISLRFRDYATTSTP--ELPSYNEQDEEVDPDDE-----
009	YP_003284237.1	ISIRFGDYEASTSS--RPPKYNTADDE--ID-----
010	YP_009268869.1	-----
011	YP_009506251.1	ISIRFHDYEVAPST--SGPHYNENDEEVESES-----
012	NP_955611.1	-----
013	YP_008567619.1	ISLRFSNYTTQAS--TSKCLKYNANDEEIQSDEEILAY-----
014	NP_149413.1	TSFRFTTNFQASASR--PAPAYNDEDEEV--EM-----
015	YP_004442824.1	RTLKFTDYQASTST--APPKYNEGDGDTDD-----
016	YP_001931967.1	-----
017	YP_002455786.1	-----
018	YP_009109694.1	-----
019	NP_789739.1	-----
020	NP_955619.1	-----
021	YP_224289.1	ISLRFGDYQAASSS--RPPVYNKNNDDE--VD-----
022	YP_009182100.1	-----
023	NP_705927.1	-----
024	YP_009508577.1	-----
025	YP_004442830.1	KSFRFGHYQASSNQ--PAPEYNSEDEI-IQE-----
026	NP_758887.1	-----
027	YP_009508406.1	-----
028	YP_610965.1	VTLRFTGYAATRPTLVEVNEDDLEEFAGMVNF-----
029	YP_001931961.1	-----
030	YP_241114.1	-----
031	YP_006732334.1	-----
032	YP_009041481.1	LSTRFSGYDDIPARDSYQSPFDKTEYAEDGDTSLPKR-----
033	YP_001036293.1	VSMRFGAYKAAPAL--MSS-----EEFDSDENQVIN-----
034	YP_605811.1	RSIRFGDYEASTSS--SAPKYEQDGDDEDEAL-----
035	NP_955577.1	-----
036	YP_003208050.1	VSLRFTGYEIA--PAVTEALQS-----
037	NP_789740.1	-----
038	YP_004442839.1	RSIRFGDYEASTSS--APPTYSTNDDEDEVL-----
039	YP_009507791.1	-----
040	YP_004581513.1	-----
041	NP_043933.1	-----
042	YP_009507248.1	-----
043	YP_002117531.1	LSLQFGNYTHAESS--RPPVYTAHDEERDID-----
044	YP_004347415.1	-----
045	NP_056891.1	-----
046	YP_009513242.1	-----

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047 YP_009352866.1 LSTRFFGYEDVPAKEPFKSPFDKTEYEEDGETSQPRR-----
048 YP_009165750.1 -----
049 NP_040840.1 -----
050 YP_004222728.1 -----
051 YP_009506264.1 LSIRFGDYEASSSS--KPPVYNEHDDE--ID-----
052 YP_567050.1 -----
053 YP_009508571.1 -----
054 NP_056803.1 -----
055 NP_955564.1 -----
056 YP_009508411.1 ISMRFTTRYVAAREP--ARIAFNSEQDEEVSEDEQHVL-----
057 YP_009140788.1 ISARFANYTQAPEP--QQPRYNGHDEEEASDEA-----
058 YP_009508410.1 -----
059 NP_040333.1 -----
060 YP_008992013.1 FERRPDGTVRMTFKPPPSAPQEPPRLSFTYSS---MITAVQT-----
061 NP_041734.1 ISIRFHDYEAAATSA--SRPHYNEEDEEVESET-----
062 NP_056895.1 -----
063 YP_009109689.1 -----
064 YP_002519387.1 -----
065 YP_595725.1 TSFRFTNYEGASSS--KPVEHNSDD-----
066 YP_009508551.1 -----
067 YP_001497148.1 -----
068 NP_041186.1 -----
069 NP_663784.1 -----
070 YP_009508443.1 ISVRFSNYKAARQP--AQITYNQDDEQIDEDEAHIIA-----
071 YP_003987465.1 LGIKKFGNYQEASTS--GPPQYNEHDDE--IV-----
072 NP_861410.1 -----
073 YP_009345071.1 VSVRFGGYEAAPET--SRVRFDENDNEIMDDDE-----
074 YP_009508582.1 -----
075 NP_569141.1 -----
076 YP_002916057.1 -----
077 NP_777384.2 -----
078 YP_233110.1 RSIRFGDYEASTSS--SAPRYEQDGDDEDEAL-----
079 NP_542258.1 -----
080 YP_009130664.1 ISLRFGNYTSARTSTTRRIAYNLRDEEIQSDEEQIIA-----
081 YP_009508566.1 -----
082 YP_006607892.1 -----
083 YP_009506270.1 RSIRFGDYQASTSS--APPRYNDGDSGDEI-----
084 NP_042513.1 -----
085 YP_006907834.1 -----
086 YP_004442827.1 KSFKKFGNYQATSNT--PAPEYNSEDEI-IQE-----
087 YP_009408594.1 IEEAYHLPTIP-----
088 YP_009508561.1 -----
089 NP_056907.1 -----
090 YP_002308474.1 -----
091 YP_007761644.1 -----
092 NP_040550.1 -----
093 NP_758808.1 VSIRFSNYHQAPVN----DTQD-NSHPDIQ-----
094 YP_009345075.1 TSIRFTGYNTQAAPAPEYNSRDEEILEE-----
095 NP_068729.1 -----
096 NP_047255.1 -----
097 YP_006273075.1 ISARSADYTQAPEP--RQPHYNEQDEEVASDEE-----
098 YP_009508888.1 -----
099 NP_395469.1 -----
100 YP_009508546.1 -----
101 NP_056762.1 ESLRFSNYKQTRMHDPTENNSDEDEDLKI LGEQLN-----
102 YP_009508556.1 -----
103 NP_569153.1 ISLRFSNYQPAPDP--TPVAYNQHDDEEVPPDED-----
104 NP_043924.1 EKRLKDLTTAGGGPKGPNPFHKPX-----
105 YP_009243641.1 -----
106 YP_004300274.1 -----
107 NP_056848.1 -----
108 YP_006495799.1 ISMRFTNFRDQAVRERALDE--DTDSGRPETSGRDET-----
109 YP_009508409.1 -----
110 NP_687035.1 -----
111 NP_045937.2 PAPRAPPGNVPSNTCFFCKQPGHWKADCPNKTRN-----
112 NP_612577.1 -----
113 NP_619548.1 -----
114 NP_056880.1 -----
115 YP_009121747.1 TSLRFRSYRNNPQPPRFSVDSQDREVQANLS-----
116 YP_009113237.2 ISMRFTNYEAAAPRE--PERRFNSQDEELASDE-----
117 YP_009508408.1 ISVRFSKYKAIQEP--TTPVFNDQDEELDPEQHILA-----
118 NP_955579.1 -----
119 YP_009229919.1 ISFRFTNYAGVPRQQPISVNQHDEEQFP-----

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120 YP_004442833.1  MTFSSFHKYQATSSST--PAPQYNSEDEIQLEE-----
121 NP_862833.2      -----
122 NP_040563.1      -----
123 YP_443922.1      WYQLAPDSSSPHVTLAVGNGFEARSLGPMIRRASKLDWVPTATPGIMKAST
124 NP_057933.2      -----
125 YP_009116631.1   ISLRFTDFRDQRIVEEGETS--EPE-GRPETK-EDES-----
126 YP_009513249.1   -----
127 YP_223871.1      -----
128 NP_127504.1      MSKRHDKSVAISFDHSHYKKLRNTHHFMGMISDDVIVLDDPET-----
129 NP_044929.1      -----
130 NP_057860.1      -----
131 NP_040973.1      -----
132 NP_777317.1      RSIRFADYQASAST--TLPRGSSDSTDHHDAT-----
133 NP_054716.1      -----
134 YP_001856242.1   -----
135 NP_954565.2      -----
136 NP_569150.1      RSIRFGNYQASTSS--APPKYNEGDGSDDDI-----
137 NP_659397.1      -----
138 YP_009513211.1   -----
139 YP_233107.1      TTLQFGDYQAASSS--RPPIYN--NEDDEI-----
140 YP_009109692.1   -----
141 NP_057849.4      -----
142 NP_049560.1      -----
143 YP_009506267.1   ISIRFSRYKPVLPQL--PEVSYNANDEELGDDERHIIA-----
144 NP_039820.1      TSLRFSNYAAASTS--KPPQYNEKDEEINED-----
145 NP_056790.1      -----
146 YP_002321513.1   TSIRFHDHVNLAQRPNSEELDEEEAIFSRLPNDQHGSSHFTHTVMMAI
147 NP_955591.1      -----
148 YP_001956722.2   -----
149 NP_056902.1      -----
150 NP_056886.1      -----
151 NP_041261.1      -----

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001 YP_004442836.1   -----QE
002 NP_056728.1      -----
003 YP_009508537.1   -----
004 YP_004732983.2   -----TFEWLEECPSYQQRRNQ
005 YP_009508407.1   -----
006 NP_040939.1      -----
007 YP_003864102.1   -----
008 YP_009002585.1   -----EQ
009 YP_003284237.1   -----SD
010 YP_009268869.1   -----
011 YP_009506251.1   -----EAE
012 NP_955611.1      -----
013 YP_008567619.1   -----IHQERQEVTTPEVLGVI
014 NP_149413.1      -----EA
015 YP_004442824.1   -----EA
016 YP_001931967.1   -----
017 YP_002455786.1   -----
018 YP_009109694.1   -----
019 NP_789739.1      -----
020 NP_955619.1      -----
021 YP_224289.1      -----SD
022 YP_009182100.1   -----
023 NP_705927.1      -----
024 YP_009508577.1   -----
025 YP_004442830.1   -----EV
026 NP_758887.1      -----
027 YP_009508406.1   -----
028 YP_610965.1      -----YDD
029 YP_001931961.1   -----
030 YP_241114.1      -----
031 YP_006732334.1   -----
032 YP_009041481.1   -----FNNVTEG
033 YP_001036293.1   -----VLT-----TTVSS-LLIK
034 YP_605811.1      -----GD
035 NP_955577.1      -----
036 YP_003208050.1   -----DD
037 NP_789740.1      -----
038 YP_004442839.1   -----GE

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039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - -
042 YP_009507248.1 - - - - -
043 YP_002117531.1 - - - - - E E
044 YP_004347415.1 - - - - -
045 NP_056891.1 - - - - -
046 YP_009513242.1 - - - - -
047 YP_009352866.1 - - - - - F T R V N E E
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 - - - - - D E
052 YP_567050.1 - - - - -
053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -
055 NP_955564.1 - - - - -
056 YP_009508411.1 - - - - - V L H - - - T S E Q F - L K V Q
057 YP_009140788.1 - - - - - E L A A
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - -
061 NP_041734.1 - - - - - E S E
062 NP_056895.1 - - - - -
063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 - - - - - E A
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 - - - - - Y L H - - - M E E P C - L K V R
071 YP_003987465.1 - - - - - E D
072 NP_861410.1 - - - - -
073 YP_009345071.1 - - - - - S Q
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 - - - - - G D
079 NP_542258.1 - - - - -
080 YP_009130664.1 - - - - - V F K L D C Y E A Q P A I W D T L
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 - - - - - Q T
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 - - - - - E V
087 YP_009408594.1 - - - - - D D
088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - - E D
094 YP_009345075.1 - - - - - E E
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - -
097 YP_006273075.1 - - - - - E L A E
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 - - - - - E E Q
104 NP_043924.1 - - - - -
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - - T P Y V G A L R F D F K G R S K P
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 - - - - -

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112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 - - - - - E D
116 YP_009113237.2 - - - - - E
117 YP_009508408.1 - - - - - Y L S - - - E A S D M P L K I R
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - - E D
120 YP_004442833.1 - - - - - E V
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 E Q M W R I V L V - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 - - - - - T H Y V - - - L M F K H S S P R
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 - - - - -
129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - - A V
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 - - - - -
136 NP_569150.1 - - - - - Q A
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - - D E
140 YP_009109692.1 - - - - -
141 NP_057849.4 - - - - -
142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - - Y L S - - - T P N L V - - V R
144 NP_039820.1 - - - - - E Q
145 NP_056790.1 - - - - -
146 YP_002321513.1 Q P S W E I C Q G I V P E D T F Y T N G V F H G D M R N I D P Y F N E Y Q V D T M P W I E E T N E Q
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 - - - - -
151 NP_041261.1 - - - - -

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001 YP_004442836.1 T I N - - - M L Y I E D D L E D - - - - -
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - -
004 YP_004732983.2 E T E E N G W V K H V E G D K G F N F K V R M T P P A W S H D P Q P I - - - - -
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 L M E H V V A A F V E E E P K E I W D T - - - - -
009 YP_003284237.1 E E H T I A M I T - E E I D E - - - - -
010 YP_009268869.1 - - - - -
011 YP_009506251.1 I R E H T V A V W I I G E E E Y P D D N G - - - - -
012 NP_955611.1 - - - - -
013 YP_008567619.1 R L T P E A R L P V R T S P S A A G Y N L F G T E R L V I Q P G E R Q - - - - -
014 NP_149413.1 H M A L C E - - E L D E E L - - - - -
015 YP_004442824.1 E V H H V N M L F F E - - A E D - - - - -
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 E E T F Q I N M V L L G D D M D - - - - -
022 YP_009182100.1 - - - - - M S G F K L S S P S D E D L N R W L T D E L D R V Q N K I I G K V
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 R M T L C E S E D E D E G I - - - - -
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 S S P L L C T E I L E E E - - - - -
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -

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031 YP_006732334.1 - - - - -
032 YP_009041481.1 TSTNFALVILASCNPDFPEDDQLADGNFYT - - - - -
033 YP_001036293.1 LMHRDAIIPQRITDGSVGYDLAACEDVVIQPRRPT - - - - -
034 YP_605811.1 IHQVNMITIIEDDAED - - - - -
035 NP_955577.1 - - - - -
036 YP_003208050.1 ESELAAMAIQESG - - - - -
037 NP_789740.1 - - - - -
038 YP_004442839.1 IHQVNMITFLEDDDEF - - - - -
039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - -
042 YP_009507248.1 - - - - -
043 YP_002117531.1 SIAYLYSSDGEADDTDLFLT - - - - -
044 YP_004347415.1 - - - - -
045 NP_056891.1 - - - - -
046 YP_009513242.1 - - - - -
047 YP_009352866.1 TKDNYALVIIATESPDFPEEG-LAEGDYTYT - - - - -
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 HLVAFLDVEEEEEDP - - - - -
052 YP_567050.1 - - - - -
053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -
055 NP_955564.1 - - - - -
056 YP_009508411.1 VLHPDARIPQRMATAEAGYDLTVIESAQLOPGEQK - - - - -
057 YP_009140788.1 TQHHVAMFRLSGYTEVEEFKPKFKEQYERYQREQ - - - - -
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - -
061 NP_041734.1 IREHTIAVWIG-EEEIPDQTG - - - - -
062 NP_056895.1 - - - - -
063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 YMALFE-EEEEEE - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 LLNEDAIIPQRLSHQAVGYDIAVVQAAEVPALGQT - - - - -
071 YP_003987465.1 VVLAIIIDDLPEDDEEDYFQQIILNDYQPD SQVALDYPVLIPTED - - - PFA
072 NP_861410.1 - - - - -
073 YP_009345071.1 IAEEVHVMIINEDDEEWEEELN - - - - -
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 IHQVNMITIIEDDAED - - - - -
079 NP_542258.1 - - - - -
080 YP_009130664.1 GE-PSGKFGYYVRYDTHDDNLHIPLEHIIATG - - - - -
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 TVEHVNMPLYILDEAED - - - - -
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 RMA LCDS DSDSETDD - - - - -
087 YP_009408594.1 ES--TGTEVLDIN - - - - -
088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 ENQFIGFLS--DLGEE - - - - -
094 YP_009345075.1 SEIETARMVLFVN - - - - -
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - -
097 YP_006273075.1 TQQHIVAMLRFPDYVEIQEFKPKYKEQYDKYKREQ - - - - -
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 IRNHTIALWREDD--EVWDT - - - - -

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104 NP_043924.1 - - - - -
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 REEECFEVAAPDVLQSWMQQLSRSPPRQNR - - - - -
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 - - - - -
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 EEQFVGICIQEREIHNP - - - - -
116 YP_009113237.2 EVETILVLIAEEPEKEVWDT - - - - -
117 YP_009508408.1 LLNADAVLPQRMSYGAVGYDIAITTSEDI PPYRQV - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 EREFVGAILLEEVEQPQENKPWWHDYDPDL PKHWGKQCDGCLMN - - - - -
120 YP_004442833.1 RMAICSDDESEEPS - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 WDTLGGQPSGKYDYMVRDAPETTTWPTTNR - - - - -
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 - - - - -
129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 QTEYINMLY TIE - GDD - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 - - - - -
136 NP_569150.1 TIEHVNMLY IEDTSDT - - - - -
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 EQHIVAVIT I ID DQED - - - - -
140 YP_009109692.1 - - - - -
141 NP_057849.4 - - - - -
142 NP_049560.1 - - - - -
143 YP_009506267.1 LVNENAILPQRMSHGAVGYDIAITEAAEILPGQQK - - - - -
144 NP_039820.1 EINHSNLNLI LNDEESTDEDEEYYQYQRYAWSQVGDSTFY YDTDGVWEEID - - - - -
145 NP_056790.1 - - - - -
146 YP_002321513.1 LADQAEV I I EEMDRDQHFIVITDGSNYP PGYFDFPDS DTEEPDDY - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 - - - - -
151 NP_041261.1 - - - - -

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001 YP_004442836.1 - - - - - D Y P -
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - -
004 YP_004732983.2 - - - - - IATGWGDDFNNPPPPPPPKTEEEEIL
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 - - - - - LGQPSGKFDFLVKYSAPASSKIRIEDIVP
009 YP_003284237.1 - - - - - WLILAEELG - - - - - YDLTEE
010 YP_009268869.1 - - - - -
011 YP_009506251.1 - - - - - RIKVWEESSNGNGRFFRY YTPPSVSN - - EPIIA
012 NP_955611.1 - - - - -
013 YP_008567619.1 - - - - - LQRTGIAIRVPEGHYGR I AARSSAAWQLGIVVG
014 NP_149413.1 - - - - - TD
015 YP_004442824.1 - - - - - D Y P S
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 - - - - - YPMFRELEK - - - - - LYITSES
022 YP_009182100.1 KDVDPDHVAMAEPGENHLRNGKVL I HQMNRMFATINTMF EKQLWFEQRQK

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023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 - - - - - S A
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 - - - - - D D E D L W V P V P P T C R A S P Y S D A E
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - -
032 YP_009041481.1 - - - - - G Q V L T D - W E D D Y - - L Q D W L T D
033 YP_001036293.1 - - - - - L V K T G I A I E V P A G T Y A Q L Y L K S S F A L K T G L Q I T
034 YP_605811.1 - - - - - D Y P R
035 NP_955577.1 - - - - -
036 YP_003208050.1 - - - - - E D E D - - - - - D
037 NP_789740.1 - - - - -
038 YP_004442839.1 - - - - - D Y P Q
039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - -
042 YP_009507248.1 - - - - -
043 YP_002117531.1 - - - - - Q L D Q V I P P V E N V E G E E V S L F S L L D E L D A E A
044 YP_004347415.1 - - - - -
045 NP_056891.1 - - - - -
046 YP_009513242.1 - - - - -
047 YP_009352866.1 - - - - - G Q V L S D N W E D D Y - - L E D W L E E
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 - - - - - W L A L E R E L G - - - - - Y D A D Y E
052 YP_567050.1 - - - - -
053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -
055 NP_955564.1 - - - - -
056 YP_009508411.1 - - - - - L F R T G V A I E V P T G T Y A H L F P R S G I A L K K G I N I G
057 YP_009140788.1 - - - - - Q W D T L G Q P S G K Y D Y Y V Q Y T A P P A A T I P L T E I Q P
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - - A Q E N L P I T G F T S N G F P V
061 NP_041734.1 - - - - - R K K V W E E S S N G N G R F F R Y Y T P P P T F E - - G Q I I A
062 NP_056895.1 - - - - -
063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 - - - - - D D
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 - - - - - M F S T G I A V E V P N G T Y A H L F I K S G V A K R K G L I L N
071 YP_003987465.1 S S Y A P L T P P A L T P L P A S G D N T P D G I R P V L Q R I V V G E K D F T D F N T L D F T L R
072 NP_861410.1 - - - - -
073 YP_009345071.1 - - - - - R Q M M A D F A E E E Q K H T E P I I A E E D I Y L L P
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 - - - - - D Y P R
079 NP_542258.1 - - - - -
080 YP_009130664.1 - - - - - W D D D D D D C T T S S S D E A S Y L Q H L S -
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 - - - - - E Y P T
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 - - - - - P Q S A
087 YP_009408594.1 - - - - -
088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - - Y E L E Y P S F T P V H A D E F I F I I N
094 YP_009345075.1 - - - - - A T N K G T E I R R I E R P T V P A V Y P A
095 NP_068729.1 - - - - -

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096 NP_047255.1 - - - - -
097 YP_006273075.1 - - - - - G W D T L G E P S G K Y D Y V R Y T A P P - A T T P I E D I Q P
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - - I K M A R F Y T M Q T P E E E L R E V I Q Q
102 YP_009508556.1 - - - - -
103 NP_569153.1 - - - - - L G E P S G K F D F Y V R Y T R P A H A L Q D P A H I V A
104 NP_043924.1 - - - - - G V A A L A A P L C S L K G R P H V S V E I E
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - - Y Q G P E W D T L G E P S G - K Y D Y K V R Y
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 - - - - - L R N M G N
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 - - - - - Y D I C F C S V C L S E A K R V E E E P L N
116 YP_009113237.2 - - - - - L G E P S G K F D Y F V K Y S A P E W A K N P - V K I E P
117 YP_009508408.1 - - - - - K L S T G L A I E V P Y G T Y A Q L Y I K S G V A H R T G L M L N
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - - P I I G T R W K Y T E D D Y D L C A S C M I K Y K A Q Q G S Y A A
120 YP_004442833.1 - - - - - T S A
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 - - - - - G W D D D P P K P P S P K G - S Y E V S L R G
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 - - - - - F S K T L P S L M Q T H D W I H H
129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - - T E S A
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 - - - - -
136 NP_569150.1 - - - - - D Y P V
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - - D Y P A
140 YP_009109692.1 - - - - -
141 NP_057849.4 - - - - -
142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - - L L P T G I S L Q V P N G F Y A H L F I K S G V A L R K G L I L N
144 NP_039820.1 R C N D L P E Y V P S E T S T P T I D E S E A I I D E F L E H A Y E Q R C D S D E S L Q S G D P R K
145 NP_056790.1 - - - - -
146 YP_002321513.1 - - - - - A E F L Q D L A E A P S Q D R S S L Y G S E D R S P E V S T K L D
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 - - - - -
151 NP_041261.1 - - - - -

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001 YP_004442836.1 - A A E E E Q V L L E D M V G E E D - - - - - I I S K F L E E L E L S D - - -
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - -
004 YP_004732983.2 E L Y P V R R R P D P V Q I A R K E K A A V F S Q A V N T I F E H E G K D V S R M K P S G E A P D S
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 T G W G D E W E Q P E Q Q Q S P Q Q Q L L S C S Q E - - - - - E S D D E D D W V S R F Q F L A Q
009 YP_003284237.1 V E D V P P E Q S S R S M V G E E K - - - - - I I S Q F L E K L - - - - -
010 YP_009268869.1 - - - - -
011 YP_009506251.1 T G W D D D E D D D Y D Y D P R W D T N L E S E G E E P D E P L R S E E D E E E E V Q D E P V W H Q
012 NP_955611.1 - - - - -
013 YP_008567619.1 A G V I D A D F Q G E I K V L I F N L S N S P V E I E A G D A V A Q L V L E R I S T P S L S V W R V
014 NP_149413.1 Q Q W I D R Y L S E Y S A Q Q K V V G - - - - - E I D E E - - - - -

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015 YP_004442824.1 L A A L E K I F S P E G M V G E E E - - - - - T I N T F L Q N L N L D T - - -
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 M V G E D D E E E K S E D L D D E E - - - - - A H A D F Q K F L N Y S D E V N
022 YP_009182100.1 V L F Q N L W D F L N S Y D E N Q K A Q Q K A L K D S Q D N I A L A T R N I A R M L E Q V K G I E E
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 L Q E I E N F L S A L P P - E G G G S - - - - - N F S A A R C S E N - - - - -
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 E E F L Q N L F S A G F T P A T E E Q D M E Y P V S I P I P L S P I Y D T Y P E D V V H T D H G V L
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - -
032 YP_009041481.1 E P A P Q P T A A P L P T L S L D E A E D I M N D F L D R Y F S D E K D S T T V S S F S V E R E V E
033 YP_001036293.1 G G V V D P D Y R G E L Q I I L I N N T F T C V P I L K G T F V A Q I V L H Q V A T P A V Q E T T T
034 YP_605811.1 L S A L E R I I A P E S M V G E E D - - - - - T I A E F L G N L S L D S S T D
035 NP_955577.1 - - - - -
036 YP_003208050.1 D P F Q D F L Y M A S M P R T A Y E S - - - - - Q P I W D - - - - -
037 NP_789740.1 - - - - -
038 YP_004442839.1 L A A F E Q I F A L E S G V G E E D D - - - - - T I I E F L D N L R L S D - - -
039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - -
042 YP_009507248.1 - - - - -
043 YP_002117531.1 A A A A A A A A V T E E P A V A D P - - - - - I I E E F L Q A L D S A E Q E L
044 YP_004347415.1 - - - - -
045 NP_056891.1 - - - - -
046 YP_009513242.1 - - - - -
047 YP_009352866.1 S - - - - - Q P Q I N I S F S E E E D I I S T F L G - - - N D E K E S C Y Q S S F F G D R V E E
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 V A D T - - - - T S E A L V G D E E - - - - - V I Q T F L S Q V Q D - - - - -
052 YP_567050.1 - - - - -
053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -
055 NP_955564.1 - - - - -
056 YP_009508411.1 A G V I D P D Y T G E V K V L I Q N I S T Q P C D I Y A G E A C A Q I I L E Q H L T P E V Q E V R A
057 YP_009140788.1 S G W D D Q - - - - - P Q W D - - - - - D E P Q - - - A T T I R F E E
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 Y P A K Q N G H F L W D V P G S G H C - - D P D C P C W - - - - - D D W E E D N D Y V T - - - - -
061 NP_041734.1 T G W G S D - D D N E K T P P K W D - - - - - E S P D E E G P T E P I W D Q
062 NP_056895.1 - - - - -
063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 I T F L N R I L S K Y S T Q Q K V V G - - - - - E E E F S - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 A G V I D P D Y T G E V M L L V C N P T A T P Q F I Q K G E F I A Q I V L Q Q V L T P P V Q D V A I
071 YP_003987465.1 G L D V E L Q T T D D F T A E E E E - - - - - L I G S F L N Q L E E E E N L Y
072 NP_861410.1 - - - - -
073 YP_009345071.1 G M E D L L N I S T D A D L S N G N N L T S T V N G F I I V S V Y H N G E N M K I L K V R N D T K E
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 L S A L E R I I A P E S M V G E E D - - - - - T I A E F L S N L S L D S S T D
079 NP_542258.1 - - - - -
080 YP_009130664.1 - - - - - N I G G T P V P I E Q D L P Y P V P I S D M I N P - - - - -
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 L A A E E E S F P L E N M V G E E A - - - - - I I S Q F L E S L N L S N - - -
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 I Y Q I E Q Y L A T L S P Q E E G G D - - - - - C V S A A R S R N T E C A - - -
087 YP_009408594.1 - - - - -

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088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 GEEIPD - - - - - DFVSSFCSNFSPPPIPEPEPT
094 YP_009345075.1 NPKVHKQFEENMEERQSQGERWGTLGDDDSFLVKFSAPPTIPIEDIVPSG
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - -
097 YP_006273075.1 TGWEEE - - - - - PKWD - - - - - DSPDEKSLATIRFEE
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 LEREKQAMIAKLEAKMKESKMAIVEDNFNPNNEYLEDITYSEYEDLEFEK
102 YP_009508556.1 - - - - -
103 NP_569153.1 TGWDDLNDNP-STSSPSNNILTYLTPS - - - - - SSSDEDDDMSYLQYLAQ
104 NP_043924.1 GHKIECLVDLTGAEVSLTSLQLQAQRFEQVVGGLGKPVVRVGIADHVDTTVG
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 SAPPPTPWPKNKPTGWGDEEEDLPPPRFDSLSESF - - GGGEIEPLEYHES
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 MGRGGRMGPPYRSQPYPAFIQPPQNHQNQYNGRMDRSQLQASAEWLPG
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 KAKRGNKPNKSRRRSYEKWSTLGEHSGKWDYVRYDSPKDTTPIDQIIAT
116 YP_009113237.2 TGWESSDEGDEDEDLFRDINSFTAGVS - - - - - LQEQEEQQQMPEVIPE
117 YP_009508408.1 AGVIDPDYRGEISLLLNPTDSTVSVRKGDFLTQLVLHQILTPPVQEENA
118 NP_955579.1 - - - - -
119 YP_009229919.1 TYFIPIHGGNTLGQPSGKYDYQVKYTVPEDWKPAHKSQIIATGWDTESSL
120 YP_004442833.1 IQEIEEFLLAALSPREEGSE - - - - - SVSTARCKN - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 EKK - - - LKEKELAEFTPETDLVSQWLNQLSNSAHNSGASSSDDEPKFDE
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 FQLDGRAVSWYKDPFDGHCPWDIDCQCYSCLYSEDEEDFEDGFPT - - - - -
129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 LAALERLLAPESMVGEHRQPIFDLDDPNPDII EEDFLNFLDSLTLND - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 - - - - -
136 NP_569150.1 MAAEEEI FPLENMVGEDD - - - - - IISQFLENLDIT - - -
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 LAAVEKQIFPENMVGE E - - - - - AIISFLQKLELSE - - -
140 YP_009109692.1 - - - - -
141 NP_057849.4 - - - - -
142 NP_049560.1 - - - - -
143 YP_009506267.1 AGVIDPDYTGELKLLLLNPTGAPVHVQAGEFIAQAVLQAIITPPVQEAQA
144 NP_039820.1 YEYPTPQSSPEHLDNESRSRSSASSTSMQDDVVEEIVRLMKEMRMKKQKK
145 NP_056790.1 - - - - -
146 YP_002321513.1 PNDPNVDFKIEHYCCLSPTHQSCGFFQASTSTA HQSAEQSVVGTSTNNQNN
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 - - - - -
151 NP_041261.1 - - - - -

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001 YP_004442836.1 - - - - -
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - -
004 YP_004732983.2 DPDSPVWKVKKSPYPHKPMK LKD - - - - -
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -

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007 YP_003864102.1 - - - - -
008 YP_009002585.1 F D E E P - - - - -
009 YP_003284237.1 - - - - -
010 YP_009268869.1 - - - - -
011 YP_009506251.1 E E E E E E - - - - -
012 NP_955611.1 - - - - -
013 YP_008567619.1 F T E E T V R G T A S P L D E D L P Y P Q L R - - - - - Q Q
014 NP_149413.1 - - - - -
015 YP_004442824.1 - - - - -
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 - - - - -
022 YP_009182100.1 V I N T V F Q T I E G I L N V N K Q F M T A E K Q R E Q I L Q S Q L K Q I K D Q L A E P V V L S K P
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 - - - - -
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 L S D H E V W V P P S H P A E A G G E P C P S T F C E - - - - -
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - -
032 YP_009041481.1 V P V E - - - - - A P E I R K T L E P E P - - - - -
033 YP_001036293.1 L T P T V R G T R G F G T L T A E A S N M I T K V R V E E R P V N P V P T P T D H M E E D D E D A E
034 YP_605811.1 G E F Y D A D N S L F - - - - -
035 NP_955577.1 - - - - -
036 YP_003208050.1 - - - - -
037 NP_789740.1 - - - - -
038 YP_004442839.1 - - - - -
039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - -
042 YP_009507248.1 - - - - -
043 YP_002117531.1 Q - - - - -
044 YP_004347415.1 - - - - -
045 NP_056891.1 - - - - -
046 YP_009513242.1 - - - - -
047 YP_009352866.1 E - - - - - D S L N P K L - - - - -
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 - - - - -
052 YP_567050.1 - - - - -
053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -
055 NP_955564.1 - - - - -
056 YP_009508411.1 M R P T L R G D Q G F G S T S A A V F S I F E - - - - - D D D D
057 YP_009140788.1 F S - - - - -
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - -
061 NP_041734.1 E E E E - - - - -
062 NP_056895.1 - - - - -
063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 L H Q T L R G D R A F G E V T S N Y L A E A - - - - - S T S Y L A D M C P - - T F E E D
071 YP_003987465.1 C - - - - -
072 NP_861410.1 - - - - -
073 YP_009345071.1 I K L I S - - - - -
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 E E F Y D A D N S L F - - - - -
079 NP_542258.1 - - - - -

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080 YP_009130664.1 FASTEGGGDKAPINN-----
081 YP_009508566.1 -----
082 YP_006607892.1 -----
083 YP_009506270.1 -----
084 NP_042513.1 -----
085 YP_006907834.1 -----
086 YP_004442827.1 -----
087 YP_009408594.1 -----
088 YP_009508561.1 -----
089 NP_056907.1 -----
090 YP_002308474.1 -----
091 YP_007761644.1 -----
092 NP_040550.1 -----
093 NP_758808.1 -----
094 YP_009345075.1 WDDK-----
095 NP_068729.1 -----
096 NP_047255.1 -----
097 YP_006273075.1 YKEEES-----
098 YP_009508888.1 -----
099 NP_395469.1 -----
100 YP_009508546.1 -----
101 NP_056762.1 LGLTG-----
102 YP_009508556.1 -----
103 NP_569153.1 QSPVPSPTQDFTNPFSEGGGESTYPYPSFQPPFDLQSDDSYGTLATWSEY
104 NP_043924.1 -----
105 YP_009243641.1 -----
106 YP_004300274.1 -----
107 NP_056848.1 -----
108 YP_006495799.1 SEDS-----YEEVRRRDMENHN-----
109 YP_009508409.1 -----
110 NP_687035.1 -----
111 NP_045937.2 TYPAX-----
112 NP_612577.1 -----
113 NP_619548.1 -----
114 NP_056880.1 -----
115 YP_009121747.1 GWDE-----
116 YP_009113237.2 EEPETP-----
117 YP_009508408.1 LPTTLRGDRGFGALTAAAFIPT-----SVPTTEHNEADDEANEAD
118 NP_955579.1 -----
119 YP_009229919.1 DDDD-----HPDDSQPRWDTSPPEEDNE-----
120 YP_004442833.1 -----
121 NP_862833.2 -----
122 NP_040563.1 -----
123 YP_443922.1 -----
124 NP_057933.2 -----
125 YP_009116631.1 ADDE-----DDVYNQKTWEKED-----
126 YP_009513249.1 -----
127 YP_223871.1 -----
128 NP_127504.1 -----
129 NP_044929.1 -----
130 NP_057860.1 -----
131 NP_040973.1 -----
132 NP_777317.1 -----
133 NP_054716.1 -----
134 YP_001856242.1 -----
135 NP_954565.2 -----
136 NP_569150.1 -----
137 NP_659397.1 -----
138 YP_009513211.1 -----
139 YP_233107.1 -----
140 YP_009109692.1 -----
141 NP_057849.4 -----
142 NP_049560.1 -----
143 YP_009506267.1 LQMTTLRGDRGFGEMSRTRLPPVESDDG-----SPSSPLSEEVRILFEDD
144 NP_039820.1 KKAQQALSSQAQEEP-----
145 NP_056790.1 -----
146 YP_002321513.1 FPNTTEWLDDTTPLEFPEERLSYSQWFSEDPQVLAQPPWSQHS AKVCHVLD
147 NP_955591.1 -----
148 YP_001956722.2 -----
149 NP_056902.1 -----
150 NP_056886.1 -----
151 NP_041261.1 -----

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001 YP_004442836.1 - - - - -
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - -
004 YP_004732983.2 - - - - -
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 - - A T Q P Q S P Q S P - - - - - T W Y
009 YP_003284237.1 - - - - -
010 YP_009268869.1 - - - - -
011 YP_009506251.1 - - - - -
012 NP_955611.1 - - - - -
013 YP_008567619.1 Q D D T S P L L A E T G G H L P N - - - - -
014 NP_149413.1 - - - - -
015 YP_004442824.1 - - - - -
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 - - - - -
022 YP_009182100.1 V S D P A L E G H L K S I N R G V K N L V E R A E L L I D Y E E L A A K I G K N I S T Q G I A V S E
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 - - - - -
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 - - - - -
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - -
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036 YP_003208050.1 - - - - -
037 NP_789740.1 - - - - -
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053 YP_009508571.1 - - - - -
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058 YP_009508410.1 - - - - -
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060 YP_008992013.1 - - - - -
061 NP_041734.1 - - - - -
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065 YP_595725.1 - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
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070 YP_009508443.1 P F Y E D P T I L T L Q Q V E - - - - -
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079 NP_542258.1 - - - - -
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094 YP_009345075.1 - - - - -
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099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
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106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - -
109 YP_009508409.1 - - - - -
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111 NP_045937.2 - - - - -
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
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116 YP_009113237.2 - - - - -
117 YP_009508408.1 D E M E Y L S Y L S T A P F S G - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - -
120 YP_004442833.1 - - - - -
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122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 - - - - -
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
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129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 - - - - -
136 NP_569150.1 - - - - -
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - -
140 YP_009109692.1 - - - - -
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143 YP_009506267.1 P F L E D P T I Y T I D S F N H S - - - - -

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147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 - - - - -
151 NP_041261.1 - - - - -

001 YP_004442836.1 - - - - - DDTKSQ - - - - - VSQ - - - QVMNLEE - EDFPQ
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - -
004 YP_004732983.2 - - - - - EKGKSPFEDLELKQDLVQSWIAQLGSGSGSRTEKPIFDTTTS
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 NP - - FAEGGGS DEND - - - - - ENPDPEESEEMGNEMGY - - - - - ETEV
009 YP_003284237.1 - - - - - ELEEE - - - - - TTSMASLNIAMMSEYPE
010 YP_009268869.1 - - - - -
011 YP_009506251.1 - - - - - EEEEEEEEEEEDEYDPNTY - - - - - MAYL
012 NP_955611.1 - - - - -
013 YP_008567619.1 - - - - - TNYEEEEEAISPAVTTTPEDIQDDLYQHDLAAIN - - - - - TEGPV
014 NP_149413.1 - - - - - EEED - IITTFLSAIPDEEEAYPAEEIEEEYPA
015 YP_004442824.1 - - - - - EDTRSH - - - - - ISE - - - KVHHIED - - - YPS
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 - - - - - TIQDFLNQYDADI - - - - - SEDEANYDVGVLEEYPE
022 YP_009182100.1 RSKSFMSFDHHPKPVESVLPKARMFMSMFAGGKPKSSIIVRSLELEVVEEQPKV
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 - - - - - CEDDEESIINDFLKLS - - HEEVYMAEE - DSDYPA
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 - - - YDSNIEEQFLYDLECLYNAEQSDLASEEEEPATVAVGDDACVLSPSQ
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - -
032 YP_009041481.1 - - - - - VSDEEVQWEVETIGTEVSDVTQQALP - - - - - IYEEAA
033 YP_001036293.1 KSREVEAEADDDDEDLYFRPSPARVTFSDDPFSEDPTIATIRESGDASQPI
034 YP_605811.1 - - - - - EEEYDGD DDDSEVS - - - - - TPRS KYNIFALED - - EYPK
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036 YP_003208050.1 - - - - - DSDSEEEPDQGFINPFSEDGGGSK
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043 YP_002117531.1 - - - - - VLIEDDRQRQAPARRAAHA EKRRRVEAAEQNRQNIEDFPD
044 YP_004347415.1 - - - - -
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050 YP_004222728.1 - - - - -
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053 YP_009508571.1 - - - - -
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055 NP_955564.1 - - - - -
056 YP_009508411.1 - - - - - GGGEMDYFPFQIEESDEDPID - - - - - LAQLV
057 YP_009140788.1 - - - - - SEAELELAY - - - - - QQEV
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - - KKKKKPK - - - - - KKSHASCHHSTSRPPQDPPP
061 NP_041734.1 - - - - - DEYDPNVY - - - - - RAYL
062 NP_056895.1 - - - - -

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067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 - - - - - E E D D D I S Y L T Y L Y D H H L F F G G E K E E E E A A A A K I F D E V A A A P I
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075 NP_569141.1 - - - - -
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077 NP_777384.2 - - - - -
078 YP_233110.1 - - - - - E E E E Y D G - - D S E V S - - - - - T P R S K Y N I F A L E D - - E Y P K
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085 YP_006907834.1 - - - - -
086 YP_004442827.1 - - - - - E Q D E E E A I I N A F L K L T A E E E V L R I E D E E D C E Y P A
087 YP_009408594.1 - - - - - T D Q T I A M L H D D D D W S N Y P
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090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - - A I E E T A F T L E E Q F N - - - - -
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096 NP_047255.1 - - - - -
097 YP_006273075.1 - - - - - Q S D E E H Y Q P D A E A E F D Y - - - - - P L K R
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099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - - W E D L D Q D S I E T E E I T E W E N P N Q V L H R E I R A Y K S V
102 YP_009508556.1 - - - - -
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106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - - N L I A E G F T Q E P R F P G L Y A P A R I E V I E E D H Y E G D A S E Q S R S E
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110 NP_687035.1 - - - - -
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123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
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127 YP_223871.1 - - - - -
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129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - - D Q N S N G Q P D D D E - - - - - V S T W S A Q I N H I N D Q S E P P A
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134 YP_001856242.1 - - - - -
135 NP_954565.2 - - - - -

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139 YP_233107.1 - - - - - D E E S Y Y G D L E S - - - - - E P R S H Y E I N H L D D - - D Y P E
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142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - - F N D E E E M D Y I S Y L Y H L D D I P A N - - - - - D A P I
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148 YP_001956722.2 - - - - -
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016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
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020 NP_955619.1 - - - - -
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025 YP_004442830.1 I R K L E E L I K Q - - - - -
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
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031 YP_006732334.1 - - - - -
032 YP_009041481.1 E Q E T I A T Q - L A D E L S Y K S - - - - -
033 YP_001036293.1 F D E S D D N E D - - - - - H
034 YP_605811.1 L Q Q L E S L V L S - - - - -
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069 NP_663784.1 - - - - -
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102 YP_009508556.1 - - - - -
103 NP_569153.1 T T E E S K H E A E - - - - -
104 NP_043924.1 - - - - -
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 E E P E F D Y P Q I A A V V N Q N N - - - - E P E L E
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 L V D T G A C L T A I G G A A T V V P D L K L T N - - - - -
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 F T E K I E M I Q M I V S P T Q E E E E H Y - - - - A F P T I E S I G E
116 YP_009113237.2 W D P E P V H E E P - - - - -
117 YP_009508408.1 Y D T D G E E G D - - - - - E D N D D
118 NP_955579.1 - - - - -
119 YP_009229919.1 G E S Q A G Y M A N - - - - -
120 YP_004442833.1 I K R L E E L L Q Q - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 D E E E D Q E L Q V I G A A T M D - - - - E P E M E
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -

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128 NP_127504.1      G S L S R P G K Y E Y - - - - -
129 NP_044929.1      - - - - -
130 NP_057860.1      - - - - -
131 NP_040973.1      - - - - -
132 NP_777317.1      L L Q L E Q V L S - - - - -
133 NP_054716.1      - - - - -
134 YP_001856242.1    - - - - -
135 NP_954565.2      - - - - -
136 NP_569150.1      L R E I E K V L S S - - - - -
137 NP_659397.1      - - - - -
138 YP_009513211.1    - - - - -
139 YP_233107.1      L L N V E K I L S - - - - -
140 YP_009109692.1    - - - - -
141 NP_057849.4      - - - - -
142 NP_049560.1      - - - - -
143 YP_009506267.1    Y D D Y P E E G E - - - - - V D
144 NP_039820.1      F K H L A A Q L S E L V N - - - - -
145 NP_056790.1      - - - - -
146 YP_002321513.1    S D E E K P V P D Y L S M Q T P K P K Y Y Y G A S S S S S S S E S V A S R Y R P K K N E K V Y K P K
147 NP_955591.1      - - - - -
148 YP_001956722.2    - - - - -
149 NP_056902.1      - - - - -
150 NP_056886.1      - - - - -
151 NP_041261.1      - - - - -

001 YP_004442836.1    - - - - - T A E S A I S S - - - - -
002 NP_056728.1      - - - - -
003 YP_009508537.1    - - - - -
004 YP_004732983.2    Y P R R - V K T A T A K L A D M E K A F A G - - - - - E T T A A V G G D S E
005 YP_009508407.1    - - - - -
006 NP_040939.1      - - - - -
007 YP_003864102.1    - - - - -
008 YP_009002585.1    Q E D P D L L P Y P H L R E L L - - - - - K N E E K V F S T
009 YP_003284237.1    - - - - - S S E V T S S - - - - -
010 YP_009268869.1    - - - - -
011 YP_009506251.1    I A S - - - - L N P E M E Y P - - - - - Q R R T E V A E T
012 NP_955611.1      - - - - -
013 YP_008567619.1    G Y A A E E E E E I D D M E Y P - - - - - H V R A L R L K M Q - E V
014 NP_149413.1      - - - - - Q P Q E A K M A S S E G - - - - -
015 YP_004442824.1    - - - - - T G E S A I S S - - - - -
016 YP_001931967.1    - - - - -
017 YP_002455786.1    - - - - -
018 YP_009109694.1    - - - - -
019 NP_789739.1      - - - - -
020 NP_955619.1      - - - - -
021 YP_224289.1      - - - - - I P I L S E V T - - - - -
022 YP_009182100.1    E M D R M K A K G Y E Y V H F G A V Q V V F R L L A R R D L N C S V L S I C R D N R L K S L Q K G L
023 NP_705927.1      - - - - -
024 YP_009508577.1    - - - - -
025 YP_004442830.1    - - - - - E E V R M S D T G - - - - -
026 NP_758887.1      - - - - -
027 YP_009508406.1    - - - - -
028 YP_610965.1      - - - - - F M E L E A L P Y P T L - - - - - A R M E K - - - - E
029 YP_001931961.1    - - - - -
030 YP_241114.1      - - - - -
031 YP_006732334.1    - - - - -
032 YP_009041481.1    - - - - - L H K M Q K K L V E N - - - - - M A L S G A E S -
033 YP_001036293.1    E L I Q E L V S L E A D F D Y P - - - - - Q I R Q L E D - - - - C V
034 YP_605811.1      - - - - - T T E S A I S R - - - - -
035 NP_955577.1      - - - - -
036 YP_003208050.1    - - - - - M T S M E E L P Y P K L - - - - - K K L E A - - - - A
037 NP_789740.1      - - - - -
038 YP_004442839.1    - - - - - T N E S A I S S - - - - -
039 YP_009507791.1    - - - - -
040 YP_004581513.1    - - - - -
041 NP_043933.1      - - - - -
042 YP_009507248.1    - - - - -
043 YP_002117531.1    - - - - - P C T E T L E H P R E N D D V S L N L A V L E E D N K D E L Y D Y P T A I R N L E N L
044 YP_004347415.1    - - - - -
045 NP_056891.1      - - - - -
046 YP_009513242.1    - - - - -

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047 YP_009352866.1  - - - - - L H K M Q E K L A K N - - - - - M A L S G V E S -
048 YP_009165750.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
049 NP_040840.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
050 YP_004222728.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
051 YP_009506264.1  - - - - - - S S V T S D Y R P P - - - - - - - - - - - - -
052 YP_567050.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
053 YP_009508571.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
054 NP_056803.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
055 NP_955564.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
056 YP_009508411.1  - - E V K L T T A T L D L D Y P - - - - - - - - - - - E L E E L Q R - - - - - I
057 YP_009140788.1  - - - - - - - L E L A Y P - - - - - - - - - - - - - - - Q R F K A I E K L
058 YP_009508410.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
059 NP_040333.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
060 YP_008992013.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
061 NP_041734.1      T A S - - - - - L R E E M E Y P - - - - - - - - - - - - - - - K R R P Q - T E M
062 NP_056895.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
063 YP_009109689.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
064 YP_002519387.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
065 YP_595725.1      - - - - - Q P V E A K M S T S T G - - - - - - - - - - - - - - - - -
066 YP_009508551.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
067 YP_001497148.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
068 NP_041186.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
069 NP_663784.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
070 YP_009508443.1  L I N P K L A S I S T E F E Y P - - - - - - - - - - - Q L R E L E Q - - - - - V
071 YP_003987465.1  - - - - - - - T V V D S N P - - - - - - - - - - - - - - - - -
072 NP_861410.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
073 YP_009345071.1  - - - V H F T E E E A R A E L R - - - - - - - - - - - - - - - K L I A G E E V H M E
074 YP_009508582.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
075 NP_569141.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
076 YP_002916057.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
077 NP_777384.2      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
078 YP_233110.1      - - - - - - - T T E S A I S R - - - - - - - - - - - - - - - - -
079 NP_542258.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
080 YP_009130664.1  - - - - - - - - D E I D Y P - - - - - - - - - - - Q L K N L - - - - - Q Q - H L
081 YP_009508566.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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083 YP_009506270.1  - - - - - - - V S E S A I S S - - - - - - - - - - - - - - - - -
084 NP_042513.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
085 YP_006907834.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
086 YP_004442827.1  - - - - - - - E T V Q M S E A S - - - - - - - - - - - - - - - - -
087 YP_009408594.1  - - - - - - - E T A L A S S - - - - - - - - - - - - - - - - -
088 YP_009508561.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
089 NP_056907.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
090 YP_002308474.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
091 YP_007761644.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
092 NP_040550.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
093 NP_758808.1      - - - - - - - - - D L D Y P - - - - - - - - - - - T L I S M E K Q L V Q
094 YP_009345075.1  - - - - - - - A A D D N D M D Y P E L - - - - - - - - - - - R A L Q E I V R S T G
095 NP_068729.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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097 YP_006273075.1  G G K D D H L - N S E E M D Y P - - - - - - - - - - - - - - - Q R M K K I E K L
098 YP_009508888.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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100 YP_009508546.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
101 NP_056762.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
102 YP_009508556.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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104 NP_043924.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
105 YP_009243641.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
106 YP_004300274.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
107 NP_056848.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
108 YP_006495799.1  Y P T K K F Q E L M A K I K G F Q N Q K - - - - - - - - - - - V E I A A M N A E
109 YP_009508409.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
110 NP_687035.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
111 NP_045937.2      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
112 NP_612577.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
113 NP_619548.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
114 NP_056880.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
115 YP_009121747.1  E A I K Q D E V D E E D L D Y P R V R E I K R M I K K A K K E G - - - - - Y T P P I H Q E Q H I F P
116 YP_009113237.2  E A Q E I V T V I Q E E L D Y P H L K R L E E - - - - - - - - - - - A L K G K T V P V E K K E
117 YP_009508408.1  I L P K R I A V L S F E H D Y P - - - - - - - - - - - - - - - Q L R G L E E - - - - - H V V
118 NP_955579.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
119 YP_009229919.1  - - - - - - E E E E L E L E Y P T L - - - - - - - - - - - - - - - Q K L K E K V - - - - - E H

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122 NP_040563.1      - - - - -
123 YP_443922.1      - - - - -
124 NP_057933.2      - - - - -
125 YP_009116631.1  Y P T R - L E K V M G K L K N V S M E K L - - - - - F P V S G M D S E
126 YP_009513249.1  - - - - -
127 YP_223871.1     - - - - -
128 NP_127504.1      - - - - -
129 NP_044929.1      - - - - -
130 NP_057860.1      - - - - -
131 NP_040973.1      - - - - -
132 NP_777317.1      - - - - - T N T S A I S R - - - - -
133 NP_054716.1      - - - - -
134 YP_001856242.1  - - - - -
135 NP_954565.2      - - - - -
136 NP_569150.1      - - - - - V A E T A I S S - - - - -
137 NP_659397.1      - - - - -
138 YP_009513211.1  - - - - -
139 YP_233107.1      - - - - - T N E S A I S N - - - - -
140 YP_009109692.1  - - - - -
141 NP_057849.4      - - - - -
142 NP_049560.1      - - - - -
143 YP_009506267.1  V F N L A T L D S G F D L D Y P - - - - - T L Q K L E A - - - - -
144 NP_039820.1      - - - - - M A E S S G Q S G V G - - - - -
145 NP_056790.1      - - - - -
146 YP_002321513.1  P K P I Q T Q K A Q Y Q P K K P K P Q K E Q K V T K E W K P K F - - - - - Q V H K L S Q D I S T E C
147 NP_955591.1     - - - - -
148 YP_001956722.2  - - - - -
149 NP_056902.1      - - - - -
150 NP_056886.1      - - - - -
151 NP_041261.1      - - - - -

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003 YP_009508537.1  - - - - -
004 YP_004732983.2  M T T G Q S S R S T L I P P N E G G G P I R Y P P A E R P S T S A S - - - - - T Y N T
005 YP_009508407.1  - - - - -
006 NP_040939.1      - - - - -
007 YP_003864102.1  - - - - -
008 YP_009002585.1  Q Q S E V S S - - Y R P P Q D T A M T P A G Y A P A R G E A S - - - - - S S
009 YP_003284237.1  - - - - - Y R P P E I D M T G P A - G Y A P A T S Q Q - - - - - G
010 YP_009268869.1  - - - - -
011 YP_009506251.1  V F S E I V D - - Y T P P G D T L M T P V G Y P P A S S S R S - - - - - T V T T P
012 NP_955611.1      - - - - -
013 YP_008567619.1  F S A Q S E I S Q Y R P P Q D T A M G P S S Y P P A V N - - - - - I T N E A
014 NP_149413.1      - - - - - S S A I W Q P G T M D L D G N F P G Y A P A Q G A T - - - - - G
015 YP_004442824.1  - - - - - Y R P P E V E M G G V A P G Y A P A S G T S - - - - - G
016 YP_001931967.1  - - - - -
017 YP_002455786.1  - - - - -
018 YP_009109694.1  - - - - -
019 NP_789739.1      - - - - -
020 NP_955619.1      - - - - -
021 YP_224289.1      - - - - - S Q Y R P A D I D M A G P T - G Y A P A T S Q Q - - - - - G
022 YP_009182100.1  L G A L Q A S L N N Q V A Y F V C I P N F S C T I E D A H E A L V L C V Q T H G T D F K E G Y T D L
023 NP_705927.1      - - - - -
024 YP_009508577.1  - - - - -
025 YP_004442830.1  - - - - - S S A M I P - A D I D M E G D L P R Y A P A Q G Q T - - - - - G
026 NP_758887.1      - - - - -
027 YP_009508406.1  - - - - -
028 YP_610965.1      S A R S S V T S P Y T P P T D S G M A P P G Y P P A S A G G - - - - - A A S S S Q M P I L
029 YP_001931961.1  - - - - -
030 YP_241114.1      - - - - -
031 YP_006732334.1  - - - - -
032 YP_009041481.1  - - - - - S G S G A G V Y N P Y S M R E D N S N R P P G Y A A A Q G L P - - - - - Q N I P
033 YP_001036293.1  I A A S S A V S N Y T P P E D T T M N P P T Y P P A R I D - - - - - Q A G P S H S
034 YP_605811.1      - - - - - F R P T D T D M T G I G P A Y A P A T G T A - - - - - G
035 NP_955577.1      - - - - -
036 YP_003208050.1  F S S G S V V S N Y A P P Q D S N M G P P T Y P P A P T N G - - - - - A S S S R P M P T L
037 NP_789740.1      - - - - -
038 YP_004442839.1  - - - - - Y N P G D I D M E G V G P G Y A P A T G G T - - - - - S

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042 YP_009507248.1 - - - - -
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044 YP_004347415.1 - - - - -
045 NP_056891.1 - - - - -
046 YP_009513242.1 - - - - -
047 YP_009352866.1 - - - S G S G A G V Y N P Y D M R E D T S N R P P G F A A A Q G L R - - - - - Q N I P
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050 YP_004222728.1 - - - - -
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053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -
055 NP_955564.1 - - - - -
056 YP_009508411.1 V G A S T A M S E Y S P P Q D T S M N P P T Y P P A R R E - - - - - S A A S A P S T S T
057 YP_009140788.1 L S T S E V T G P Y R P P D D A A M G R P S Y P P A R S I S E E - - - - - G V S S S
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - - L Y K K E L Q W L A K R C T S T I S S P V P D P S P P L S - - - - - C M M F S
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062 NP_056895.1 - - - - -
063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 - - - - - S S A M I P - A N M D M D G N M P G Y A P A Q E A R - - - - - G
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 I A A S S A V S A Y N P P E D T T M N P P T Y P P A Q T P - - - S M P S T S Y G G S T S Y G G T F
071 YP_003987465.1 - - - - - G N Q Y M I G D T D M D G P P - G Y A P A Q A Q A - - - - - A
072 NP_861410.1 - - - - -
073 YP_009345071.1 A E S S I N S G S Y R L P T D A T M G P P I Y P P A R Q R F D - - - - - E P S
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 - - - - - F R P A D T D M T G V G P G Y A P A T G T A - - - - - G
079 NP_542258.1 - - - - -
080 YP_009130664.1 Y A S P S A I T G Y K P P Q D V A M G P P N Y G P T P L R - - - - - V I R P E A
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 - - - - - F R P P E V E M G G I A P A Y A P A T S T T - - - - - G
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 - - - - - S A I I P - A E V D M E G N L P G Y A P A T T A T - - - - - G
087 YP_009408594.1 - S T T I A M S P Y N P P E D T M M G P P Q Y P P A T A R P N - - - - - M P N P W A V P D Y
088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 S S - - - V T S A Y N P P T E P L M G Q V V Y P P A S A P R P - - - - - Q A E T S S - - - T
094 YP_009345075.1 D S S S S I V T N L Q P P M D S A M G P P V F P P A R E G S R - - - - - P T Y L P G N L G F
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - -
097 YP_006273075.1 L S T S E V T S P Y R P P E D A A M G R P S Y P P A R T I P G G - - - - - G A S S S
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - N Y D M A L K N L E E K Y D L D K I E K A K S I E E I A K S S T S S E I R P T K R P K E E Q T A Y
102 YP_009508556.1 - - - - -
103 NP_569153.1 L S S A I S S - - Y T P P T D T A M T P V A Y P P A Q N I A S P - - - - - S Y N P S
104 NP_043924.1 - Q V K G K G C W R I S Q E L A E N I L G N D L L R S L G L I V D Q C N G V I W Q A S E G L G P D N
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 S S G S G V T S G N F V P P I A T T G P S V Y P P A T - - G T H G T - - - - - N I G P
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 E P V P H V L A K P T K I Q I E N T N I D I S P W Y N P D Q T F H I L G R D T L S K M R A I V S F E

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112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 STSEGASGVYNPPPDQVMGPPVYPPARGNVP - - - - - QNSFNLGYPK
116 YP_009113237.2 TVASAVSSAYNPPADTAMMPAYPPGSADPG - - - - - P
117 YP_009508408.1 AATSTAVSAYRPPEDTTMNPPTYPPASNLP SAGSV PSTSY P-STSYPTTQ
118 NP_955579.1 - - - - -
119 YP_009229919.1 MAKSSASSPYRPPQEPYMGTYIYPPASGIT - - - - - EASTSTASTM
120 YP_004442833.1 - - - SSALIP-ADVDMEGNLPGYAPAQTKA - - - - - G
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - - D
124 NP_057933.2 - - - - -
125 YP_009116631.1 SSITGGGGG-FIPSPVPVGAQGYP PAT - - TSTMS - - - - - TIGP
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 - - - - - LVRYDAPSWAKDPHLTVEPTGWDSDEPIPPKQPFTTRNTLPKIYM
129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - - YRPADEDMTGIGPAYTPATSTR - - - - - G
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 - - - - -
136 NP_569150.1 - - - - - YRPPDAEMGEEAPAYAPATSAT - - - - - G
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - - YRVP-QDEEMTVPGYAPAGSSR - - - - - G
140 YP_009109692.1 - - - - -
141 NP_057849.4 - - - - -
142 NP_049560.1 - - - - -
143 YP_009506267.1 TIASTAVSEYRPPEDTTMNPPIYPPARIS - - GQASTSTGPTSTSYTSGP
144 NP_039820.1 - - FQPPVNAQPDVNMEGPA-GYAPATSQA - - - - - T
145 NP_056790.1 - - - - -
146 YP_002321513.1 PNLDKFLKTFEPKKKEPTPPVEKIFSASSSYHVPEDSSMGDTAYTPAPNM
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 - - - - -
151 NP_041261.1 - - - - -

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001 YP_004442836.1 WAG-NNQFPFTTTRR-PRRWDSNNEFYMLPPAQSKQGAMFIMPLDFDV - - K
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - -
004 YP_004732983.2 TAPPLFEGTVR - - - PGRYGRPLAPWSLPSAQHSQGALLILPPEVASHAD
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 THQPMFEGYMPRRP-QFKQDRSTEYWQFPTAQGGQTGAMFVI PRQIGLFDH
009 YP_003284237.1 WAS - - SHPPTSGRN-FRYKDPSGYFALPSAQQQNGSILLLSPTYDT - - K
010 YP_009268869.1 - - - - -
011 YP_009506251.1 SRPPLYEGRIPSASRVLRDDYTEWWQLPSSQGTGALFVMPKQIGLFDH
012 NP_955611.1 - - - - -
013 YP_008567619.1 GPSRPMFEGYNKSGVRFKHKDLADNWTLP SAQQQQGAVFVIPTQLGLFDS
014 NP_149413.1 WDNSASSSKKNYGGYSRKFKNESEFFNLPSAMATSGAILVLT MNNYA - - K
015 YP_004442824.1 WAG-TSSQLFPFPRRPKKWDDSSSEWFALPPAQSRQGAMFVMPYDFDV - - K
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 LLG - - STAPDRLGKGSFKWKSPTEYFNLP SAQQQAGAMFVMPANFDP - - K
022 YP_009182100.1 AIEYIVTYKFMTSDMEAMSKL KATEGFN SMVISDRNNHTISHTKKIDWKE
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 WS-DYNPQQKHFGGTSKKWSNPVNHWNLP SANAANGSMLVLSIGKNN - - D
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 GAPFTAADVRLNLRGSRSNAGMFQLPSAQQLRGALLVLPEDIGLYQD
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -

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031 YP_006732334.1 - - - - -
032 YP_009041481.1 DVSHFTASARPPPKSKQPYGAP-AMWNLPsAQQTQGVMlVLPYDIGKYAE
033 YP_001036293.1 GPSYS- - - - -VPSGTRFKPMNYSANLQLPSAQQTGTGAMFYMPLELDKFDE
034 YP_605811.1 YTG-ASSSDFPYPRRPRKWDNNSEWFNLPTANARQASIFVMPQDFDT--K
035 NP_955577.1 - - - - -
036 YP_003208050.1 G- - - -LEGARPKVSDFR-RRETSNQWNLPSAQQVNGAMlVLPEDIGLYEE
037 NP_789740.1 - - - - -
038 YP_004442839.1 YTG-AGTSDFPYPRRPRKWENSSEWFNLPMANARQASVFIMPQDFDT--K
039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - -
042 YP_009507248.1 - - - - -
043 YP_002117531.1 WVG-SHKFEGSTSKARFKWKDPSEMFTLPSAYQVEGAIFVMPDPDYDP--K
044 YP_004347415.1 - - - - -
045 NP_056891.1 - - - - -
046 YP_009513242.1 - - - - -
047 YP_009352866.1 EVSNFVGGARPPPKSKVPYGAP-ANWNLPSAQQSQGVMlVLPYDIGMYAE
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 YKE- - -GERSFGFRGGFRWKNPSENFQLPSAQQQGTGAI FIMP PN FDP--K
052 YP_567050.1 - - - - -
053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -
055 NP_955564.1 - - - - -
056 YP_009508411.1 GISSG- -APTVSAGTRFRGKDYS GAWTLPSAQQTGTGAI FNM PLELGKFDE
057 YP_009140788.1 NYP SKFN- - - -AARTRFRGGYNDEMWTLPsAQQKNGAMFVLPEQLGLFND
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 SASSDYSSYFPPLDTHTDsQRNVVSKPFI P SPITSAGHLEPPKPFESVLN
061 NP_041734.1 SRPPLFEGRTTHVPRFLKRDEYTEWWQLPSSQGTGALFVMPKQMGLFHE
062 NP_056895.1 - - - - -
063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 WD-SGETSRRNYGGHSRKWKDESQFFNLPSAMATSGAMlVLTMGNYA--K
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 GGTSg- - - - -VGSGTRFRSKDYS GNWNLPSAQQQGTGAMLYIPLELGKFDE
071 YP_003987465.1 AVPPTYGGTSPSVRGPFWRWKNPHEHFELPSAHQLSGAIFVMPQN FDP--K
072 NP_861410.1 - - - - -
073 YP_009345071.1 TSTVPMYPPQYRAPLRKVPDFQNWNLPTAQINGGAMFIIPSDFSKFDD
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 YTG-ASSSDFPYPRRPRKWDNNSEWFNLPTANARQASIFVMPQDFDT--K
079 NP_542258.1 - - - - -
080 YP_009130664.1 GPLRPAFEGYKPGEVRYKAKDYSEWNLPSAQHGTGAI FIIPTQLGMFND
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 WAG-TTEFPFTTARRPRVWDSNNEFYMLPPAQSRQGAIFIMPMDFDV--K
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 WS-DYNPKINRIGGTSSKWNQTNyWNLPNANAVNGSMLILCYGKNS--E
087 YP_009408594.1 AT- - - - -RNAGRARFQGGIPGEQWQLPSAQQIAGAMlVLPDDIGMYND
088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 SERF- - - - -KNFRAKP- -YSTPTIFLPPAYNQQGAILVLPDDIGLYED
094 YP_009345075.1 GDG- - - - -LAXPKRYPTARLPTQNFWE LPSAQINRGALLILPNDIGKYDD
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - -
097 YP_006273075.1 AEP PRFD- - - -AARTRFRKGGYNDEMWTLPsAQQKNGAMFVIPEQLGLFND
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 EDDMRDDWKRKELTVNPIEASKDRNFERIGSSYKKNFYPSRSEILNLDNV
102 YP_009508556.1 - - - - -
103 NP_569153.1 PQMPMFEGYYPKRP-NFKRD-NHAFISLPsAQQNTGALFIMPQQIIGLFHE
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104 NP_043924.1 WMAAETLR IYSIKSPGHYNLP ELLATKDEQLADILWNNVEAFATHRND CG
 105 YP_009243641.1 - - - - -
 106 YP_004300274.1 - - - - -
 107 NP_056848.1 - - - - -
 108 YP_006495799.1 QDQGGWGG RMPRSRMPGGYGR PQR PWTLP SAQTENGVM LIIPEDLT LAAD
 109 YP_009508409.1 - - - - -
 110 NP_687035.1 - - - - -
 111 NP_045937.2 KNGEMTVLL PPTYHKQLSCQT KNTLN IDEYLLQFPDQL WASLPTD IGRML
 112 NP_612577.1 - - - - -
 113 NP_619548.1 - - - - -
 114 NP_056880.1 - - - - -
 115 YP_009121747.1 YARE - - - - - SDFNGDYGRYHSSQWTL PPA L TDSGAMLVLPAD PGLWSD
 116 YP_009113237.2 STTPIFKG - YDGA KVKIKREEGSEY WQLPSAQNQT GALFV IPRQLGMFDE
 117 YP_009508408.1 GATSG - - - - - VGS GTRFR AKDYS GNWNLP SAQQT TGALFY IPLELGKFDE
 118 NP_955579.1 - - - - -
 119 YP_009229919.1 R - - - - - LPRLRHQG - RDPTVNWWSL PPAQNQQGAML ILPQDIGLYTD
 120 YP_004442833.1 YS - DYNPGETR FGGYSRKWSN PINNWSLPVANAAT G SMLVLSIGKNS - - E
 121 NP_862833.2 - - - - -
 122 NP_040563.1 - - - - -
 123 YP_443922.1 TTEICKPERLSL PRHHGKPYSDHPSATALLDSIDEA IWTTS PFDFVGR LAV
 124 NP_057933.2 - - - - -
 125 YP_009116631.1 ADMQGWGGRV PRSRSP LGYGRPQQPWSLPSAQSDNGCMLVLPQDFTLIPD
 126 YP_009513249.1 - - - - -
 127 YP_223871.1 - - - - -
 128 NP_127504.1 FNPLNYENNFPPLSSFSKDGADHTPKIPKRN VVLP SGAKDPTGDLEATVN
 129 NP_044929.1 - - - - -
 130 NP_057860.1 - - - - -
 131 NP_040973.1 - - - - -
 132 NP_777317.1 WTG - ENS - NFPPVTAPRRWDNSSERFQLPSAQGTHGAI FVMPYDFDT - - K
 133 NP_054716.1 - - - - -
 134 YP_001856242.1 - - - - -
 135 NP_954565.2 - - - - -
 136 NP_569150.1 WAG - SRPFPFMPKGGPRRWDSNNEFYSLPPAQSRQGAMFVMPMDFDI - - K
 137 NP_659397.1 - - - - -
 138 YP_009513211.1 - - - - -
 139 YP_233107.1 WAT - NIDDAMLHQ RKPKRWDNSSSEWFQLPSANARQGSIFVMPYDFDV - - K
 140 YP_009109692.1 - - - - -
 141 NP_057849.4 - - - - -
 142 NP_049560.1 - - - - -
 143 YP_009506267.1 GPSSSGYSQRTPSGVHFRARDYSNNWSLPSAQQNTGAMFYLPLELVKFDE
 144 NP_039820.1 WSN - - - GVNIPVKSANFRWKGPVGNFQLPSAQGKD GAMLVFGMNYSP - - E
 145 NP_056790.1 - - - - -
 146 YP_002321513.1 ITPYNPPGVDARRGRARGRPYVPPTFNLPLAGNDTGLMLELS - DPSMYNE
 147 NP_955591.1 - - - - -
 148 YP_001956722.2 - - - - -
 149 NP_056902.1 - - - - -
 150 NP_056886.1 - - - - -
 151 NP_041261.1 - - - - -

001 YP_004442836.1 VFERWESITLLH MTE - - RSFDNAD DDKMRYMENLLGED EKKHFI EW RM - - K
 002 NP_056728.1 - - - - -
 003 YP_009508537.1 - - - - - PTPQKQYHINPKAKPDIQIVINDLLKQGVLIQK - - -
 004 YP_004732983.2 AITTWETITLNLHLMN - - ISFDSLQDRVDYIENLLGPREEREAWVTWRM - - A
 005 YP_009508407.1 - - - - -
 006 NP_040939.1 - - - - - GPHVPQWPLTE EKLKGLTEIIDKLVEEGKLGKAP - - P
 007 YP_003864102.1 - - - - - PVWVDQWPLTKEKLTAQQQLVQEQLQAGHIVES - - -
 008 YP_009002585.1 AFNRWESITKNYVAS - - QGFTDSKDKA EFMENLLGETEKL TWVQWRM - - N
 009 YP_003284237.1 IFERWESTTLN HMAD - - KSFA TAEDKLIYLENLLGEMEKKTFQTWRM - - A
 010 YP_009268869.1 - - - - - GPHIAQWPLTQEKL EGLKEIVDKLEKEGKVG RAP - - P
 011 YP_009506251.1 VFSRWESITKNYVSA - - QGITDPT EKMEFIENLLGETEKL TWIQWRM - - R
 012 NP_955611.1 - - - - - PVWIDQWPLPEGKLVALTQLVEKEQLQLGHIEPS - - -
 013 YP_008567619.1 VFARWESITKNLVAA - - QGFTDPA DKVDFIENLLGEAEKLTW IQWRS - - T
 014 NP_149413.1 EFERWQSINTNL LAT - - QSFETADDKITRIENLLGETEKL MFQTWRM - - A
 015 YP_004442824.1 VFERWESITLLYLSE - - RSFDTADDKLRTVENLLGENEKKMFIAWRM - - K
 016 YP_001931967.1 - - - - -
 017 YP_002455786.1 - - - - - APRGQPV SFKPERLQALIDLVS KALEAGHIEPY - - -
 018 YP_009109694.1 - - - - - AVPVSIKQYPMSLEAHMGIRQHI IKFLELGVLRPC - - -
 019 NP_789739.1 - - - - - GPKVKQWPLTE EKI KALVEICTEMEKEGKISKIG - - P
 020 NP_955619.1 - - - - - PPEISQFPLNPERLQALQHLVRKALEAGHIEPY - - -
 021 YP_224289.1 VFERWESITLNLHMAD - - KVFSTAEDKLIYLENLLGEAEKIMFQSWRM - - T
 022 YP_009182100.1 LNQSEFPKEWSINSEEP EAKSSSVITGIYQHENGNI SMRFHQAGEG - - S

023	NP_705927.1	- - - - -	- -	GPKVKQWPLTEEKIKALVEICTEMEKEGKISKIG--P
024	YP_009508577.1	- - - - -	- -	PRPQRQYHINTKAKPSIQQVIDDLKQGVLIKQ---P
025	YP_004442830.1	I F E R W E S S T L N Y M A S - -	Q N I S G S E E K I	A R I E N L L G E T E K K T F I G W R M - - A
026	NP_758887.1	- - - - -	- -	GPKIKQWPLSKEKILALQEICSQMKEKEGQISKIG--P
027	YP_009508406.1	- - - - -	- -	- - - - -
028	YP_610965.1	V I S R W E T I T L N V L A D - -	K V F S D N R S K L	M Y V E N L L G E D E K K A W I Q W R M - - A
029	YP_001931961.1	- - - - -	- -	- - - - -
030	YP_241114.1	- - - - -	- -	PVWVDQWPLTQEKLSAAQQQLVQEQLRRLGHIEPS----
031	YP_006732334.1	- - - - -	- -	- - - - -
032	YP_009041481.1	V I N R W E S I N V N L V N S - -	M N W D S N Q D K V	D F M E N L L G E T E K Q I F V S W R M - - Q
033	YP_001036293.1	V F S R W E S I T K N I T S Q - -	H S F I S G R E K A	D F I E N L L G E T E K L T W I Q W R T - - T
034	YP_605811.1	V F E R W E S S V L L H M S D - -	K V F D D P Q D K L	T Y V E N L L G E S E K K M F I T W R M - - M
035	NP_955577.1	- - - - -	- -	A T P I S I R Q Y P M P H E A Y Q G I K P H I R R M L D Q G I L K P C - - -
036	YP_003208050.1	V I S R W E S I T I N L L N D - -	R T W D N N K A R V	I Y V E N L L G E S E K K I W Q Q W R T - - T
037	NP_789740.1	- - - - -	- -	GPKVKQWPLTEEKIKALVEICTEMEKEGKISKIG--P
038	YP_004442839.1	V F E R W E S S V L L H M T D - -	K I F D D P Q D K L	T Y I E N L L G E S E K K M F I T W R M - - K
039	YP_009507791.1	- - - - -	- -	GPKIKQWPLTNEKIEALTEIVERLLETEGKVKRAD--P
040	YP_004581513.1	- - - - -	- -	- - - - -
041	NP_043933.1	- - - - -	- -	- - - - -
042	YP_009507248.1	- - - - -	- -	VYTKSYRYPFIHRQEV RDQITKMLDQGGIIRPSDSAW
043	YP_002117531.1	V F S R W E S I T L N H M A P - -	K A F A N A T D K I	T Y I E N L L G E N E K I T F Q T W R M - - S
044	YP_004347415.1	- - - - -	- -	- - - - -
045	NP_056891.1	- - - - -	- -	PVWVDQWPLTNDKLA AAQQQLVQEQLEAGHITES----
046	YP_009513242.1	- - - - -	- -	PRPQKQYPINPKAKPSIQIVIDDLKQGVLIQQ----
047	YP_009352866.1	V I N R W E S I N V N V V N S - -	M N W D S N Q D K V	D F I E N L L G E T E K Q I V V S W R M - - Q
048	YP_009165750.1	- - - - -	- -	- - - - -
049	NP_040840.1	- - - - -	- -	GPHIAQWPLTQEKLEGLKEIVDRLEKEGKVGRAP--P
050	YP_004222728.1	- - - - -	- -	PVWIDQWPLPEGKLVALTQLVKEKELQLGHIEPS----
051	YP_009506264.1	V F E R W E S V V L N F L A D - -	K N F P T A E D K L	I Y I E N M L G E M E K I T F Q T W R M - - A
052	YP_567050.1	- - - - -	- -	PPQIDQFPFKPERLQALTDLVSKALEASYIEPY----
053	YP_009508571.1	- - - - -	- -	PRPQKQYPINPKARSSIQQVIDDLKQGVLVQQ----
054	NP_056803.1	- - - - -	- -	PRPQKQYPINPKAKPSIQIVIDDLKQGVLT PQ-----
055	NP_955564.1	- - - - -	- -	PVWLNQWPLKQEKLQALQQQLVTEQLQLGHLEES----
056	YP_009508411.1	V F M R W E S V T K N L T A Q - -	H V F T S G R D K A	E F I E N L L G E Y E K L T W L Q W R T - - A
057	YP_009140788.1	A F S R W E S V T K N H V A T - -	Q S F T D V R D K M	E Y M E N L L G E I E K L I W I Q W R M - - T
058	YP_009508410.1	- - - - -	- -	- - - - -
059	NP_040333.1	- - - - -	- -	STPVSIKQYPMSQEARLGIKPHIQRLDQGGILVPC----
060	YP_008992013.1	W Q T Q N A R A Q N D T L L N I N S K V E K I S L R T E H L E T - -	K V D S I S A Q L Q Q I - -	H
061	NP_041734.1	V F S R W E S I T K N Y V A A - -	Q G F T D P T E K M	E F M E N L L G E T E K L T W I Q W R M - - N
062	NP_056895.1	- - - - -	- -	PPEVPQFPPLNLERLQALQDLVHRSLEAGYISPW----
063	YP_009109689.1	- - - - -	- -	AVPVSIKQYPMSLEAHMGIRQHI IKFLELGLVRPC----
064	YP_002519387.1	- - - - -	- -	- - - - -
065	YP_595725.1	E F D R W Q S I N T N L L A S - -	Q T F E N A E D K I	T R I E N L L G E T E K L M F Q T W R M - - A
066	YP_009508551.1	- - - - -	- -	PRPQKQYPINPKAKPSIQIVIDDLKQGVLT PQ-----
067	YP_001497148.1	- - - - -	- -	AMPVSI RQYPMSKEAHMGIQPHITRFLLELGLVRPC----
068	NP_041186.1	- - - - -	- -	- - - - -
069	NP_663784.1	- - - - -	- -	GPRLKQWPLTKEKIEALKEICEKMEKEGQLEEAP--P
070	YP_009508443.1	V F M R W E S I T K N I I S Q - -	H T F I S G K E K A	D Y I E N L L G E Y E K L T W I Q W R T - - A
071	YP_003987465.1	V F G R W E S I V L N H L A D - -	R N F P T A L D K I	I Y V E N L L G E M E K I T F Q T W R M - - R
072	NP_861410.1	- - - - -	- -	- - - - -
073	YP_009345071.1	V F M R W E S I T K N V V A L - -	Q N F S D N K D K A	E F I E N L L G E T E K L A W M Q W R S - - I
074	YP_009508582.1	- - - - -	- -	PRPQRQYHINTKAKPSIQQVIDDLKQGVLVKQ----
075	NP_569141.1	- - - - -	- -	- - - - -
076	YP_002916057.1	- - - - -	- -	- - - - -
077	NP_777384.2	- - - - -	- -	PPEVPQFPPLNLERLQALQDLVHRSLEAGYISPW----
078	YP_233110.1	V F E R W E S S V L L H M S D - -	K V F D D P Q D K L	T Y V E N L L G E S E K K M F I T W R M - - M
079	NP_542258.1	- - - - -	- -	APGGLAVPVKPERLQALTDLVSRAL EAKHIEPY----
080	YP_009130664.1	T F M R W E S I T K N L V S Q - -	Q G F T D P N D K V	E F I E N L L G E A E K I A W I Q W R M - - T
081	YP_009508566.1	- - - - -	- -	PKPQKQYHINPKAKPSIQI VIN DL L K Q G V L K Q Q - - - -
082	YP_006607892.1	- - - - -	- -	- - - - -
083	YP_009506270.1	V F E R W E S I T L L H M A E - -	R S F D N A D D K M	R Y I E N L L G E D E K K H F V E W R M - - K
084	NP_042513.1	- - - - -	- -	- - - - -
085	YP_006907834.1	- - - - -	- -	- - - - -
086	YP_004442827.1	I F E R W E S S T L N Y M A A - -	Q N I S G G E E K I	S R I E N L L G E S E K R T F I G W R T - - A
087	YP_009408594.1	V I S R W E S I T T N L V D S - -	K V W G D V T T K I	N F I E N L L G E I E K K L F V Q W R M - - M
088	YP_009508561.1	- - - - -	- -	PKPQKQYHINPKAKPSIQI VIN DL L K Q G V L R Q S - - - -
089	NP_056907.1	- - - - -	- -	PPQIDQFPFKPERLQALTDLVSKALEASYIEPY----
090	YP_002308474.1	- - - - -	- -	APRSS TISVKPERLQALTDLVSKALEAKYIEPY----
091	YP_007761644.1	- - - - -	- -	- - - - -
092	NP_040550.1	- - - - -	- -	PVWIDQWPLPEGKLVALTQLVKEKELQLGHIEPS----
093	NP_758808.1	T I S R W E S I T L N M M N E - -	K V W P S N E A K A	K Y M E N L L G E M E K K T W I Q W R T - - T
094	NP_009345075.1	V I T R W S T I N S N L L S Q - -	T D F S D N A T K V	Q F V E N L L G E D E K R L F Q Q W R S - - N
095	NP_068729.1	- - - - -	- -	- - - - -

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096 NP_047255.1  - - - - - A T P I S I R Q Y P M P H E A Y Q G I K P H I R R M L D Q G I L K P C - - - -
097 YP_006273075.1 A F S R W E S V T K N H V A T - - Q G F T D T R D K I K Y M E N L L G E I E K L I W I Q W R M - - T
098 YP_009508888.1  - - - - - - - P R P Q K Q Y P I N P K A K E S I Q I V I N D L L K Q G V L I Q Q - - - -
099 NP_395469.1     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
100 YP_009508546.1  - - - - - - - P R P Q K Q Y P I N P K A K P S I Q I V I D D L L K Q G V L T P Q - - - -
101 NP_056762.1     P P Q F Y Y D Q L V T W E G I V K N E W E A R K K D G M D M W S W M D G R I T G L V L Y L V Q - - D
102 YP_009508556.1  - - - - - - - P R P Q K Q Y P I N P K A K P S I Q I V I D D L L K Q G V L I Q Q - - - -
103 NP_569153.1     V F T S W E A I T K A Y V A Q - - Q G I T D P R D K A E F I E N M L G P T E K I I W T Q W R M - - G
104 NP_043924.1     N L Q G M T A S F T A D H P K M I K Q Y P V P D A S H A S I K E T V E A L L E Q G V L R K C N - - -
105 YP_009243641.1  - - - - - - - P I W I E Q W P L T R E K L Q A A E E L V E E Q L Q K G H I E T S - - - -
106 YP_004300274.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
107 NP_056848.1     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
108 YP_006495799.1  A I N R W E S I T I N V V S K - - L A F D N M Q D K V D Y V E N L L G E R E K E V W T T W R M - - K
109 YP_009508409.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
110 NP_687035.1     - - - - - - - G P K L K Q W P L S R E K I E A L T E I C K Q M E E E G K L S R I G - - G
111 NP_045937.2     V P P I T I K I K D N A S L P S I R Q Y P L P K D K T E G L R P L I S S L E N Q G I L I K C - - - -
112 NP_612577.1     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
113 NP_619548.1     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
114 NP_056880.1     - - - - - - - P V W L N Q W P L K Q E K L Q A L Q Q L V T E Q L Q L G H L E E S - - - -
115 YP_009121747.1  V L A R W E S I T I N R L N D - - T I W A N N K A K L M F V E N L L G E N E K K M W Q Q W R T - - A
116 YP_009113237.2  V F T R W E S I T K N Y V S L - - Q M F S S G Q E K M D F I E N L L G E K E K L V W I S W R M - - A
117 YP_009508408.1  T F M R W E S I T K N L V S Q - - H T F T S G R D K A E F I E N L L G E Y E K L A W I Q W R T - - S
118 NP_955579.1     - - - - - - - A T P I S I R Q Y P M P H E A Y Q G I K P H I R R M L D Q G I L K P C - - - -
119 YP_009229919.1  V V S R W E S V T L N V I D D P M K S W S S N R Q K I S F I E N L L G E D E K K I W Q Q W K A - - A
120 YP_004442833.1  I F E R W E S T T L N Y M A S - - Q N I I G A E E K I S R I E N L L G E T E K K I F I G W R T - - Q
121 NP_862833.2     - - - - - - - P V W V D Q W P L T Q E K L S A A Q Q L V Q E Q L R L G H I E P S - - - -
122 NP_040563.1     - - - - - - - G P K V P Q W P L T K E K Y Q A L K E I V K D L L A E G K I S E A A - - W
123 YP_443922.1     P P V R V Q L T H Q G Q L P V Y R S Q Y R L K Y E Q I E G I R P T V E G L L G A D C I Y A T - - - -
124 NP_057933.2     - - - - - - - S T P V S I K Q Y P M S Q E A R L G I K P H I Q R L L D Q G I L V P C - - - -
125 YP_009116631.1  V I N R W E S I T V N L I N K - - M M F D S L Q D K A D Y V E N L L G E R E K E T W M T W R M - - Q
126 YP_009513249.1  - - - - - - - P T P Q K Q Y H I N P K A K P D I Q I V I N D L L K Q G V L I Q K - - - -
127 YP_223871.1     - - - - - - - A L P V R V R Q Y P I T L E A K R S L R E T I H K F R A A G I L R P V - - - -
128 NP_127504.1     W Q T E N A L A Q N R M L T T I D R T L K E T V T K V D R V T D Q S S K N Q G L I K V L E Q Q - - L
129 NP_044929.1     - - - - - - - P R P Q K Q Y H I N P R A K A D I Q I V I D D L L R Q G V L R Q Q - - - -
130 NP_057860.1     - - - - - - - P P E I S Q F P L N P E R L Q A L Q H L V R K A L E A G H I E P Y - - - -
131 NP_040973.1     - - - - - - - G P Q I K Q W P L T N E K I E A L T E I V E R L E R E G K V K R A D - - P
132 NP_777317.1     V F D R W E S T T L L Y L S E - - R N F D T A E D K I R V I E N L L G E S E K K M F I A W R M - - N
133 NP_054716.1     - - - - - - - P K P Q K Q Y R I N P K A K A D I Q I V I D D L L K Q G V L K Q Q - - - -
134 YP_001856242.1  - - - - - - - G P K V K Q W P L T E E K I K A L V E I C T E M E K E G K I S K I G - - P
135 NP_954565.2     - - - - - - - P V W V D Q W P L T N D K L A A A Q Q L V Q E Q L E A G H I T E S - - - -
136 NP_569150.1     V F E R W E S I T L L H M T E - - K I F D N A D D K M R Y M E N L L G E D E K K H F I E W R M - - K
137 NP_659397.1     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
138 YP_009513211.1  - - - - - - - A S P V A V R Q Y P M S K E A R E G I R P H I Q R F L D L G I L V P C - - - -
139 YP_233107.1     V F E R W E S S V L V H L A D - - K N F D T P E D K V I Y I E N L L G E S E K K A F M T W R M - - K
140 YP_009109692.1  - - - - - - - A V P V S I K Q Y P M S L E A H M G I R Q H I I K F L E L G V L R P C - - - -
141 NP_057849.4     - - - - - - - G P K V K Q W P L T E E K I K A L V E I C T E M E K E G K I S K I G - - P
142 NP_049560.1     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
143 YP_009506267.1  V F S R W E S I T K N L V S Q - - Q S F I T G K E K A E F I E N L L G E T E K L T W I Q W R T - - A
144 NP_039820.1     V F D R W A S I T R N Y I S S - - F N F N D G G D K I A W M E D L L G E T E R K I F V S W R M - - R
145 NP_056790.1     - - - - - - - A S P V A V R Q Y P M S K E A R E G I R P H I Q K F L D L G V L V P C - - - -
146 YP_002321513.1  I L D Q W E S S T K N L L N G - - Q Q F D S N R S K V E Y V E N L L G S T A K K T F L Q W K V - - A
147 NP_955591.1     - - - - - - - S T P V S I K Q Y P M S Q E A R L G I K P H I Q R L L D Q G I L V P C - - - -
148 YP_001956722.2  - - - - - - - P R P Q K Q Y P I N P K A K A S I Q T V I N D L L K Q G V L I Q Q - - - -
149 NP_056902.1     - - - - - - - G P K I P Q W P L T K E K L E G A K E I V Q R L L S E G K I S E A S - - D
150 NP_056886.1     - - - - - - - P V W I D Q W P L P E G K L V A L T Q L V E K E L Q L G H I E P S - - - -
151 NP_041261.1     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

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001 YP_004442836.1  Y T T E Y E T M K A Q A L G D Q G T Q N I I N Q M R L I F F L E N P Q V G T T T S Q D A A Y K T L K
002 NP_056728.1     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
003 YP_009508537.1  E S T M N T P V Y P V P K P - N G R W R M V L D Y R A V N K V T P L I A V Q N Q H S Y G I L G S L F
004 YP_004732983.2  Y D T E Y R Q L V E I S G E - - P R N V T S T I K R V L G I N D P Y T G T T H I Q N Q A Y A D L E
005 YP_009508407.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
006 NP_040939.1     H W T C N T P I F C I K K K - S G K W R M L I D F R E I N K Q T E D L T E A Q L G L P - H P G G L Q
007 YP_003864102.1  N S P W N T P I F V I K K K - S G K W R L L Q D L R A V N A T M I L M G A L Q P G L P - S P V A I P
008 YP_009002585.1  F P T E Y Q E M V N A A D G R E G T Q N I L S Q M R R V F T L E D P T T G S T A V Q D E A Y R D L E
009 YP_003284237.1  F P T E F E L M K T Q A L G A N G T Q N S I S Q I R R I F Y L E D P K T G S T T S Q D A A Y K A I K
010 YP_009268869.1  H W T C N T P I F C I K K K - S G K W R M L I D F R E I N K Q T E D L A E A Q L G L P - H P G G L Q
011 YP_009506251.1  Y E A E Y Q Q L L T I A E G R Q G T Q N I L S Q I K R V F S L E D P A S G S T R I Q D S A Y R D L E
012 NP_955611.1     L S C W N T P V F V I R K A - S G S Y R L L H D L R A V N A K L V P F G A V Q Q G A P - V L S A L P
013 YP_008567619.1  Y Q A E Y Q Q M M N S A D G R A G T E N I L S Q V R R I F A L E D P S T G S T K I Q D E A Y R D L E
014 NP_149413.1     F P N A F D T L R G C A L G T N G T A N V F A Q I K R V L L G E V P E Q G T T G V Q D A A Y K K I K

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015	YP_004442824.1	YTNEYETMKAQAALGDNGSQNIILNQRLRIFFLENPQVGTTDSDAAYKTLK
016	YP_001931967.1	- -
017	YP_002455786.1	SGPGNNPVFPVKKP-NGKWRFIHDLRATNNAITTTTLASPSPGPP-DLTSLSLP
018	YP_009109694.1	RSPWNTPLLPVKKPGTQDYRPVQDLREINKRTVDIHPTVPNPNYLLSTLK
019	NP_789739.1	ENPYNTPVFAIKKKDSTKWRLVDFRELNKRTQDFWEVQLGIP-HPAGLKLK
020	NP_955619.1	TGPGNNPVFPVKKA-NGTWRFIHDLRATNSLTIDLSSSSSPGPP-DLSSSLP
021	YP_224289.1	YANEYEEMKGQAALGNNGTQNLDVSQSIRRIIFYLEDPKTGTTVSVQDAAYKAIKS
022	YP_009182100.1	SHSKAQTHKGVIFDDDEPIQLDLSKSGRPKARMIRASTRKKEVQVEALHDIKS
023	NP_705927.1	ENPYNTPVFAIKKKDSTKWRLVDFRELNKRTQDFWEVQLGIP-HPAGLKLK
024	YP_009508577.1	TSVMNTPIYPVPKP-PDGKWRMVLDYRAVNKTVPPLIGAQNQHSLGLITNLV
025	YP_004442830.1	YTTEFELLKAQAALGVNGTQNVISQIRRIILLGDSPKQGTTLTQDAAYKRRIK
026	NP_758887.1	ENPYNTPVFCKKKDGTSSWRKLVDFRQLNKVTQDFFEVEVQLGIP-HPGGGLK
027	YP_009508406.1	- -
028	YP_610965.1	FEQEYESLIAVAADD--SQAIIISQVRRIITILEDPSQGSTTEEQDRAYMDLG
029	YP_001931961.1	- -
030	YP_241114.1	TSAWNSPIFVKKK-SGKWRLQLDLRKVNETMMHMGALQGPLP-TPSAIP
031	YP_006732334.1	- -
032	YP_009041481.1	FEDDYRKLVSAAGD---IRNVTSAIRVIFLTEDPAQGSTTMEQDRAYADLE
033	YP_001036293.1	FNAEFDSLIAAADOGREGTQNIISQIRTIFFSLEDPFGRGSTTKIQEDAYRDLE
034	YP_605811.1	FTAEEYEEKNNALGSNGTQNIILNQIRMIFFLENPQVGTTNTQDAAYKTLK
035	NP_955577.1	QSPWNTPLLPVKKPGTEDYRPVQDLREV NKRVEDIHPTVPNPNYLLSTLP
036	YP_003208050.1	YTKEYEELVAIAADD--PQDITSQVRMVI TLEDYPYRGSTEEQSRAYLDLE
037	NP_789740.1	ENPYNTPVFAIKKKDSTKWRLVDFRELNKRTQDFWEVQLGIP-HPAGLKLK
038	YP_004442839.1	FTTEYEEMRANALGSNGTQNIILNQIRMIFFLENPQVGTTNSQDAAYKTLK
039	YP_009507791.1	NNPWNTPIFCIKKK-SGKWRLMIDFRELNKLT LKGAEVQLGLP-HPAGLS
040	YP_004581513.1	- -
041	NP_043933.1	- -
042	YP_009507248.1	SSPIWVVPKKKDASGKQKWRLVVD FRKLNEKTI DDKYP IPN ISDVLDKLG
043	YP_002117531.1	YEQEYEAALKTAALVGENGTQNVLSHIRKIFFLEDPKQGT TSSQDAAYRS LK
044	YP_004347415.1	- -
045	NP_056891.1	SSPWNTPIFVKKK-SGKWRLQLDLRAVNATMVLMGALQPGLP-SPVAIP
046	YP_009513242.1	NSTMNTPVYPVPKP-PDGKWRMVLDYREVN KTI PLIAAQNQH SAGILSSIY
047	YP_009352866.1	FEKDYKRLVENAAGD---IRNVTSAIRVIFLTEDPAQGSTTVEQDRAYADLE
048	YP_009165750.1	- -
049	NP_040840.1	HWT CNTPIFCIKKK-SGKWRLMIDFRELNKQTEDLAE AQLGLP-HPGGGLQ
050	YP_004222728.1	LSCWNTPVFVIRKA-SGSYRLHLHDLRAVNAKLVPFGAVQQGAP-VLSALP
051	YP_009506264.1	YEAHEYTAMKGQAALGNNGTQNIILSQIRRIIFYLEDPKSGSTTLTQDAAYKAIK
052	YP_567050.1	SGPGNNPVFPVKKP-NGKWRFIHDLRATNNAITTTTLASPSPGPP-DLTSLS
053	YP_009508571.1	NSTMNTPVYPVPKP-PDGRWGMVLDYREVN KTI PLIAAQNQH SAGILATIV
054	NP_056803.1	NSTMNTPVYPVPKP-PDGRWRMVLDYREVN KTI PLTAAQNQH SAGILATIV
055	NP_955564.1	NSPWNTPVFVIRKK-SGKWRLQLDLRAVNATMHDMGALQPGLP-SPVAVP
056	YP_009508411.1	YPAEYDTLLASAADOGREGTQNIILSQIRTIFFTLEDPFGRGSTKVQEDAYRDLE
057	YP_009140788.1	YVAEYESLIAIALG DGRDGTQNIILSQMR RVFSLED PAQGSTTVIQDEAYRELE
058	YP_009508410.1	- -
059	NP_040333.1	QSPWNTPLLPVKKPGTNDYRPVQDLREV NKRVEDIHPTVPNPNYLLSGLP
060	YP_008992013.1	QNLQSRIAQLISELR TM LAQR YHGPEFDQKER EIRHLKAELAQIESDKQK
061	NP_041734.1	YEAHEYQQLLTQAADGRQGTQNIILSQIKRIFSLEDPASGSTTRI QDAAYRDLE
062	NP_056895.1	DGPGNNPVFPVRKP-NGTWRFVHD LRATNAL TKPIPALSPGPP-DLT AIP
063	YP_009109689.1	RSPWNTPLLPVKKPGTQDYRPVQDLREINKRTVDIHPTVPNPNYLLSTLK
064	YP_002519387.1	- -
065	YP_595725.1	FPTAFEAMKTQAATGTNGTQNVFSQM KR IL LG EVPEQGT TNTQDAAYKR IK
066	YP_009508551.1	NSTMNTPVYPVPKP-PDGRW RMV LDYREVN KTI PLTAAQNQH SAGILATIV
067	YP_001497148.1	RSPWNTPLLPVKKPGTRDYRPVQDLREV NKRTMDIHPTVPNPNYLLSTLS
068	NP_041186.1	- -
069	NP_663784.1	TNPYNTPPTFAIKKKDKNKWRLMIDFRELNKVTQDFTEIQ LG IP-HPAGLA
070	YP_009508443.1	FP EE YEKLLASAADOGREGTQNIISQL RT I FTLED PFR GSTKVQEEAYRDLE
071	YP_003987465.1	YEEEFVSLQTFVLGNNGTQNLLAQIRK V F FLED PKGGT TVSVQDAAYKAIK
072	NP_861410.1	- -
073	YP_009345071.1	YETEYQALIGTMEGRSGTQNM LSQIRRI FFTLED PYQ GSTTMSQDQAYKDLE
074	YP_009508582.1	TSVMNTPVYPVPKP-PDGKWRMVLDYRAVN KTI PLIGAQNQH SLGLITNLV
075	NP_569141.1	- -
076	YP_002916057.1	- -
077	NP_777384.2	DGPGNNPVFPVRKP-NGTWRFVHD LRATNAL TKPIPALSPGPP-DLT AIP
078	YP_233110.1	FTAEEYEEKNNALGSNGTQNIILNQIRMIFFLENPQVGTTNTQDAAYKTLK
079	NP_542258.1	QGPGNNPPIFPVKKP-NGKWRFIHD LRATNSLT RD LASP SPGPP-DLTS LP
080	YP_009130664.1	YPEAFQQMLESADGRQGTQNIILSQIYRVFTLEDPYQGSTTMQEEALRDLE
081	YP_009508566.1	NSIMNTPIYPVPKKT-EGKWRMVLDYRAVN KTI PLIAAQNQH SAGILITNLV
082	YP_006607892.1	- -
083	YP_009506270.1	YTVEYETMKAQAALGDQGTQNIILNQIRLIFFLENPQVGTTTSQDAAYKTLK
084	NP_042513.1	- -
085	YP_006907834.1	- -
086	YP_004442827.1	FPTDFEALKNQALGTNGTQNVISQVRRILLGDSPKQGT TATQDAAYKKIK
087	YP_009408594.1	YPDQYQRLIAIALGDD--TQNIILSQIRRIITLEDPATGSTAERDQAYLDI

088	YP_009508561.1	T	S	P	M	N	T	P	V	P	V	P	K	K	P	-	D	G	K	W	R	M	V	L	D	Y	R	A	V	N	K	T	I	P	L	I	A	A	Q	N	Q	H	S	L	G	I	L	T	N	L	I
089	NP_056907.1	S	G	P	G	N	N	P	V	F	P	V	K	K	P	-	N	G	K	W	R	F	I	H	D	L	R	A	T	N	A	I	T	T	T	L	A	S	P	S	P	G	P	P	-	D	L	T	S	L	S
090	YP_002308474.1	Q	G	P	G	N	N	P	I	F	P	V	K	K	P	-	N	G	K	W	R	F	I	H	D	L	R	A	T	N	C	L	T	K	T	L	T	S	P	S	P	G	P	P	-	D	L	T	S	L	P
091	YP_007761644.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
092	NP_040550.1	L	S	C	W	N	T	P	V	F	V	I	R	K	A	-	S	G	S	Y	R	L	L	H	D	L	R	A	V	N	A	K	L	V	P	F	G	A	V	Q	Q	G	A	P	-	V	L	S	A	L	P
093	NP_758808.1	Y	V	S	E	Y	D	A	L	V	Q	Q	S	O	E	-	-	-	T	Q	N	L	S	Q	V	R	R	I	F	L	L	Q	D	P	Y	Q	G	S	T	A	E	Q	D	Q	A	Y	N	D	L	E	
094	YP_009345075.1	F	P	E	E	Y	D	T	L	V	E	R	A	O	D	-	-	-	N	I	N	M	F	S	Q	I	R	R	M	F	T	L	E	D	P	Y	S	G	S	T	M	A	Q	E	R	A	Y	D	L	E	
095	NP_068729.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
096	NP_047255.1	Q	S	P	W	N	T	P	L	L	P	V	K	K	P	G	T	E	D	Y	R	P	V	Q	D	L	R	E	V	N	K	R	V	E	D	I	H	P	T	V	P	N	P	Y	N	L	L	S	T	L	P
097	YP_006273075.1	Y	A	T	E	Y	E	A	L	V	A	I	G	E	G	R	D	G	T	Q	N	I	L	S	Q	M	R	R	V	F	S	L	E	D	P	A	Q	G	S	T	V	I	Q	D	E	A	Y	R	E	L	E
098	YP_009508888.1	N	S	I	M	N	T	P	V	P	V	P	K	K	P	-	D	G	R	W	R	M	V	L	D	Y	R	E	V	N	K	T	I	P	L	I	A	A	Q	N	Q	H	S	A	G	I	L	A	S	I	Y
099	NP_395469.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
100	YP_009508546.1	N	S	T	M	N	T	P	V	P	V	P	K	K	P	-	D	G	R	W	R	M	V	L	D	Y	R	E	V	N	K	T	I	P	L	T	A	A	Q	N	Q	H	S	A	G	I	L	A	T	I	V
101	NP_056762.1	W	I	S	K	N	Q	A	A	Y	N	I	K	S	R	G	D	R	P	E	N	F	V	K	M	V	K	D	R	F	L	I	E	D	P	T	D	E	R	R	T	A	L	Q	R	L	A	Q	R	E	
102	YP_009508556.1	N	S	T	M	N	T	P	V	P	V	P	K	K	P	-	D	G	K	W	R	M	V	L	D	Y	R	E	V	N	K	T	I	P	L	I	A	A	Q	N	Q	H	S	A	R	I	L	S	S	F	F
103	NP_569153.1	Y	A	D	E	Y	E	N	L	V	T	T	A	O	G	R	E	G	T	Q	N	I	L	S	Q	M	R	R	V	F	S	L	E	D	P	T	T	G	S	T	A	V	Q	D	E	A	Y	R	D	L	E
104	NP_043924.1	-	S	T	V	N	S	A	I	W	P	V	G	K	P	-	D	G	S	W	R	L	T	I	D	Y	R	P	L	N	S	A	V	S	C	P	Y	P	T	V	A	S	T	P	E	L	F	A	K	L	E
105	YP_009243641.1	T	S	P	W	N	S	P	I	F	V	I	R	K	K	-	S	G	K	W	R	L	L	T	D	L	R	A	V	N	A	S	M	F	P	M	G	A	L	Q	P	G	L	P	-	A	P	V	M	L	P
106	YP_004300274.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
107	NP_056848.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
108	YP_006495799.1	W	E	D	E	Y	R	R	M	V	A	I	S	O	D	-	-	-	T	R	N	L	T	A	A	I	K	R	V	F	G	V	H	D	P	F	T	G	S	T	F	L	Q	N	Q	A	Y	A	D	L	E
109	YP_009508409.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
110	NP_687035.1	E	N	P	Y	N	T	P	V	F	A	I	K	K	K	D	K	T	Q	W	R	M	L	V	D	F	R	E	L	N	K	A	T	Q	D	F	F	E	V	Q	L	G	I	P	-	H	P	A	G	L	Q
111	NP_045937.2	H	S	P	C	N	T	P	I	F	P	I	K	K	A	G	R	D	E	Y	R	M	I	H	D	L	R	A	I	N	N	I	V	A	P	L	T	A	V	V	A	S	P	T	T	V	L	S	N	L	A
112	NP_612577.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
113	NP_619548.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
114	NP_056880.1	N	S	P	W	N	T	P	V	F	V	I	K	K	K	-	S	G	K	W	R	L	L	Q	D	L	R	A	V	N	A	T	M	H	D	M	G	A	L	Q	P	G	L	P	-	S	P	V	A	V	P
115	YP_009121747.1	F	P	E	A	Y	E	A	L	E	T	N	A	O	D	-	-	-	P	Q	N	I	T	S	Q	I	R	Q	I	T	I	M	E	D	P	Y	R	G	S	T	E	E	Q	D	R	A	Y	R	S	L	E
116	YP_009113237.2	Y	Q	D	E	Y	N	Q	L	I	A	R	S	O	G	Y	E	G	V	Q	N	I	L	S	Q	I	R	R	V	F	T	L	Q	D	P	A	T	G	S	T	K	A	Q	D	Q	A	Y	R	D	I	E
117	YP_009508408.1	Y	P	D	E	Y	E	K	I	L	E	S	S	O	G	R	E	G	T	Q	N	I	L	S	Q	I	R	T	V	F	T	L	E	D	P	F	R	G	S	T	K	V	Q	E	D	A	Y	R	D	L	E
118	NP_955579.1	Q	S	P	W	N	T	P	L	L	P	V	K	K	P	G	T	E	D	Y	R	P	V	Q	D	L	R	E	V	N	K	R	V	E	D	I	H	P	T	V	P	N	P	Y	N	L	L	S	T	L	P
119	YP_009229919.1	Y	P	E	D	Y	N	S	L	E	A	I	A	E	E	-	-	-	T	Q	N	V	L	S	Q	I	R	K	V	F	L	L	E	V	P	Y	Q	G	D	L	A	E	Q	N	Q	A	Y	I	D	L	E
120	YP_004442833.1	Y	T	T	E	F	E	I	L	K	T	Q	A	I	G	T	N	G	T	Q	N	V	I	S	Q	I	R	R	I	L	L	G	D	S	P	K	Q	G	T	T	L	T	Q	D	A	A	Y	K	R	I	K
121	NP_862833.2	T	S	A	W	N	S	P	I	F	V	I	K	K	K	-	S	G	K	W	R	L	L	Q	D	L	R	K	V	N	E	T	M	M	H	M	G	A	L	Q	P	G	L	P	-	T	P	S	A	I	P
122	NP_040563.1	D	N	P	Y	N	T	P	V	F	V	I	K	K	K	G	T	G	R	W	R	M	L	M	D	F	R	E	L	N	K	I	T	V	K	G	Q	E	F	S	T	G	L	P	-	Y	P	P	G	I	K
123	YP_443922.1	S	S	P	W	N	T	P	I	L	P	V	K	K	A	D	G	K	T	Y	R	M	V	Q	D	F	R	A	V	N	D	V	T	T	G	V	D	L	P	V	P	D	P	H	V	S	L	S	N	L	S
124	NP_057933.2	Q	S	P	W	N	T	P	L	L	P	V	K	K	P	G	T	N	D	Y	R	P	V	Q	D	L	R	E	V	N	K	R	V	E	D	I	H	P	T	V	P	N	P	Y	N	L	L	S	G	L	P
125	YP_009116631.1	Y	E	E	E	Y	K	Q	L	L	T	N	S	G	D	-	-	-	V	R	N	I	T	A	A	V	K	R	V	F	G	V	H	D	P	H	T	G	S	V	H	I	Q	N	Q	A	Y	A	E	L	E
126	YP_009513249.1	E	S	T	M	N	T	P	V	P	V	P	K	K	P	-	N	G	R	W	R	M	V	L	D	Y	R	A	V	N	K	V	T	P	L	I	A	V	Q	N	Q	H	S	Y	G	I	L	G	S	L	F
127	YP_223871.1	H	S	P	W	N	T	P	L	L	P	V	R	K	S	G	T	S	E	Y	R	M	V	Q	D	L	R	E	V	N	K	R	V	E	T	I	H	P	T	V	P	N	P	Y	T	L	L	S	L	L	P
128	NP_127504.1	Q	D	L	N	K	R	I	C	P	P	Q	T	S	L	F	H	F	F	D	Q	-	-	Q	K	S	E	M	A	S	L	K	E	Q	I	R	L	L	K	E	Q	P	Q	K	N	E	T	D	T	-	
129	NP_044929.1	N	S	E	M	N	T	P	V	P	V	P	K	K	A	-	D	G	R	W	R	M	V	L	D	Y	R	E	V	N	K	V	T	P	L	V	A	T	Q	N	C	H	S	A	S	I	L	N	T	L	Y
130	NP_057860.1	T	G	P	G	N	N	P	V	F	P	V	K	K	A	-	N	G	T	W	R	F	I	H	D	L	R	A	T	N	S	L	T	I	D	L	S	S	S	S	P	G	P	P	-	D	L	S	S	L	P
131	NP_040973.1	N	N	P	W	N	T	P	V	F	A	I	K	K	K	-	S	G	K	W	R	M	L	I	D	F	R	E	L	N	K	L	T	E	K	G	A	E	V	Q											

007	YP_003864102.1	QNY-LKIIIDLKDCFFFTIPLHPNDQKRFAFSLPSTNFKPEPMKRYQWKVLP
008	YP_009002585.1	RLSCTNIK--DIVSFLNDYARLAAKSGRMFISPE--LSEKILWLKMPYDL
009	YP_003284237.1	SLVCTDMSGIAIKRYMNSYMDLAATSGRMWVSAE--LSDDEFKLPNGL
010	YP_009268869.1	KKK-HVTIILDIGDAYFTIPLYEPYRPTYTCFTMLSPNNLGPCTRYYWKVLP
011	YP_009506251.1	RLTCHNIK--DIVQFLNDYGRLLAAKSGRLFIGTE--LSEKILWMKMPPEL
012	NP_955611.1	RGW-PLMVLDLKDCFFSIPLAEQDREAFATLTPSVNNQAPARRFQWKVLP
013	YP_008567619.1	QLTCSNIK--DLVPFLNDYLRLLAAKTGRMFLGTE--LSEKILWMKLPGNL
014	NP_149413.1	SLVCTEMTYPALMRVMGYRNLAAARSGRRAWANNE--LTNEFFTCLKPGKL
015	YP_004442824.1	SLVCTEMTDTAIYRYMNDYFHLAAKSGRAWANEE--LSQEFFFTKLPRGL
016	YP_001931967.1	-----
017	YP_002455786.1	QALPHLQITIDLTDAFFQIPLPKRFQPYFAFTIPQPPLNHGPGSRYAWTVLP
018	YP_009109694.1	PDYSWYTVLDLKDAFFCLPLAPQSQELFAFEWKDPE-RGISGQLTWTRLP
019	NP_789739.1	KKK-SVTVLDYGDAYFSVPLDEDFRKYTAFTIPSIINNETPGIRYQYNVLP
020	NP_955619.1	TTLAHLQITIDLKDAFFQIPLPKQFQPYFAFTVPPQQCNYPGPGTRYAWRVLP
021	YP_224289.1	SLVCHEMTGTAIKRYMADYWTLLAAKTGRIWQGPPE--LSDDEFKLPSPGL
022	YP_009182100.1	IREISDEKLDIYATTSDPQYFNVTVLPEMQRRINQGISVRAISQSVNRP
023	NP_705927.1	KKK-SVTVLDYGDAYFSVPLDEDFRKYTAFTIPSIINNETPGIRYQYNVLP
024	YP_009508577.1	R-QKYKSTIDLSNGFWAHPITKDSQWITAFITWEGK--LHVVWTRLP
025	YP_004442830.1	SLVCTEISYPAIMRYLVGYFHLARSATGRMWSSKE--LSDDEFKLPDEI
026	NP_758887.1	QCE-QITVLDIGDAYFSCPLDEDFRKYTAFTIPSVNNQGPGRYQYNVLP
027	YP_009508406.1	-----
028	YP_610965.1	RLSCTNMK--DLLDYMNDYKTLAAKSGRMVYNHE--LSDKFFDKMPQII
029	YP_001931961.1	-----
030	YP_241114.1	DKS-YIIVIDLKDCFYTIPLAPQDCKRFAFSVPSVNFKEPMKRYQWKVLP
031	YP_006732334.1	-----
032	YP_009041481.1	RLPTPEMK--NIFQFLNQYKKLAAASGRMWITPE--LSEKILFRKLPPVI
033	YP_001036293.1	RISCKDVQ--DIIPFMNEYMRILAAKTGRFLFISSE--LSEKILFRKLPGDL
034	YP_605811.1	QLVCTEMSGPAIYRYLNDYFHLAAKSGRAWASDE--LSKEFFTCLKPKGL
035	NP_955577.1	PSHPWYTVLDLKDAFFCLRLHSESQLLFAFEWRDPE-IGLSGQLTWTRLP
036	YP_003208050.1	RLVCDIDK--DILPYLNDYFVLAALKSGRMFTSPE--LSEKILFRKLPLLI
037	NP_789740.1	KKK-SVTVLDYGDAYFSVPLDEDFRKYTAFTIPSIINNETPGIRYQYNVLP
038	YP_004442839.1	QLVCTEMSGPAIYRYLNDYFHLAAKSGRAWASEE--LSKEFFTCLKPKGL
039	YP_009507791.1	MRK-QVTVLDIGDAYFTIPLDPDYQPYTAFTLTPNKNQGPGRYVWCSLP
040	YP_004581513.1	-----
041	NP_043933.1	-----
042	YP_009507248.1	KCQ-YFTTLDLASGFYQVEMDPQDISKTAFNVEHG--HFEFLRMP
043	YP_002117531.1	SLTCMEMTGTAIRRYMASYFDLAAKSGRMWSSEE--LSKEFFTCLKPGRL
044	YP_004347415.1	-----
045	NP_056891.1	QGY-LKIIIDLKDCFFSIPLHPSDQKRFAFSLPSTNFKPEPMQRFQWKVLP
046	YP_009513242.1	R-GKYKTTLDTNGFWAHPITPESYWLTAFTWQ GK--QYCWTRLP
047	YP_009352866.1	RLPTPEMK--NIFQFLNQYKKLAAASGKMWITSE--LSEKILFRKLPPII
048	YP_009165750.1	-----
049	NP_040840.1	RKK-HVTIILDIGDAYFTIPLYEPYRQYTCFTMLSPNNLGPVRYYWKVLP
050	YP_004222728.1	RGW-PLMVLDLKDCFFSIPLAEQDREAFATLTPSVNNQAPARRFQWKVLP
051	YP_009506264.1	SLVCNDENGEAVKRYMLSYFDLAAARSGRMWTSQE--LSEEFFTKLPDGL
052	YP_567050.1	TALPYLQITIDLTDAFFQIPLPKQFQPYFAFTIPQPCCNYGPGARYAWTVLP
053	YP_009508571.1	R-KKYKTTLVLANGFWAHPITPESYWLTAFTIWQ GK--QYCWTRLP
054	NP_056803.1	R-QKYKTTLDLANGFWAHPITPDSYWLTAFTWQ GK--QYCWTRLP
055	NP_955564.1	KGW-EIILIDLDQDCFFNIKLHPEDCKRFAFSVPSPNFKRPYQRFQWKVLP
056	YP_009508411.1	RISCSDMK--NIIAFMNEYMRILAAKSGRLFVSPE--LSEKILFRKLPGDL
057	YP_009140788.1	RLSCTDVK--YIIPFLNEYLRLLAAKSGRIFLGGE--LSEKILWMKMPGDL
058	YP_009508410.1	-----
059	NP_040333.1	PSHQWYTVLDLKDAFFCLRLHPTSLFSAFEWRDPE-MGISGQLTWTRLP
060	YP_008992013.1	PSLFTSSPPIPSIGPTYHPFASMSLSIRQYEPSKLFGMTHTLFRDNLPLP
061	NP_041734.1	RLTCHNIK--DIVQFLNDYGRLLAAKSGRLFLGTE--LSEKILWMKMPPEL
062	NP_056895.1	THLPHIICLDLKDAFFQIPVEDRFRSYFAFTLPTPGGLQPHRRFAWRVLP
063	YP_009109689.1	PDYSWYTVLDLKDAFFCLPLAPQSQELFAFEWKDPE-RGISGQLTWTRLP
064	YP_002519387.1	-----
065	YP_595725.1	SLVCQEMTYPAIMRYLVGYRNLAAARSGRRAWVNEE--LTDEFFTCLKPGKL
066	YP_009508551.1	R-QKYKTTLDLANGFWAHPITPESYWLTAFTWQ GK--QYCWTRLP
067	YP_001497148.1	PDRTWYTVLDLKDAFFCLPLAPQSQELFAFEWRDPE-RGISGQLTWTRLP
068	NP_041186.1	DKS-YIIVIDLKDCFYTIPLAPQDCKRFAFSVPSVNFKEPMQRYQWRVLP
069	NP_663784.1	KKK-RISILDYGDAYFSIPLHEDFRQYTAFTLPAVNMMPEPGKRYIYKVLP
070	YP_009508443.1	RISC RDVK--DLIPFMNEYMRILAAKSGRLFISSE--LSEKILFRKLPGDL
071	YP_003987465.1	SLTCQEMSGQAIRKYMSSYFDLAAARSGRMWVNEE--LSDDEFKLPMPGL
072	NP_861410.1	-----
073	YP_009345071.1	RLTCTDVK--HILEYLRQFMYLAAKTGRFLFTSSE--LSSKILFVKMPGDL
074	YP_009508582.1	R-QKYKSTIDLSNGFWAHPITKDSQWITAFITWEGK--QHVVWTRLP
075	NP_569141.1	-----
076	YP_002916057.1	-----
077	NP_777384.2	THLPHIICLDLKDAFFQIPVEDRFRSYFAFTLPTPGGLQPHRRFAWRVLP
078	YP_233110.1	QLVCTEMSGPAIYRYLNDYFHLAAKSGRAWASDE--LSKEFFTCLKPRGL
079	NP_542258.1	QDLPHLRTIDLTDAFFQIPLPAVFQPYFAFTLTPQPNNHGPGTRYSWRVLP

080	YP_009130664.1	KLSCHNLIK--DIVAYMNEYMRLACKSRRLFINAD--LSEKFWFKMPGEL
081	YP_009508566.1	R-QKYKSTIDLSNGFWAHPIDQDSQWITAFWEGK--QYVWTRLP
082	YP_006607892.1	-----
083	YP_009506270.1	SLVCTEMTDTAIYRYMNDYFHLSAKTGRAWASEE--LSKEFFTCLPRGL
084	NP_042513.1	-----
085	YP_006907834.1	-----
086	YP_004442827.1	SLVCTEISYPAIMRYMVGYFHLASKSGRMWTSNE--LSDEFFTCLPDEI
087	YP_009408594.1	RLSCEHMK--DLIPYMNRYKVLAKTGRFLFINSE--LSDKFFFRKMPPTLI
088	YP_009508561.1	R-HKYKSTIDLSNGFWAHPITEDSQWITAFWEGK--QHVWTRLP
089	NP_056907.1	TALPYLQTTIDLTDAFFQIPLPKQFQPYFAFTIPQPCNYGPGARYAWTVLP
090	YP_002308474.1	QGLPHLRTIDLTDAFFQIPLPVAFQPYFAFTLPQPNNHGPARYSWKVLP
091	YP_007761644.1	-----
092	NP_040550.1	RGW-PLMVLDLKDCFFSIPLAEQDREAFATLTPSVNNQAPARRFQWKVLP
093	NP_758808.1	RISCNDNIK--DLIPYLIQFRNLAAKSGRFLFLGPE--LSEKLFRRKMPPLI
094	YP_009345075.1	RLTCSNIN--NVIQFMNEYKKLAAASGRAFISTE--LSEKFFRRKLPPLY
095	NP_068729.1	-----
096	NP_047255.1	PSHPWYTVLDLKDAFFCLRLHSESQLLFAFEWRDPE-IGLSGQLTWTRLP
097	YP_006273075.1	RMSCTDVK--YIIPFLNEYMRLAAKTGRFLFLGGE--LSEKIWMKMPGDL
098	YP_009508888.1	R-GTYKTTLDLANGFWAHPITPNSYWLTAFTWQ GK--QHCWTRLP
099	NP_395469.1	-----
100	YP_009508546.1	R-QKYKTTLDLANGFWAHPITPESYWLTAFTWQ GK--QYCWTRLP
101	NP_056762.1	LEALNCEDP TKIQPFMAEYLLKKASEAKKGFDDVY--VERLFDRLPEAV
102	YP_009508556.1	S-GKYKTTLDLTNGFWAHPITPESYWLTAFTWRGK--QYCRTKLP
103	NP_569153.1	RLTCDSVK--HIVQYLNDFMRIAAKTGRMF IGPE--LSEKILWLKMPGDL
104	NP_043924.1	KKYQVYS SLDLSNGFWSIRLEEECQYLF AFTFD T--QYTWTRLP
105	YP_009243641.1	RDW-PLLIIDLLDCFFTIP IHPQDKQRF AFSIPKINNAGPHTRYQWRVLP
106	YP_004300274.1	-----
107	NP_056848.1	-----
108	YP_006495799.1	RLSCKRME--DVMPFLFTYYQLAAKSGRMWTNEE--LSDKLFRRKLPPEAV
109	YP_009508409.1	-----
110	NP_687035.1	KKK-QITVIDIGDAYYSIPLCKEFRKYTAFTIPS VNN TGPGIRYQFNCLP
111	NP_045937.2	PSLHWFTVIDLSNAFFSVPIHKDSQYLF AFTFEG--HQYTWTVLP
112	NP_612577.1	-----
113	NP_619548.1	-----
114	NP_056880.1	KGW-EIIDIIDLDQDCFFNIK LHPEDCKRFAFSVPSPNFKRPYQRFQWKVLP
115	YP_009121747.1	RITCEDTR--DLWKFLNFRILASKSGRFLFF-PA--TTDKFFTCLPMTL
116	YP_009113237.2	KLNCHDVK--DIVSFLNDYLRLLAAKTGRMYIGME--LSEKILWMKMPGEL
117	YP_009508408.1	RISCKDMK--DIIPFMNEYMRLASKTGRFLFISSE--LSEKFWMKLPGLD
118	NP_955579.1	PSHPWYTVLDLKDAFFCLRLHSESQLLFAFEWRDPE-IGLSGQLTWTRLP
119	YP_009229919.1	RLTCESTR--DIWRYLNDFKTLLAAKSGRIYF-PE--TSEKLFRRKMPPLI
120	YP_004442833.1	SLVCDKETYPDIMRYMVGYLHLAARTGRMWISKE--LSDEFFFLKLPSEI
121	NP_862833.2	DRS-YIIDIIDLDKDCFYTIPLAPQDCKRFAFS LPSVNFKEPMQRYQWKVLP
122	NP_040563.1	ECE-HLTAIDIKDAYFTIPLHEDFRPFTAFSVVPVNREGPIERFQWNVLP
123	YP_443922.1	PKHQYFTVVDLNAFFSIP LHVDSQPLFAFTYDNQ--QYTYSVLP
124	NP_057933.2	PSHQWYTVLDLKDAFFCLRLHPTSQPLFAFEWRDPE-MGISGQLTWTRLP
125	YP_009116631.1	RLYCKRTD--DVIPFLDYQLAAKSGRMWLGP--LSEKILFRKLPPPEI
126	YP_009513249.1	K-GRYKTTIDLSNGFWAHPIVPEYWITAFWQ GK--QYCWTVLP
127	YP_223871.1	PDRIWYSVLDLKDAFFCIPLAPESQLIF AFEWADAE-EGESGQLTWTRLP
128	NP_127504.1	PSYQSSYQPFHSFSSPYMPSNPPNSPFTTFANTPQP--QPSLFSQYPIQP
129	NP_044929.1	R-GPYKSTLDLANGFWAHP IKPEYWITAFWGGK--TYCWTVLP
130	NP_057860.1	TTLAHLQTTIDLKDAFFQIPLPKQFQPYFAFTVPQQCNYGPGTRYAWRVLP
131	NP_040973.1	IKK-QVTVLDIGDAYFTIPLDPDYAPYTAFTLTPRKNNAGPGRFVWCSLP
132	NP_777317.1	SLVCTEMTDTSLYRYMNDYFHLAAKSGRAWANED--LSKEFFTCLPRGL
133	NP_054716.1	R-GQYKTTLDLANGFWAHP IQESDQWITSFTWNGK--SYVWTTLP
134	YP_001856242.1	KKK-SVTVLDYGDAYFSVPLDED FRKYTAFTIPS INN ETGPIRYQYNVLP
135	NP_954565.2	QGY-LKIIDIIDLDKDCF S IPLHPSDQKRFAFS LPSSTNFKEPMQRYQWKVLP
136	NP_569150.1	SLVCTEMTDTAIYRYMNDYFHLSAKTGRAWASEE--LSKEFFTCLPRGL
137	NP_659397.1	-----
138	YP_009513211.1	PSHTWYSVLDLKDAFFCLKLHPNSQPLFAFEWRDPE-KGNTGQLTWTRLP
139	YP_233107.1	SLVCNEMTDKAVYRYMNDYFHLASKSGRMWANEE--LSTEFFTKLPRLH
140	YP_009109692.1	PDYSWYTVLDLKDAFFCLPLAPQSQELFAFEWKDPE-RGISGQLTWTRLP
141	NP_057849.4	KKK-SVTVLDYGDAYFSVPLDED FRKYTAFTIPS INN ETGPIRYQYNVLP
142	NP_049560.1	-----
143	YP_009506267.1	RISCRDVK--DLIPFLNEYMRLAAKTGRFLFISTE--LSDKIWMKLPGLD
144	NP_039820.1	QLVCPNY--QSIRRYLMDYLTLLAAETGLMWSETEGPAISEELFTKMPAAI
145	NP_056790.1	PSYTWYSVLDLKDAFFCLRLHPNSQPLFAFEWKDPE-KGNTGQLTWTRLP
146	YP_002321513.1	RLQCDRIE--HIVPFMM EYFKISAETGRLYVDNE--MSDKFFRRKLPPLY
147	NP_955591.1	PSHQWYTVLDLKDAFFCLRLHPTSQPLFAFEWRDPE-MGISGQLTWTRLP
148	YP_001956722.2	R-GKYKTTLDLSNGFWAHSITPESYWLTAFTWL GQ--QYCWTRLP
149	NP_056902.1	KCK-HMTVLDIGDAYFTIPLDPEFRPYTAFTIPS INHQEPDKRYVWKCLP
150	NP_056886.1	RGW-PLMVLDLKDCFFSIPLAEQDREAFATLTPSVNNQAPARRFQWKVLP
151	NP_041261.1	LN Y-HKIIDIIDLDKDCF FTIPLHPEDRPYFAFSV PQIN FQSPMPRYQWKVLP

071	YP_003987465.1	G	D	R	V	R	Q	A	F	L	S	R	Y	P	G	N	T	I	G	V	P	A	R	I	T	F	T	Q	-	-	Q	Y	L	E	E	V	C	R	E	A	A	Y	Q	R	S	L	K	T	L	D	F	
072	NP_861410.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
073	YP_009345071.1	G	K	R	I	E	D	S	F	K	A	K	Y	P	G	N	T	V	G	V	F	P	R	I	V	F	S	F	-	-	K	Y	L	E	N	Q	C	R	E	A	S	F	Q	R	S	L	K	S	L	E	F	
074	YP_009508582.1	Q	G	F	L	N	S	P	A	L	F	T	A	D	V	V	D	L	L	K	D	I	-	-	-	-	-	-	-	-	-	P	G	I	S	V	Y	V	D	O	I	Y	F	S	T	E	T	V	S	E	H	L
075	NP_569141.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
076	YP_002916057.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
077	NP_777384.2	Q	G	F	I	N	S	P	A	L	F	E	R	A	L	Q	E	P	L	R	Q	V	S	A	A	F	S	Q	-	-	S	L	L	V	S	Y	M	D	O	I	L	I	A	S	P	T	E	E	Q	R	S	
078	YP_233110.1	G	D	R	V	E	K	K	F	K	E	K	Y	P	N	N	T	I	G	V	A	P	R	I	T	F	T	R	-	-	N	Y	I	K	E	I	C	Q	E	A	V	F	Q	S	Q	L	K	R	L	D	F	
079	NP_542258.1	Q	G	F	K	N	S	P	T	L	F	E	Q	Q	L	S	H	I	L	A	P	V	R	K	A	F	P	N	-	-	S	L	I	I	Q	Y	M	D	O	I	L	L	A	S	P	A	L	R	E	L	T	
080	YP_009130664.1	G	P	R	I	K	E	A	Y	E	A	R	Y	P	G	N	T	I	G	V	F	P	R	V	L	F	A	Y	-	-	K	F	L	E	N	E	C	R	O	A	A	Y	K	R	S	L	K	N	L	S	F	
081	YP_009508566.1	Q	G	F	L	N	S	P	A	L	F	T	A	D	V	V	D	L	L	K	E	I	-	-	-	-	-	-	-	-	P	N	V	N	V	Y	V	D	O	I	Y	V	S	T	E	T	I	N	Q	H	F	
082	YP_006607892.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
083	YP_009506270.1	G	D	A	V	E	K	A	F	K	E	K	H	P	S	N	T	V	G	I	A	A	R	I	T	F	T	K	-	-	R	Y	L	K	E	L	C	E	K	V	A	L	Q	K	S	I	G	K	M	D	F	
084	NP_042513.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
085	YP_006907834.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
086	YP_004442827.1	A	D	S	A	K	T	A	F	N	K	K	F	P	G	T	A	I	H	I	P	A	R	I	E	F	T	Y	-	-	N	Y	L	E	E	I	C	T	E	N	N	K	Q	R	K	L	G	K	L	N	F	
087	YP_009408594.1	G	K	H	L	E	Q	K	Y	N	A	A	F	P	G	N	T	I	G	V	F	P	R	I	H	F	A	Y	-	-	Q	E	L	A	E	M	C	K	Q	A	Q	L	Q	R	G	L	K	D	L	A	F	
088	YP_009508561.1	Q	G	F	L	N	S	P	A	L	F	T	A	D	V	V	D	I	L	K	E	V	-	-	-	-	-	-	-	-	P	G	V	S	V	Y	V	D	O	I	Y	I	S	S	P	T	M	E	E	H	F	
089	NP_056907.1	Q	G	F	K	N	S	P	T	L	F	E	Q	Q	L	A	A	V	L	S	P	I	R	K	T	F	P	M	-	-	S	T	I	I	Q	Y	M	D	O	I	L	L	A	S	P	T	Q	E	E	L	Q	
090	YP_002308474.1	Q	G	F	K	N	S	P	T	L	F	E	Q	Q	L	S	H	I	L	T	P	V	R	Q	A	F	P	K	-	-	S	I	V	I	Q	Y	M	D	O	I	L	L	A	S	P	T	L	E	E	S	I	
091	YP_007761644.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
092	NP_040550.1	Q	G	M	T	C	S	P	T	I	C	Q	L	V	V	G	Q	V	L	E	P	L	R	L	K	H	P	S	-	-	L	R	M	L	H	Y	M	D	O	L	L	L	A	A	S	S	H	D	G	L	E	
093	NP_758808.1	G	K	E	I	E	T	A	F	I	A	K	H	G	N	A	N	I	T	V	M	P	R	I	H	F	A	Y	-	-	H	Y	L	A	E	L	C	K	K	A	A	L	Q	R	S	L	K	D	L	S	F	
094	YP_009345075.1	G	K	K	I	E	A	A	F	N	E	K	H	P	G	N	N	T	G	V	M	P	R	I	H	F	T	Y	-	-	H	W	L	A	E	L	C	K	S	A	A	M	Q	R	G	I	K	S	L	D	F	
095	NP_068729.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
096	NP_047255.1	Q	G	F	K	N	S	P	T	L	F	D	E	A	L	H	S	D	L	A	D	F	R	V	R	Y	P	A	-	-	L	V	L	L	Q	Y	V	D	O	L	L	L	A	A	A	T	R	T	E	C	L	
097	YP_006273075.1	R	K	T	I	K	E	D	F	D	N	K	Y	P	G	V	V	S	G	V	V	P	R	V	L	F	A	Y	-	-	K	F	L	E	K	E	C	R	O	A	A	F	K	R	S	L	K	N	L	S	F	
098	YP_009508888.1	Q	G	F	L	N	S	P	A	L	F	T	A	D	V	V	D	L	M	K	H	I	-	-	-	-	-	-	-	-	P	N	V	Q	V	Y	V	D	O	L	Y	L	S	H	D	D	P	Q	E	H	L	
099	NP_395469.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
100	YP_009508546.1	Q	G	F	L	N	S	P	A	L	F	T	A	D	V	V	D	L	L	K	E	I	-	-	-	-	-	-	-	-	P	N	V	Q	V	Y	V	D	O	I	Y	L	S	H	D	D	P	Q	E	H	I	
101	NP_056762.1	G	K	V	V	K	A	D	F	V	K	D	G	N	S	Y	E	A	G	I	G	I	A	V	S	Y	I	S	-	-	T	W	M	R	A	K	C	I	K	E	T	E	A	K	T	Q	K	K	A	S	L	
102	YP_009508556.1	Q	G	F	L	N	S	P	A	L	F	T	A	H	V	V	D	L	L	K	E	I	-	-	-	-	-	-	-	-	P	H	V	P	A	Y	V	D	O	I	Y	I	S	H	D	D	P	H	E	H	L	
103	NP_569153.1	G	Q	R	M	K	K	A	Y	E	E	K	H	P	G	N	I	V	G	V	C	P	R	I	L	F	A	Y	-	-	K	Y	L	E	G	E	C	K	O	A	A	F	R	R	S	L	K	N	L	S	F	
104	NP_043924.1	Q	G	F	H	A	S	P	G	I	F	H	Q	A	L	Y	N	G	L	A	S	C	K	T	A	I	E	S	Q	G	C	K	L	L	Q	Y	V	D	O	I	L	L	M	S	E	D	R	D	H	H	L	
105	YP_009243641.1	Q	G	M	M	N	S	P	T	I	C	Q	L	Y	V	D	A	A	L	K	P	I	R	K	R	Y	P	F	-	-	L	H	I	Y	H	Y	M	D	O	I	L	F	A	G	P	K	K	E	F	L	Q	
106	YP_004300274.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
107	NP_056848.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
108	YP_006495799.1	G	P	T	I	E	K	A	Y	K	E	R	Y	P	G	L	V	I	G	V	M	A	R	I	N	F	I	I	-	-	E	Y	L	Q	N	V	C	K	Q	A	A	L	Q	R	S	L	K	N	L	N	F	
109	YP_009508409.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
110	NP_687035.1	Q	G	W	K	G	S	P	T	I	F	Q	N	T	A	A	N	I	L	E	E	I	K	R	H	T	P	G	-	-	L	E	I	V	Q	Y	M	D	O	L	W	L	A	S	D	H	D	E	T	R	H	
111	NP_045937.2	Q	G	F	I	H	S	P	T	L	F	S	Q	A	L	Y	Q	S	L	H	K	I	K	F	K	I	S	-	-	S	E	I	C	I	Y	M	D	O	V	L	I	A	S	K	D	R	D	T	N	L		
112	NP_612577.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
113	NP_619548.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
114	NP_056880.1	Q	G	M	K	N	S	P	T	L	C	Q	K	F	V	D	K	A	I	L	T	V	R	D	K	Y	Q	D	-	-	S	Y	I	V</																		

144 NP_039820.1 G E R V A Q A Y K I M D P T S A V N L P S R V Y F T I - - N Y L T E Q C K K A S Y M R S L K A L D F
 145 NP_056790.1 Q G F K N S P T L F D E A L H R D L A P F R A L N P Q - - V V L L Q Y V D O L L V A A P T Y E D C K
 146 YP_002321513.1 G E D I E K N Y K Q V H - G D L P G V A P R I Y F T Y - - K Y L Q E M C K T A E K Q R G L K S L N F
 147 NP_955591.1 Q G F K N S P T L F D E A L H R D L A D F R I Q H P D - - L I L L Q Y V D O L L L A A T S E L D C Q
 148 YP_001956722.2 Q G F L N S P A L F T A D V V D L L K E V - - - - - P N V Q V Y V D O I Y I S H D D P R E H L
 149 NP_056902.1 Q G F V L S P Y I Y Q K T L Q E I L Q P F R E R Y P E - - V Q L Y Q Y M D O L F M G S N G S K K Q H
 150 NP_056886.1 Q G M T C S P T I C Q L V V G Q V L E P L R L K H P S - - L C M L H Y M D O L L L A A S S H D G L E
 151 NP_041261.1 Q G M A N S P T L C Q K F V A A A I A P V R S Q W P E - - A Y I L H Y M D O I L L A C D S A E A A K

001 YP_004442836.1 C R N - - - T P V H G L Y G R E R S H - - K R Y G A R K S T S Y K G K P H K - S H V R I G K K K H L
 002 NP_056728.1 -
 003 YP_009508537.1 E Y L - - - E I L F N R L N E A G Y I V S L K K S N I A N S I V D F L G F Q I T N E G R G L T D T F
 004 YP_004732983.2 C K A - - - I P I P G Y Y D Q G V - - - K K Y G L R K S K T Y K G K P H D - S H V K V I K N K Y K
 005 YP_009508407.1 -
 006 NP_040939.1 R E I - - - V K D L A N Y I A Q Y G F T L P E E K R Q K G Y E A K W L G F E L H P Q T W K F Q K H T
 007 YP_003864102.1 Q C F - - - A Q L K E K L V I A G L H I A P E K I Q L H D - E Y T Y L G F Q I N G P K I T T Q K A -
 008 YP_009002585.1 C S E - - - M P L P G Y Y G E K - - - - - K R Y G V R R S T T Y K G K P H P - T H A R I E K Q K H L
 009 YP_003284237.1 C K E - - - F P V P G Y Y - K K P G Y - - - K Y G R R K T T T Y K G K P H K - T H V R I D K R K H L
 010 YP_009268869.1 R E I - - - V E E L A S Y I A Q Y G F M L P E E K R Q E G Y E A K W L G F E L H P E K W R F Q K H T
 011 YP_009506251.1 C K D - - - M P L T G Y Y D K S - - - - - S F Y G M R R S K T Y K G K P H A - S H A R I E K R K H L
 012 NP_955611.1 A A G - - - E E V I S T L E R A G F T I S P D K V Q R E P - G V Q Y L G Y K L G - S T Y V A P V G -
 013 YP_008567619.1 C N S - - - I P I P G Y Y S - K E - - - - - K M G V R R S T T Y K G K P H S - S H V R I E K R K H L
 014 NP_149413.1 C K G - - - F P V V N P V G T K K Y G - - - K R Y G T R K A R S Y R G K P H S - S H V R I E R T R Y L
 015 YP_004442824.1 C R N - - - T P V H G L Y G K D K P Y - - - K R Y G A R K S Q N Y H G K P H K - S H V R I A K R K H L
 016 YP_001931967.1 -
 017 YP_002455786.1 Q L A - - - T L T A Q L L S S H G L P V S Q E K T Q R T P G K I H F L G Q I I H P D H I T Y E T T P
 018 YP_009109694.1 Q G T - - - R H L L Q E L G E K G Y R A S A K K A Q I C Q T K V T Y L G Y I L S E G K R W L T P G R
 019 NP_789739.1 R T K - - - I E E L R Q H L L R W G L T T P D K K H Q K E P F F L W M G Y E L H P D K W T V Q P I V
 020 NP_955619.1 L L S - - - E A T M A S L I S H G L P V S E N K T Q Q T P G T I K F L G Q I I S P N H L T Y D A V P
 021 YP_224289.1 C R E - - - F P I P G Y Y - K K P G R - - - K F G V R K S T S Y K G K P H K - T H I K I D K R K Y L
 022 YP_009182100.1 K P N - - - E F N T E R Y K P R I E P N P A V S E N G V W L D I D N N P D P R G N I D E W N T M N
 023 NP_705927.1 R T K - - - I E E L R Q H L L R W G L T T P D K K H Q K E P F F L W M G Y E L H P D K W T V Q P I V
 024 YP_009508577.1 K I L - - - E K V F K I L L E A G Y I V S L K K S A L I R Y E V T F L G F S I T Q T G R G L T S E F
 025 YP_004442830.1 C R G - - - F P V I N P L - S K K Y - - - K S L G T R R T T T Y K G K P H H - T H A R I D R R K Y L
 026 NP_758887.1 S R M - - - I Q E L R D H L L F W G L E T P D K K F Q K E P F E F W M G Y I L H P K K W T V Q K V Q
 027 YP_009508406.1 -
 028 YP_610965.1 C R R - - - I P L P G Y Y K D G P - - - - - K K K L G L R K A K N Y R G K P H D - T H V R L V K N K - -
 029 YP_001931961.1 -
 030 YP_241114.1 Q A F - - - S I L K Q H L S L N G L V I A D E K I Q T H F - E Y N Y L G F S L Y P R T Y N T Q L V -
 031 YP_006732334.1 -
 032 YP_009041481.1 C A Q - - - V P I P G D Y N R E - - - - - G K K Y G L R R A S T Y K G K P H A - T H V R T F K R K D A
 033 YP_001036293.1 C S K - - - I P I P G Y Y K G R E - - - - - K R Y G V R K S T T Y K G K P H D - S H V R I E R R K H L
 034 YP_605811.1 C K G - - - T P V H G L Y G K D K A Y G - R R Y G V R K S T S Y K G K P H K - S H V R I D K K K H L
 035 NP_955577.1 E G T - - - K A L L E T L G N K G Y R A S A K K A Q I C L Q E V T Y L G Y S I K D G Q R W L T K A R
 036 YP_003208050.1 C R K - - - F P I P G Y Y Q K - S - - - - - Q K K Y G L R K S Q S Y K G K P H D - T H V R V V K N K - -
 037 NP_789740.1 R T K - - - I E E L R Q H L L R W G L T T P D K K H Q K E P F F L W M G Y E L H P D K W T V Q P I V
 038 YP_004442839.1 C K G - - - T P V H G L Y G K D K S Y G - R R Y G V R K S T S Y K G K P H K - S H V R I D K K K H L
 039 YP_009507791.1 E K I - - - I Q E L R D L L I F W G F E T P E D K L Q Q E P E Y K W M G Y T L Y P N K W T I Q K T K
 040 YP_004581513.1 -
 041 NP_043933.1 -
 042 YP_009507248.1 E N L - - - E R V F Q R L R E S N F K I Q M D K S E F I K L E T A Y L G H I I S R D G I K P N P D K
 043 YP_002117531.1 C S S - - - F P I P N Y Q - K G A G R - - - - - K F G L R K S K S Y K G K P H K - T H V R I E K S K Y L
 044 YP_004347415.1 -
 045 NP_056891.1 Q C F - - - D Q L K Q E L T A A G L H I A P E K V Q L Q D - E Y T Y L G F E L N G P K I T N Q K A -
 046 YP_009513242.1 E Q L - - - E K V F S I L L N A G Y V V S L K K S E I A Q R E V E F L G F N I T K E G R G L T E T F
 047 YP_009352866.1 C S Q - - - I P I P G D Y N R E - - - - - G K K Y G L R K A G T Y K G K P H N - T H V R A F K K K D Q
 048 YP_009165750.1 -
 049 NP_040840.1 R G I - - - V N E L A S Y I A Q Y G F M L P E D K R Q E G Y E A K W L G F E L H P E K W K F Q K H T
 050 YP_004222728.1 A A G - - - E E V I S T L E R A G F T I S P D K V Q R E P - G V Q Y L G Y K L G - S T Y V A P V G -
 051 YP_009506264.1 C K E - - - F P I P G Y Y H K K P T K - - - - - K Y G L R K T T T Y R G K P H K - T H V R I D K S K H L
 052 YP_567050.1 Q L S - - - K M T L Q A L V T H G L P V S Q E K T Q Q T P G Q I R F L G Q V I S P N H I T Y E T T P
 053 YP_009508571.1 D Q L - - - E K V F Q I L L Q A G Y V V S L K K S E V A Q K T V E F L G F N I T K E G R G L T E A F
 054 NP_056803.1 Q Q L - - - E K V F Q I L L Q A G Y V V S L K K S E I G O R T V E F L G F N I T K E G R G L T D T F
 055 NP_955564.1 E I L - - - T S M I Q A L N K H G L V V S T E K I Q K Y D - N L K Y L G T H I Q G D S V S Y Q K L -
 056 YP_009508411.1 C S Q - - - I P I P G Y Y K N S G - - - - - K R Y G V R R S T T Y K G K P H E - T H V R I E K K K Y L
 057 YP_009140788.1 C S S - - - I P I P G Y Y K N T G - - - - - K R Y G V R R S K T Y K G K P H E - S H A R I E K R K H L
 058 YP_009508410.1 -
 059 NP_040333.1 Q G T - - - R A L L Q T L G D L G Y R A S A K K A Q I C Q K Q V K Y L G Y L L K E G Q R W L T E A R
 060 YP_008992013.1 P P T - - - A S K D K E P M H Q F S - - - - - A H T I D H P S S T D D Q T S D S N L A V S D S H T E
 061 NP_041734.1 C K D - - - M P L T G Y Y D K T - - - - - S K Y G M R K S R T Y K G K P H A - S H A R V E K R K H L
 062 NP_056895.1 Q C Y - - - Q A L A A R L R D L G F Q V A S E K T R Q T P S E V P F L G Q M V H N Q I V T Y Q S L P

063	YP_009109689.1	QGT---	RHL	LQ	EL	GE	KGY	RAS	AKKA	QIC	QTK	V	T	Y	L	Y	I	L	S	E	G	K	R	W	L	T	P	G	R
064	YP_002519387.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
065	YP_595725.1	CKG---	F	P	V	V	N	P	V	G	T	R	K	Y	G	-	-	-	-	-	-	-	-	-	-	-	-	-	
066	YP_009508551.1	QQL---	E	K	V	F	Q	I	L	L	Q	A	G	Y	V	S	L	K	K	S	E	I	G	Q	K	T	V	E	F
067	YP_001497148.1	RGT---	K	H	L	L	R	E	L	G	D	K	G	Y	R	A	S	A	K	K	A	Q	I	C	Q	T	K	V	T
068	NP_041186.1	QAF---	S	I	L	K	Q	H	L	S	L	N	G	L	V	I	A	D	E	K	I	Q	T	H	F	-	F	Y	N
069	NP_663784.1	DKV---	V	L	Q	L	K	E	L	L	N	G	L	G	F	S	T	P	D	E	K	F	Q	K	D	P	F	F	Q
070	YP_009508443.1	CNQ---	I	P	I	P	G	Y	Y	K	G	K	E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
071	YP_003987465.1	CKE---	F	P	I	P	N	F	Y	-	K	G	P	Q	K	-	-	-	-	-	-	-	-	-	-	-	-	-	
072	NP_861410.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
073	YP_009345071.1	CKQ---	M	P	I	P	G	Y	Y	G	T	D	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
074	YP_009508582.1	KIL---	E	K	V	F	K	I	L	L	E	A	G	Y	I	V	S	L	K	S	A	L	I	R	H	E	V	T	F
075	NP_569141.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
076	YP_002916057.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
077	NP_777384.2	QCY---	Q	A	L	A	A	R	L	R	D	L	G	F	Q	V	A	S	E	K	T	R	Q	T	P	S	E	V	P
078	YP_233110.1	CKG---	T	P	V	H	G	L	Y	G	K	E	K	A	Y	G	-	-	-	-	-	-	-	-	-	-	-	-	-
079	NP_542258.1	ALT---	D	K	V	T	N	A	L	T	K	E	G	L	P	M	S	L	E	K	T	Q	A	T	P	G	S	I	H
080	YP_009130664.1	CSS---	I	P	I	P	G	Y	Y	K	-	I	E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
081	YP_009508566.1	QVL---	D	K	I	F	Q	K	L	L	Q	A	G	Y	V	S	L	K	S	N	L	C	R	Y	E	V	T	F	L
082	YP_006607892.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
083	YP_009506270.1	CRN---	T	P	V	H	G	L	Y	G	K	E	K	S	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-
084	NP_042513.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
085	YP_006907834.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
086	YP_004442827.1	CKG---	F	P	V	V	N	P	M	-	T	R	K	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
087	YP_009408594.1	CSQ---	I	P	L	P	G	Y	Y	G	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
088	YP_009508561.1	QVL---	D	S	I	F	R	K	L	L	E	T	G	Y	I	V	S	L	K	S	A	L	A	R	Y	E	V	N	F
089	NP_056907.1	QLS---	K	M	T	L	Q	A	L	V	T	H	G	L	P	V	S	Q	E	K	T	Q	Q	T	P	G	Q	I	R
090	YP_002308474.1	VLA---	Q	E	I	T	N	A	L	A	Q	E	G	L	P	M	S	T	E	K	T	Q	S	T	P	G	E	I	H
091	YP_007761644.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
092	NP_040550.1	AAG---	E	E	V	I	S	T	L	E	R	A	G	F	T	I	S	P	D	K	I	Q	R	E	P	-	G	V	Q
093	NP_758808.1	CNQ---	I	P	L	P	G	I	Y	T	K	-	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
094	YP_009345075.1	CKD---	I	P	I	P	G	V	Y	P	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
095	NP_068729.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
096	NP_047255.1	EGT---	K	A	L	L	E	T	L	G	N	K	G	Y	R	A	S	A	K	K	A	Q	I	C	L	Q	E	V	T
097	YP_006273075.1	CSS---	I	P	I	P	G	Y	Y	K	N	T	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
098	YP_009508888.1	QVL---	Q	Q	V	L	H	I	L	H	D	A	G	Y	V	S	L	K	S	A	I	A	Q	K	V	E	F	L	S
099	NP_395469.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	YP_009508546.1	QQL---	E	K	V	F	Q	I	L	L	Q	A	G	Y	V	S	L	K	K	S	E	I	G	Q	K	T	V	E	F
101	NP_056762.1	AFCR	S	I	Y	T	I	G	D	Y	K	K	R	K	I	L	K	R	V	T	N	Y	N	K	N	R	K	N	Y
102	YP_009508556.1	EQL---	E	K	V	F	S	I	L	L	N	A	G	Y	V	S	L	K	S	E	I	A	Q	R	E	V	E	F	L
103	NP_569153.1	CSS---	I	P	I	P	G	Y	Y	G	G	K	S	G	E	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104	NP_043924.1	RSL---	A	I	L	L	Q	G	L	K	D	L	G	V	K	I	N	P	K	S	H	F	C	K	D	Q	V	Q	Y
105	YP_009243641.1	DLL---	E	Q	L	P	L	Y	F	K	P	Y	G	L	I	I	A	P	E	K	I	Q	L	E	D	-	I	S	H
106	YP_004300274.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
107	NP_056848.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108	YP_006495799.1	CRT---	M	P	V	P	G	Y	Y	E	K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
109	YP_009508409.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110	NP_687035.1	NQQ---	V	D	I	V	R	K	M	L	L	E	K	G	L	E	T	P	D	K	F	V	Q	R	E	P	E	W	E
111	NP_045937.2	KDT---	A	V	M	L	Q	H	L	A	S	E	G	H	K	V	S	K	K	I	Q	L	Q	Q	E	V	V	Y	L
112	NP_612577.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
113	NP_619548.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114	NP_056880.1	EIL---	T	S	M	I	Q	A	L	N	K	H	G	L	V	S	T	E	K	I	Q	K	Y	D	-	N	L	K	Y
115	YP_009121747.1	CSS---	I	P	I	P	G	Y	Y	D	R	-	Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
116	YP_009113237.2	CKD---	I	P	I	P	G	Y	Y	Q	S	R	R	N	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117	YP_009508408.1	CNQ---	I	P	I	P	G	Y	Y	K	G	K	E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
118	NP_955579.1	EGT---	K	A	L	L	E	T	L	G	N	K	G	Y	R	A	S	A	K	K	A	Q	I	C	L	Q	E	V	T
119	YP_009229919.1	CKE---	V	H	I	P	G	Y	Y	K	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120	YP_004442833.1	CRG---	F	P	V	I	N	P	L	-	Q	R	K	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
121	NP_862833.2	QAF---	S	L	L	K	Q	H	L	S	L	N	G	L	V	X	A	D	E	K	I	Q	T	H	F	-	F	Y	N
122	NP_040563.1	KQI---	V	Q	E	I	R	D	K	L	G	S	Y	G	F	K	T	P	D	E	K	V	Q	E	E	-	F	V	K
123	YP_443922.1	AAT---	K	I	L	L	D	F	L	A	T	K	G	Y	K	V	K	R	S	K	V	Q	T	C	R	R	T	V	L
124	NP_057933.2	QGT---	R	A	L	L	Q	T	L	G	N	L	G	Y	R	A	S	A	K	K	A	Q	I	C	Q	K	Q	V	K
125	YP_009116631.1	CRN---	M	P	V	P	G	Y	Y	E	K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
126	YP_009513249.1	EYL---	D	I	L	F	N	R	L	K	E	A	G	Y	I	S	L	K	S	N	I	A	N	S	I	V	D	F	L
127	YP_223871.1	SAT---	D	I	L	L	M	T	L	A	E	L	G	Y	R	V	S	G	K	A	Q	L	C	Q	E	E	V	T	Y
128	NP_127504.1	PQS---	S	S	H	L	G	D	Q	F	M	I	S	D	P	A	L	P	K	V	Y	A	L	N	E	P	S	V	P
129	NP_044929.1	DIL---	E	T	I	F	N	R	L	S	T	A	G	Y	I	V	S	L	K	S	K	L	A	K	E	T	V	E	F
130	NP_057860.1	LLS---	E	A	T	M	A	S	L	I	S	H	G	L	P	V	S	E	N	K	T	Q	Q	T	P	G	T	I	K
131	NP_040973.1	KEK---	V	E	E	L	R	K	L	L	L	W	G	F	E	T	P	D	E	K	L	Q	E	E	P	P	Y	T	W
132	NP_777317.1	CKS---	T	P	V	H	G	V	Y	G	E	R	K	S	Y	K	-	-	-	-	-	-	-	-	-	-	-	-	-
133	NP_054716.1	KTM---	D	L	L	F	Q	K	L	Q	T	A	G	Y	I	V	S	L	K	S	K	L	G	Q	H	T	V	D	F
134	YP_001856242.1	RTK---	I	E	E	L																							

136 NP_569150.1 CRS - - - T P V H G L Y - R D K S Y - - R K Y G A R K S T S Y K G K P H K - S H V R I G K K K Y L
 137 NP_659397.1 -
 138 YP_009513211.1 EGT - - - R R L L Q E L S K L G Y R V S A K K A Q L C R E E V T Y L S Y L L K G G K R W L T P A R
 139 YP_233107.1 C G N - - - T P V H G I Y G K N K E G G F R K Y G V R K N T S Y K G K P H K - S H I R I G K Q K H L
 140 YP_009109692.1 QGT - - - R H L L Q E L G E K G Y R A S A K K A Q I C Q T K V T Y L S Y I L S E G K R W L T P G R
 141 NP_057849.4 R T K - - - I E E L R Q H L L R W G L T T P D K K H Q K E P F L W M G Y E L H P D K W T V Q P I V
 142 NP_049560.1 L L S - - - E V T M A S L I S H G L P V S E N K I T Q Q T P G T I K F L S Q I I S P N H L T Y D A V P
 143 YP_009506267.1 C S K - - - I P I P G Y Y G G A E - - - K K Y G V R K S K T Y K G K P H Q - S H V R I E K R K H L
 144 NP_039820.1 C R D - - - F P I E G Y Y G R S G E K - - - K K Y T A R K A T K Y T G K A H D - N H I R V T K A K Y -
 145 NP_056790.1 K G T - - - Q K L L Q E L S K L G Y R V S A K K A Q L C Q R E V T Y L S Y L L K E G K R W L T P A R
 146 YP_002321513.1 C K D - - - I R L P G Q Y A R D S - - - S K R Y G M R K A N T Y K G K P H R - T H A R V I K N K E K
 147 NP_955591.1 QGT - - - R A L L Q T L G N L G Y R A S A K K A Q I C Q K Q V K Y L S Y L L K E G Q R W L T E A R
 148 YP_001956722.2 E Q L - - - E K V F S L L L N A G Y V V S L K K S E I A Q H E V E F L S F N I T K E G R G L T E T F
 149 NP_056902.1 K E L - - - I I E L R A I L L E K G F E T P D D K L Q E V P E Y S W L S Y Q L C P E N W K V Q K M Q
 150 NP_056886.1 A A G - - - E E V I S T L E R A G F T I S P D K V Q R E P - G V Q Y L S Y K L G - S T Y V A P V G -
 151 NP_041261.1 A C Y - - - A H I I S C L T S Y G L K I A P D K V Q V S E - E F S Y L G F E L H H Q Q V F T P R V -

001 YP_004442836.1 A A R - - - - K R N C R C Y A C G E E G H F A S E C T - N Q K K I I D R V R V L D S L D L E D G L
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 003 YP_009508537.1 K E K L E N V T A P T T L K Q L Q S I L G L L N F A R N F I P D F T E L I A P L Y A L I P K S T K -
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 005 YP_009508407.1 -
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 008 YP_009002585.1 V R - - - - - N K R C K C Y L C G E M G H F A R E C P - N D K K N T R R V A M Y E Q L N I P E G F
 009 YP_003284237.1 K N R - - - - K - - C K C Y A C G E E G H Y A S E C R - N K K Q Y T D R V N I I E N I A L K E D E
 010 YP_009268869.1 L P E I K E G - - T I T L N K L Q K L V G D L V W R - - Q S L I G K S I P N I L K L M E G D R A L
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 015 YP_004442824.1 A M R - - - - K K D C K C F A C G E T G H F A S E C K - N P R K L V E R V A I M D S L E L P E D V
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 017 YP_002455786.1 T I P I K A - - - H W T L T E L Q T L L G E L Q W V S K G T P V L R E H L H C L Y S A L R G L K D P
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 028 YP_610965.1 - D - - - K G R T T K C R C Y I C G Q E G H F A R E C R - N G R G N I A R A A I I K D L D L P S D F
 029 YP_001931961.1 -
 030 YP_241114.1 K L Q T D H - - - L K T L N D F Q K L L G D I N W I R P Y L K L P T Y T L Q P L F D I L K G D S D P
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 032 YP_009041481.1 G K Q - - - - R K C A C F I C G E P D H F A K E C P R N G K G N I N R V H Y Y D N L N I P E D W
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 036 YP_003208050.1 - D - - - K A R S V K C K C F I C G E E G H F A R E C R - S K K G N I A R A A V D N L D L P P D F
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 039 YP_009507791.1 L - D I P E - - - V P T L N Q L Q K L A G V I N W A T - - Q N V G G I K I K A L T E L M K G N Q Q L
 040 YP_004581513.1 -
 041 NP_043933.1 -
 042 YP_009507248.1 I S A I Q K Y L I P K T P K E I K Q F L G L L G Y Y R K F I P D F A R L T K P L T Q C L K K G S K V
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 044 YP_004347415.1 -
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 051 YP_009506264.1 K N R - - - - K - - C K C Y A C G E E G H F A R D C R - N P R K I M D R V N V L E D L E L K D G M
 052 YP_567050.1 T I P I K S - - - Q W T L T E L Q T V L G E I Q W V S K G T P I L R K H L Q C L Y S A L R G Y Q D P
 053 YP_009508571.1 K A K L L D I T P P K D L K Q L Q S I L G L L N F A R N F I L N F A E L V K P L Y S L I S S A K G -
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055	NP_955564.1	QIRTDK--LR	TLNDFQKLLGNINWIRPFLKLT	TGELKPLFEILNGDSNP
056	YP_009508411.1	ERGS-ALKNKK	CKCFLCGEEGHFARECS-SDRRN	IKRVAFEGIELPEDC
057	YP_009140788.1	VR-----NKR	CKCFLCGQEGHFARECP-NDRKS	SSKRMAMFENLELPDDC
058	YP_009508410.1	-----	-----	-----
059	NP_040333.1	KETVMGQPTPK	TPRQLREFLGTAGFCRLWIPGFA	EMAAPPLYPLTKTG---
060	YP_008992013.1	IDTESSASTSD	SEKSYADITRILMAQPD-----	PQTSRTEPYVNIPSDV
061	NP_041734.1	IR-----NKK	CKCYLCGDEGHFARECP-NQRRD	VKRVAIFEGIDLPEGF
062	NP_056895.1	TLQISS--PI	SLHQQLQAVLGLDQWVSRGTPTT	RRPLQLLYSSSLKGIDDP
063	YP_009109689.1	IETVARIPPPR	NPREVREFLGTAGFCRLWIPGFA	EELAAPLYALTKE---
064	YP_002519387.1	-----	-----	-----
065	YP_595725.1	QQR-----EKK	CRCYVCGSPDHLMKDCK-SPMKR	QERVNLANELDIPDGY
066	YP_009508551.1	KTKLLNITPPK	DLKQLQSILGLLNFARNFIPNFA	ELVQPLYNLIASAKG
067	YP_001497148.1	IETVARIPPPQ	SPREVREFLGTAGFCRLWIPGFA	EELAAPLYALTKE---
068	NP_041186.1	KLQTDH--LK	TLNDFQKLLGGINWIRPYLKLPT	YTLQPLFDILKGDSDP
069	NP_663784.1	LPQKD---IW	TVNDIQKLVGVLNWAA-QIYSG	IKTKHLCRLIRGKMTL
070	YP_009508443.1	VR-----ERR	CKCFLCGAEGHFARECP-NDKRN	IKRVAVFEGLEIPEDC
071	YP_003987465.1	KNR-----K--	CKCYICGEEGHFARDCK-NPKKI	VDRVHVVLEELDIDQDGM
072	NP_861410.1	-----	-----	-----
073	YP_009345071.1	RT-----KK	CKCYLCGEEGHFARECK-NDNRN	NIHRQTMYSLSLELPKEF
074	YP_009508582.1	KDKIQNITPPK	TLKELQSILGLFNFARNFVVPNF	SEIKPLYSLISTAEG-
075	NP_569141.1	-----	-----	-----
076	YP_002916057.1	-----	-----	-----
077	NP_777384.2	TLQISS--PI	SLHQQLQAVLGLDQWVSRGTPTT	RRPLQLLYSSSLKGIDDP
078	YP_233110.1	LMK-----RKD	CKCFACGDIGHFASECP-NPKKL	MHRVQIILQSLELDDGI
079	NP_542258.1	SIHVKS--IW	SLAELQSMLGELQWVSKGTPVLR	SSSLHQLYLALRGHRDP
080	YP_009130664.1	QR-----NKR	CKCYLCGQEGHFARECP-NDRRS	IKRVAFENLDLPEDC
081	YP_009508566.1	QEKLRNISPPN	SLKQLQSILGLLNFARNFIPNF	SELIKPLYELISTAQG-
082	YP_006607892.1	-----	-----	-----
083	YP_009506270.1	ALR-----KKN	CRCYACGEEGHFASECR-NPRKI	MDRVKVLDSLELEDGL
084	NP_042513.1	-----	-----	-----
085	YP_006907834.1	-----	-----	-----
086	YP_004442827.1	QGR-----KKD	CRCYVCGEEGHFAKECR-SKKRI	QERVNIVQELDIPDGY
087	YP_009408594.1	HD--RGRVKK	CKCFICGKEGHFARECR-NNVGN	KERVAMLNELDLPEDY
088	YP_009508561.1	RERLQEITPPT	TLKQLQSILGLFLNFARNFVVPNF	SELVQPLYQLISTASG-
089	NP_056907.1	TIPIKS--QW	TLTELQTVLGEIQWVSKGTPI	LRKHLQCLYSALRGYQDP
090	YP_002308474.1	TIHVKP--NW	TLTELQSTLGEELQWVSKGTPT	LRSSLHQLYTAALRGHHP
091	YP_007761644.1	-----	-----	-----
092	NP_040550.1	LVAEPR--IA	TLWDVQKLVGSLQWLRPALGIP	PRMLMGPFYEQLRG-SDP
093	NP_758808.1	AK---YQRTKK	CKCFICGEPGHFARECT-KQRGN	NIVRATVHQELAIPDNF
094	YP_009345075.1	-----KPPVK	CKCYICGREGHFARDCN-NNNG	NIARA AVIENLELPD DW
095	NP_068729.1	-----	-----	-----
096	NP_047255.1	KEAILSIPVPK	NSRQVREFLGTAGYCRLWIPGFA	EELAAPLYPLTRPG---
097	YP_006273075.1	VR-----NKR	CKCFLCGQEGHFAARKCP-NDKRS	SSKRMAMFENLEIPEDC
098	YP_009508888.1	KEKLLNISPPQ	NLKQLQSILGLMNFARNFIPNYA	ERVKPFYSLISTAKS-
099	NP_395469.1	-----	-----	-----
100	YP_009508546.1	KTKLLNVTPPK	DLKQLQSILGLLNFARNFIPNFA	ELVQPLYNLI PSARG-
101	NP_056762.1	NHLANRCPRRY	TNQARASLIDGLDEDIVSIA	SDDEDIENFLEIIELEDEFI
102	YP_009508556.1	KLKLLDITPPK	DLKQLQSILGLLNFARNFIPNY	SELVKPLYTIVANANG-
103	NP_569153.1	R-----NKK	CKCYLCGEEGHFARECP-NDRRN	VKRVAMFEGLDLPDDC
104	NP_043924.1	SQIRTLDIPLT	TVQGLRSALGLFNFCRAWIPE	FSRKTQSLYDMLKGDCKS
105	YP_009243641.1	TIRRDN--LK	TLNDFQKLLGGINWLRPSLGIP	TYQLHNLFDTLKGDTDL
106	YP_004300274.1	-----	-----	-----
107	NP_056848.1	-----	-----	-----
108	YP_006495799.1	NAPG-----RK	CKCYLCGIEGHYARECPKKKT	VQ-PQRMAYFEGLALADNW
109	YP_009508409.1	-----	-----	-----
110	NP_687035.1	LPPLEG--EW	TVNKIQKVGVLNWAS-QIYP	GIKTKHTCAMLRGKKNL
111	NP_045937.2	KVTVSQFQQPT	TIRQIRAFGLVGYCRHWIPE	FSIHSKFLEKQLKKDTAE
112	NP_612577.1	-----	-----	-----
113	NP_619548.1	-----	-----	-----
114	NP_056880.1	QIRTDK--LR	TLNDFQKLLGNINWIRPFLKLT	TGELKPLFEILNGDSNP
115	YP_009121747.1	ED--RGRVSK	CKCYICGREGHFARDCK-SKTGN	MARRAVIDNLDLKEDW
116	YP_009113237.2	Q-----NRK	CKCYACGEEGHFSKDCP-NDKKS	SSKRVALLQNLEIPEDY
117	YP_009508408.1	MR-----EKR	CKCFLCGNEGHFARECP-NDKRN	IKRVAVFEGLEV PDDC
118	NP_955579.1	KEAILSIPVPK	NSRQVREFLGTAGYCRLWIPGFA	EELAAPLYPLTRPG---
119	YP_009229919.1	-H---ADKVRK	CKCFICGEEGHFARECK-RGKGN	IAARA AVLKDLDIPDDY
120	YP_004442833.1	QGR-----KKE	CRCYVCGEEGHFAKECK-SKKKI	QERVNIVNELDIPEGY
121	NP_862833.2	KLQTDH--LK	TLNDFQKLLGGINWIRPYLKLPT	YILQPLFDILKGNSDP
122	NP_040563.1	LKIKN---PL	TVNELQQLVGNCVWVQ--PEVK	-IPLYPLTDLLRDKTNL
123	YP_443922.1	RNSILGHPRPT	TVSGLSLFGLGTAGYRTHWIP	DYTCRTEPLREIVRQAGAR
124	NP_057933.2	KETVMGQPTPK	TPRQLREFLGTAGFCRLWIPGFA	EMAAPLYPLTKTG---
125	YP_009116631.1	HTQG----KK	CKCYLCGIEGHYARECPKKVVK	-PQRAAYFNGMGLDDNW
126	YP_009513249.1	KEKLENI TAPT	TLKQLQSILGLLNFARNFIPDF	TEL IAPLYALIPKSTK-
127	YP_223871.1	TQAILQIPVPK	TKRQVREFLGTIGYCRLWIPGFA	EELAQPLYAATRGN-


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128 NP_127504.1 E D T D S F S V V S E E S T Q L S Q L S S S S N D S P E N N E N T L P Q T F M V R P T E P E I S E V
129 NP_044929.1 K Q K L M D L Q P P T T L R Q L Q S I L G L I N F A R N F L P N F A E L V A P L Y Q L I P K A K G -
130 NP_057860.1 K V P I R S - - - R W A L P E L Q A L L G E I Q W V S K G T P T L R Q P L H S L Y C A L Q R H T D P
131 NP_040973.1 L - D I P E - - - Q P T L N E L Q K L A G K I N W A S - - Q A I P D L S I K A L T N M M R G N Q N L
132 NP_777317.1 A L R - - - - K S E C K C Y A C G E L G H F A S D C N - N P R K L T Q R V A I L D S L E L E K G I
133 NP_054716.1 K S K L L D I T P P N T L K Q L Q S I L G L I N F A R N F I P N Y S E L I T P L Y Q L I P L A K G -
134 YP_001856242.1 L P E K D - - - S W T V N D I Q K L V G K L N W A S - - Q I Y P G I K V R Q L C K L L R G T K A L
135 NP_954565.2 V I R K D K - - L Q T L N D F Q K L L G D I N W L R P Y L K L T T G D L K P L F D T L K G D S D P
136 NP_569150.1 S L R - - - - K K N C R C Y A C G E E G H F A S E C K - N P R K I M D R V K V L D S L D L E D G L
137 NP_659397.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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139 YP_233107.1 N L R - - - - K K D C K C F A C G E T G H Y A S E C T - N P K K F T H R V A I L E S L D L Q E G L
140 YP_009109692.1 I E T V A R I P P P R N P R E V R E F L G T A G F C R L W I P G F A E L A A P L Y A L T K E S - - -
141 NP_057849.4 L P E K D - - - S W T V N D I Q K L V G K L N W A S - - Q I Y P G I K V R Q L C K L L R G T K A L
142 NP_049560.1 T V P I R S - - - R W A L P E L Q A L L G E I Q W V S K G T P T L R Q P L H S L Y C A L Q R H T D P
143 YP_009506267.1 T R - - - - E K R C K C F L C G K E G H Y A R E C P - N D R R D I K R V A I F E G L S I P D D F
144 NP_039820.1 - - - - - - - Q R K C K C Y I C G Q E G H Y A N Q C R - N K H K D Q Q R V A I L Q S L D L K E N E
145 NP_056790.1 K A T V M K I P V P T T P R Q V R E F L G T A G F C R L W I P G F A S L A A P L Y P L T K E S - - -
146 YP_002321513.1 S K K - - - G V I R K C K C Y I C G E D G H F A R E C R - S K M V N V Q R A A I F N E L E L D D S L
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148 YP_001956722.2 K Q K L L N I T P P R D L K Q L Q S I L G L I N F A R N F I P N F S E L V K P L Y N I I A T A N G -
149 NP_056902.1 L D M V K N - - - P T L N D V Q K L M G N I T W M S - - S G I P G L T V K H I A A T T K G C L E L
150 NP_056886.1 L V A E P R - - - I A T L W D V Q K L V G S L Q W L R P A L G I P P R L M G P F Y E Q L R G - S D P
151 NP_041261.1 C I K T D H - - - L K T L N D F Q K L L G D I Q W L R P Y L K L P T S A L V P L N N I L K G D P N P

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003 YP_009508537.1 - - - N Y V P W Q T E H S T - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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006 NP_040939.1 Q S - - E R K I E E V H V K - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
007 YP_003864102.1 N S - - P R S L S D E A L I - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
008 YP_009002585.1 E V V S V E E G E E V S D A I F S I S E N E D E D A L H T G G A F A E T I F - - - - - - - - - -
009 YP_003284237.1 E I V S V G E D E D E V S D I W S L S E G E D G H - - - - - G - - - - - - - - - - - - - - - -
010 YP_009268869.1 Q S - - E R R I E L R H V K - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
011 YP_009506251.1 E I V S V E E G E E D S D A I Y S L S E N E E - - - E L Q D E V L H E K V F - - - - - - - - - -
012 NP_955611.1 N E - - A R E W N L D M K M - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
013 YP_008567619.1 D V V S V S E G E D S D A I Y S V S E G E - - - - - - - D G S I A T M T - - - - - - - - - -
014 NP_149413.1 D I V S V G F D E E D T E D I Y S V S E N E E N Q A H L G V S Y E D P Q L P T I P - - - - - - - -
015 YP_004442824.1 D V I S V G M D E D D I S E I Y S V G E E I D E Y Q F Q Q E E - - - - - - - - - - - - - - - -
016 YP_001931967.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
017 YP_002455786.1 R D - - T I T L R H P H L H - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
018 YP_009109694.1 - - - T P F T W Q T E H Q L - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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021 YP_224289.1 E I V S V E E N E T E L S D I Y S I S E G E E S G P P K S E I - - - - - - - - - - - - - - - -
022 YP_009182100.1 S K S P S D F A T C L Y K Q F C R E Q D P S K K E K D L E I L K G K L V N L T I S D L K Y F L S Y V
023 NP_705927.1 T E - - V I P L T E E A E L - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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026 NP_758887.1 D E - - K V E W T R E A E L - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
027 YP_009508406.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
028 YP_610965.1 D V L S V D N N D P M S D A I C S F S E G E A G - G S Q T I K T A L S D L P - - - - - - - - - -
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030 YP_241114.1 A S - - P R T L S L E G Q T - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
031 YP_006732334.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
032 YP_009041481.1 D I M S V D P E E P M S D A I C S M S E G E - A G F T A T A Y N F E D D L P Y G - - - - - - - -
033 YP_001036293.1 E I V S V Q E G D E L S D S I F S V S E G E - - - E V L Q S L N P F I Q Q - - - - - - - - - -
034 YP_605811.1 D V I S V G F D E S D V S D I Y S V S E G E D N Y Q F N N E D - - - - - - - - - - - - - - - -
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037 NP_789740.1 T E - - V I P L T E E A E L - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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043 YP_002117531.1 D V V S V G L D E G D Q S D I Y S V S E G E E G H S - - - - - D - - - - - - - - - - - - - - - -
044 YP_004347415.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
045 NP_056891.1 N S - - H R S L S K E A L A - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
046 YP_009513242.1 - - - K F I S W T E E N S N - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

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048 YP_009165750.1 ----
049 NP_040840.1 QS--ERYIESIHVR-----
050 YP_004222728.1 NE--AREWNLDMM-----
051 YP_009506264.1 EVVSVGENEDDLSDVYSLSEGETG-----G-----
052 YP_567050.1 RA--HLLQLKQQLH-----
053 YP_009508571.1 ---KYIEWSNENTV-----
054 NP_056803.1 ---KYIEWTEDNTK-----
055 NP_955564.1 IS--TRKLTPEACK-----
056 YP_009508411.1 EIVSVKEGEAQSDAIYSISEGEDDNEVHN-LNSITHS-----
057 YP_009140788.1 DIVSVQEGEELSDAIYSISEGEDN-----DEELQ-----
058 YP_009508410.1 ----
059 NP_040333.1 ---TLFEWGPDPQK-----
060 YP_008992013.1 EEEMPES SATNQPP-P-AQT TSSSQKSSNGPWFTYDDIPSYKWR-----
061 NP_041734.1 DIVSVEEGEEESDAIYSISENEDG--ELDTEVVHEKVF-----
062 NP_056895.1 RA--IIQLSPEQLQ-----
063 YP_009109689.1 ---TPFTWQTEHQL-----
064 YP_002519387.1 ----
065 YP_595725.1 DLVSVGYDESDIDEIYSVSENEECQAHLGLN-EDEQLPKVP-----
066 YP_009508551.1 ---KYIEWSEENTK-----
067 YP_001497148.1 ---APFTWQEKHQS-----
068 NP_041186.1 AS--PRTLSLEGRT-----
069 NP_663784.1 TE--EVQWTELAEA-----
070 YP_009508443.1 EIVSVHEGDDLSDAIYSVSEGENNEEIDQGVNVFINR-----
071 YP_003987465.1 DVVSVGENEDELSDIYSVSEGEES-----
072 NP_861410.1 ----
073 YP_009345071.1 ELVSAEENDS-GDEIYSMSEGEDPTTMMFNLTPLAQIEDCLTLDWEYKDV
074 YP_009508582.1 ---NNIKWTSSEHTR-----
075 NP_569141.1 ----
076 YP_002916057.1 ----
077 NP_777384.2 RA--IIQLSPEQLQ-----
078 YP_233110.1 DVISVGFDES DVSDIYSVSEGEDSYQFNED-----
079 NP_542258.1 RD--TIELTSTQVQ-----
080 YP_009130664.1 DIVSVQEGDNESDAIYNISEGEEMEDLTKSLNVMSVS-----
081 YP_009508566.1 ---QSI SWEPKHSQ-----
082 YP_006607892.1 ----
083 YP_009506270.1 DVVSVGFD EDDVSDIYSIDEEADNYKFTNEE-----
084 NP_042513.1 ----
085 YP_006907834.1 ----
086 YP_004442827.1 DII SVGYDEKSI EDIYSISEGEDNQAH LGRD-EEQ-LPEVP-----
087 YP_009408594.1 DIVSVDLNEPDSDAICSVSEGETS-TEQQCQAATLEFP-----
088 YP_009508561.1 ---NFIQWTA EHTL-----
089 NP_056907.1 RA--HLLQLKQQLH-----
090 YP_002308474.1 RD--TIQLTPPQLQ-----
091 YP_007761644.1 ----
092 NP_040550.1 NE--AREWNLDMM-----
093 NP_758808.1 DVVSVDADES DSSGIYSYSENEAPLQEVNSFIHDENIF-----
094 YP_009345075.1 DVVSV DINDPDSDAICSVSDGEPEGQEEVLNGISPDP-----
095 NP_068729.1 ----
096 NP_047255.1 ---TLFQWGTEQQQL-----
097 YP_006273075.1 DIVSVEEGEDMSDAIYSISEGEDG-----ADELQ-----
098 YP_009508888.1 ---NNILWNDELTS-----
099 NP_395469.1 ----
100 YP_009508546.1 ---KYIEWSKENTK-----
101 NP_056762.1 AHS SQEHEHTWEIG-----
102 YP_009508556.1 ---KFISWTEENS-----
103 NP_569153.1 EIVSIDEGDPDSDAIFSISEGEE-----AGTLEEQCF-----
104 NP_043924.1 TDKLKWTEDNLNKFKLKDEVASACVLGLPDP TLPFRHLIG-----
105 YP_009243641.1 NS--ARCLTPAAEE-----
106 YP_004300274.1 ----
107 NP_056848.1 ----
108 YP_006495799.1 DVL SVDVGES DSEGVCSISEGETAGRMDELA AFKTQLPYPV-----
109 YP_009508409.1 ----
110 NP_687035.1 LE--EIVWTEEA EA-----
111 NP_045937.2 PFQLDDQV EAFNK-----
112 NP_612577.1 ----
113 NP_619548.1 ----
114 NP_056880.1 IS--TRKLTPEACK-----
115 YP_009121747.1 DIVSADMSDHD T--VYSISEGEGGATEMNIGAMVEESP-----
116 YP_009113237.2 VAVSVDEGDPQSDAIYSISDNEDE--YQNE LLQEESVF-----
117 YP_009508408.1 EIVSVQEGDNQSDAIYSVSEGEVADDVQQGVNVFIQK-----
118 NP_955579.1 ---TLFQWGTEQQQL-----
119 YP_009229919.1 DVVSVDVGD PDS DGI CSFSEGEIK--NYATKAVLEDDF-----

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008	YP_009002585.1	-----
009	YP_003284237.1	-----
010	YP_009268869.1	-----
011	YP_009506251.1	-----
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013	YP_008567619.1	-----
014	NP_149413.1	-----
015	YP_004442824.1	-----
016	YP_001931967.1	-----
017	YP_002455786.1	-----
018	YP_009109694.1	-----
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033	YP_001036293.1	-----
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070	YP_009508443.1	- - - - -
071	YP_003987465.1	- - - - -
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021 YP_224289.1 - - - - - MSLELFMLHEIEDEPEA -
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025 YP_004442830.1 - - - - - LSWEDWENYYKKEFLYMAEIEEVS
026 NP_758887.1 - - - - -
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076 YP_002916057.1 - - - - -
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078 YP_233110.1 - - - - - F D V I G - H D V F M F T I E E Q - -
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083 YP_009506270.1 - - - - - M E D F K N Y E V Y M M N L E E I E E
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086 YP_004442827.1 - - - - - T T W E D W D S Y Y K K E F L M M A E V L E V S
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100 YP_009508546.1 - - - - -
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117 YP_009508408.1 - - - - - E T L Y Y L R Q E D - - N A Y F L G G G G - - -
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131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - - L E D F K N Y E V N F L E D H E E D E
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135 NP_954565.2 - - - - -
136 NP_569150.1 - - - - - M E G F K N Y E V Y M L R M E E M D E
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139 YP_233107.1 - - - - - W D V L M L Q E E E I P E
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147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
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017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
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020 NP_955619.1 - - - - -
021 YP_224289.1 - - - - -
022 YP_009182100.1 E L K H K K K G K K I K S F K R Y K F R K S K K K G F E K S K I N P Q K N F K R R F K Q K S G K E I

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147 NP_955591.1 - - - - -
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022 YP_009182100.1  E D R K K Q S K S K P T S S K G V A N V C W N C N Q Q G H F S R E C P R K N A R L I E L Q E A A D T
023 NP_705927.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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031 YP_006732334.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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067 YP_001497148.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
068 NP_041186.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
069 NP_663784.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
070 YP_009508443.1  - - - - - - - - - - - - - - - - W R C S V K V S Q Q E H D C K - H R W D Y Y T - - - - N T
071 YP_003987465.1  - - - - - L I G K A N T W R Y Q V R V S P K E Y Y C K - H E W G F N S - - - - K I
072 NP_861410.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
073 YP_009345071.1  - - - - - - - - - - - - - - - - W Q P L I K L S D Q E F N C V - H H W Q H N I Q V P - D C
074 YP_009508582.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
075 NP_569141.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
076 YP_002916057.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
077 NP_777384.2      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
078 YP_233110.1      - - - - - R N C L V E T T S A W R S A M K V T P E E K N C L - H T W S F E E - - - - K T
079 NP_542258.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
080 YP_009130664.1  - - - - - - - - - - - - - - - - Y R S M I K A T K T Q H D C N - H V W E Y N - - - - G A G
081 YP_009508566.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
082 YP_006607892.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
083 YP_009506270.1  - - - - - P N D Y L V G E P S D W R S K M K V S R R Q Y F C K - H E W S F E E - - - - A H
084 NP_042513.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
085 YP_006907834.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
086 YP_004442827.1  - - - - - E G P W L V G K E G G Y M Q Q M Y V T K K Q F H C T - H D W Y Y D Q - - - - P R
087 YP_009408594.1  - - - - - G S R V Q I K V S D E I L N C V - H Q W Q M N E D V D V L Y

```


001	YP_004442836.1	R	T	I	C	R	A	C	G	S	E	A	V	H	K	H	R	I	D	C	L	K	C	D	M	T	I	C	L	M	C	Q	P	W	F	Y	K	D	I	N	T	E	E	V	K	K	-	-	-	-				
002	NP_056728.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
003	YP_009508537.1	L	E	T	L	I	T	K	L	N	E	A	E	Y	L	Q	G	R	R	G	D	K	T	L	I	M	K	V	N	A	S	Y	-	-	T	T	G	Y	I	R	Y	Y	N	E	G	E	K	-	-	-	-			
004	YP_004732983.2	-	Q	A	C	S	T	C	Q	T	I	T	V	L	G	R	R	A	T	C	T	L	C	L	N	L	C	S	L	C	A	G	L	D	F	G	L	K	I	V	P	K	T	A	-	-	-	-	-	-	-	-		
005	YP_009508407.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
006	NP_040939.1	W	E	A	C	R	K	K	L	E	E	M	E	G	N	-	Y	N	K	D	K	D	V	Y	G	Q	L	A	W	G	-	D	K	A	I	E	Y	I	V	Y	Q	E	K	G	K	P	-	-	-	-	-	-	-	-

[illegible]

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080 YP_009130664.1 S F K C F C C K E E T S V N Y R M H C P Q C L I T T C N L C A L Y Y F G Q K V P A S R P N - - - -
081 YP_009508566.1 L N N L I I A L N H A D N L E Q R N G E V P L V I K I N A S N - - T T G Y I R F Y N K N G K - - - -
082 YP_006607892.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
083 YP_009506270.1 V T T C K A C G S E A V P K H R V D C K K C G M T V C L M C Q P W Y Y K D I N T E E V K K - - - -
084 NP_042513.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
085 YP_006907834.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
086 YP_004442827.1 V R I C Q R C F Q K S P K G Q Y I I C G I C K V K V C H Q C T E Y C Y G I T M K G K E V Q - - - -
087 YP_009408594.1 I R - C L F C K Y N T K K R M R I H C T Q C K V T A C P M C S D Y Y L - - Q V H I T P G - - - -
088 YP_009508561.1 L N E L I S A L N H A G N L E Q R R G D S P L V V K V N A S D - - K T G Y I R Y Y N D N S L - - - -
089 NP_056907.1 L H A I Q Q A L Q H - N C R S R L N P A L P I L G L I S L S S S G T T S V L F Q A R Q R - - - -
090 YP_002308474.1 L N T L Q K A L T H - N C R S R I V S N L P I L A L I M L R P T G T T A V L F Q T K Q K - - - -
091 YP_007761644.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
092 NP_040550.1 W R E I V Q L S T T - A A L E R W D P A L P L E G A V A R C E Q G A I G V L G Q G L S T H P - - - -
093 NP_758808.1 H K - C H T C R R D T Q K H Y R L E C Q K C K F L V C S L C T I P Y L G I T M Q F R Q K Q - - - -
094 YP_009345075.1 N F N C L Y C K N L T K Q T R R W H C P K C Q F T T C A Y C A Y L Q L G K K M P P A P T K - - - -
095 NP_068729.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
096 NP_047255.1 F E D I K K A L L S S P A L G L P D I T K P F E L F I D E N S G F A K G V L V Q K L G P W K - - - -
097 YP_006273075.1 A V H C S F C R R E S I K R A R I H C P L C L L T A C N L C G P Y Y L K I E V P V E - P A - - - -
098 YP_009508888.1 L Q E L I T L L N Q A D N L E E R K P T T R L I I K V N S S - - H A G Y I R Y Y N E G S K - - - -
099 NP_395469.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
100 YP_009508546.1 L N T V I E A L N T A S N L E E R L P N Q R L V I K V N T S P - - S A G Y V R Y Y N E S G K - - - -
101 NP_056762.1 D K V C E I C S Y F T D Y N K T V S C K T C E T Q Y C K T C S D Q L A L E V T E V K K P T K E E T M
102 YP_009508556.1 L Q Y I I S V L N Q A D N L E E R N P E T R L I L K V N S S P - - S A G Y I R Y Y N E G S R - - - -
103 NP_569153.1 H V R C Y P C K R E T T Q R A R L H C K L C H I T S C L M C G P T Y F N K K I T V Q - P M - - - -
104 NP_043924.1 R K M T P V E S N L G I C E Q Y A E C A A W A I S A C N L V S G F G R K I I V T S H S P V K F I L Q
105 YP_009243641.1 L Q F F E H Q L K S - K F L M R I D P L P L P L T L Y L I N T F M Y P T A L L G Q N E - - - - - -
106 YP_004300274.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
107 NP_056848.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
108 YP_006495799.1 - R F C S L C G D N T P V G R R V H C T T C K A N L C P V C A W L E F G I R I V A A K T - - - -
109 YP_009508409.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
110 NP_687035.1 Y K N N Q G I V Q E T Q E G T Y Y D P L K E L I A T V Q K Q G E G Q W T Y Q F T Q E G - A V - - - -
111 NP_045937.2 - - - L K H A I T T A P V L V P D P A K P F Q L Y T S H S E H A S I A V L T Q K H A G R T - - - -
112 NP_612577.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
113 NP_619548.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
114 NP_056880.1 L Q L M N E R L S T - A R V K R L D L S Q P W S L C I L K T E Y T P T A C L W Q D G - - - - - -
115 YP_009121747.1 S I - C H F C G I A T T E I S R L H C P E C R L T A C A L C A L H Y L K I K I E V K R S K - - - -
116 YP_009113237.2 A K - C S F C K G E R L Q R Q Y V Y C H K C D L L A C G M C S W T Y V N Q K I E V K - P A - - - -
117 YP_009508408.1 V A N C R F C K R E V M Q R W N A K C S K C S I L T C G M C S E H Y L G L N I P C Q R E E - - - -
118 NP_955579.1 F E D I K K A L L S S P A L G L P D I T K P F E L F I D E N S G F A K G V L V Q K L G P W K - - - -
119 YP_009229919.1 E K - C S Y C Q Y P T F K R M R C H C K G C G I T A C P M C S K F Y L - - E Y L V T P E P - - - -
120 YP_004442833.1 V R S C Q R C F G K F T K G Q Y V I C G K C K V R V C H L C I Q Y C Y G F S I T K E E I P - - - -
121 NP_862833.2 L Q F V E E A I R Q - Q Q I T Y C D Y Q R S W G L Y I L S T P R A P T G V L Y Q D K - - - - - -
122 NP_040563.1 V E E F N L K L K D P E W K D R I R E G A E L V I K I Q M V P R G I V F D L L Q D G N P I W - - - -
123 YP_443922.1 F G L L K T D L S V A A A L A A P D Y S K P F H L D V S E K E G F A S A I L F Q K Q E G E R - - - -
124 NP_057933.2 Y Q E I K Q A L L T A P A L G L P D L T K P F E L F V D E K Q G Y A K G V L T Q K L G P W R - - - -
125 YP_009116631.1 - R V C S I C S D E T P H G R R V T C T T C N I N L C P I C A R M D Y G I M L I A A K D T K - - - -
126 YP_009513249.1 L E T L I T K L N G A E Y L Q G R K G D K T L I M K V N A S Y - - T T G Y I R Y Y N E G E K - - - -
127 YP_223871.1 F Q S L K L A L T Q P P A L A L P S L D K P F Q L F V E E T S G A A K G V L T Q A L G P W K - - - -
128 NP_127504.1 R F L T S Q D F T W N I R I L Y S Y F C G D Q S Q N K E E L R R Q I F E M K C L S Y D R K K I D R H
129 NP_044929.1 L K T I I Q A L N S T E N L E E R R P D V D L I M K V H I S N - - T A G Y I R F Y N H G G Q - - - -
130 NP_057860.1 L V Q L R Q A L S Q - N C R S R L V Q T L P L L G A I M L T L T G T T T V V F Q S K Q Q - - - -
131 NP_040973.1 V Q K A K K A I E E Q V Q L G Y Y D P S K E L Y A K L S L V G P H Q I S Y Q V Y Q K D P E K I - - - -
132 NP_777317.1 P T T C K G C N I Y A A P K N R M D C P Q C K L T I C V L C E P H Y Y K G A M A L S K P E - - - -
133 NP_054716.1 L Q K I K E L N A S E N L E Q R K P D V E L I V K V H V S P - - T A G Y I K F A N K G S I - - - -
134 YP_001856242.1 L A E N R E I L K E P V H G V Y Y D P S K D L I A E I Q K Q G Q G Q W T Y Q I Y Q E P F K N - - - -
135 NP_954565.2 L E K V E T A I A E - Q F V T H I N Y S L P L I F L I F N T A L T P T G L F W Q D N - - - - - -
136 NP_569150.1 V T I C K A C G S E A A P K H R I D C L K C E M T V C L M C Q P W F Y K N V N T E E V K K - - - -
137 NP_659397.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
138 YP_009513211.1 F G R I K E A L L S A P A L A L P D L T K P F A L Y V D E K E G V A R G V L T Q T L G P W R - - - -
139 YP_233107.1 S K H C R D C K F E A R R D N R M D C S K C Q L T I C A L C T Y H C F K - - - - I L I P R - - - -
140 YP_009109692.1 F E A L K K A L L S A P A L G L P D T S K P F T L F L D E R Q G I A K G V L T Q K L G P W K - - - -
141 NP_057849.4 L A E N R E I L K E P V H G V Y Y D P S K D L I A E I Q K Q G Q G Q W T Y Q I Y Q E P F K N - - - -
142 NP_049560.1 L V Q L R Q A L S Q - N C R S R L V Q T V P L L G L V M L T L T G T T T V V F Q S K Q Q - - - -
143 YP_009506267.1 N A H C R F C R R E V M Q R W N A K N C K D I T T C G M C S D H Y V G L R V S C K R P E - - - -
144 NP_039820.1 Q L A C R S C K Q F L A G - - - V Q C H H C H A V Y C F M C A E A Y H D V Q A E K I L S K D Y S F S
145 NP_056790.1 F D H I K K A L L S A P A L A L P D L T K P F T L Y I D E R A G V A R G V L T Q T L G P W R - - - -
146 YP_002321513.1 R I K C Q E C S I F T T P Q A R F L C D S C N L L L C A M C A Q G Y Y G I N I V E P V V P E - - - -
147 NP_955591.1 Y Q E I K Q A L L T A P A L G L P D L T K P F E L F V D E K Q G Y A K G V L T Q K L G P W R - - - -
148 YP_001956722.2 L Q N I I S M L N S A E N L E E R N P E V R L I M K V N T S P - - S A G Y I R F Y N E F A K - - - -
149 NP_056902.1 L E E N N E K I K N A Q G L Q Y Y N P E E E M L C E V E I T K N Y E A T Y V I K Q S Q G I - - - -
150 NP_056886.1 W R E I V R L S T T - A A L E R W D P A L P L E G A V A R C E Q G A I G V L G Q G L S T H P - - - -
151 NP_041261.1 L A L I N K A I Q N - Q S V Q Q I S Y N L P L V L L L L P T P H T P T A V F W Q P N G T D P T K - -

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001 YP_004442836.1 TRVRIERVIDWKEIALRQ--HEVLKTSIANEK-----QLSEENE
002 NP_056728.1 -----
003 YP_009508537.1 -----
004 YP_004732983.2 -TRADWKFFQDRDSLIALS--YEHNAFLLRQVEGLKQELQAAKEQLQLLHS
005 YP_009508407.1 -----
006 NP_040939.1 -----
007 YP_003864102.1 -----
008 YP_009002585.1 --QTSFFNEKS--LLTQQ--QEYIAYQTAEIK-----KLQEQLK
009 YP_003284237.1 SFSSQHHEPKWKEIATAL--GEINAKLEQEKK-----ALIEELN
010 YP_009268869.1 -----
011 YP_009506251.1 --TPIPFSPNA--LLQQQ--AAYIRWLESENK-----RLNELVE
012 NP_955611.1 -----
013 YP_008567619.1 --V-APYNPRN--LLEEQ--QRYIEWCELEMK-----RLKESII
014 NP_149413.1 --KKPSSSINYEKLARQL--LLENSKLKEEKK-----ILIEELN
015 YP_004442824.1 IKTRETRSVDWKKIVLEQ--HEALLSISAREK-----SLRKELE
016 YP_001931967.1 -----
017 YP_002455786.1 -----
018 YP_009109694.1 -----
019 NP_789739.1 -----
020 NP_955619.1 -----
021 YP_224289.1 KEKEKEKESDLLGLVNNC--REIMAKYRTEKE-----VLLEELN
022 YP_009182100.1 FGIKTIRLNNWPHDTQEIGDVVSFEAILEYEKFECD FCKTSADQYTPVIO
023 NP_705927.1 -----
024 YP_009508577.1 -----
025 YP_004442830.1 --PEVD---YKSLAASL--ISENERLKLKLEKK-----VLLEELN
026 NP_758887.1 -----
027 YP_009508406.1 -----
028 YP_610965.1 --PPVEAP--EQLIQNL--IGYIDSLKLENE-----RLKEER-
029 YP_001931961.1 -----
030 YP_241114.1 -----
031 YP_006732334.1 -----
032 YP_009041481.1 ---VTWKFFQNKDELINSL--YHHNAFLIKENS-----LLKEQLQLAQRRRI
033 YP_001036293.1 --V-QVYNPQR--LLQEQ--QNYIQVCEVEIE-----KLKESVK
034 YP_605811.1 STPSGYSHDDWMGSANRW--KAHYEFSQARRK-----SLKADLE
035 NP_955577.1 -----
036 YP_003208050.1 --PPPPPPENKDELIHEL--VVYTETLLKRVK-----ELEEQL-
037 NP_789740.1 -----
038 YP_004442839.1 KVVK---DDWMNMAKRF--MDSWKKAEDEKM-----ELKEELN
039 YP_009507791.1 -----
040 YP_004581513.1 -----
041 NP_043933.1 -----
042 YP_009507248.1 -----
043 YP_002117531.1 SLLKDRKKVDYIGVCIEV--LEENKKLRTEKE-----VLIQDLN
044 YP_004347415.1 -----
045 NP_056891.1 -----
046 YP_009513242.1 -----
047 YP_009352866.1 ---VTWKFFQNKDELINNL--YLHNAFLIKENS-----LLKEQLQLAQRRV
048 YP_009165750.1 -----
049 NP_040840.1 -----
050 YP_004222728.1 -----
051 YP_009506264.1 NQ-VAYASPNWREIALRQ--QEIIIRDLEAEKR-----ALIEEVN
052 YP_567050.1 -----
053 YP_009508571.1 -----
054 NP_056803.1 -----
055 NP_955564.1 -----
056 YP_009508411.1 --VRPVYEPRQ--LMNEQ--MTYIKHCEEEIEA-----RLKQEVA
057 YP_009140788.1 --PSTPLNPRR--IIQEQ--HNYIGWCEAEIE-----RLNKEVK
058 YP_009508410.1 -----
059 NP_040333.1 -----
060 YP_008992013.1 YKRMSLLFYKLNGFNEPTLKHVFLASLPEELQPD IQRQLTASN LVIDNIS
061 NP_041734.1 --PPVPFNTHT--LLQQQ--AAYIQWLEKENQ-----RLTEAVE
062 NP_056895.1 -----
063 YP_009109689.1 -----
064 YP_002519387.1 -----
065 YP_595725.1 --KPPEKKSNYELLAKQL--LIENSKLKMEKE-----ILIEELN
066 YP_009508551.1 -----
067 YP_001497148.1 -----
068 NP_041186.1 -----
069 NP_663784.1 -----
070 YP_009508443.1 --IRQVYNPQQ--LMMEQ--QNYIQSCEMEIQ-----RLKDELA

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071 YP_003987465.1  SSSTASREESWKTIALEQ--RKLKKLENEKE-----ALIVELN
072 NP_861410.1      -----
073 YP_009345071.1  --VSPYYATPS--LLKEN--QEYISWCQAEIN-----KTGEAMT
074 YP_009508582.1  -----
075 NP_569141.1      -----
076 YP_002916057.1  -----
077 NP_777384.2      -----
078 YP_233110.1     STPSGYSYDDWMGSANRW--KAHYEFSQARRK-----SLKADLE
079 NP_542258.1      -----
080 YP_009130664.1  --P-IQYNPLS--LMHEQ--QGYITWCEAEIT-----RLKQEEV
081 YP_009508566.1  -----
082 YP_006607892.1  -----
083 YP_009506270.1  TRVRIERVIDWKDIALKQ--HEVLKTSIAREK-----QLSEEVE
084 NP_042513.1      -----
085 YP_006907834.1  -----
086 YP_004442827.1  --PEED---YKELAKSL--LAENKKLKLKLERK-----LLLEELN
087 YP_009408594.1  --PPVQKEFDEKPVLRLEL--LQYVTWLQTEND-----RLKAELR
088 YP_009508561.1  -----
089 NP_056907.1      -----
090 YP_002308474.1  -----
091 YP_007761644.1  -----
092 NP_040550.1      -----
093 NP_758808.1      --KSQPENPNLVRELLEH--AIFLEEKCKNQE-----LLSETQI
094 YP_009345075.1  --EPAVRSKVQSSAVHAE--LSRLRNERDHLE-----RIVDSFL
095 NP_068729.1      -----
096 NP_047255.1      -----
097 YP_006273075.1  --PSTPINPRR--IIQEQ--HNYIGWCEVEIE-----RLNKEVK
098 YP_009508888.1  -----
099 NP_395469.1      -----
100 YP_009508546.1  -----
101 NP_056762.1     IDDLKLVNKNLEFRVTILEHKVEMQNLQDKFETMQIR-----
102 YP_009508556.1  -----
103 NP_569153.1      --PQAPFNQKG--LLQQQ--QEYIAWCNNEIA-----RLKEEVA
104 NP_043924.1     TTPNVSNQRLARWHRI LTQEDITIETDASI QG-----
105 YP_009243641.1  -----
106 YP_004300274.1  -----
107 NP_056848.1      -----
108 YP_006495799.1  -DATKWNLYLNKDELIAQL--YEHNAFLTHQNK---ALQGRIEELTKGRN
109 YP_009508409.1  -----
110 NP_687035.1      -----
111 NP_045937.2      -----
112 NP_612577.1      -----
113 NP_619548.1      -----
114 NP_056880.1      -----
115 YP_009121747.1  --GSSKGS-----EVIVP--DEETQQPNSIWK-----LLAQKDN
116 YP_009113237.2  --AKPVPKPLSTDLVRLQ--SEHLLWQEKQID-----KLKEEVL
117 YP_009508408.1  --IRQVYNPRQ--LMMEQ--QSYIQSCELEIQ-----RLKEEIQ
118 NP_955579.1      -----
119 YP_009229919.1  --PAPKQYSSSKDRLIQEL--MSYNVYLLSENE-----RLQEIIN
120 YP_004442833.1  --KEEEN---WKELASTL--MIENRKLKLEKK-----LLLKELN
121 NP_862833.2      -----
122 NP_040563.1      -----
123 YP_443922.1      -----
124 NP_057933.2      -----
125 YP_009116631.1  -SAAHWQYQNKDELIQHL--YEHNAFLTRKVA---ELTSQLQEFHNRRP
126 YP_009513249.1  -----
127 YP_223871.1      -----
128 NP_127504.1     FORMIKLFYHIG--GDISLKQAFISSLPPILSERISALIKERGTSVTQMH
129 NP_044929.1      -----
130 NP_057860.1      -----
131 NP_040973.1      -----
132 NP_777317.1     PAPEEPKHLYWMRYAKEQ--LDKYKEAQKEKL-----ELRKRVE
133 NP_054716.1      -----
134 YP_001856242.1  -----
135 NP_954565.2      -----
136 NP_569150.1     TRVRIERVIDWKDIALKQ--HEVLKTSIANEK-----QLSEEVE
137 NP_659397.1      -----
138 YP_009513211.1  -----
139 YP_233107.1     KQTTPSMKHDWRELAERQ--SELLRKFCQREK-----ELEQEVQ
140 YP_009109692.1  -----
141 NP_057849.4      -----
142 NP_049560.1      -----
143 YP_009506267.1  --VQQVYQPTN--LLVEQ--RNYIMSCEEEIA-----RLKNEIE

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144 NP_039820.1 ARGKKGKAVIIIEEDEIEG--EFLISQLQQENQ-----RLQKQVE
145 NP_056790.1 -----
146 YP_002321513.1 -LQHHERPKIDKGKKKVSWSQEEIQDLEGMSEIPYARARQSLRMLSSDEE
147 NP_955591.1 -----
148 YP_001956722.2 -----
149 NP_056902.1 -----
150 NP_056886.1 -----
151 NP_041261.1 -----

001 YP_004442836.1 ELKEKI-----KELKGKELITVEEISEEEG-----
002 NP_056728.1 -----
003 YP_009508537.1 -----
004 YP_004732983.2 VDMINLSD-----DGLNFSLEEKSFRLRGGGGTSSSS-----
005 YP_009508407.1 -----
006 NP_040939.1 -----
007 YP_003864102.1 -----
008 YP_009002585.1 QTE-----EKLAEAERKIRGYENMEVLEKERKEMAL-----
009 YP_003284237.1 RALEQI-----KDYKQKGLPTAIIQEVDE-----
010 YP_009268869.1 -----
011 YP_009506251.1 FYK-----RLLDGGSRLQQ-----ELEADQKELEE-----
012 NP_955611.1 -----
013 YP_008567619.1 QNDELRMENDRLQLENRDLKRQIEKLQDKQKMKALMEDLGEEF-----
014 NP_149413.1 KEIKAR-----QEAENKNAVFVEETSSEVN-----
015 YP_004442824.1 QALEQL-----KHYKRESEIIIEEE-----P-----
016 YP_001931967.1 -----
017 YP_002455786.1 -----
018 YP_009109694.1 -----
019 NP_789739.1 -----
020 NP_955619.1 -----
021 YP_224289.1 NALKQA-----KEYKEK--FEHLEGICEEQ-----
022 YP_009182100.1 RSDLSKEGTISYHTWCFTSLVMRETKNAEVPQLVQREVVDLAKLRDAKKKF
023 NP_705927.1 -----
024 YP_009508577.1 -----
025 YP_004442830.1 KEILEK-----NQLRN-ELPVI EETNSEAA-----
026 NP_758887.1 -----
027 YP_009508406.1 -----
028 YP_610965.1 DDLQQK-----LQRT EERLQSL LGDYLHEASEDMAA-----
029 YP_001931961.1 -----
030 YP_241114.1 -----
031 YP_006732334.1 -----
032 YP_009041481.1 ANNAQLTG----ADLQAFMEDYRNLTLETAQKIATETPKPVGK-----
033 YP_001036293.1 AANKIA-----EDKIMAASIRHAVELEELRKQLQA IK-----
034 YP_605811.1 KAE EEL-----KFYKQKEKERARLKNQIP-----
035 NP_955577.1 -----
036 YP_003208050.1 KEKELE-----IARLELMIN-----DEGKQETAE-----
037 NP_789740.1 -----
038 YP_004442839.1 DIKEQI-----KFYKGKEKE--VCTEEIP-----
039 YP_009507791.1 -----
040 YP_004581513.1 -----
041 NP_043933.1 -----
042 YP_009507248.1 -----
043 YP_002117531.1 SALEQL-----KNTKGK--EIIVEEESPE-----
044 YP_004347415.1 -----
045 NP_056891.1 -----
046 YP_009513242.1 -----
047 YP_009352866.1 ANNAMLTG----ADLQAFMEDYRNLTVETSQR IAEGTRGPLGQ-----
048 YP_009165750.1 -----
049 NP_040840.1 -----
050 YP_004222728.1 -----
051 YP_009506264.1 MSRDEI-----KQYKAKGLTEII EETPEET-----
052 YP_567050.1 -----
053 YP_009508571.1 -----
054 NP_056803.1 -----
055 NP_955564.1 -----
056 YP_009508411.1 AAKILS-----ENEIVSMKIREAVETD TLRKENETLR-----
057 YP_009140788.1 HYK-----GLYEALLTEKS-----LKKDYEDLRE-----
058 YP_009508410.1 -----
059 NP_040333.1 -----
060 YP_008992013.1 LGKIFQLAKTCLDKLCEQKQFFKDLLKDKEPFRSACKKPYLQIKCKQKKD
061 NP_041734.1 FYK-----KEAEE-LRLER-----DLEQDRSLEP-----
062 NP_056895.1 -----

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063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 KEIKAH - - - - - QETKKGKELYIEEASTEVE - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 REKKVA - - - - - EEMVVAARISEAVSQQESKKQLEEMK - - - - -
071 YP_003987465.1 QALEQL - - - - - KQTKGKGIPHEHQDDALEKELLKELLREEKEK
072 NP_861410.1 - - - - -
073 YP_009345071.1 HIKKEN - - - - - AAQSEVITAQEHVINKLKEEKLDQRKIVEELKQELQ - -
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 RAEEEEL - - - - - KFYKQKEKEKAKLKDQIP - - - - -
079 NP_542258.1 - - - - -
080 YP_009130664.1 TS - - - - - KKQVEYW - - KQKYLSTQEEV - - - - -
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 FLRKQN - - - - - KELKSKEPIVFEEDEET - - - - -
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 NQILEN - - - - - TKIKR - ELPVIEETSSEAA - - - - -
087 YP_009408594.1 AATERR - - - - - PREDVGDVEID - - - - AELLKDLED - - - - -
088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 ERIVSS - - - - - EKQVKFYGILPTKKSNSKAGYDLQSNIDIEIPPG - - -
094 YP_009345075.1 DQLPSE - - - - - LQRSVVEPSQNQKLQQQEEPSSQKG - - - - -
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - -
097 YP_006273075.1 HYK - - - - - GLYEALLMEKS - - - - - LRKDYEELKE - - - - -
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 FYK - - - - - QLAQERELQLQ - - - - - LEQSRKELAG - - - - -
104 NP_043924.1 - - - - -
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 ND L I D L C E G D P D L M A E I C D E L F R K P A S G E T S I L R G K E R V K L E I - - - - -
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 - - - - -
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 DWKQAI - - - - - RDQAKEEALWQIKEKELRAQINEKD - - - - -
116 YP_009113237.2 YWKNKYLAS - IERDLEQEFQTLPVREEDREKKRKEDDEMEEDRVSSNQKP
117 YP_009508408.1 NVKKVA - - - - - EEQVVAAKINEAVAVKEMQEIQELK - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 KKLIED - - - - - LEKGRMEAER - - - - FDQAKERRKG - - - - -
120 YP_004442833.1 DQIEAN - - - - - KKIKE - EFPVIEETNSDAA - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 EDLISLAD - - - DLEDVSI LDNASNRGKEEKELFQFGTTIPIDH - - - - -
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 VGDIRQTAFYVLDLCSKRKFFNQMKKMSRDLEKACTKSDLI IKGDKGCS
129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 ILETMI - - - - - PQHKELEEE - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 - - - - -

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136 NP_569150.1 I L R K Q S - - - - - K E L K E K E P I I F E E D T E E T - - - - -
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 E L R R E I - - - - - S T L K T D L A N L S V I Q E T P E - - - - -
140 YP_009109692.1 - - - - -
141 NP_057849.4 - - - - -
142 NP_049560.1 - - - - -
143 YP_009506267.1 A M K I S S - - - - - E N Q L V A E K I A R A V E E E H L K K E V Q A L K - - - - -
144 NP_039820.1 R L Q E E L - - - - - M K L H R E K D E A L K H S E K A S R - - - - -
145 NP_056790.1 - - - - -
146 YP_002321513.1 Q P N R P Q R Q A E K E S D T I I K M A S I M A E Q T K E I S Y W R D K A V E L K Q A L G D L Q R D
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 - - - - -
151 NP_041261.1 - - - - -

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001 YP_004442836.1 - - - - - A A M I E K I E N L E K E N E L L N A I I T - - - - -
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - -
004 YP_004732983.2 - - - - - I K I S S T T T P - - P G F P T T P N R F Q P - - - - -
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 - - - - - K D M Q R K I D E E I K K A A M Q E L P T E K - - - - -
009 YP_003284237.1 - - - - - S K T E E L E R E N E L L N A V L E - - - - -
010 YP_009268869.1 - - - - -
011 YP_009506251.1 - - - - - L E A D R K E L E A H D K G K R V Q F T E E E K - - - - -
012 NP_955611.1 - - - - -
013 YP_008567619.1 - - - - - D Y E E E V N V L V E D W D N K R V T K E L D - - - - -
014 NP_149413.1 - - - - - D E I E M W K S K A E L Y E A L Y H E A L N K - - - - -
015 YP_004442824.1 - - - - - V E L M E E L E N T K R E N E L L N A L L E R - - - - -
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 - - - - - E A E N K A L A Q E N Q D L K E K V E - - - - -
022 YP_009182100.1 E Q A Q L K E E Q E R L R A T R R P V I L E V Y D D A E E L E E M S K I G G H L E E L S I K L R R P
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 - - - - - L E I D M L Q E V V T S L Q R Q L E Q K D Q I - - - - -
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 - - - - - E A E R R R K G K A L A T S V P R A T T G G P V I - - - - -
029 YP_001931961.1 - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - -
032 YP_009041481.1 - - - - - A A L T W R E E A E A A Y K E E L A T R K N W - - - - -
033 YP_001036293.1 - - - - - L D K E R L E L E N P D L K K I L E - - - - -
034 YP_605811.1 - - - - - E A I Q A K L D D L E R E K E L N N I L R I E - - - - -
035 NP_955577.1 - - - - -
036 YP_003208050.1 - - - - - E G E E - - - - -
037 NP_789740.1 - - - - -
038 YP_004442839.1 - - - - - Q I Y T Q K L E L L E N E - - - N S L L K D - - - - -
039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - - M E N N L Q L L E E L N - - H L E E G - - - - -
042 YP_009507248.1 - - - - -
043 YP_002117531.1 - - - - - L L A R I S Y L E Q R E L F M Q E L Y E - - - - -
044 YP_004347415.1 - - - - -
045 NP_056891.1 - - - - -
046 YP_009513242.1 - - - - -
047 YP_009352866.1 - - - - - A A R N W R K E A D V E W T E E E E D - - - - -
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 - - - - - A K E I E R L E A E K A L L A E L L E - - - - -
052 YP_567050.1 - - - - -
053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -

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055 NP_955564.1 - - - - -
056 YP_009508411.1 - - - - - L E N E R L Q L E V A D L N K I I K G K Q P I I P E D E E L E - - - - -
057 YP_009140788.1 - - - - - G D I K R G K G V M I Q E P E D I N Y L G E N - - - - -
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 C D C S P K K K R H F R K F K S P E F S S R P - R R S R K P Y R F - - - - -
061 NP_041734.1 - - - - - T L L D - - - - - K G K K V Q I L D P D - - - - -
062 NP_056895.1 - - - - -
063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 - - - - - N E I E T W K S R A E L F E A L Y N E E V K K N - - - - -
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 - - - - - L E N D R L T L E N E D L K K E I R S - - - - -
071 YP_003987465.1 A K K A E E S L Q E L L K E E K E K A K K A E E S L Q E L L R - - - - -
072 NP_861410.1 - - - - -
073 YP_009345071.1 - - - - - Q E K E K F L K E I E E Q K E L F M R Q I A E E K - - - - -
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 - - - - - E A V Q A K L D D L E K E K E L N N I L R I E - - - - -
079 NP_542258.1 - - - - -
080 YP_009130664.1 - - - - - F E K E F D E L Y K E K G K G V V I Q E A T - - - - -
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 - - - - - A Q L V Q K L E D M E K E N E L M K I L I S - - - - -
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 - - - - - I E I D T L Q E A L E R A N E L N K E K D A M - - - - -
087 YP_009408594.1 - - - - - L E I H - - - - -
088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - - K C T V I S T G T F L Q M P D N M Y G R L V E R T S L A I Q G - - - - -
094 YP_009345075.1 - - - - - V C I Q E P P P Q K P A I T F T R N E G S T V T L P T K K T R R R A G W D F Y S P - - - - -
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - -
097 YP_006273075.1 - - - - - G D K E R R K G I M I Q E P E E V N Y L G E D - - - - -
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 - - - - - V D S R R R K D K G I V I D E G S C Y F N P E - - - - -
104 NP_043924.1 - - - - -
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - - L E E E V R G Y K E E Q E L R T P L Q K L S E G A S T S - - - - -
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 - - - - -
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 - - - - - K K A Q E E S Q K W A E E R Q S L Y K D I D D L L K I Q Q Q - - - - -
116 YP_009113237.2 Y K S - - - - S T P A K E R D R R T V I I Q E P H Q E T V Q K T V - - - - -
117 YP_009508408.1 - - - - - L E N D R L T L E N H D L K E L L K - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - - V V I R T P S G S - - - - -
120 YP_004442833.1 - - - - - I E I E M L Q E L L N E A N K S N N Q - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 - - - - - I Q N L E N V A K I I E K W K D T P R V V I K - - - - -
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -

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128 NP_127504.1 G Y C N P S R R R K Y K R F K L P S F K E R D G R Q Y R K R R R F - - - - -
129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - - N E L K I R L E D E K R E N S L L Q R L Y E - - - - -
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 - - - - -
136 NP_569150.1 - - - - - A Q L I Q K L E D V E R E N E L L N I L I K - - - - -
137 NP_659397.1 - - - - -
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - - E D E E E L Q R L R Q E N T L L E L L N Q - - - - -
140 YP_009109692.1 - - - - -
141 NP_057849.4 - - - - -
142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - - L E N D R L T L E N E D Q R K E L E K K - - - - -
144 NP_039820.1 - - - - - V F S T I Q E S D E A E L N L I K E E L R - - - - -
145 NP_056790.1 - - - - -
146 YP_002321513.1 Y A Q - - - L Q K E V E L L R W H N V V K N S Q P K E A D E S L E T N E D S I N - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 - - - - -
151 NP_041261.1 - - - - -

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001 YP_004442836.1 - - - - - Q K E E E E V G Y L N K I Q E
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - -
004 YP_004732983.2 - - - - - L A Q E K L K G I
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 - - - - - E L W E Q
009 YP_003284237.1 - - - - - K K D K E - - - - -
010 YP_009268869.1 - - - - -
011 YP_009506251.1 - - - - - V Q L T E E L E E I H M
012 NP_955611.1 - - - - -
013 YP_008567619.1 - - - - - D L E
014 NP_149413.1 - - - - - P S S S M I K E G L Y Q T Q I T H
015 YP_004442824.1 - - - - - E K T E R E E L A I R A S E E K E A
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 - - - - - E L K E E N E I L K D Q N T T
022 YP_009182100.1 V A A S P G A T S S N P L E E N V D T P K D L K G Q I L L C P I F K G P I P K R T E A D W K R E E E
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 - - - - - I I Q
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 - - - - - R E P L E G
029 YP_001931961.1 - - - - - M S T S Q R
030 YP_241114.1 - - - - -
031 YP_006732334.1 - - - - - M L S Q Q M M N H Q E Q
032 YP_009041481.1 - - - - - R Q K K K I G E
033 YP_001036293.1 - - - - -
034 YP_605811.1 - - - - - A E A E L K A L K E S F K E R E E A
035 NP_955577.1 - - - - -
036 YP_003208050.1 - - - - - A N
037 NP_789740.1 - - - - -
038 YP_004442839.1 - - - - - L E E E R K I Q D I Q V F K E I Q A
039 YP_009507791.1 - - - - -
040 YP_004581513.1 - - - - -
041 NP_043933.1 - - - - - W E M L T D E D F K L Q Q N
042 YP_009507248.1 - - - - -
043 YP_002117531.1 - - - - - K E K F E K D L L Q A Q M R S
044 YP_004347415.1 - - - - -
045 NP_056891.1 - - - - -
046 YP_009513242.1 - - - - -

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047 YP_009352866.1 - - - - - E
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 - - - - - K E Q A K N K M K I G E L E A
052 YP_567050.1 - - - - -
053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -
055 NP_955564.1 - - - - -
056 YP_009508411.1 - - - - - E L K Q Q V Q Q L K K S
057 YP_009140788.1 - - - - -
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - - F R K R S S S S K D S
061 NP_041734.1 - - - - - E D Q H T
062 NP_056895.1 - - - - -
063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - - M T K S K I
065 YP_595725.1 - - - - - K A S T S S V T E G M Y Q V Q I D H
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 - - - - - L K I Q
071 YP_003987465.1 - - - - - K E K E K V R K A E E S Q K E
072 NP_861410.1 - - - - -
073 YP_009345071.1 - - - - - A K F L S L K Q
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 - - - - - A E T E L K A L K E S F K E K E E A
079 NP_542258.1 - - - - -
080 YP_009130664.1 - - - - - N V F
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - - M N M N T M
083 YP_009506270.1 - - - - - Q K E A E E I Q Y L N K I T E
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 - - - - - I L K
087 YP_009408594.1 - - - - - D
088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - - M N Q T R F E D D P I E H D L N A Q S W I K W F H L M R R Q D T G Y Q W
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - - I T V Q G G V I D P D
094 YP_009345075.1 G D I A L P I G A I L T I Q T Q L K V Q L P S G T Y M Q L A A K S S L A K L G V Q V L G G V I D E D
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - -
097 YP_006273075.1 - - - - -
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 - - - - - E T T R
104 NP_043924.1 - - - - -
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - - Y K A P E E S D E E R
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 - - - - -
112 NP_612577.1 - - - - - M S L R N R
113 NP_619548.1 - - - - - M T S S S L F R E G E L
114 NP_056880.1 - - - - -
115 YP_009121747.1 - - - - - I K D Q
116 YP_009113237.2 - - - - - E V E G K G K E K A E E
117 YP_009508408.1 - - - - - N
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - - V H E A S

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120 YP_004442833.1 - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 - - - - - E T P E S S T S N T
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 - - - - - F R R - - S K T S K A
129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 - - - - - D E R T K N T E L E T K I K E
133 NP_054716.1 - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 - - - - -
136 NP_569150.1 - - - - - Q K E K D E I Q Y L N E I I E
137 NP_659397.1 - - - - - M K R N T L F K W G E F
138 YP_009513211.1 - - - - -
139 YP_233107.1 - - - - - K Q Q K D I E A L Q Q Q N E
140 YP_009109692.1 - - - - -
141 NP_057849.4 - - - - -
142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - - N K E V L D L Q S Y
144 NP_039820.1 - - - - - Q F K E E T R M A I A Q
145 NP_056790.1 - - - - -
146 YP_002321513.1 - - - - - D G Q E D A S G A E
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 - - - - -
151 NP_041261.1 - - - - -

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001 YP_004442836.1 L E E R I R K L E Q Q M K Y R D E E M Q V I L K - - - - -
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - -
004 YP_004732983.2 Q E D L S L A V Q F D D V R - - - - -
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 R E G K A H I A G A V I A A - - - - -
009 YP_003284237.1 - - - - I K D L K E R - - - - L Q W L S Q - - - - -
010 YP_009268869.1 - - - - -
011 YP_009506251.1 A Y L E E D T I T R V V G H - - - - -
012 NP_955611.1 - - - - -
013 YP_008567619.1 A E L N K V G V I I P E E K - - - - -
014 NP_149413.1 L T K E L R Q L E A G M E V N Q - - - - -
015 YP_004442824.1 L K T E I R E L R Q E N E A L K T G - - - - -
016 YP_001931967.1 - - - - -
017 YP_002455786.1 - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - -
021 YP_224289.1 M G Q E M V K I Q E K Q Q E A E K F L R R E I K R R E Q A N T E - - - - -
022 YP_009182100.1 E R N R K L V E S Y R K L K L F E R Y K E V R N E V L Q Q I P Q H Q I P I N T I I T V K S S P T E M
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - -
025 YP_004442830.1 L T N K L K G Y E Q A S S S S E - - - - -
026 NP_758887.1 - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 C V E E C S D E D T E E A A - - - - -
029 YP_001931961.1 S L S S T Q I Y P I R K A L M N - - - - -
030 YP_241114.1 - - - - -
031 YP_006732334.1 N K K E I L F K A I M A K I R Q R - - - - -
032 YP_009041481.1 E E D E E E E E E E I I V G - - - - -
033 YP_001036293.1 - E F E Q V N V L I C D G - - - - -
034 YP_605811.1 L M G E I T A L E E G V K V H K E E A E E L Q E E N Q K L K E K I L A F E K E A - - - - -
035 NP_955577.1 - - - - -
036 YP_003208050.1 F I E E S S T I H C E E D E - - - - -
037 NP_789740.1 - - - - -
038 YP_004442839.1 M R K E I E S L K A A K - - - E E E N K A H E E E K K A L K E E I L A L K R S I - - - - -

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039 YP_009507791.1 - - - - - M I Q G - - - - -
040 YP_004581513.1 - - - - - M I Q G - - - - -
041 NP_043933.1 E - - - - - - - - - - - - - - -
042 YP_009507248.1 - - - - - - - - - - - - - - -
043 YP_002117531.1 M A A E M E R L Q Q Q V S - - - - - Q L E E Q I A Q K A - - - - -
044 YP_004347415.1 - - - - - - - - - - - - - - -
045 NP_056891.1 - - - - - - - - - - - - - - -
046 YP_009513242.1 - - - - - - - - - - - - - - -
047 YP_009352866.1 D E G E Q V G G V V F P E G - - - - - - - - - - -
048 YP_009165750.1 - - - - - M D L L - - - - - - - - - - -
049 NP_040840.1 - - - - - - - - - - - - - - -
050 YP_004222728.1 - - - - - - - - - - - - - - -
051 YP_009506264.1 E K A L L A E L L E R E Q - - - - A K C E - A L E E A Q Q T T - - - - -
052 YP_567050.1 - - - - - - - - - - - - - - -
053 YP_009508571.1 - - - - - - - - - - - - - - -
054 NP_056803.1 - - - - - - - - - - - - - - -
055 NP_955564.1 - - - - - - - - - - - - - - -
056 YP_009508411.1 L E E K R L G V I I C E G - - - - - - - - - - -
057 YP_009140788.1 - - - - - E K V - - - - - - - - - - -
058 YP_009508410.1 - - - - - - - - - - - - - - -
059 NP_040333.1 - - - - - - - - - - - - - - -
060 YP_008992013.1 K R R K S S R C F I C R K K G H F A K - - - - - - - - - - -
061 NP_041734.1 A Y L E E D T I S R V I G H - - - - - - - - - - -
062 NP_056895.1 - - - - - - - - - - - - - - -
063 YP_009109689.1 - - - - - - - - - - - - - - -
064 YP_002519387.1 T - - - - - - - - - - - - - - -
065 YP_595725.1 L R K E L R E V E A T L E V N K - - - - - - - - - - -
066 YP_009508551.1 - - - - - - - - - - - - - - -
067 YP_001497148.1 - - - - - - - - - - - - - - -
068 NP_041186.1 - - - - - - - - - - - - - - -
069 NP_663784.1 - - - - - - - - - - - - - - -
070 YP_009508443.1 I E D M A V N V L I C D G - - - - - - - - - - -
071 YP_003987465.1 T A L L V E K L Q E Q L Q - - - - Q A L S N K T T C N E E V R - - - - -
072 NP_861410.1 - - - - - - - - - - - - - - -
073 YP_009345071.1 K Q E K E E E C L F I K E E - - - - - - - - - - -
074 YP_009508582.1 - - - - - - - - - - - - - - -
075 NP_569141.1 - - - - - - - - - - - - - - -
076 YP_002916057.1 - - - - - - - - - - - - - - -
077 NP_777384.2 - - - - - - - - - - - - - - -
078 YP_233110.1 L K E E I T A L E E E V R I H K E E A E E L Q E E N Q K L K E K I I A F E K D V - - - - -
079 NP_542258.1 - - - - - - - - - - - - - - -
080 YP_009130664.1 R Q I E T Q R I L S - - - - - - - - - - -
081 YP_009508566.1 - - - - - - - - - - - - - - -
082 YP_006607892.1 F L S S L K N P Q I Q M E Q L S I - - - - - - - - - - -
083 YP_009506270.1 L S E R I K R L E Q Q Q K Y - - - - - - - - - - -
084 NP_042513.1 - - - - - - - - - - - - - - -
085 YP_006907834.1 - - - - - M K P Q P L - - - - - - - - - - -
086 YP_004442827.1 L T E K L K G L E E A S T S - - - - - - - - - - -
087 YP_009408594.1 K G R E S I Q Y L G E Y V V - - - - - - - - - - -
088 YP_009508561.1 - - - - - - - - - - - - - - -
089 NP_056907.1 - - - - - - - - - - - - - - -
090 YP_002308474.1 - - - - - - - - - - - - - - -
091 YP_007761644.1 H K S L S E Q E I I N E A R I R A F I T V I P R P I V T E P I N N G Q T S N Q P Q S P T E T I E E I
092 NP_040550.1 - - - - - - - - - - - - - - -
093 NP_758808.1 F T G E I Q I V L F N H N T A P Y P V K K T Y R L A Q I I F E K F Y T P I F I Q E P F T S T Q Q G S
094 YP_009345075.1 Y K E E I F I T L Y N A S K E D L V F P A Q S Q I A Q G - - - - - - - - - - -
095 NP_068729.1 - - - - - - - - - - - - - - -
096 NP_047255.1 - - - - - - - - - - - - - - -
097 YP_006273075.1 - - - - - E K I - - - - - - - - - - -
098 YP_009508888.1 - - - - - - - - - - - - - - -
099 NP_395469.1 - - - - - - - - - - - - - - -
100 YP_009508546.1 - - - - - - - - - - - - - - -
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102 YP_009508556.1 - - - - - - - - - - - - - - -
103 NP_569153.1 - - - - - I I A - - - - - - - - - - -
104 NP_043924.1 - - - - - - - - - - - - - - -
105 YP_009243641.1 - - - - - - - - - - - - - - -
106 YP_004300274.1 - - - - - - - - - - - - - - -
107 NP_056848.1 - - - - - - - - - - - - - - -
108 YP_006495799.1 V G A L L A E G E L E K L A - - - - - - - - - - -
109 YP_009508409.1 - - - - - - - - - - - - - - -
110 NP_687035.1 - - - - - - - - - - - - - - -
111 NP_045937.2 - - - - - - - - - - - - - - -

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113	NP_619548.1	GHFCLN
114	NP_056880.1	
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116	YP_009113237.2	ISEESSEEDAEIIA - - - - -
117	YP_009508408.1	KEPEQLEVLICEG - - - - -
118	NP_955579.1	
119	YP_009229919.1	SDEETAMAITEETS - - - - -
120	YP_004442833.1	LRKRIAELEGASTS - - - - -
121	NP_862833.2	
122	NP_040563.1	
123	YP_443922.1	
124	NP_057933.2	
125	YP_009116631.1	IGALLAEEGIEELA - - - - -
126	YP_009513249.1	
127	YP_223871.1	
128	NP_127504.1	MRQKPRSCFTCGKIGHFSR - - - -
129	NP_044929.1	
130	NP_057860.1	
131	NP_040973.1	
132	NP_777317.1	LQKELEQAKHQNTVLTAAQAKGKTEE - - - -
133	NP_054716.1	
134	YP_001856242.1	
135	NP_954565.2	
136	NP_569150.1	LKERIKDLEQQQKD - - - - -
137	NP_659397.1	SP - - - - -
138	YP_009513211.1	
139	YP_233107.1	LLLQLAKIDKKEIESLRS - - - - -
140	YP_009109692.1	
141	NP_057849.4	
142	NP_049560.1	
143	YP_009506267.1	IEEHDEVNVLICEG - - - - -
144	NP_039820.1	LKEAIIIVQEEDTIEER - - - - -
145	NP_056790.1	
146	YP_002321513.1	ATNDMDEILSVHSQHS - - - - -
147	<u>NP_955591.1</u>	
148	YP_001956722.2	
149	NP_056902.1	
150	NP_056886.1	
151	NP_041261.1	

001	YP_004442836.1	-----QQREEKVNA	LEEVSVNALR-PRNNHLNIRCEVEIKEKK
002	NP_056728.1	----MDHLL LKTQTQTEQVMN	VTNP-- -- -- -- --NSIYIKGRLYFKGYK
003	YP_009508537.1	-----KPISYVSIVFSKTELKFTTELEKLLTTVHK	
004	YP_004732983.2	-----QQE-QAYTEMPRG	AHNKLYHVVTFRIPDAK
005	YP_009508407.1	-----	-----
006	NP_040939.1	-----	--LWVNVVHNINKLSI--PQQVVIKAAQK
007	YP_003864102.1	-----PLMWIHSHAS	PKRVLLPYDAIADLIIL
008	YP_009002585.1	-----STETGREERRPVK	GNMLYNMDVEIDIPSPV
009	YP_003284237.1	-----EKVQMLTEEDEKVF	SAS-GRSGP-RYNGLYNVKVGIEVEKEI
010	YP_009268869.1	-----	--LWVNVVHNINKLSQ--SQQIIKAAQK
011	YP_009506251.1	-----TTEGPSEAKKVVK	KSNNMLYNLEVILIIPEVG
012	NP_955611.1	-----RPCLWLFS-TQPT	KAFTAWLEVLTLITK
013	YP_008567619.1	-----ICISKEGEKIKPI	SKSMLIKFQVKLEIPDVP
014	NP_149413.1	-----AVESEEEDEV	EEVTLMASAV--KQDMFRFPVVEVPEVG
015	YP_004442824.1	-----RPIIEDVNA	LEECIVSTLG-PRNNLLNMKVVSFEVEERR
016	YP_001931967.1	-----MSKRNL	TNP-- -- -- -- --NSIYILGTFFQFPGYK
017	YP_002455786.1	-----WPLVWLHAPHPT	-SLCPWGHILACTVLT
018	NP_009109694.1	-----RPVAYLSKKLP	VAAGWPPCLRQLMAATAM
019	NP_789739.1	-----	--LKTGKYARMRGAHTNDVKQLTEAVQK
020	NP_955619.1	-----WPLVWLHAPLPHT	-SQCPWGQLLASAVLL
021	YP_224289.1	-----KLALMMNEVCTER	EYEQINATT-VQNNLYNLIKIGLEV DGEK
022	YP_009182100.1	LADIEKLMEEVKKLQKKESTP	EDKPDATPEFRHKDNSIYISAAFRFKGYE
023	NP_705927.1	-----	--LKTGKYARMRGAHTNDVKQLTEAVQK
024	YP_009508577.1	-----KPIAYASHVFTN	TELKFTPLEKLLVTMHK
025	YP_004442830.1	-----KILMAKEKL	-QETVLISAR--KDFMYRFDVHVEVEGK-
026	NP_758887.1	-----	--LKVGKYARTKNAHTNELRVLAGLVQK
027	YP_009508406.1	-----	-----
028	YP_610965.1	-----ALLAE	AAKIGQQHQKKLINRLYNTVVKFTIPGAE
029	YP_001931961.1	----RVKNLINNQIYSGDVTN	ITNP-- -- -- -- --HSIYIKGRLLKFPGYK
030	YP_241114.1	-----	-PLRWIYLSATPETHLLPYVELVAKIVAK

031	YP_006732334.1	--KHQCLSLQTVDNGLCLIAN	RTSP--	--	--	--	--	NSIYIKAKLSFKGYK
032	YP_009041481.1	-----	AMHESILSSTVKGAT	RR	LY	NI	RV	TFEIPDVP
033	YP_001036293.1	-----	REK-SERIASIKERR	NN	GL	YN	LM	VQLEIPGAA
034	YP_605811.1	-----VQESSEEVIELVNN	VEEHLVLTGQ-Q	KN	NL	LN	NI	KITLEIKEKK
035	NP_955577.1	-----	RPVAYLSKKLD	TV	AS	GW	PP	CLRMVAAIAI
036	YP_003208050.1	-----FGASA	AVTG--	--	--	--	--	RVNKLFTIPNVK
037	NP_789740.1	-----	--LKTGKYARMRGA	HT	ND	VK	QT	LTEIAVQK
038	YP_004442839.1	-----T-EIQKPVELVNN	VEEHLVLTGK-Q	RN	NL	LN	NI	KITIEIKEKK
039	YP_009507791.1	-----	--LWMGRMNRQ	KK	KA	EN	TC	DIVLRAIN
040	YP_004581513.1	-----	AVSPQIVSSASGEL	NN	RL	YN	NM	KVCIRIRGCP
041	NP_043933.1	--DEEQLLLESVDSEERFSTLT	KTNP--	--	--	--	--	NSIYIRGNFYFKGYK
042	YP_009507248.1	-----	KPVCYASRTLNESE	EL	NY	ST	IE	EKELLAIWV
043	YP_002117531.1	-----ESVGMLMEENEQV	FSASQALQPKGQ	Y	N	GL	YN	LQIEICCDSW
044	YP_004347415.1	-----	--	--	--	--	--	MNRMTYMTVKITIPTYM
045	NP_056891.1	-----	--PIMWIHLPASPK	KV	LL	PY	YD	AIADLIIL
046	YP_009513242.1	-----	RPIMYVNYVFSKA	EV	K	FT	Q	TEKMLTMMHK
047	YP_009352866.1	-----	INSEECYSTSVKKAS	KK	KL	YN	RV	VTFTFIPGVE
048	YP_009165750.1	-----QKVQIQNNHQQLSLN	ATNT--	--	--	--	--	SSIYISGKLFQGYK
049	NP_040840.1	-----	--LWVNVVHSIK	N	L	S	Q	--AQQIIKAAQK
050	YP_004222728.1	-----	KPCLWLFS-TQPT	KA	FT	AW	LE	VLTLITK
051	YP_009506264.1	-----ENALFLEEEESKV	FSYERLRAGP-R	Y	N	GL	YN	LKIALEINGVI
052	YP_567050.1	-----	WPLVWLHTPHPT	--	SL	CP	WG	HLLACTILT
053	YP_009508571.1	-----	KPIMYLYNYVFSKA	EL	K	FT	LL	EKLLTMMHK
054	NP_056803.1	-----	KPIMYLYNYVFSKA	EL	K	F	S	MLEKLLTMMHK
055	NP_955564.1	-----	--VVEWIHLPHIS	P	K	V	I	TPYDIFCTQLIIK
056	YP_009508411.1	-----	KGEOQLATTSS--	--	R	N	GL	YN
057	YP_009140788.1	-----	LIAGAEERKRLVK	--	N	M	L	YN
058	YP_009508410.1	-----	--	--	--	--	--	--
059	NP_040333.1	-----	RPVAYLSKKLD	PV	AA	GW	PP	CLRMVAAIAV
060	YP_008992013.1	-----DCPNKRAKSI	RLVEHLQATTDYS	P	Q	Q	D	ELEFYFSEQDEP
061	NP_041734.1	-----TV	E-QQEV	R	K	P	V	KGNM
062	NP_056895.1	-----	FPLAYFQTP	PL	T	D	N	--QASPWGLLLLLGCQY
063	YP_009109689.1	-----	RPVAYLSKKLD	PV	AA	GW	PP	CLRIMAATAM
064	YP_002519387.1	-----LLMNLNLKTS	GKST	KT	NP	--	--	--YSTYVTVG
065	YP_595725.1	-----VEESEEE--	AEEVMMASAV--	K	D	E	M	YRFPVIEVPEVG
066	YP_009508551.1	-----	KPIMYLYNYVFSKA	EL	K	F	S	MLEKLLTMMHK
067	YP_001497148.1	-----	RPVAYLSKKLD	PV	AA	GW	PP	CLRIMAATAM
068	NP_041186.1	-----	--PLRWIYLSATPT	K	H	L	P	Y
069	NP_663784.1	-----	--LKV	G	K	Y	A	KIKN
070	YP_009508443.1	-----	KD	K	H	V	A	A
071	YP_003987465.1	-----EEVAVITEEEN--	LSYSAIKSPT-R	Y	N	GL	YN	LKAKIEVEGET
072	NP_861410.1	-----MKS	KGNP--	--	--	--	--	NATFITV
073	YP_009345071.1	-----PE	EEEQRVEETLA	I	S	G	K	L
074	YP_009508582.1	-----	KPIAYASHVFTN	T	E	S	K	F
075	NP_569141.1	-----	--	--	--	--	--	--MKIYILAKI
076	YP_002916057.1	-----	--	--	--	--	--	--MRV
077	NP_777384.2	-----	FPLAYFQTP	PL	T	D	N	--QASPWGLLLLLGCQY
078	YP_233110.1	-----TQGPEEVIELVNN	VEEHLVLTGQ-Q	KN	NL	LN	NI	KITLEVKEKR
079	NP_542258.1	-----	WPLVWLHTPHPAT	--	SL	R	P	WGQLLANAII
080	YP_009130664.1	-----	IEKNE	L	S	P	P	KKTKNM
081	YP_009508566.1	-----	RPIAYASHVFNHT	E	Q	K	F	T
082	YP_006607892.1	-----HLQNHQVQIQNNSEMNYLN	STNP--	--	--	--	--	NSIYVKGILKFSGYK

001	YP_004442836.1	V	-	-	-	I	N	-	A	I	L	D	T	G	A	T	V	C	V	A	D	S	R	M	I	P	A	E	M	R	-	-	E	Q	A	K	N	R	I	I	R	G	V	N	G	V	T	E				
002	NP_056728.1	K	-	-	-	I	L	H	C	F	V	D	T	G	A	S	L	C	I	A	S	K	F	V	I	P	E	E	H	W	V	N	A	E	R	-	-	P	I	M	V	K	I	A	D	G	S	S	I			
003	YP_009508537.1	G	-	-	-	-	L	K	A	L	D	L	S	M	G	Q	N	I	H	V	Y	S	P	I	V	S	M	Q	N	I	Q	K	T	P	-	-	-	Q	T	A	K	K	A	L	A	S	R					
004	YP_004732983.2	G	Q	L	L	E	F	I	N	A	I	D	T	G	C	T	C	C	I	N	L	T	K	V	P	D	G	A	I	-	-	E	N	A	S	I	I	Q	E	V	S	G	I	N	S	K	T	V				
005	YP_009508407.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
006	NP_040939.1	L	-	-	-	-	T	Q	E	V	I	I	R	T	G	K	I	P	W	I	L	L	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
007	YP_003864102.1	G	-	-	-	-	E	G	H	S	R	T	Y	F	G	I	E	P	S	T	I	I	Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
008	YP_009002585.1	R	-	-	-	-	F	V	K	A	I	L	D	T	G	A	T	S	C	C	I	S	M	D	K	I	P	K	A	A	I	-	-	E	P	N	T	F	E	V	T	F	R	G	I	N	S	V	Q	K		
009	YP_003284237.1	K	-	-	-	-	Y	N	-	A	I	V	D	T	G	A	T	T	C	V	I	R	E	A	R	L	T	E	K	M	L	-	-	E	E	S	P	V	N	V	T	L	R	G	M	N	S	I	S	R		
010	YP_009268869.1	L	-	-	-	-	T	Q	E	V	I	I	R	I	G	K	I	P	W	I	L	L	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
011	YP_009506251.1	K	P	-	-	-	L	V	K	A	I	L	D	T	G	A	T	T	C	C	I	N	I	N	S	V	P	K	M	A	I	-	-	E	Q	N	T	F	L	V	Q	F	R	G	I	N	S	T	Q	S		
012	NP_955611.1	L	-	-	-	-	E	A	S	A	V	R	T	F	G	K	E	V	D	I	L	L	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
013	YP_008567619.1	E	-	-	-	-	F	V	N	A	I	L	D	T	G	A	T	T	C	C	I	D	E	R	V	I	P	Q	E	A	L	-	-	E	A	N	P	Y	L	V	H	F	R	G	I	N	S	K	T	T		
014	NP_149413.1	K	-	-	-	-	V	Q	L	T	A	L	L	D	T	G	A	T	R	S	C	I	N	K	P	F	I	E	D	K	M	L	-	-	Q	D	T	A	F	K	V	K	I	S	G	V	N	S	V	T	Y	
015	YP_004442824.1	I	-	-	-	-	M	I	N	-	A	I	L	D	T	G	A	T	V	S	V	C	S	E	E	I	V	P	Q	E	F	R	-	-	T	N	A	A	V	K	A	L	I									

023	NP_705927.1	I	-	-	-	-	T	E	S	I	V	I	W	G	K	T	P	K	F	K	L	P	-	-	-	-	-	-	-	-	-	-	I	Q	K	E	T	W	E	T	W													
024	YP_009508577.1	A	-	-	-	-	I	K	A	I	D	L	A	L	G	Q	P	I	E	V	Y	S	P	I	I	S	M	Q	K	L	Q	K	T	P	-	-	-	L	P	E	R	K	A	L	S	T	R							
025	YP_004442830.1	K	-	-	-	-	T	L	K	A	L	L	D	T	G	A	T	K	S	C	I	N	I	D	H	L	D	Q	S	Y	L	-	-	T	D	S	K	F	A	V	D	I	E	G	V	N	S	S	T	R				
026	NP_758887.1	I	-	-	-	-	K	E	A	L	V	I	W	G	K	L	P	K	F	Y	L	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
027	YP_009508406.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
028	YP_610965.1	P	-	-	-	-	F	I	A	I	A	I	F	D	T	G	A	T	S	C	V	L	D	S	K	I	V	P	E	K	A	L	-	-	T	A	L	T	Y	N	V	Q	F	S	G	V	N	S	L	D	T			
029	YP_001931961.1	I	-	-	-	-	M	L	D	C	F	V	D	T	G	A	S	I	C	L	C	S	K	Y	V	I	P	E	E	H	W	K	D	A	E	R	-	-	-	S	I	K	V	K	I	A	D	D	S	V	I			
030	YP_241114.1	G	-	-	-	-	H	E	A	I	Q	Y	F	G	M	E	P	P	F	I	C	V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
031	YP_006732334.1	K	-	-	-	-	F	L	H	C	Y	V	D	T	G	A	G	L	C	L	A	S	K	H	V	I	P	D	E	L	W	E	N	A	P	R	-	-	T	I	E	V	T	V	A	N	Q	E	K	V				
032	YP_009041481.1	-	-	-	-	-	K	F	T	A	M	A	I	L	D	T	G	A	T	C	C	C	I	D	Q	R	V	V	P	A	G	A	T	-	-	E	D	A	A	M	Q	S	T	F	L	G	V	N	S	K	T	I		
033	YP_001036293.1	P	-	-	-	-	I	Q	V	N	A	I	L	D	T	G	A	T	T	C	C	I	N	E	E	G	L	P	K	A	I	L	-	-	E	A	N	T	F	E	V	K	F	T	G	A	N	S	E	M	V			
034	YP_605811.1	I	-	-	-	-	T	M	N	-	A	I	L	D	T	G	A	A	I	C	V	C	D	G	N	M	V	D	E	Y	F	R	-	-	R	P	S	M	M	N	A	F	I	K	G	V	N	G	I	T	N			
035	NP_955577.1	L	-	-	-	-	V	K	D	A	G	K	L	T	L	G	Q	P	L	T	I	L	T	S	H	P	V	E	A	L	V	R	Q	P	P	N	K	W	L	S	N	A	R	M	T	H	Y	Q	A	M				
036	YP_003208050.1	P	-	-	-	-	F	T	L	N	A	I	V	D	T	G	A	T	S	C	C	A	D	I	R	A	I	P	E	E	A	L	-	-	E	E	L	N	Y	T	V	N	F	F	G	V	N	S	E	S	Q			
037	NP_789740.1	I	-	-	-	-	T	E	S	I	V	I	W	G	K	T	P	K	F	K	L	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
038	YP_004442839.1	I	-	-	-	-	T	M	N	-	A	I	L	D	T	G	A	A	I	C	V	C	D	G	Q	I	V	D	N	Y	F	R	-	-	R	P	S	M	M	N	A	F	I	K	G	V	N	G	I	T	N			
039	YP_009507791.1	V	-	-	-	-	L	Q	E	A	I	V	R	L	G	I	E	P	V	Y	Q	I	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
040	YP_004581513.1	E	-	-	-	-	F	S	V	N	A	I	L	D	T	G	A	T	V	C	C	I	E	E	E	R	V	P	K	E	G	L	-	-	E	E	S	K	M	T	A	Q	F	T	G	L	N	S	T	Q	Q			
041	NP_043933.1	K	-	-	-	-	Y	S	L	D	L	Y	V	D	T	G	A	S	M	C	T	A	N	K	H	V	I	P	E	E	F	W	V	N	A	K	N	-	-	P	I	R	A	R	I	A	N	D	S	I	M			
042	YP_009507248.1	A	T	-	-	-	H	Y	F	R	P	Y	L	F	G	R	K	F	K	I	L	T	D	H	K	P	L	Q	W	M	M	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
043	YP_002117531.1	A	-	-	-	-	F	I	V	N	A	I	L	D	T	G	A	T	T	S	C	I	R	T	G	K	A	P	R	E	T	V	-	-	E	D	S	K	T	Q	A	V	L	K	G	V	N	S	V	S	I			
044	YP_004347415.1	S	-	-	-	-	R	Y	H	G	L	F	D	T	G	A	N	T	C	V	C	K	T	K	V	L	P	P	E	K	W	I	E	I	D	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
045	NP_056891.1	G	-	-	-	-	H	D	H	S	K	K	Y	F	G	I	E	P	S	T	I	I	Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
046	YP_009513242.1	G	-	-	-	-	I	K	A	M	D	L	A	M	G	Q	E	I	L	V	Y	S	P	I	V	S	M	T	K	I	Q	K	T	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
047	YP_009352866.1	-	-	-	-	-	K	F	T	A	M	A	I	D	T	G	A	T	C	C	C	I	D	Q	R	V	V	P	E	G	A	T	-	-	E	E	A	A	V	P	S	V	F	H	G	I	N	S	Q	S	L			
048	YP_009165750.1	Q	-	-	-	-	L	H	L	H	C	F	V	D	T	G	A	S	M	C	V	A	S	K	H	V	I	P	E	E	H	W	E	N	S	S	R	-	-	Q	L	L	V	K	T	A	N	G	-	M	I			
049	NP_040840.1	L	-	-	-	-	Q	E	V	I	I	R	T	G	K	I	P	W	I	L	L	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
050	YP_004222728.1	L	-	-	-	-	H	A	S	A	V	R	T	F	G	K	E	V	D	T	L	L	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
051	YP_009506264.1	T	-	-	-	-	R	I	N	-	A	I	L	D	T	G	A	T	I	C	V	V	R	S	S	R	I	P	A	N	C	L	-	-	E	E	A	S	M	N	Y	T	I	K	G	V	N	S	I	T	K			
052	YP_567050.1	L	-	-	-	-	H	K	Y	S	L	Q	H	Y	G	Q	L	C	Q	S	F	H	H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
053	YP_009508571.1	A	-	-	-	-	I	K	A	M	D	L	A	M	G	Q	E	I	L	V	Y	S	P	V	V	S	M	T	K	I	Q	K	T	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
054	NP_056803.1	A	-	-	-	-	I	K	A	M	D	L	A	M	G	Q	E	I	L	V	Y	S	P	I	V	S	M	T	K	I	Q	K	T	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
055	NP_955564.1	G	-	-	-	-	H	R	S	K	E	L	F	S	K	D	P	D	Y	I	V	V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
056	YP_009508411.1	P	-	-	-	-	F	S	V	N	A	I	L	D	T	G	A	T	N	C	C	I	N	E	E	G	L	P	K	G	A	L	-	-	E	D	N	T	F	E	V	T	F	T	G	A	N	S	V	M	K			
057	YP_009140788.1	K	-	-	-	-	F	I	V	R	A	I	L	D	T	G	A	T	S	C	C	V	N	E	G	A	V	P	K	E	A	I	-	-	E	D	S	P	Y	E	V	Q	L	N	G	V	N	S	V	Q	K			
058	YP_009508410.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
059	NP_040333.1	L	-	-	-	-	K	D	A	G	K	L	T	M	G	Q	P	L	V	I	L	A	P	H	A	V	E	A	L	V	K	Q	P	P	D	R	W	L	S	N	A	R	M	T	H	Y	Q	A	L					
060	YP_008992013.1	N	D	E	T	V	F	A	L	L	Q	Q	S	S	D	D	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
061	NP_041734.1	R	P	-	-	-	I	H	V	K	A	I	L	D	T	G	A	T	T	C	C	I	N	I	N	S	V	P	Q	T	A	I	-	-	E	Q	N	T	F	L	V	Q	F	R	G	I	N	S	T	Q	S			
062	NP_056895.1	L	-	-	-	-	Q	T	Q	A	L	S	S	Y	A	K	P	I	L	K	Y	Y	H	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
063	YP_009109689.1	L	-	-	-	-	V	K	D	S	A	K	L	T	L	G	Q	P	L	T	V	I	T	P	H	T	L	E	A	I	V	R	Q	P	P	D	R	W	I	T	N	A	R	L	T	H	Y	Q	A	L				
064	YP_002519387.1	G	-	-	-	-	F	L	H	A	Y	V	D	T	G	A	T	S	C	T	A	S	P	H	I	I	P	T	E	L	W	E	E	L	P	K	-	-	P	I	L	V	N	I	A	N	D	T	N	I				
065	YP_595725.1	K	-	-	-	-	V	Q	L	T	A	L	L	D	T	G	A	T	R	S	C	I	N	Q	V	F	I	E	E	K	F	L	-	-	Q	P	T	K	F	K	V	K	I	H	G	V	N	S	V	T	K			
066	YP_009508551.1	A	-	-	-	-	I	K	A	M	D	L	A	M	G	Q	E	I	L	V	Y	S	P	I	V	S	M	T	K	I	Q	K	T	P	-	-																		

096 NP_047255.1 L - - - - - V K D A G K L T L G Q P L T I L T S H P V E A L V R Q P P N K W L S N A R M T H Y Q A M
 097 YP_006273075.1 R - - - - - F E V R A I L D T G A S T C C I N E G A V P K E A L - - E E S P Y E V Q L N G V N S V Q K
 098 YP_009508888.1 A - - - - - I I K A V D L A M G T E I M V Y S P I V S M T K I Q K T P - - - - - L P E R K A L P V R
 099 NP_395469.1 - - - - - I I L A Y I D T G A S L C L L P E Y N L P K Q L W K E L K K - - P I T I R V A D K R E L
 100 YP_009508546.1 A - - - - - I I K A M D L A M G Q E I L V Y S P I V S M T K I Q K T P - - - - - L P E R K A L P I R
 101 NP_056762.1 F N N E N R I I T A L I D S G S T H N I I C P T L I P A S W I N N T H R E I I M F A V D N S K Y N L
 102 YP_009508556.1 G - - - - - I I K A M D L A M G Q E I L V Y S P I V S M T K I Q K T P - - - - - L P E R K A L P V R
 103 NP_569153.1 A - - - - - F T V K A I L D T G A T T C C I D S R S V P K D A L - - E E N S F V N F S G I N S K Q Q
 104 NP_043924.1 E K W W I D G S R Y W D H D K G Y V T G W A A L R E D K K N Q L G G A L E G H V S A Q V A E L V A
 105 YP_009243641.1 G - - - - - E Q R C I S L S G Y D V S T I V L - - - - - - - - - - - - - - - - P L T K S Q F F F
 106 YP_004300274.1 S - - - - - R Y Y T P M I D T G A E I S I C K M N C L P D E Y W K E T R N D - - L I V R G F N N E G S
 107 NP_056848.1 S - - - - - R Y Y H G L F D T G A N I C I C K K K V L P D E L W H K T E N - - - L V L R G F N D E K H
 108 YP_006495799.1 G G H V S F T V A A I I D T G C T C C C I N G A K V P E E A Q - - E E A S Y A M T F A G V N S R G T
 109 YP_009508409.1 -
 110 NP_687035.1 I - - - - - C K E A L T I W G R L P R V Q L P -
 111 NP_045937.2 S - - - - - I T Q A D S F I L G A P L I I Y T T H A I C T L L Q R D R S Q L V T A S R F S K W E A D
 112 NP_612577.1 T N - - - - L I L H C Y V D T G S S L C M A S K Y V I P E E Y W Q T A E K - - P L N I K I A N G K I I
 113 NP_619548.1 S - - - - - F M I H C Y V D T G A S L C I A S R Y I I P E E L W E N S P K - - D I Q V K I A N Q E L I
 114 NP_056880.1 G - - - - - E H R S K E L F S K D P D Y I V V -
 115 YP_009121747.1 L - - - - - F E V K A I I D T G A T S C C I N K V I V P R E A L - - E E M N K T V F F N G L N S R Q P
 116 YP_009113237.2 P - - - - - V T V K A I I D T G A T V C C I D E R T V P A Q I L - - E E N T Y R V E F S G V N S K S I
 117 YP_009508408.1 P - - - - - I M V N A I L D T G A T T C C I N E K G L P K E I L - - E D N T Y E V K F V G A N S E M T
 118 NP_955579.1 L - - - - - V K D A G K L T L G Q P L T I L T S H P V E A L V R Q P P N K W L S N A R M T H Y Q A M
 119 YP_009229919.1 P - - - - - F E V R A I L D T G A T T C C V D K G A V P A E A L - - E K S P Y A V H F S G I N S R Q L
 120 YP_004442833.1 K - - - - - E E L K A L L D T G A T K S C I S E R Y I P K E F L - - T D S K F T V N I A G V N S M T R
 121 NP_862833.2 G - - - - - E Y E A I Q Y F G L E P P F I C V -
 122 NP_040563.1 L - - - - - M R T V I M T G R E A S F L L P -
 123 YP_443922.1 A - - - - - E K T A H L V M C H K M E I H T H H G V A A Y L T A K E F T F S A D R - - - - - K N K
 124 NP_057933.2 L - - - - - V K D A G K L T M G Q P L V I L A P H A V E A L V K Q P P D R W L S N A R M T H Y Q A L
 125 YP_009116631.1 G A P T K F E V R A V I D T G C T C T C I N S K K V P K E A L - - E E A K Y Q M N F A G V N S T G E
 126 YP_009513249.1 G - - - - - I L K A L D L S M G Q N I H V Y S P I V S M Q N I Q K T P - - - - - Q T A K K A L A S R
 127 YP_223871.1 L - - - - - T R E A S K L T F G Q D I E I T S S H N L E S L L R S P P D K W L T N A R I T Q Y Q V L
 128 NP_127504.1 S E D T L F S L E F Y E E Y A G E Q Y Q I T S Y E A P K T E N P P L P K I H T I V E I P Q T E V K I
 129 NP_044929.1 G - - - - - I L K A L D L S L G K E I H V Y S A I A S M T K L Q K T P - - - - - L S E R K A L S I R
 130 NP_057860.1 L - - - - - I K Y T L Q S Y G L L C Q T I H H -
 131 NP_040973.1 I - - - - - E E S I I R I G K E P R Y E I P -
 132 NP_777317.1 F - - - - - N I N - A I L D T G A T V C V C S E E M I P K E I R - - E P S K T N T V I R G V N G A N K
 133 NP_054716.1 A - - - - - I L K A F D L A M G Q P I W V Y S P I H S M T R I Q K T P - - - - - L T E R K A L S I R
 134 YP_001856242.1 I - - - - - T E S I V I W G K T P K F K L P -
 135 NP_954565.2 G - - - - - I D H S K K Y F G I E P S T I I Q -
 136 NP_569150.1 V - - - - - V I N - A I L D T G A T V C V A D E R M I P S G M K - - E Q A K N K I I I R G V N G V T E
 137 NP_659397.1 T - - - - - L S L H C Y V D T G A S L C L A S K H V I P D D F W E N A P R - - S I P V K I A N Q S S I
 138 YP_009513211.1 L - - - - - I K D A D K L T L G Q N V L V I A P H N L E S I V R Q P P D R W M T N A R M T H Y Q S L
 139 YP_233107.1 L - - - - - P I N - A I L D T G A A I C V C N G E V I P Q E Y R - - R S S L T D S L I Q G V N G A T R
 140 YP_009109692.1 L - - - - - V K D S A K L T L G Q P L T V I T P H T L E A I V R Q P P D R W I T N A R L T H Y Q A L
 141 NP_057849.4 I - - - - - T E S I V I W G K T P K F K L P -
 142 NP_049560.1 L - - - - - I K Y T L Q S Y G L L C Q T I H H -
 143 YP_009506267.1 P - - - - - L V N A I L D T G A T T C C I N S E G L P K E M M - - E D N T F T V K F T G A N S V M K
 144 NP_039820.1 P - - - - - Y I N A I V D T G A T A C L I Q I S A I P E N Y Y - - E D A K V T V N F R S V L G I G T
 145 NP_056790.1 L - - - - - I K D A D K L T L G Q N V T V I A S H S L E S I V R Q P P D R W M T N A R M T H Y Q S L
 146 YP_002321513.1 P - - - - - F T A R A I L D T G A S I C C I C T S I T P R N C L - - V E T - K E A S F N G I T S S S K
 147 NP_955591.1 L - - - - - V K D A G K L T M G Q P L V I L A P H A V E A L V K Q P P D R W L S N A R M T H Y Q A L
 148 YP_001956722.2 G - - - - - I K A L D L G M G Q E I L V Y S P I V S M T K I Q K T P - - - - - L P E R K A L P I R
 149 NP_056902.1 V - - - - - A T E S I T R V G K C P T F K V P -
 150 NP_056886.1 L - - - - - E A S A V R T F G K E V D I L L L -
 151 NP_041261.1 G - - - - - E Y T G R Q L F G R D P H S I I I -

001 YP_004442836.1 V N E V T A I - G R L W V G K Q - - - - - W F T L P Q T F I M P - - - - - T L G D G V H M I I G M N F I
 002 NP_056728.1 T I S K V C K D I O L I I A G E - - - - - I F R I P T V Y Q Q - - - - - E S G I D F I I G N N F C
 003 YP_009508537.1 W L S W L S Y L E O P R I R F F Y D P Q M P A L K D L - - P A V D I G E N N - K K H P - S N F Q H V
 004 YP_004732983.2 V T K K L R Q - G K M I L A G N - - - - - D F Y I P Y V S A F E - - - - - M N M P G I D M L I G C N F I
 005 YP_009508407.1 -
 006 NP_040939.1 L Q L G - N I T W M P -
 007 YP_003864102.1 L M Q N T E T W P I A C A S Y A G K I D N H Y P P D K -
 008 YP_009002585.1 S N K K L K Y - G Q M R I G G H - - - - - M F R I P Y T Y C F E S - L T L G D D V Q Y V L T G C N F I
 009 YP_003284237.1 A S K V V K Q - G K I W I G E Q - - - - - Y F R T P R T F A L D I - - S L S G D I D M I L G C N F I
 010 YP_009268869.1 L Q I G - N I T W M P -
 011 YP_009506251.1 V D K K L R Y - G R M T I S G H - - - - - Q F R F P Y C Y A F P - - L S L G D G I E M I L G C N F I
 012 NP_955611.1 - L P L P E G I L L A L K G F A G K I R S S D T P S -
 013 YP_008567619.1 A N K K L K Y - G R M I I G D Q - - - - - Q F K V P Y T Y A F P - - M T I S D D I Q M I L G C N F I
 014 NP_149413.1 L D K Q V K D G A K L W A G S S - - - - - W F R L P L T Y V G N M - - H M G E K T Q M L I G C N F L

015	YP_004442824.1	VTEVLKE	-GKLWVGNQ	- - - -	YFRMPRTFVMP	- - -	KLSEGLHLII	IGLNFI
016	YP_001931967.1	TIDKVC	LSQVITVAGK	- - - -	EFLIPTIYQL	- - - -	NTGIDMVL	LGNNFL
017	YP_002455786.1	FVKNS	SHPSVAII	IHHMHRFC	DLGRQP	PGPWRT	LLQLPAL	LREPQLLRPA
018	YP_009109694.1	LLDTRV	QFGPPV	TLNPNATLL	PVPENQ	PSPHDC	RQVLA	ETHGTREDLKDQ
019	NP_789739.1	WTEYWQ	ATWIP	- - - - -	- - - - -	- - - - -	- - - - -	EWEFVNTPLV
020	NP_955619.1	FIQTS	DHPSVPI	LLHSHSRFK	NLGAQT	GELWNT	FLLKT	TAPLAPVKALMPV
021	YP_224289.1	VNKVLKE	-GKIWIGNQ	- - - -	YFRLPRTYALE	EI	- - -	ELSGGIDMI
022	YP_009182100.1	KIDKYA	ATNVPYI	ISGI	- - - -	- - - -	- - - -	KQGCDFLIGNDF
023	NP_705927.1	WTEYWQ	ATWIP	- - - - -	- - - - -	- - - - -	- - - - -	EWEFVNTPLV
024	YP_009508577.1	WITWLS	YLEOPRI	TFYDKTLP	DLKNV	-PETV	TDKKP	-KMXPIIEYAAV
025	YP_004442830.1	VTKQLKE	-AKLWVGGT	- - - -	FFTLPTIYVGKL	- - -	DLGERTQ	MVIGCNFI
026	NP_758887.1	WPEYWQ	ATWIP	- - - - -	- - - - -	- - - - -	- - - - -	EWEFVSTPHLIGLW
027	YP_009508406.1	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
028	YP_610965.1	SRQRKE	-GRMTIGDH	- - - -	DFPIPLVYCFP	- - -	LDSSRDG	VQMLIGCNFI
029	YP_001931961.1	EINKVC	ENLNM	YIAGE	- - - -	CFHIPRVFMQ	- - - -	ESGIDFIL
030	YP_241114.1	LFQFSD	NWALAF	FANYPGRIIH	HYPPDK	- - - -	- - - -	LLQFASSHAFIFP
031	YP_006732334.1	QINKVC	KNLILQ	IVGE	- - - -	EFVIPTIYQQ	- - - -	ETGIDILLGNFNC
032	YP_009041481.1	AKKRKA	-GKMFLGDN	- - - -	YFKIPYIYCFQ	- - -	- - -	MQVKNIDMLIGCNFI
033	YP_001036293.1	ARKKLK	GIMKIGDN	- - - -	QFRIPYTF	AFAP	-LKL	GGGEQLIIGCNFI
034	YP_605811.1	VKEILEE	-GKIWIGNQ	- - - -	WFRIPRTYIMP	- - -	- - -	QLSEGLHFIIGMNF
035	NP_955577.1	LLDAER	VHFSPTV	SLNPNATLL	PLPSGG	-NHHD	CLQILA	ETHGTRPDLTDQ
036	YP_003208050.1	ARHKIK	GQISMGES	- - - -	NFRLPFIYA	AFK	-MDS	-KDEIQMLLIGCNFI
037	NP_789740.1	WTEYWQ	ATWIP	- - - - -	- - - - -	- - - - -	- - - - -	EWEFVNTPLV
038	YP_004442839.1	VQEILEE	-GRIWIGNQ	- - - -	WFRIPRTYVMP	- - -	- - -	QLSEGLHFIIGMNF
039	YP_009507791.1	LITS	-IYLNWPP	- - - - -	- - - - -	- - - - -	- - - - -	EVQFIHASLMMARM
040	YP_004581513.1	TRKKLKE	-GYMLIGE	HEH	- - - -	MFPLPFVYALN	-PMRI	GRGIQFIIGCNFI
041	NP_043933.1	TFNKVA	ELMDVQI	ADE	- - - -	TFIIP	TLYQAT	- - - -
042	YP_009507248.1	WRLRLS	EYDFS	VVYKK	- - - -	- - - -	- - - -	GKSNTNADALS
043	YP_002117531.1	GTKSLRP	-GLMKIQGG	- - - -	TYRIPKTY	VIDI	- - -	QLSEGIDMILIGCNFI
044	YP_004347415.1	VIKYRAD	NIKIMIA	AKK	- - - -	EFIIPYIYAM	D	- - - -
045	NP_056891.1	LMQNT	EMWPIA	CASFVGI	LDNHYPP	PNK	- - - -	- - - -
046	YP_009513242.1	WITWMT	YLEOPRI	QFHYDKTLP	ELQQT	-PSV	TEDVIA	-KTKHPSEFAMV
047	YP_009352866.1	AKKRKA	-GKIFL	GDN	- - - -	YFKIPYIYCFQ	- - -	- - -
048	YP_009165750.1	TINKVC	KNIDMIA	ADT	- - - -	IFHIPTIYQQ	- - - -	- - - -
049	NP_040840.1	LQMG	-NINWMP	- - - - -	- - - - -	- - - - -	- - - - -	SFWSCYKGSVRWK
050	YP_004222728.1	-LPLPE	GILAL	KGFAGKIRS	SDTPS	- - - -	- - - -	- - - -
051	YP_009506264.1	TNQVLK	GKIWIGE	Q	- - - -	YYRIPRTMALE	EV	- - -
052	YP_567050.1	FVKNS	PHPSV	GILIIHHMGRFH	NLGSQ	PSGPWRT	LLHLPAL	LQEPRLRLRPL
053	YP_009508571.1	WITWMT	YLEOPRI	QFHYDKTLP	ELKNI	-PDV	LTENS	SKIMIHPSQYNSV
054	NP_056803.1	WITWMT	YLEOPRI	QFHYDKTLP	ELKHI	-PDV	YTSSIP	-PLKHPSQYEGV
055	NP_955564.1	LLQEKED	WPISL	LGFLGEVHF	HLPKDP	- - - -	- - - -	- - - -
056	YP_009508411.1	ANKKLK	GMMKIGDH	- - - -	QFRIPYTF	AFAP	-LRL	GGGEQLILIGCNFI
057	YP_009140788.1	TKKKLKY	-GRMMIGMN	- - - -	SFRIPFTYSLP	- - -	- - -	- - -
058	YP_009508410.1	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
059	NP_040333.1	LLDTRV	QFGP	IVALNPATLL	PLPEEG	-LQHD	CLDILA	EAHGTRPDLTDQ
060	YP_008992013.1	LPSKFR	QRP	IPAIGLIDTGAQR	SMIN	PHILP	DSWTQS	EEHFKAVNGKLE
061	NP_041734.1	VDKKLKY	-GRMTISNH	- - - -	QFRIPYCYAF	P	-LSL	GDGIEMLIGCNFI
062	NP_056895.1	WIQSS	EDPRVQ	ELLQLWPQIS	SSQGIQ	PPGPWKT	TLITRAE	VFLTP
063	YP_009109689.1	LLDTRV	QFGPPV	TLNPNATLL	PVPENQ	PSPHDC	RQVLA	ETHGTREDLKDQ
064	YP_002519387.1	EIRYVT	RNLKVS	MTDTNGNKH	TFIIP	TVYQQ	- - - -	NTGMD
065	YP_595725.1	LDRQVK	DGAKL	WAGEN	- - - -	WFRLPITYVGP	M	-YMGEKTQMLIGCNFM
066	YP_009508551.1	WITWMT	YLEOPRI	QFHYDKTLP	ELKHI	-PDV	YTSSQ	S-PVKHPSQYEGV
067	YP_001497148.1	LLDTRV	QFGPPV	TLNPNATLL	PAPKDD	QSSAHDC	RQVLA	ETHGTREDLKDQ
068	NP_041186.1	LFQFSD	NWALAF	FANYPGQITH	HYPSDK	- - - -	- - - -	LLQFASSHAFIFP
069	NP_663784.1	WDNYWQ	VTWIP	- - - - -	- - - - -	- - - - -	- - - - -	EWD
070	YP_009508443.1	AIKKLKN	-GTMRIGDH	- - - -	QFRIPYTYAF	P	-LKL	GGGEQLILIGCNFI
071	YP_003987465.1	GRKVLK	GKLWLGEQ	- - - -	FFRLPRTL	VADM	- - -	VLTEGVEMIVGCNFI
072	NP_861410.1	EIWHRA	EMVEI	WIRNY	- - - -	KFVAATVCQK	- - - -	SSGMD
073	YP_009345071.1	VNQKLKQ	-GKLIIGSQ	- - - -	EFRLPITYV	LP	MKNLV	TDQMIGCNFI
074	YP_009508582.1	WITWLS	YLEOPRI	IFHYDKTLP	DLKNV	-PETI	TEKQ	P-KILPIIEYAAV
075	NP_569141.1	MINYKAR	NVKIQ	IWDK	- - - -	ILTIEE	IYNFE	- - -
076	YP_002916057.1	TRKKLKE	-GMI	IADH	- - - -	TFGLPFVYALN	-PMRI	GRGIQFIIGCNFI
077	NP_777384.2	WIQSS	EDPRVQ	ELLQLWPQIS	SSQGIQ	PPGPWKT	TLITRAE	VFLTP
078	YP_233110.1	VKEILEE	-GKIWIGNQ	- - - -	WFRIPRTYIMP	- - -	- - -	QLSEGLHFIIGMNF
079	NP_542258.1	YLHTSD	QSSVA	ILLQHS	HRFH	NLGAQ	PSGPWRS	LLQVPQIFQ
080	YP_009130664.1	TNKKLRY	-GKMIIGDN	- - - -	AFRIPYTYVFP	- - -	- - -	MQLGDDIQMILIGCNFI
081	YP_009508566.1	WLSWLS	YIEOPR	FLFIYDKTLP	DLKEM	-PPTQ	TD	DN-PMLPLHQYLA
082	YP_006607892.1	TLTKVC	KNVKIM	LAGE	- - - -	LFHIPTIYQQ	- - - -	EVEIDLILGNFI
083	YP_009506270.1	VNEVTS	A-GKLWVG	LEK	- - - -	WFYLPQTYIMP	- - -	TLADGVHMIIGMNF
084	NP_042513.1	HIWYKA	VDLVL	LEGK	- - - -	RFPLPSVYQQ	- - - -	DAGLPLILGNFI
085	YP_006907834.1	TLDKIC	RNL	IIAGE	- - - -	RFHIDV	VYQQ	- - - -
086	YP_004442827.1	VTKQLKE	-AKLWVKDT	- - - -	FFTLPTIYVGNL	- - -	- - -	DLGRNTQMIIGCNFI
087	YP_009408594.1	ANWKLK	GDMQIGEN	- - - -	KFKIPFTYSFN	- - -	- - -	MNLGDGIQMIIGCNFI

001	YP_004442836.1	RTV	G--LR	IENG	EV	T	IYKIM	TTVP	APP	IAHDL	-	-	-	-	-	-	-	-	-
002	NP_056728.1	QLY	EFPFI	QFTD	RVI	F	TK--	NKSYP	VHIA	KLT	-	-	-	-	-	-	-	-	-
003	YP_009508537.1	FYT	DGSAI	TSPT	KE	GHLN	AGMG	IVYF	MNKD	GDG	-	-	-	-	-	-	-	-	-
004	YP_004732983.2	RAM	KGGIR	LEGT	EV	T	FYKTIT	TRIQT	TL	EPQ	-	-	-	-	-	-	-	-	-
005	YP_009508407.1	--	--	--	--	--	--	--	--	--	-	-	-	-	-	-	-	-	-
006	NP_040939.1	KRN	IIEEV	VEGP	TY	YTDG	GK-KN	KVGSG	SLG-	FI	-	-	-	-	-	-	-	-	-

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007 YP_003864102.1 K I I S K S P L D N A L L V F T D G S S T G - I A A Y T F A D - - - - -
008 YP_009002585.1 R N M H G G V R L E G T E V T F Y K N I T T I Q T R L M A P I V E - - - - -
009 YP_003284237.1 R S L E G G V R I E G N D I T F Y K L V T S V R T Q R E A H Q V - - - - -
010 YP_009268869.1 K R N V I T E V V E G P T Y Y T D G G K - K N G K G S L G - F I - - - - -
011 YP_009506251.1 R G M Y G G L R I E G S T I T F Y K N V T T I Q T K L A A G M V G G T T S F Y P G E G G S H F E F
012 NP_955611.1 V R V T D H P V P G P T V F T D A S S S T H K G V V V W R E G P - - - - -
013 YP_008567619.1 R A M H G G V R I E G N E V T F Y K Y V T K I M A Q Q G N - A M V R T - - - - -
014 NP_149413.1 Q S L A G G V R L E G R T V T F Y K Y I S S I Q A N - - - - -
015 YP_004442824.1 H A M E G G V R I E K G E V T F Y K I V T T T P T S P I V H D I - - - - -
016 YP_001931967.1 N L Y G P F I Q F T N C I I L H L R D - N P K T S V R V T K V T - - - - -
017 YP_002455786.1 F S L S P V V I D Q A P C L F S D G S P Q K A A Y V I W D K V I - - - - -
018 YP_009109694.1 E L P D A D H T W Y T D G S S Y L D S G T R R A G A A V D - - - - -
019 NP_789739.1 Y Q L E K E P I V G A E T F - - - - -
020 NP_955619.1 F T L S P V I I N T A P C L F S D G S T S Q A A Y I L W D K H I - - - - -
021 YP_224289.1 R A M S G G V R I E G E T V T F Y K I V T T T D A P K V P H Q I - - - - -
022 YP_009182100.1 M K Y A P Y T Q Y P D R I S I A K - - - N G I S Y I T N V V E R P V S V A Y - - - - -
023 NP_705927.1 Y Q L E K E P I V G A E T F Y V D G A A N R E T K L G K A G Y V - - - - -
024 YP_009508577.1 F Y T D G S A I R S P D K N K S H S S G M G I V H A V F K P - - - - -
025 YP_004442830.1 Q S L R G G L R L E G R T V T F Y K L T T H V Q A D - - - - -
026 NP_758887.1 Y N L L R E P V P G E D V Y Y V D G A A N R N S K E G K A G Y V - - - - -
027 YP_009508406.1 - - - - -
028 YP_610965.1 R S K Q G G V R F E G T T V T F Y K Q L T T V Q T E I E A I K S - - - - -
029 YP_001931961.1 Q N Y E P L K Q Y T D R I I L T L - - - E N R - E I I I G K I R - - - - -
030 YP_241114.1 K I V R R Q P I P N A T L I F T D G S S N G - T A A L I I N H - - - - -
031 YP_006732334.1 Q L Y N P F I Q W V D R I A F H K - - - N E E - I I L V P K V R - - - - -
032 YP_009041481.1 K S M G G G L R I E G P T I T F Y K N V T S I Q T Q A E E L G V I S M E K G E - - - - -
033 YP_001036293.1 R A M N G G V R I E G D T V T F Y K N V T T I Q T Q Q V P K L L A L - - - - -
034 YP_605811.1 R A M E G G I R I E Q G M V T F Y K M V T Q A Q A P P M V H D I - - - - -
035 NP_955577.1 P L P D A D L T W Y T D G S S F I R N G E R E A G A A V T T - - - - -
036 YP_003208050.1 R S M A G G V R L E G T T I T F Y K Q I T T I N T T L A V E S A K K A - - - - -
037 NP_789740.1 Y Q L E K E P I V G A E T F Y V D G A A N R E T K L G K A G Y V - - - - -
038 YP_004442839.1 R A M E G G I R I E Q G I V T F Y K M I T Q A Q A P P I T H D I - - - - -
039 YP_009507791.1 T M L T S E P I E G I E T W F I D G G R - R L G K K A I S A Y W - - - - -
040 YP_004581513.1 R R M K G G L R I E G P T V T F Y R N V S T I E T Q E K S T V A A T - - - - -
041 NP_043933.1 R L Y E P F V Q Y K D M I T F H K - - - D G R A V S T K K V T - - - - -
042 YP_009507248.1 E I H T T E I D E I D S V I E N I K E L S S M I N N P S E T S R - - - - -
043 YP_002117531.1 R A M E G G L R I E G D T L S F Y K L L T T V Q T S R H A Q Q I - - - - -
044 YP_004347415.1 N K Y S P I T I D M E K G I K F T N K G E V Y P N Y L V K Y P R K K V - - - - -
045 NP_056891.1 Q I I S K T P L N N A L L V F T D G S S T G - M A A Y T L T D - - - - -
046 YP_009513242.1 F Y T D G S A I K H P D I N K S H S A G M G I A Q V Q F Q P - - - - -
047 YP_009352866.1 K S M G G G L R I E G T T V T F Y K N V T T V Q T Q A E D L G A P N A G D Q D - - - - -
048 YP_009165750.1 L L Y G P F T Q Y T D R I I L F K - - - E N Q - P V I I G K V S - - - - -
049 NP_040840.1 K R N V I A E V V P G P T Y Y T D G G K - K N G R G S L G - Y I - - - - -
050 YP_004222728.1 V R V T D H P V P G P T V F T D A S S S T H K G V V V W R E G P - - - - -
051 YP_009506264.1 R S L E G G V R I E G D K I T F Y K L T T H I D T S K E A F T V - - - - -
052 YP_567050.1 F T L S P V V L T T A P C L F S D G S S Q K A A Y V L W D Q T I - - - - -
053 YP_009508571.1 F Y T D G S A I R S P D P T K S H N A G M G I V Q V K F S P - - - - -
054 NP_056803.1 F C T D G S A I K S P D P T K S N N A G M G I V H A I Y N P - - - - -
055 NP_955564.1 H M T S T T P L E K G I V I F T D G S A N G R S V T Y I Q G R - - - - -
056 YP_009508411.1 R A M Q G G L R I E G D E V T F Y K N V T T I K T Q Q M V S K V L A L - - - - -
057 YP_009140788.1 R A M Y G G V R I E G N E V T F Y K N L T K I S T S P E V S V N V - - - - -
058 YP_009508410.1 - - - - -
059 NP_040333.1 P L P D A D H T W Y T D G S S F L Q E G Q R K A G A A V T T - - - - -
060 YP_008992013.1 T S L I T K K P I G I Q I F P N C V I W T K V I G S T L P N K D I L L G - - - - -
061 NP_041734.1 R G M Y G G L R I E G H T I T F Y K N V T T I Q T R L A A V M V G G T T A S E L G G G E E S K S D S
062 NP_056895.1 - Q F S P E P I P A A L C L F S D G A T G R G A Y C L W K D H L - - - - -
063 YP_009109689.1 E L P D A D H T W Y T D G S S Y L D S G T R R A G A A V D - - - - -
064 YP_002519387.1 K L Y R P F T Q D L Y E I Y L T P - - - - - K L L K F K I Q Q - - - - -
065 YP_595725.1 Q S L A G G V R L E G R T V T F Y K Y I A S I K A N - - - - -
066 YP_009508551.1 F Y T D G S A I K S P D P T K S N N A G M G I V H A T Y K P - - - - -
067 YP_001497148.1 E L P D A D H S W Y T D G S S Y I D S G T R R A G A A V D - - - - -
068 NP_041186.1 K I V R R Q P I P E A T L I F T D G S S N G - T A A L I I N H - - - - -
069 NP_663784.1 F N L V G D P I P G A E T F Y T D G S C N R Q S K E G K A G Y V - - - - -
070 YP_009508443.1 R S M N G G V R I E G N E V T F Y K N V T T I Q T Q Q E V P K V L A L - - - - -
071 YP_003987465.1 R S L E G G L R I E G E V T T F Y K L V T N V Q S C R S T H A F G - - - - -
072 NP_861410.1 R L Y Q P F I Q G L N Y I K L R A P - - - - - L D K D I N Q P S - - - - -
073 YP_009345071.1 R S L H G G V R I E G N E I T F Y K Y L T K L E S I N L I E E D N - - - - -
074 YP_009508582.1 F Y T D G S A I R S P D K N K S H S S G M G I V Q A I F K P - - - - -
075 NP_569141.1 E K L Y P H I I T - - K T H W W F T T P C K N K V G A K R V N N K Q R K - - - - -
076 YP_002916057.1 R R M K G G L R I E G P T V T F Y R N V S T I E T Q E K S T V A A X - - - - -
077 NP_777384.2 - Q F S P E P I P A A L C L F S D G A T G R G A Y C L W K D H L - - - - -
078 YP_233110.1 R A M E G G I R I E Q G T V T F Y K M V T Q A Q A P P M V H D I - - - - -
079 NP_542258.1 F I I S P V V I D H A P C L F S D G A T S K A A F I L W D K Q V - - - - -

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080 YP_009130664.1 RSM QGGVRIEGD TVTFYKNVTQIQ TQTVP IIAAI - - - - -
081 YP_009508566.1 FYTDGSSIKSPDPTKTHSSGMGIVQAIYEP - - - - -
082 YP_006607892.1 QLHEPFVQFTDRII IHK - - - DGE - PVTIGKVF - - - - -
083 YP_009506270.1 RTVG - - LRIENG EVTIYKIMTTVQAPP IIVHEL - - - - -
084 NP_042513.1 KLYNPF IQTLETISLRCP - - - - - QLE - - KQPS - - - - -
085 YP_006907834.1 QEYS PF IQFTGHI VFTM - - - KDQYQVP ITKLR - - - - -
086 YP_004442827.1 QSLRGAVRLEGRSVTFYKLISTVEAD - - - - -
087 YP_009408594.1 RAMQGGIRIEGNQVTFYKQLTTIETMSAGPCIQE - - - - -
088 YP_009508561.1 FYTDGSAIKSPKTEQTHSAGMGIVMVVYTP - - - - -
089 NP_056907.1 FTLS PVVLT TAPCLFSDGSSQKAA YVLWDQTI - - - - -
090 YP_002308474.1 FTIS PVVINHAPCLFSDGSSNSQAAFTIWDKKI - - - - -
091 YP_007761644.1 FPP ELWIKQTPKLVSYANQSTGSIMYKAVQVPFKLG - - - - -
092 NP_040550.1 VRVTDHPVPGPTAFTDASSSTHKGVVWVREGP - - - - -
093 NP_758808.1 KHMGGMRFE GPHVTFYKGITTLST - - - - - S - - - - -
094 YP_009345075.1 KANYGGMRIEGSKI TFYKNVGS IETS PVVSSAHFA - - - - -
095 NP_068729.1 KLYQ PFIQRLETIE LRWK - - - - - NLNNPKES - - - - -
096 NP_047255.1 PLPDADLTWYTDGSSFIRNGEREAGAAVTT - - - - -
097 YP_006273075.1 RAMYGGVRIEGNEVTFYKNLTRISTSP EVSVNS - - - - -
098 YP_009508888.1 FYTDGSAIKNPNTKTHSAGMGV VQGFNP - - - - -
099 NP_395469.1 RLYY PFCQYLSYITLRCP - - - - - KMINQKQ - - - - -
100 YP_009508546.1 FYTDGSAIKSPDPTKSNNAGMGIVHV TYKP - - - - -
101 NP_056762.1 TNENG SVTIHKDYITIQKTTGIYPTARHELKSEFAR - - - - -
102 YP_009508556.1 FYTDGSAIKHPDINKSHSAGMGIAQVQFQP - - - - -
103 NP_569153.1 RSMYGGVRL EGN TITFYKQITSINTRLAAPLLK - - - - -
104 NP_043924.1 QEIWQLIEH DSTQT LGIVKVKAHTQRKCS THEQQ LNNDVDQPAKQYAKEE
105 YP_009243641.1 QIISDIPLE - GPNVFTDGS RQR - - SAYWAEK - - - - -
106 YP_004300274.1 RMYLPHKIS - - KDFWYLTTPCGKMIGAKIVENKERF - - - - -
107 NP_056848.1 NKYSPIELDIGKGIKFTKNNEKYPNYLVKYPKKRK - - - - -
108 YP_006495799.1 KAMQGGIRFE GTEVTIYKKVTTIQT TLEPI - - - - -
109 YP_009508409.1 - - - - - - - - - - - - - - - - - - - - -
110 NP_687035.1 YSLVKEPIKGEDVYYVDGAASKVTKL GKAGYL - - - - -
111 NP_045937.2 PIPDPDMT LFS DGSYTTGRGGA AVVMHRP VTD - - - - -
112 NP_612577.1 QLYS PFIQYTDRIYFHL - - - NKQ - SVIIGKIT - - - - -
113 NP_619548.1 RLYNPF IQWEDRIA FHL - - - - KNEMVL IKKVT - - - - -
114 NP_056880.1 HMTSTTPLEKGIVIFTDGSSANGRSV TYIQGR - - - - -
115 YP_009121747.1 RSMNGGIRIEGEDEVTLYKKVT KIKTNPTVEITA - A - - - - -
116 YP_009113237.2 RAMNGGLRIEGPTLT FYKLLTSIETKTVAALIK - - - - -
117 YP_009508408.1 RSMSGGVRIEGDNVTFYKNVTTIKTQQEVS KVLSSL - - - - -
118 NP_955579.1 PLPDADLTWYTDGSSFIRNGEREAGAAVTT - - - - -
119 YP_009229919.1 RSMYGGRLIEGNLLTFYKNVTTVT TVQNT EASKLA - - - - -
120 YP_004442833.1 QSLKGAVRLEGRSVTFYKLVSTIEAD - - - - -
121 NP_862833.2 KIVRQQPIPEATLIFTDGS SNG - TAALIINQ - - - - -
122 NP_040563.1 TSI CGPVRENLT TY YTDGGK - - KGKTA AAVYW - - - - -
123 YP_443922.1 PLPQADLWLYTDGC CYRGKDGNI AAYAVVQQDSNG - - - - -
124 NP_057933.2 PLPDADHTWYTDGSSLLQEGQRKAGAAVTT - - - - -
125 YP_009116631.1 RAMKGGVRLEGTEVTIYKKVTTIQT TLEPQ - - - - -
126 YP_009513249.1 FYTDGSAITSPTKEGHLNAGMGIVYFINKDG - - - - -
127 YP_223871.1 PLAQA EATLFTDGS SYVRD GKRYAGAAVVT - - - - -
128 NP_127504.1 TTVKTKHPITIEFFPGFKYTTKLLGSDIPGKDLLIG - - - - -
129 NP_044929.1 FYTDGSAIRSPKPNKTHSAGMGIIQAKFEP - - - - -
130 NP_057860.1 FTLS PVIINTAPCLFSDGSTSQAA YILWDKHI - - - - -
131 NP_040973.1 SMIKDAPIPGAETWYIDGGR - KLGKAAKAA YW - - - - -
132 NP_777317.1 SSMEGGIRIEQGMVTFYKLV TQAETSPIVHEL - - - - -
133 NP_054716.1 FYTDGSSIKSPKKDKQHSAGMGIIAVRYQP - - - - -
134 YP_001856242.1 YQLEKEPIVGAETFYVDGAANRETKLGKAGYV - - - - -
135 NP_954565.2 QIISKTP LNNALLVFTDGS STG - MAAYTLTD - - - - -
136 NP_569150.1 RTVG - - LRIENG EVTIYKIMTTVQAPP IIVHEL - - - - -
137 NP_659397.1 QTYQ PFIQWVDHIA FHIKENNEEKRV LIPKVR - - - - -
138 YP_009513211.1 PLPGVP - AWYTDGSSFIMDGR RQAGAAIVD - - - - -
139 YP_233107.1 KAMEGGLRIEKGEVTFYKLVTTVNTSPK PHEV - - - - -
140 YP_009109692.1 ELPDADHTWYTDGSSSYLDSGTRRAGAAVVD - - - - -
141 NP_057849.4 YQLEKEPIVGAETFYVDGAANRETKLGKAGYV - - - - -
142 NP_049560.1 FTLS PVIINAA PCLFSDGSTSRAAY IILWDKHI - - - - -
143 YP_009506267.1 RSMNGGVRIEGNDVTFYKNITTVKTQT EVPKILAL - - - - -
144 NP_039820.1 RSLEGGRLIEKDIITFYKLVTSIETSRTTQVA - - - - -
145 NP_056790.1 PLPGVP - TWYTDGSSSFITEGKR RAGAPIVD - - - - -
146 YP_002321513.1 RSMKGGIKIEGNTITFYERSYSIQTC EESGEIAAK - - - - -
147 NP_955591.1 PLPDADHTWYTDGSSLLQEGQRKAGAAVTT - - - - -
148 YP_001956722.2 FYTDGSAIKHPNVNKSHNAGMGIAQVQFKP - - - - -
149 NP_056902.1 RMKLV EEP TSGITTYTDGGK - QNGE - GIAAYV - - - - -
150 NP_056886.1 VRVTDHPVPGPTVFTDASSSTHKGVVWVREGP - - - - -
151 NP_041261.1 KITKCAPIPOATLVFTDGS SNG - IAA YVIDN - - - - -

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001 YP_004442836.1  --NYIEELELELELYEYYD ICATQ-----
002 NP_056728.1    ---RAVRVG---TEGFLESMKKRS-----
003 YP_009508537.1 -----
004 YP_004732983.2  ----KIAYLEELVEA-EDLHYE-----
005 YP_009508407.1 -----
006 NP_040939.1    -----
007 YP_003864102.1 -----
008 YP_009002585.1  EDDEDDEVEQ---ETNWIRTMAS-----
009 YP_003284237.1  --AAIEEELDLNEDEYYDIAISD-----
010 YP_009268869.1 -----
011 YP_009506251.1  KASEESDDDAEIDFEIHQQIISH-----
012 NP_955611.1    -----
013 YP_008567619.1  ----EVISEEEEEYSAVEEICT-----
014 NP_149413.1    -----EFLQAEVEEINIAT-----
015 YP_004442824.1  --NYIEELELELEIPEYYD ICSTVG-----
016 YP_001931967.1  ---KAYAYG---KPGFIQSMKKGS-----
017 YP_002455786.1 -----
018 YP_009109694.1 -----
019 NP_789739.1    -----
020 NP_955619.1    -----
021 YP_224289.1    --NLIEELEMSEEEFIEVQIST-----
022 YP_009182100.1 --RKEFLERRKIPDHQQSHKVKCGENYKVQKQAQENDFTIEDYGT TDSEA
023 NP_705927.1    -----
024 YP_009508577.1 -----
025 YP_004442830.1  ----EY LKMAEEQLMIAQ-----
026 NP_758887.1    -----
027 YP_009508406.1 -----
028 YP_610965.1    ----AQFDEPEELMEIICPQWH-----
029 YP_001931961.1  ---RAHRVG---VPGFLES LKKKS-----
030 YP_241114.1    -----
031 YP_006732334.1  ---KAMRKG---YEGFLKTMERDS-----
032 YP_009041481.1  GAHQQQQIAELTTTESVLDVQEAY-----
033 YP_001036293.1  ----EELEMDDEDEYIELQQSIS-----
034 YP_605811.1    --SYLEELELELELPIYYD ICATN-----
035 NP_955577.1    -----
036 YP_003208050.1  ----IPELDLDAEMLAEIQELVY-----
037 NP_789740.1    -----
038 YP_004442839.1  --SYIEELELELELPLYD ICAAN-----
039 YP_009507791.1 -----
040 YP_004581513.1 -----
041 NP_043933.1    ---KAYFHG---LPGFLES KKVGS-----
042 YP_009507248.1 -----
043 YP_002117531.1  --AAIQELELELDEIEYQNLGALD-----
044 YP_004347415.1  --LIPWEKGN-----
045 NP_056891.1    -----
046 YP_009513242.1 -----
047 YP_009352866.1  GLPQQQVAELLTAEAVLDHQEAY-----
048 YP_009165750.1  ---KAYLHG---MPGYLD SMKKNS-----
049 NP_040840.1    -----
050 YP_004222728.1 -----
051 YP_009506264.1  --ASIEEELDLNEDEYYDIALMD-----
052 YP_567050.1    -----
053 YP_009508571.1 -----
054 NP_056803.1    -----
055 NP_955564.1    -----
056 YP_009508411.1  ----EELEMTED E FIEVNETLS-----
057 YP_009140788.1  ----LEE EVCEEY LQIQDMVV-----
058 YP_009508410.1 -----
059 NP_040333.1    -----
060 YP_008992013.1  -FDILHQIK-HLQIIPHGIRVKS-----
061 NP_041734.1    ESMFDLSETEEFDSETHQQIVSH-----
062 NP_056895.1    -----
063 YP_009109689.1 -----
064 YP_002519387.1  ---RAFKQA---SPGF LDSIRKQKRGE-----
065 YP_595725.1    ----EY LQAEAE E I LVAT-----
066 YP_009508551.1 -----
067 YP_001497148.1 -----
068 NP_041186.1    -----
069 NP_663784.1    -----
070 YP_009508443.1  ----EELEMGEE EYIAIQESCS-----

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071 YP_003987465.1  --AIIEELEMAEDEYIDLNLML-----
072 NP_861410.1     ---KMIYIPVTTTPSKILQFAILE-----
073 YP_009345071.1  ----F--SKNFSEYMLLNDTGT-----
074 YP_009508582.1  -----
075 NP_569141.1     --TTEWIRGS-----
076 YP_002916057.1  -----I-----
077 NP_777384.2     -----
078 YP_233110.1     --SYLEEELELELPIYYDICATN-----
079 NP_542258.1     -----
080 YP_009130664.1  ----EELELEEEYISIIATICA-----
081 YP_009508566.1  -----
082 YP_006607892.1  ---KAYYHG--KPGYLESMKKNS-----
083 YP_009506270.1  --NYIEEELELELQEYYNICSAE-----
084 NP_042513.1     ---SLITTKIYNTFSLFGGVIVN-----
085 YP_006907834.1  ---RAFKRG--IPGFLESMKKRS-----
086 YP_004442827.1  -----EYIQKIEEQVLIVQ-----
087 YP_009408594.1  ----EEDLD-----AAVMTLSL-----
088 YP_009508561.1  -----
089 NP_056907.1     -----
090 YP_002308474.1  -----
091 YP_007761644.1  --YKTYSFDFWCHDAMSHDIIVG-----
092 NP_040550.1     -----
093 NP_758808.1     ---YANTGIDTEHEQITSTT-----
094 YP_009345075.1  ---IEELEMDEL DY LKIHESVF-----
095 NP_068729.1     ---QMISTKILTKNEVLKLSFEK-----
096 NP_047255.1     -----
097 YP_006273075.1  ----LDEEVCEEY LQVQEMVI-----
098 YP_009508888.1  -----
099 NP_395469.1     ---EVIKIPIIHSSQLIKAKLLN-----
100 YP_009508546.1  -----
101 NP_056762.1     ----KHGGRPPLFSNIPETYN-----
102 YP_009508556.1  -----
103 NP_569153.1     QEEEEKEEELNLEEHRLIQEMVA-----
104 NP_043924.1     PNMSVIAPLQVYPLWIGLVPCKE-----
105 YP_009243641.1  -----
106 YP_004300274.1  --KCEWEKGD-----
107 NP_056848.1     --LVPWTKGN-----
108 YP_006495799.1  ---KLG YAEFD PD I QVELERA-----
109 YP_009508409.1  -----
110 NP_687035.1     -----
111 NP_045937.2     -----
112 NP_612577.1     ---KAYQYG--VKG FLESMKKKS-----
113 NP_619548.1     ---KAFSVS--NPSFLENMKKDS-----
114 NP_056880.1     -----
115 YP_009121747.1  ----IQELEIDEEFYQELQGTXM-----
116 YP_009113237.2  ----EEEVN YEELDQIKEIVA-----
117 YP_009508408.1  ----EELEMNEDEYISIQQSVS-----
118 NP_955579.1     -----
119 YP_009229919.1  ---VEELGLEAEEYYSIREMVY-----
120 YP_004442833.1  -----EYIRRAEEQICIAH-----
121 NP_862833.2     -----
122 NP_040563.1     -----
123 YP_443922.1     -----
124 NP_057933.2     -----
125 YP_009116631.1  ----KISLLRAEAEVGEELERM-----
126 YP_009513249.1  -----
127 YP_223871.1     -----
128 NP_127504.1     -FDIYRQLNNKLRIGADGIRWKN-----
129 NP_044929.1     -----
130 NP_057860.1     -----
131 NP_040973.1     -----
132 NP_777317.1     --NYIEEELELELPEYYNICAAA-----
133 NP_054716.1     -----
134 YP_001856242.1  -----
135 NP_954565.2     -----
136 NP_569150.1     --NYIDELELELELHEYNICAAE-----
137 NP_659397.1     ---IAMRKG--HPGFLEAMRKGS-----
138 YP_009513211.1  -----
139 YP_233107.1     --CLLDEL DLELPEYYDICA AI-----
140 YP_009109692.1  -----
141 NP_057849.4     -----
142 NP_049560.1     -----
143 YP_009506267.1  ----EELEMEEEY LALQSKYS-----

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144 NP_039820.1  --NSIEELELSEDEYLNIAASV-----
145 NP_056790.1  -----
146 YP_002321513.1 --YAIPELELNENEYQCLSESIY-----
147 NP_955591.1  -----
148 YP_001956722.2 -----
149 NP_056902.1  -----
150 NP_056886.1  -----
151 NP_041261.1  -----

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001 YP_004442836.1 -----
002 NP_056728.1  -----
003 YP_009508537.1 -----
004 YP_004732983.2 -----
005 YP_009508407.1 -----
006 NP_040939.1  -----
007 YP_003864102.1 -----
008 YP_009002585.1 -----
009 YP_003284237.1 -----
010 YP_009268869.1 -----
011 YP_009506251.1 -----
012 NP_955611.1  -----
013 YP_008567619.1 -----
014 NP_149413.1  -----
015 YP_004442824.1 -----
016 YP_001931967.1 -----
017 YP_002455786.1 -----
018 YP_009109694.1 -----
019 NP_789739.1  -----
020 NP_955619.1  -----
021 YP_224289.1  -----
022 YP_009182100.1 EEP IYDAIYDKGFQPIESDDEPNDEIQPINDEPNEEVRPGFQPIESNDEP
023 NP_705927.1  -----
024 YP_009508577.1 -----
025 YP_004442830.1 -----
026 NP_758887.1  -----
027 YP_009508406.1 -----
028 YP_610965.1  -----
029 YP_001931961.1 -----
030 YP_241114.1  -----
031 YP_006732334.1 -----
032 YP_009041481.1 -----
033 YP_001036293.1 -----
034 YP_605811.1  -----
035 NP_955577.1  -----
036 YP_003208050.1 -----
037 NP_789740.1  -----
038 YP_004442839.1 -----
039 YP_009507791.1 -----
040 YP_004581513.1 -----
041 NP_043933.1  -----
042 YP_009507248.1 -----
043 YP_002117531.1 -----
044 YP_004347415.1 -----
045 NP_056891.1  -----
046 YP_009513242.1 -----
047 YP_009352866.1 -----
048 YP_009165750.1 -----
049 NP_040840.1  -----
050 YP_004222728.1 -----
051 YP_009506264.1 -----
052 YP_567050.1  -----
053 YP_009508571.1 -----
054 NP_056803.1  -----
055 NP_955564.1  -----
056 YP_009508411.1 -----
057 YP_009140788.1 -----
058 YP_009508410.1 -----
059 NP_040333.1  -----
060 YP_008992013.1 -----
061 NP_041734.1  -----
062 NP_056895.1  -----

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063	YP_009109689.1	-----
064	YP_002519387.1	-----
065	YP_595725.1	-----
066	YP_009508551.1	-----
067	YP_001497148.1	-----
068	NP_041186.1	-----
069	NP_663784.1	-----
070	YP_009508443.1	-----
071	YP_003987465.1	-----
072	NP_861410.1	-----
073	YP_009345071.1	-----
074	YP_009508582.1	-----
075	NP_569141.1	-----
076	YP_002916057.1	-----
077	NP_777384.2	-----
078	YP_233110.1	-----
079	NP_542258.1	-----
080	YP_009130664.1	-----
081	YP_009508566.1	-----
082	YP_006607892.1	-----
083	YP_009506270.1	-----
084	NP_042513.1	-----
085	YP_006907834.1	-----
086	YP_004442827.1	-----
087	YP_009408594.1	-----
088	YP_009508561.1	-----
089	NP_056907.1	-----
090	YP_002308474.1	-----
091	YP_007761644.1	-----
092	NP_040550.1	-----
093	NP_758808.1	-----
094	YP_009345075.1	-----
095	NP_068729.1	-----
096	NP_047255.1	-----
097	YP_006273075.1	-----
098	YP_009508888.1	-----
099	NP_395469.1	-----
100	YP_009508546.1	-----
101	NP_056762.1	-----
102	YP_009508556.1	-----
103	NP_569153.1	-----
104	NP_043924.1	-----
105	YP_009243641.1	-----
106	YP_004300274.1	-----
107	NP_056848.1	-----
108	YP_006495799.1	-----
109	YP_009508409.1	-----
110	NP_687035.1	-----
111	NP_045937.2	-----
112	NP_612577.1	-----
113	NP_619548.1	-----
114	NP_056880.1	-----
115	YP_009121747.1	-----
116	YP_009113237.2	-----
117	YP_009508408.1	-----
118	NP_955579.1	-----
119	YP_009229919.1	-----
120	YP_004442833.1	-----
121	NP_862833.2	-----
122	NP_040563.1	-----
123	YP_443922.1	-----
124	NP_057933.2	-----
125	YP_009116631.1	-----
126	YP_009513249.1	-----
127	YP_223871.1	-----
128	NP_127504.1	-----
129	NP_044929.1	-----
130	NP_057860.1	-----
131	NP_040973.1	-----
132	NP_777317.1	-----
133	NP_054716.1	-----
134	YP_001856242.1	-----
135	NP_954565.2	-----

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136 NP_569150.1 - - - - -
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138 YP_009513211.1 - - - - -
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140 YP_009109692.1 - - - - -
141 NP_057849.4 - - - - -
142 NP_049560.1 - - - - -
143 YP_009506267.1 - - - - -
144 NP_039820.1 - - - - -
145 NP_056790.1 - - - - -
146 YP_002321513.1 - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - -
149 NP_056902.1 - - - - -
150 NP_056886.1 - - - - -
151 NP_041261.1 - - - - -

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003 YP_009508537.1 - - - - - N L Q K Q Q E W S I S L G N - - - - -
004 YP_004732983.2 - - - - - L A A A S M P E P T A E G L R - - - - -
005 YP_009508407.1 - - - - - - - - - - - - - - - - - - - - - - - - - - -
006 NP_040939.1 - - - - - - V S T G E K F R K H E E - - - - -
007 YP_003864102.1 - - - - - - - S I I K F Q T K - - F - - - - -
008 YP_009002585.1 - - - - - S T M D A P Y E K L R S S - - - - -
009 YP_003284237.1 - - - - - Q E K A Y I N K E I V D S - - - - -
010 YP_009268869.1 - - - - - - A S T G V K F R K H E E - - - - -
011 YP_009506251.1 - - - - - A V A Q A T T P K L S P K - - - - -
012 NP_955611.1 - - - - - - R W E I K E I A D L - - G - - - - -
013 YP_008567619.1 - - - - - - G T V I H P E F G N K - - - - -
014 NP_149413.1 - - - - - S E G G F I D K P F M S K N - - - - -
015 YP_004442824.1 - - - - - A I Q G G I S E E F I S P - - - - -
016 YP_001931967.1 - - - - - K V K P P T - - - - - P E N I S R L T D K I V S F S G G E S S E D T T K T N F E N D
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018 YP_009109694.1 - - - - - G H N T I W A Q S L P P G - - - - -
019 NP_789739.1 - - - - - - - - - - - - - - - - - - - - - - - - - - -
020 NP_955619.1 - - - - - - L S Q R S F P L P P - P H - - - - -
021 YP_224289.1 - - - - - S T E G Y I N K E I M D S - - - - -
022 YP_009182100.1 N N E I Q P S N D E P N K E V R P K P T K D I R - - P K P I T E E D F Q A E L R L V E A H Y E K Q A
023 NP_705927.1 - - - - - - T N R G R Q K V V T L T D - - - - -
024 YP_009508577.1 - - - - - E L T I E H Q W S I P L G D - - - - -
025 YP_004442830.1 - - - - - Q P S P F I E K S F M T R N - - - - -
026 NP_758887.1 - - - - - - T A R N K S R V I A L E N - - - - -
027 YP_009508406.1 - - - - - - - - - - - - - - - - - - - - - - - - - - -
028 YP_610965.1 - - - - - I E H P T D A I G V G L R - - - - -
029 YP_001931961.1 - - - - - K L T M Q K - - - - - G T N I A - - P S K T - - - - - S F D K R G E L G Y T L
030 YP_241114.1 - - - - - - - Q T Y T Q T S - - F - - - - -
031 YP_006732334.1 - - - - - K S Q P T P - - - - - G T N I T - - Q E V I D E - - - - -
032 YP_009041481.1 - - - - - F A R P E Q P V D L K F K H V - - - - -
033 YP_001036293.1 - - - - - S I E P - - N N Y F S N K - - - - -
034 YP_605811.1 - - - - - P S G G E I N S D L I P P - - - - -
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051 YP_009506264.1 - - - - - E E K G Y I N R E I V D S - - - - -
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053 YP_009508571.1 - - - - - E L Q V I N Q W S I P L G N - - - - -
054 NP_056803.1 - - - - - E Y K I L N Q W S I P L G H - - - - -

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055	NP_955564.1	- - - - -	- - - E P I I K E N T - -	Q	- - - - -
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057	YP_009140788.1	- - - - -	C N I G E S R E S F L K K	- - - - -	- - - - -
058	YP_009508410.1	- - - - -	- - - - -	- - - - -	- - - - -
059	NP_040333.1	- - - - -	E T E V V W A K A L P A G	- - - - -	- - - - -
060	YP_008992013.1	- - - - -	M F K P F T D V L K L Y N L S E T P	- - - - -	- - - - -
061	NP_041734.1	- - - - -	V A A Q A Q Q Q K L D P K	- - - - -	- - - - -
062	NP_056895.1	- - - - -	- L D F Q A V P A P - -	- - - - -	- - - - -
063	YP_009109689.1	- - - - -	G H N T I W A Q S L P P G	- - - - -	- - - - -
064	YP_002519387.1	- - - - I I S K H A T N - - - - -	P I N I T K L E D N L R I V E T I L E D S N S K T L S E V S D	- - - - -	- - - - -
065	YP_595725.1	- - - - -	S E Q E F I N R S F M S K N	- - - - -	- - - - -
066	YP_009508551.1	- - - - -	E Y Q V L N Q W S I P L G N	- - - - -	- - - - -
067	YP_001497148.1	- - - - -	G H H I I W A Q S L P P G	- - - - -	- - - - -
068	NP_041186.1	- - - - -	- - - Q T Y Y A Q T S - -	F	- - - - -
069	NP_663784.1	- - - - -	- T D R G K D K V K V L E Q	- - - - -	- - - - -
070	YP_009508443.1	- - - - -	T I C P V V N I N F A Q R	- - - - -	- - - - -
071	YP_003987465.1	- - - - -	A T E P A V G E E F A K L	- - - - -	- - - - -
072	NP_861410.1	- - - - -	K L Q D I L F E L H V Q E N	- - - - -	- - - - -
073	YP_009345071.1	- - - - -	D E L Q N E Q E N L R I K K A	- - - - -	- - - - -
074	YP_009508582.1	- - - - -	E L T I E H Q W T I P L G D	- - - - -	- - - - -
075	NP_569141.1	- - - - -	E K I T Q K L E N I N K N T T T	- - - - -	- - - - -
076	YP_002916057.1	- - - - -	G N I N E E R T M V F P R	- - - - -	- - - - -
077	NP_777384.2	- - - - -	- L D F Q A V P A P - -	- - - - -	- - - - -
078	YP_233110.1	- - - - -	P S G G E I N S D L I S P	- - - - -	- - - - -
079	NP_542258.1	- - - - -	- I H Q Q V L P L P - -	S T	- - - - -
080	YP_009130664.1	- - - - -	Y G G M E I S S P F Q F S	- - - - -	- - - - -
081	YP_009508566.1	- - - - -	N F Q I K H Q W S I P L G D	- - - - -	- - - - -
082	YP_006607892.1	- - - - -	K K P V P S - - - - -	P L N I T - - P V K I E E Q E	- - - T L R L Q L L R R G R E I
083	YP_009506270.1	- - - - -	T S K G E I A E E F I S P	- - - - -	- - - - -
084	NP_042513.1	- - - - -	I L K Q Q I Y I A I E D E	- - - - -	- - - - -
085	YP_006907834.1	- - - - -	T A Q Q P E - - - - -	P L N I S - - T N K T V S	- - - - - L S R G R R F
086	YP_004442827.1	- - - - -	E P A P Y I D R P F M T K N	- - - - -	- - - - -
087	YP_009408594.1	- - - - -	F S A V P S N Q K F L Q Q	- - - - -	- - - - -
088	YP_009508561.1	- - - - -	E P N I T Q Q W S I P L G D	- - - - -	- - - - -
089	NP_056907.1	- - - - -	- L H H D S V T L P P H G S	- - - - -	- - - - -
090	YP_002308474.1	- - - - -	- I H Q Q V L P L P - -	T A	- - - - -
091	YP_007761644.1	- - - - N P F W I Y L Q Q S F M S I T G	N T V H T K D N S F V F Y E H K N P A R E T P W Q S E F T H	- - - - -	- - - - -
092	NP_040550.1	- - - - -	- R W E I K E I A D L - -	G	- - - - -
093	NP_758808.1	- - - - -	- - - - - S Q S F K E R	- - - - -	- - - - -
094	YP_009345075.1	- - - - -	Y N V G Q K L G N H G P E	- - - - -	- - - - -
095	NP_068729.1	- - - - -	I H I C L E K Y L F F K T - -	- - - - -	- - - - -
096	NP_047255.1	- - - - -	E S E V I W A A P L P P G	- - - - -	- - - - -
097	YP_006273075.1	- - - - -	C N I G E S R K S F L K K	- - - - -	- - - - -
098	YP_009508888.1	- - - - -	E F Q V V N Q W S I P L G N	- - - - -	- - - - -
099	NP_395469.1	- - - - -	L V T N I E E Q L L M E Q - -	- - - - -	- - - - -
100	YP_009508546.1	- - - - -	E Y Q I L N Q W S I P L G N	- - - - -	- - - - -
101	NP_056762.1	- - - - -	K I P H L H S Y Q P Q P I L G Y K N	- - - - -	- - - - -
102	YP_009508556.1	- - - - -	E Y K V I H Q W S I P L G D	- - - - -	- - - - -
103	NP_569153.1	- - - - -	Y S T E R P F V Q F Q Q K	- - - - -	- - - - -
104	NP_043924.1	- - - - -	P K L W E N I Q H H I T K V D L P	- - - - -	- - - - -
105	YP_009243641.1	- - - - -	- - - K Y W S Q K Q N - -	T	- - - - -
106	YP_004300274.1	- - - - -	K T L N Q K L R N V Y D	- - - - -	- - - - -
107	NP_056848.1	- - - - -	P S V T E T M E N I G I N	- - - - -	- - - - -
108	YP_006495799.1	- - - - -	Y Y A A P V S E A E L I K L R	- - - - -	- - - - -
109	YP_009508409.1	- - - - -	- - - - -	- - - - -	- - - - -
110	NP_687035.1	- - - - -	- S E R G K S R I R E L E N	- - - - -	- - - - -
111	NP_045937.2	- - - - -	- - - D F I I I H Q Q P G G	- - - - -	- - - - -
112	NP_612577.1	- - - - -	K V N R P E - - - - -	P I N I T - - S N Q H - -	- - - - - L F L E E G - - G N H V
113	NP_619548.1	- - - - -	K T E Q I P - - - - -	G T N I S - - K N I I N P	- - - - -
114	NP_056880.1	- - - - -	- - - E P I I K E N T - -	Q	- - - - -
115	YP_009121747.1	- - - - -	F S K E - D A E S L K E R	- - - - -	- - - - -
116	YP_009113237.2	- - - - -	M N V H E P Y P G F A Q R	- - - - -	- - - - -
117	YP_009508408.1	- - - - -	A I S P G I H S S F T T R	- - - - -	- - - - -
118	NP_955579.1	- - - - -	E S E V I W A A P L P P G	- - - - -	- - - - -
119	YP_009229919.1	- - - - -	Y S L G H T S P K F Q E R	- - - - -	- - - - -
120	YP_004442833.1	- - - - -	D P A S F V Q E T F M K K N	- - - - -	- - - - -
121	NP_862833.2	- - - - -	- - - Q T Y Y A H T N - -	F	- - - - -
122	NP_040563.1	- - - - -	- C E G - - R T K S K V F P	- - - - -	- - - - -
123	YP_443922.1	- - - - -	N H S T L E S G V I P Q P	- - - - -	- - - - -
124	NP_057933.2	- - - - -	E T E V I W A K A L P A G	- - - - -	- - - - -
125	YP_009116631.1	- - - - -	Y Y A N D Y S E E G I S R L K	- - - - -	- - - - -
126	YP_009513249.1	- - - - -	N L Q K Q Q E W S I S L G N	- - - - -	- - - - -
127	YP_223871.1	- - - - -	L D S V I W A E P L P I G	- - - - -	- - - - -

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128 NP_127504.1 - - - - - Q F K R Y T E I P R L F Q L T T S N - - - - -
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130 NP_057860.1 - - - - - L S Q R S F P L P P - P H - - - - -
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017 YP_002455786.1  - - - - - L N I F L D S K F L I R Y L Q S L A S G A F Q G S S T - - - H H R L Q A S L P T L - - -
018 YP_009109694.1  - - - - - A N I Y T D S R Y A F A T A H T H G S I Y E R R G L L T S E G K E I K N K A E I I A - - -
019 NP_789739.1      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
020 NP_955619.1      - - - - - L N I F L D S K Y L Y H Y L R T L A L G T F Q G R S S - - - - Q A P F Q A L L P R L - - -
021 YP_224289.1      - - K C K L E L K N P D I T I Q D K P L K H V T A K M R E T M R A H I D K L L Q L K V I R P S - - -
022 YP_009182100.1  - T Y A D I Q L K D P Y A L I R V K P - M P Y S A E D E A E F E R Q L E E Q L K L E L I Q P S - - -
023 NP_705927.1      - - - - - V N I V T D S Q Y A L G I I Q A Q - - P D Q S E S E L V N Q I I E Q L I K K E K V Y - - -
024 YP_009508577.1  - - - - - V L I V T D S D Y A R S V N E E L P F W R S N G F V N N K K P L K H I S K W K N - - -
025 YP_004442830.1  - - K C H I R I K N P E L T I Q D K P H K F V T P Q M K E Q M Q K H M D E L L K R K V I R P S - - -
026 NP_758887.1      - - - - - V N I V T D S Q Y A M G I L S A A - - P D Q S D N P I V R E I I E L M I H K E A V Y - - -
027 YP_009508406.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
028 YP_610965.1      - - T C Q L E I I N P D L T I Q D K P L K H V T P L M E Q Q F K R H V E A L L Q L K V I R P S - - -
029 YP_001931961.1  - M K A S I K L I D P K T V V K V K P - M R Y N P Q D V E E F A K Q I K E L L E L K I I I P S - - -
030 YP_241114.1      - - - - - F N L F T D S S Y V V G A L Q M I E T V P I I G T T S P E V F N L F T L I Q Q V L H - - -
031 YP_006732334.1  - M T A S I K L A D P K S V V K V K P - M V Y S P Q D R K E F E I Q I K E L L N L K V I I P S - - -
032 YP_009041481.1  - - I C R L D I I N P D I T I Q S Q P L K H V T V E M E R S F Q T H V D G L L K L K V I R P S - - -
033 YP_001036293.1  - - V C E L N I I N P D L T I Q D K P L K H V T P A M E E T F R K H I D A L L K L K V I R A S - - -
034 YP_605811.1      - - K C K I E I K N P D L I I E D R P L K H V T P A M K E S M K K H I D K L L E L K V I R P L - - -
035 NP_955577.1      - - - - - L T V Y T D S R Y A F A T T H V H G E I Y R R R G L L T S E G K E I K N K N E I L A - - -
036 YP_003208050.1  - - K C R L E I I N P D L T I Q D K P L K H V T P Q M E A Q F K R H T D A L L Q L G V I R P S - - -
037 NP_789740.1      - - - - - V N I V T D S Q Y A L G I I Q A Q - - P D Q S E S E L V N Q I I E Q L I K K E K V Y - - -
038 YP_004442839.1  - - R C R I E V K N P D L I I E D R P L K H V T P A M K E S M K R H V D K L L E L K V I R P S - - -

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039 YP_009507791.1  - - - - - M N I I T D S Q Y I M N V L K Q - - Y P D S L S G - L W Q K I I E L L Q S K I K I F - - -
040 YP_004581513.1  - - Y C K L Q I K N T D L I I Q D P P L K H V T P A A R E F F K S Q I S D L L K A K L I R P S - - -
041 NP_043933.1      - F E A Q I A L L D T N K I I K C K P - M Q Y S P Q D R E E F K T Q I E E L L K L G I I R P S - - -
042 YP_009507248.1  - - - - - L N R F H R Q I H L T V V G D I K R R P I V T K P F E S H T R I A I Q L S E S N L E Q D V
043 YP_002117531.1  - - K C K L D I I N P N L T I E D K P L K H V T P A M K E Q M R K H I D K L L E L K V I R P S - - -
044 YP_004347415.1  - - Y A K I E L K N P D D H I Y K P P - I N Y Q E S D Y K E F K M H I D E M V K E G F I E E C K N L
045 NP_056891.1      - - - - - L N I Y T D S A Y L A H S I P L L E T V A Q I K H I S - E T A K L F L Q C Q Q L I Y - - -
046 YP_009513242.1  - - - - - V L I V T D S F Y V A E S A N K E L S Y W K S N G F L N N K K K P L K H V S K W K S - - -
047 YP_009352866.1  - - I C K L E I I N P D I T I Q A Q P L K H V T A E M E K S F K T Q V D G L L K L R V I R P S - - -
048 YP_009165750.1  - M T A S I K L K D P N T I V Q Q V K P - M Q Y C P E D R K E F A V Q I K E L L D L K I I I P S - - -
049 NP_040840.1      - - - - - M N I V T D S R Y A Y E F M L R N W D E E V I R N P I Q A R I M E L V H N K E K I G - - -
050 YP_004222728.1  - - - - - T N V V T D S A F V A K M L L K M G Q K G V P S T A A - - - - - A F I L E D A L S - - -
051 YP_009506264.1  - - K C R L E I K N P D M I I E D R P L K H V T P K L K E D M Q K H I D Q L L K L K V I R P S - - -
052 YP_567050.1      - - - - - L N I F L D S K Y L I K Y L H S L A I G A F L G T S T - - - - H Q S L Y A H L P T L - - -
053 YP_009508571.1  - - - - - V L I I T D S F Y V A E S T N K E L P Y W K S N G F V N N K K K P L K H V S K W K S - - -
054 NP_056803.1      - - - - - V L V I T D S F Y V A E S A N K E L P Y W K S N G F V N N K K E P L K H I S K W K S - - -
055 NP_955564.1      - - - - - F N L Y T D S K Y V T G L F P E I E T A T L S P R T K - - I Y T E L K H L Q R L I H - - -
056 YP_009508411.1  - - M C K L D I I N P N L I I Q D K P L K H V T P A M T E T F K K H I D A L L E L K V I R P S - - -
057 YP_009140788.1  - - L C Q L D I K N P D F I I E D R P L K S V T P Q M K E S F K R H V K A L L D L K V I R P S - - -
058 YP_009508410.1  - - - - - V E S L E P P A L G F I K P - - - - - - - - - A D F R A G L A T A S A A V Q - - -
059 NP_040333.1      - - - - - L N V Y T D S R Y A F A T A H I H G E I Y R R R G L L T S E G K E I K N K D E I L A - - -
060 YP_008992013.1  - F V K L P F K L N E D I N P T K A T H P G M S P S D L L L A Q Q E C S Q L L A Q G L I E P T - - -
061 NP_041734.1      - - L C R L D I K N P D L I I E D K P I K H L T P A M E K Q F Q K H I K A L L D I G V I R P S - - -
062 NP_056895.1      - - - - - L N I W V D S K Y L Y S L L R T L V L G A W L Q P D P - - - - V P S Y A L L Y K S L - - -
063 YP_009109689.1  - - - - - A N I Y T D S R Y A F A T A H T H G S I Y E R R G L L T S E G K E I K N K A E I I A - - -
064 YP_002519387.1  - L L A E I K L I N P A T T V N V K S - M A Y S P D D A V E I N K Q I Q E L L E I K V I R P S - - -
065 YP_595725.1      - - K C K I E L R N P D L I I K D K P Q T L N I Q K K E A M R K H I D A L L E R K V I R P S - - -
066 YP_009508551.1  - - - - - V L V I T D S F Y V A E S A N K E L P Y W K S N G F V N N K K K P L K H I S K W K S - - -
067 YP_001497148.1  - - - - - A N I Y T D S R Y A F A T A H T H G S I Y E R R G L L T S E G K E I K N K A E I I A - - -
068 NP_041186.1      - - - - - F N L F T D S S Y V V G A L Q M I E T V P I I G T T S P E V L N L F T L I Q Q V L H - - -
069 NP_663784.1      - - - - - V N I I V D S Q Y V M G I V A G Q - - P T E S E N R I V N Q I I E E M I K K E A V Y - - -
070 YP_009508443.1  - - T C K L E I I N P E L T I Q D K P L K H V T P S M E E A F R K H V Q A L L K L K V I R P S - - -
071 YP_003987465.1  - - I C E L Q I K N P E L T I E D R P L K H V T P A L K E A M Q K H V D K L L E L K V I R P S - - -
072 NP_861410.1      - E L V K I E L I N P E K E V N V P N N I P Y S L R D I N E F S Q E C A D L V R K G I I E E S - - -
073 YP_009345071.1  - - E C K L E I I N P Q L K I E D K P L K H I T P Q M Q E S F N K Q I Q E L L E I K V I R P S - - -
074 YP_009508582.1  - - - - - V L I V T D S D Y V A R S V N E E L P F W R S N G F V N N K K K P L K H I S K W K N - - -
075 NP_569141.1      - - K V K I E L I E N S I I T Q K P - L K Y N F N D L T E F K I H I K D L D N K Y I Q E S - - -
076 YP_002916057.1  - - E C T L R I K N P D L V I Q D P P L K H V T P A A R E F F Q N Q V S S L I K A Q L I R P S - - -
077 NP_777384.2      - - - - - L N I W V D S K Y L Y S L L R T L V L G A W L Q P D P - - - - V P S Y A L L Y K S L - - -
078 YP_233110.1      - - K C R I E I K N P D L I I E D R P L K H V T P A M K E S M K K H V D K L L E L K V I R P S - - -
079 NP_542258.1      - - - - - L N I F L D S K F L I G H L R R M A L G A F L G P S T - - - - Q C D L H A R L F P L - - -
080 YP_009130664.1  - - T C Q L E I K N P D L T I E D R P L K H I S P Q M E A S Y R R H T E A V L K L G T I R P S - - -
081 YP_009508566.1  - - - - - V L I V T D S D Y V A R S V N N E L N F W R S N G F V N N K K K P L K H I S K W K S - - -
082 YP_006607892.1  - M T A S I K L K D P N T I V K V K P - M Q Y N P D D R M E F S K Q I K E L L D L K I I I P S - - -
083 YP_009506270.1  - - E C R I E V K N P D M I I E D E P L K H V T P A M K E T M A K H V K L L E L K V I R P S - - -
084 NP_042513.1      - I I V H I D L I D P T K E V N V P N R I P Y T Q K D I D E F R E E T S K Q I E L L G I L R Q S - - -
085 YP_006907834.1  - M Q A S I K L S D P T K V I K V K P - M K Y S P M D R E E F E K Q I Q E L L D L K V I R P S - - -
086 YP_004442827.1  - - K C H I R I K N P E L T I Q D K P Q K M V T P Q I K E Q M K K H M D E L L L R R V I R P S - - -
087 YP_009408594.1  - - K C H I D I I N P D I T I Q D P P L K H V T P A L K E T F Q K H I D A L L K L G V I R E S - - -
088 YP_009508561.1  - - - - - V L I V T D S D Y V A R S A N K E L P F W R S N G F L N N K K K P L K H I S K W K N - - -
089 NP_056907.1      - - - - - L N I F L D S K Y L I K Y L H S L A I G A F L G T S T - - - - H Q S L Y A H L P T L - - -
090 YP_002308474.1  - - - - - L N I F L D S K F L V G Q L R R L A L G A F I G P S T - - - - Q C D L H S Q L L P L - - -
091 YP_007761644.1  L P Q D Q L D R L K L K C P V R C K P - I G A N P I D M E E F H N Q I N E L L R L K L I R K T - - -
092 NP_040550.1      - - - - - T N V V T D S A F V A K M L L K M G Q E G V P S T A A - - - - - A F I L E D A L S - - -
093 NP_758808.1      - - T C K L D L K N T E I T I Q D K P L R H I T P A L E Q S Y G R H V N A L L M L K V I Q P S - - -
094 YP_009345075.1  - - V C K I D I I N P D L T I E D R P L K H I T P E M K A Q F S R H T E A L L K L G V I R K S - - -
095 NP_068729.1      - L L I E I R L K D P L Q E I N V T N R I P Y T I R D V Q E F K E E C E D L L K K G L I R E S - - -
096 NP_047255.1      - - - - - L T V Y T D S R Y A F A T T H V H G E I Y R R R G L L T S E G K E I K N K N E I L A - - -
097 YP_006273075.1  - - L C Q L D I K N P D F I I E D R P L K N L T P Q M K E S F K K H I K V L L D L G V I R A S - - -
098 YP_009508888.1  - - - - - V L I I T D S F Y V A E S A N K E L P Y W K S N G F V N N K K K P L K H V S K W K S - - -
099 NP_395469.1      - E L I E I K L K D P N A E I F V P N N I P Y T Q R D I E E F K E D M E D L I N K G L I R P S - - -
100 YP_009508546.1  - - - - - V L I I T D S F Y V A E S A N K E L P Y W K S N G F V N N K K K P L K H I S K W K S - - -
101 NP_056762.1      - - - - - F K I I N P D I N I T C A T - I P Y T P A D K E V F E K Q I K E L L D N K L I K K A D P - - -
102 YP_009508556.1  - - - - - V L I V T D S F Y V A E S A N K E L S Y W K S N G F L N N K K K P L R H V S K W K S - - -
103 NP_569153.1      - - V C H L D I K N P D M V I E D R P L K H V T P Q M E E S F R K H V E A L L K I G A I R P S - - -
104 NP_043924.1      D K I K P Y L G K G Q Q L T L C D T Y I G K E G A A I L G Q L R P D M Q A L H Q A E G E V H V S L G
105 YP_009243641.1  - - - - - I N I I A D S A Y V V G V V K N I I G - A V I N S L D K E L T T L F K T L Q V L L T - - -
106 YP_004300274.1  - - E V K I E L I N P D S I V Y Q K P - L R W N F E D I E E F K L H I D E L L K G G F I R P S - - -
107 NP_056848.1      - - L A K I E L K N E T D N I Y K P P - M L Y Q E T D L P E F K M H I E E M I K E G F I E E K T N F
108 YP_006495799.1  - - K C K L D I I N P D I T I Q G K P P S T A T P E I K D R Y Q R H I D A L L S I G V I R P S - - -
109 YP_009508409.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
110 NP_687035.1      - - - - - V N I V T D S Q Y V M N I L T A C - - P Q E S N S P L V E Q I I Q A L M K K R Q V Y - - -
111 NP_045937.2      - - - - - - I Y T D S R Y A Y G V V H D F G H L W M H R G F V T S A G T P I K N H K E I E Y L L K

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112 NP_612577.1 -MTATIELIDPKTVVKVKP-MSYSPSDREEFDRQIKELIELKVIKPS---
113 NP_619548.1 -MKASIKLIDPLKVIIRVKP-MSYSPQDREGFAKQIKELLDLGLIIPS---
114 NP_056880.1 -----FNLYTDSKYVTGLFPEIETATLSPRTK--IYTELKHQLRIH---
115 YP_009121747.1 --TCKLDIINPDITVQDKPLKHVTPALEASFKKXIEALLKLKVIRPS---
116 YP_009113237.2 --HCYLDIKNPDLTVQDKPLDQITPVQKEMYKKHIDALLQIGVIRRS---
117 YP_009508408.1 --TCKLDIINPELRIQDKPLKHVTPAMEETFRRKHVQALLKLKVIRPS---
118 NP_955579.1 -----LTVYTDSRYAFATTHVHGEIYRRRGLLTSEGKEIKNKNIEILA---
119 YP_009229919.1 --KCKLEIINPDITIQDKPMKHVTPAMKDQFQKHTQALLKLGVIRPS---
120 YP_004442833.1 --KCHIRIRNPELTIQDKPKHFVTPQMKEQMCFHNMNELLRKQVIRPS---
121 NP_862833.2 -----FNLFTDSSYVVGALQMIETVPIIGTTSPEVLNLTFTLIQQALH---
122 NP_040563.1 -----MNIITDSRYAYEGMREE-PETWAREGIWLEIAKILPFFKQYVG---
123 YP_443922.1 -----VNIYTDSAYAHGAVHIDGPGWLRRNFTTTGNLPIKHKQTQMEV---
124 NP_057933.2 -----LNVYTDSRYAFATAHIHGEIYRRRGLLTSEGKEIKNKNDEILA---
125 YP_009116631.1 --KCKLDIKNPDIVISSKPPDSVSKETKAQYQRHIDALLKIGVIQPS---
126 YP_009513249.1 -----ILVVTDSDNYVAKAYNEELD VWASNGFVNNRKKPLKHISKWKs---
127 YP_223871.1 -----VNIYTDSRYAFATLHVHGMIIYRERGLLTAGGKAIKNAPIEILA---
128 NP_127504.1 -FIQLPFKKNNENINPTKASHSGMNPHEHLQLAIKECDELQQFDLIEPS---
129 NP_044929.1 -----VLIVTDSNYVAKSYNEELPYWESNGFVNKKKKTKLKHISKWKA---
130 NP_057860.1 -----LNIFLDSKYLHYLRTLALGTFQGRSS--QAPFQALLPRL---
131 NP_040973.1 -----MNIITDSQYVINIILQ--QPDMMEG-IWQEVLEEELEKKTATIF---
132 NP_777317.1 --TCKLEIKNPDLIIEDKPLKHVTPKMKKEVMARHVTTALLQSKVIRPS---
133 NP_054716.1 -----VLIVTDSDYVAKSYNQELDFWVSNGFVNKKKKPLKHVSKWKs---
134 YP_001856242.1 -----VNIVTDSQYALGIIQAQ--PDQSESEELVNQIIIEQLIKKEKVY---
135 NP_954565.2 -----LNIYTDSAYLAHSIPLLETVAQIKHIS-ETAKLFLQCQQLIY---
136 NP_569150.1 --KCRIEVKNPDMIIEDRPLKHVTPMTKETMAKHVQKLLELKVIRPS---
137 NP_659397.1 -MKAIEIKLIKPEETVVRVKP-MVYSPEDRKEFEIQIKELLDLKVIPS---
138 YP_009513211.1 -----INIIYTDSDRYAFATAHVHGAIIYKQRLTTSAGKDIKNKEIEILA---
139 YP_233107.1 --KCKLEIKNPDLIIEDRPLKHVTPAMKETMTKHVQRLDLIKVIRPS---
140 YP_009109692.1 -----ANIIYTDSDRYAFATAHHTGSIYERRGLLTSEGKEIKNKAIEIA---
141 NP_057849.4 -----VNIVTDSQYALGIIQAQ--PDQSESEELVNQIIIEQLIKKEKVY---
142 NP_049560.1 -----LNIFLDSKYLHYLRTLALGTFQGRSS--QAPFQDPLPRL---
143 YP_009506267.1 --QCKLEIINPNLTIQDKPLKHVTPAMEETFKKHVDALLLELKVIRPS---
144 NP_039820.1 --KCKLNIINPDIKIMGRPDKHVTPGDDEAMTRQINLLQMKVIRPS---
145 NP_056790.1 -----INIIYTDSDRYAFATAHIHGAIIYKQRLTTSAGKDIKNKEIEILA---
146 YP_002321513.1 --KCKLEVINPDITISDKPLKHVSIIGLKQQFQNLQDPLPKMGLIRPS---
147 NP_955591.1 -----LNVYTDSRYAFATAHIHGEIYRRRGLLTSEGKEIKNKNDEILA---
148 YP_001956722.2 -----VLIVTDSRYFAESVNKELPYWQSNGFVNKKKKPLKHVSKWKs---
149 NP_056902.1 -----VNIVTDSYYCWKNITEGLGLEGPQS-PWWPIIQNIREKEIVY---
150 NP_056886.1 -----TNVVTDSAFVAKMLLKMGEQGVPTAA--AFILEDALS---
151 NP_041261.1 -----FNLYTDSAYIAQSVPLLETVPFIKSST-NATPLFSKLQQLIL---

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001 YP_004442836.1 -QSKHRTTAMIVESGTEIDPVTGK-----
002 NP_056728.1 -KSPHMAPAFLVNNEAEKR-----
003 YP_009508537.1 -VADFKKLRPDVVTHEPG-----
004 YP_004732983.2 -KSRHRSAAFIVASGTSVDPKTGK-----
005 YP_009508407.1 -KQNTLTNLITQIFEKLT-----
006 NP_040939.1 -VHWVPGHKGIPQN--EIDKYISEIFLAKEGEGILPKREEDAGYDLIC
007 YP_003864102.1 -NRSTPIYIGHVRA-----
008 YP_009002585.1 -TSKHRTTAFIVNSGTSVDPVTGK-----
009 YP_003284237.1 -TSKHRTTAMIVESGTEIDPKTGQ-----
010 YP_009268869.1 -VHWVPGHKGIPQN--EIDKYISEIFLAAREGSGILPKRAEDAGYDLIC
011 YP_009506251.1 -KSRHRTTAFIVESGTTIDPKTKK-----
012 NP_955611.1 -QRSAMAAVLHVRS-----
013 YP_008567619.1 -KSRHRTCAFIIVNSGTSIDPVTGK-----
014 NP_149413.1 -NSPHRTNAFIVESGTSVDPVTGK-----
015 YP_004442824.1 -TSKHRTTAMIVESGTEVDPVTGI-----
016 YP_001931967.1 -KSPHMSPAFMVNKGAEQR-----
017 YP_002455786.1 -LQGKVVYLHHTRS-----
018 YP_009109694.1 -LLKALFLPQEVAIHCPG-----
019 NP_789739.1 -----
020 NP_955619.1 -LSRKVVYLHHVRS-----
021 YP_224289.1 -SSRHRTTAMIVESGTEVDPKTGQ-----
022 YP_009182100.1 -KSPHSSPAFCVRNHAEIK-----
023 NP_705927.1 -LAWVPAHKGIGGN-----
024 YP_009508577.1 -ISDSLRLKRDIIIVHEPG-----
025 YP_004442830.1 -SSRHRTNAFIVNSGTTVDPLTKK-----
026 NP_758887.1 -LAWVPAHKGIGGN-----
027 YP_009508406.1 -----
028 YP_610965.1 -KSRHRTTAMIGNSGTSVDPTTGK-----
029 YP_001931961.1 -KSPHQSPAFLVNEAEERR-----
030 YP_241114.1 -CRQYPCFFGHIRA-----

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[illegible]

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104 NP_043924.1 TRAGHCPQELGTMLTNLLKSTQER-----
105 YP_009243641.1 -SRNARIFIVHIRS-----
106 YP_004300274.1 -NSKHSSPAFIVNKHSEQK-----
107 NP_056848.1 EDKKYSSPAFIVNKHSEQK-----
108 YP_006495799.1 -KSRHRTAAAFITYSGTSDPKTGE-----
109 YP_009508409.1 -----
110 NP_687035.1 -LQWVPAHKGIGGN-----
111 NP_045937.2 QIMKPKQVSVIKIEAHTKGVSMEEVRG-----
112 NP_612577.1 -KSTHMSPAFLVENEAEERR-----
113 NP_619548.1 -KSQHMSPAFLVENEAEERR-----
114 NP_056880.1 -KRQEKIFYIGHIRG-----
115 YP_009121747.1 -KSRHRTMAMIVNSGTTVDPATGK-----
116 YP_009113237.2 -NSRHRTNAFIVHSGTTVDPRGTGE-----
117 YP_009508408.1 -TSKHRTTAFIVHSGTTIDPKTGV-----
118 NP_955579.1 -LLEALFLPKRLSIIHCPG-----
119 YP_009229919.1 -KSRHRTMAMIVYSGTSDVEKTGK-----
120 YP_004442833.1 -TSRHRTNAFIVNSGTTVDPIITRK-----
121 NP_862833.2 -CRQHPCFFGHIRAE-----
122 NP_040563.1 -VGWVPAHKGIGGN-----TEADEGVKKA
123 YP_443922.1 -LISAVALPKKVAIMKCKG-----
124 NP_057933.2 -LLKALFLPKRLSIIHCPG-----
125 YP_009116631.1 -KSKHRTAAAFITHSGTSDPIITKK-----
126 YP_009513249.1 -VADLKRLRPDVVVTHEPG-----
127 YP_223871.1 -LLTAVWLPKRVAVMHCKG-----
128 NP_127504.1 -DSQWACEAFYVNKRSEQV-----
129 NP_044929.1 -IAECKNLKADIHVIHEPG-----
130 NP_057860.1 -LSRKVVYLHHVRS-----
131 NP_040973.1 -IDWVPGHKGIPGN-----EVDK-LCQTMMIIEGDGILDKRSEDAGYDLLA
132 NP_777317.1 -TSKHRTTAIIIVESGTEVDPIITGK-----
133 NP_054716.1 -IADCKKHKADIHVIHEPG-----
134 YP_001856242.1 -LAWVPAHKGIGGN-----
135 NP_954565.2 -NRSIPFYIGHVRA-----
136 NP_569150.1 -SSKHRTTAMIVESGTEVDPMITGK-----
137 NP_659397.1 -KSQHMSPAFLVEKEAEKR-----
138 YP_009513211.1 -LLEAIIHLPKRVAIIHCPG-----
139 YP_233107.1 -TSKHRTTAIMVNSGTEIDPIITGA-----
140 YP_009109692.1 -LLKALFLPQEVAAIIHCPG-----
141 NP_057849.4 -LAWVPAHKGIGGN-----
142 NP_049560.1 -LSRKVVYLHHVRS-----
143 YP_009506267.1 -TSQHRTTAFIVYSGTTVDPATGK-----
144 NP_039820.1 -ESKHRTSTAFIVRSGTEIDPIITGK-----
145 NP_056790.1 -LLEAIIHLPRRVAIIHCPG-----
146 YP_002321513.1 -TSRHRTMAMIINSGTTVDPVTGE-----
147 NP_955591.1 -LLKALFLPKRLSIIHCPG-----
148 YP_001956722.2 -IADCIOQLKPDIIIIHEKG-----
149 NP_056902.1 -FAWVPGHKGIIYGNQLADEAAKIKKEEIMLAYQGTQIKEKRDEEDAGFDLCV
150 NP_056886.1 -QRSAMAAVLHVRS-----
151 NP_041261.1 -NRQHPPFI GHLRA-----

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001 YP_004442836.1 -----EKRGGKERLVFN YKRLN
002 NP_056728.1 -----RGKKRMVVNYKAMN
003 YP_009508537.1 -----HQKLDSSSPHAY
004 YP_004732983.2 -----ETRGKERMVIDYRMLN
005 YP_009508407.1 -----QIQTEVRS LK
006 NP_040939.1 PEEVTIEPGQVKCIPIELRLNLKKSQWAMIATKSSMAAKGVFTQG GGIIDS
007 YP_003864102.1 -----HSGLP GP I AQ
008 YP_009002585.1 -----ETKGKERMVFN YKRLN
009 YP_003284237.1 -----EKRGGKERLVFN YKRLN
010 YP_009268869.1 PQEVCIPAGQVRKIPINLRINLKEDQWAMVGT KSSSFASKGVFVQG GGIIDS
011 YP_009506251.1 -----TIHGKERMVFN YKRLN
012 NP_955611.1 -----HSEVP GFFTE
013 YP_008567619.1 -----EVKGKERLVFN YKRLN
014 NP_149413.1 -----EIRGGKPRLVFN YKRLN
015 YP_004442824.1 -----EKRGGKERLVFN YKRLN
016 YP_001931967.1 -----RGKMRMVFN YKALN
017 YP_002455786.1 -----HTQLPDPIST
018 YP_009109694.1 -----HQKGQDP-VAV
019 NP_789739.1 -----
020 NP_955619.1 -----HTNLPDPISR
021 YP_224289.1 -----EKRGGKERLVFNFKRLN
022 YP_009182100.1 -----RQKARIVIN YKELN

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[illegible]

[illegible]

001	YP_004442836.1	DNTEKDKQYSLPGINTIIKRIGNAKIYSKF-----
002	NP_056728.1	KATVGDAYNLPNKDELTLIRGKKIFFSSF-----
003	YP_009508537.1	GNNLADQLATQASFKVHTTK-NPKLDIEQIKAIQACQNNEKLVPVGYPKQY
004	YP_004732983.2	DNCHKDQYSLPGITSIISKSLGQA KIFFSKF-----
005	YP_009508407.1	SQASPVAASDELLDKVITKLGRLSIADK L-----
006	NP_040939.1	GYQGQIQVIMYNSNKIAVVI PQGRKF AQLILMDKKH GKLEPWG-----
007	YP_003864102.1	GNQLADLATKTIAF-----
008	YP_009002585.1	DLTEKDKQYSLPGINTIMKRVGHAKIYSKF-----
009	YP_003284237.1	DNTEKDKQYSLPGINTIIQRIGRSKIYSKF-----
010	YP_009268869.1	GYQGI IQVVYNSNDKEV IIPQGRKF AQLILMPLIHEDLEAWG-----
011	YP_009506251.1	DNTEKDKQYSLPGIHTIILKRVGNKKIFFSKF-----
012	NP_955611.1	GNDVADSQA TFQA-----
013	YP_008567619.1	DNTNKDQYSLPGINTIISKVGN SKVF S KF-----
014	NP_149413.1	DNTWPDQYSLPGINALLKNVARAKIFFSKF-----

015	YP_004442824.1	DNTEKDKQYSLPGINTI IQRIGNAKIYSKF-----
016	YP_001931967.1	DATIGDAHNIPNRDLSMALISGKRIFSSSF-----
017	YP_002455786.1	LNEYTDSLIVAPV-----
018	YP_009109694.1	GNRQADRVARQAAMAEVLTLATEPDNTS--HIT-----
019	NP_789739.1	-----
020	NP_955619.1	LNALTDALLITPV-----
021	YP_224289.1	DNTEKDKQYSLPGINTIISRIGNAKVYSKF-----
022	YP_009182100.1	RVTKDDGYFLPNLETLVYQVAEARVFYSKF-----
023	NP_705927.1	LVSAGIRKVL-----
024	YP_009508577.1	GNNLADKLATQGGSYTVNNIVKNPSLDAELEQLINGHSVK-----GYPSRY
025	YP_004442830.1	DNTEKDKQYSLPGINGLLKSVGNAKIYSKF-----
026	NP_758887.1	LVSRGVRQVLF-----
027	YP_009508406.1	-----
028	YP_610965.1	DNTHKDKQYSLPGINTI IQKIGRATVYSKF-----
029	YP_001931961.1	TATIGDAHNLPNKDELLTLIRGKSIFSSSF-----
030	YP_241114.1	GNHTADALTQKVFE-----
031	YP_006732334.1	EVTIGDSHNLPNMQELITLLRGKSIFSSSF-----
032	YP_009041481.1	NNTHKDKQYSLPGINTI IQKVGRAKVYSKF-----
033	YP_001036293.1	DNTEKDKQYSLPGINTILKRVGQSKIYSKF-----
034	YP_605811.1	DNTEKDKQYSLPGINTIISRIGKSKIIYSKF-----
035	NP_955577.1	GNRLADDTAKKAATETHSSLTTLPTELIEGPKRPPWEYDSDSL-----DL
036	YP_003208050.1	DNTHKDKQYSLPGINTILKKIGTSKVYSKF-----
037	NP_789740.1	LVSAGIRKVLFE-----
038	YP_004442839.1	DNTEKDKQYSLPGINTIISRIGNSKIYSKF-----
039	YP_009507791.1	GYRGALNVILSNLTRHG VKISKGGQKIAQLIILPYVTESLEKGK-----
040	YP_004581513.1	DNTEKDKQYSLPGINTIVSRISGKKIYSKF-----
041	NP_043933.1	DHTKGDGYLLPNKEQLLQRIGGKTIFYSSF-----
042	YP_009507248.1	I IQKTFRSSSSLNLVLT KVELENVKEYLRQ-----
043	YP_002117531.1	DNTEKDKQYSLPGINTI IQRIGRSKIYSKF-----
044	YP_004347415.1	KKAKVIKHPIPNKDILINRGIKANYFSKF-----
045	NP_056891.1	GNQRADLATKIVAS-----
046	YP_009513242.1	GNNLADKLATQGGSYVVHCNTT-PSLDAELDQLLQGHNP-----GYPKQY
047	YP_009352866.1	NNTHKDKQYSLPGINTI IQKVGRAKVYSKF-----
048	YP_009165750.1	EVTLGDSHNLPNKDELLTLIRGKTIYSSF-----
049	NP_040840.1	GYQGTIQVVIYNSSNNKEVVIPQGRKFAQLILMPLIHEELEPWG-----
050	YP_004222728.1	GNDVADSQATFQA-----
051	YP_009506264.1	DNTEKDKQYSLPGINTI IQRIGRSKIYSKF-----
052	YP_567050.1	LNEYTDSLIIAPL-----
053	YP_009508571.1	GNALADKLATQGGSYVVNNNDKKPNLD AELDHLIQGKY PK-----GYPKQY
054	NP_056803.1	GNALADKLATQGGSYVVNCNTKKPNLD AELDQLLQGN NVK-----GYPKQY
055	NP_955564.1	GNAYADSLTRILT-----
056	YP_009508411.1	DNTEKDKQYSLPGINTILKKIGHSKVYSKF-----
057	YP_009140788.1	DITHKDKQYSLPGINTILKRIGNSKIFSKF-----
058	YP_009508410.1	KEPE--LPDEILDQITSRFNKL SIAEAP-----
059	NP_040333.1	GNRMADQAAREVATRET PETSTLLIENSAPYTHEHFHYTVTDI-----KD
060	YP_008992013.1	MFLQDDKFP LPRRQSMFTFLKNAQIFSKF-----
061	NP_041734.1	DNTEKDKQYSLPGIQTILKRVG NKKVFSKF-----
062	NP_056895.1	LNNYVDQLLP-----
063	YP_009109689.1	GNRQADRVARQAAMAEVLTLATEPDNTS--HIT IEHTYTSEDQ-----EE
064	YP_002519387.1	AATISDGYLLPNKETILT AIRGRKYFSTL-----
065	YP_595725.1	DNTWPDQYSLPGINALKNVARAKIFSKF-----
066	YP_009508551.1	GNALADKLATQGGSYVVNCNTKKPNLD AELDQLLQGHY IK-----GYPKQY
067	YP_001497148.1	GNRQADV ARQVAEAETLTLTK-LEETN--LTTNKYAYTPEDQ-----EE
068	NP_041186.1	GNHTADVLTQKVFE-----
069	NP_663784.1	LVSQGI RQVLF-----
070	YP_009508443.1	DNTEKDKQYSLPGINTILKRIGQS VIYSKF-----
071	YP_003987465.1	DNTEKDKQYSLPGISTIL QKIGH SKIYSKF-----
072	NP_861410.1	KATIGNAHKLPRID SILTKVKGSNW FSTL-----
073	YP_009345071.1	DNTEKDKQYPLPGINTIL QRIGKTKIYSKF-----
074	YP_009508582.1	GNNLADKLATQGGSYNVNSIVKNP SLDAELEQLINGHSMK-----GYPSKY
075	NP_569141.1	AKTKTYNYPIPNKILKIRQIQGY NYFSKF-----
076	YP_002916057.1	DNTEKDKQYSLPGINTIISR VAGKKVFSKF-----
077	NP_777384.2	LNNYVDQLLP-----
078	YP_233110.1	DNTEKDKQYSLPGINTIISRIGKSK IYSKF-----
079	NP_542258.1	LNEATDALMLA PL-----
080	YP_009130664.1	DNTHKDKQYSLPGINTI IQKVGN SKIYSKF-----
081	YP_009508566.1	GNALADKLAVQGSYTINNITIKPS LDTELRAVLEGKLPK-----GYPKNL
082	YP_006607892.1	EATIGDSHNLPNKDELLTLIRGK TIYSSF-----
083	YP_009506270.1	DNTEKDKQYSLPGINTI IRRIGNAKIYSKF-----
084	NP_042513.1	KATKGDAYNLDR--LYLTDRESNWFSTL-----
085	YP_006907834.1	DATVGDAYNLPNKDELLTLIRGKK IFSSF-----
086	YP_004442827.1	DNTEKDKQYSLPGINALK SVGNAKIYSKF-----
087	YP_009408594.1	DNTYKDKQYSLPGINTILKKVGN SKIYSKF-----

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088 YP_009508561.1 GNSLADKCLAVVQGSYSVNTINKIPSLDAELNQILEGNLPK-----GYPKQY
089 NP_056907.1 LNEYTDSLIIAPL-----
090 YP_002308474.1 LNEATDALMLAPL-----
091 YP_007761644.1 LRIRKKNAYRIPNKDLSFLAIRESEQFYSKF-----
092 NP_040550.1 GNDVADSQATFQA-----
093 NP_758808.1 DNTYKDKQYSLPNIQLILKKVINSTIYSKF-----
094 YP_009345075.1 QNTHKDKQYSLPGINTIILKLVGNSKIYSKF-----
095 NP_068729.1 EATIGDSYKLPKRDFILEKIKGSLWFSSSL-----
096 NP_047255.1 GNRLLADDTAKKAAETETHSSSLTVLPTEELIEGPKRPPWEYDDSDL-----DL
097 YP_006273075.1 DITHKDKQYSLPGINTIILKKVGNSKIFSKF-----
098 YP_009508888.1 GNALADKCLATQGSYVVN-NIIKPSLDAELDQVLQGNLPK-----GYPKHF
099 NP_395469.1 EATIGTPKTLPRADYIMNRLKGKIWFSTL-----
100 YP_009508546.1 GNALADKCLATQGSYVVNCNTKKPNLDAELDQLLQGQNVK-----GYPKQY
101 NP_056762.1 DNMHTDPFNI PHKISMNLIIQKANI FSKF-----
102 YP_009508556.1 GNNLADKCLATQGSYVVHCNTT-PSLDAELDQLLQGHNP P-----GYPKQY
103 NP_569153.1 DLTNKKDKQYSLPGIQTILQRLKGSTIFSKF-----
104 NP_043924.1 ETGKVQGYVIKTTLGMKTWIMNDHLVTQS-----
105 YP_009243641.1 GNEQVDKCLAAFAF-----
106 YP_004300274.1 AKTKTYNYPLPNKILRVRRQVQGYNWFSKF-----
107 NP_056848.1 KKAQVVKYPIPNKDTLIIHRSIQARYYSKF-----
108 YP_006495799.1 NNTHKDKQYTLPGINSIVA AVGNAKIYSKF-----
109 YP_009508409.1 -----
110 NP_687035.1 LVSKGIRQILF-----
111 NP_045937.2 QRVLLKKGDALASTDLVMEYSETDEKFTAG-----
112 NP_612577.1 KATKGD AHNLPNKDELTLVRGKKIYSSF-----
113 NP_619548.1 QATIGDSHNL PNMQELTLRLGKSI FSSF-----
114 NP_056880.1 GNAYADSLTRILT-----
115 YP_009121747.1 DNTYKDKXSLPGINTLLKRIGNAKI FSKF-----
116 YP_009113237.2 DLT HKDKQYSLPGIQGI IARVGRAKI FSKF-----
117 YP_009508408.1 DNT EKDKQYSLPGINTIILKRVGQSEIYSKF-----
118 NP_955579.1 GNRLLADDTAKKAAETETHSSSLTVL-----
119 YP_009229919.1 DNTFKDKQYSLPGINTIILQRIGKSKIYSKF-----
120 YP_004442833.1 DNT EKDKQYSLPGINSLLNSVGNAKIYSKF-----
121 NP_862833.2 GNHTADVLT KQVF-----
122 NP_040563.1 MVDSE LQLQLNLNIGTEHIRIQKDEVFMT-----
123 YP_443922.1 GND AADQA AKKAGGYSPGQMVLRVDP P PSTELTVEHIKELQQTAGPYEHSV
124 NP_057933.2 GNRMAADQAARKAAITETPD TSTLLIENSSPYTSEHFHYTVTDI-----KD
125 YP_009116631.1 DNT HKDKQYTLPGINTIISAIGNAKI FSKF-----
126 YP_009513249.1 GNNLADQLATQASFKVHM TKNPKLDIEQIKAIQACQNNERLPVGYPKQY
127 YP_223871.1 GNRRADEVAREVAIRPLSTQATISDAPDMPDTETP-QYSNVEE-----AL
128 NP_127504.1 HFLQDDKFPPIPNKLTLSHLSKAKLFSKF-----
129 NP_044929.1 GNALADKQAVSGSYKVS SNE LKPSLDAELEQVLSTGRPN---PQGYPNKY
130 NP_057860.1 LNALTDALLITPV-----
131 NP_040973.1 GYRGEIGVIMINVSRSKSI TLMERQKIAQLIILPCKHEVLEQ GK-----
132 NP_777317.1 DNT EKDKQYSLPGINTIILKRIGTSKVYSKF-----
133 NP_054716.1 GNN AADKCLAVKASYTVFSSVQTLPSLDAELHQLLDKQTPN---PKGYP SKY
134 YP_001856242.1 LVSAGIRKVL-----
135 NP_954565.2 GNQRADLATKIVAS-----
136 NP_569150.1 DNT EKDKQYSLPGINTIILKRIGNAKIYSKF-----
137 NP_659397.1 EVTIGDSHNL PNMQELITLLRGKNIFSSF-----
138 YP_009513211.1 GNRKADEAAKQAAQSTRILTETTKNQEHFEPTRGKIKPRE-----
139 YP_233107.1 DNT EKDKQYSLPGINTIILARISHSKIYSKF-----
140 YP_009109692.1 GNRQADRVARQAAMAEVLT LATEPDNTS--HITIEHTYTS EDQ-----EE
141 NP_057849.4 LVSAGIRKVL-----
142 NP_049560.1 LNALTDALLITPV-----
143 YP_009506267.1 DNT EKDKQYSLPGINTIILKKVGNSKIYSKF-----
144 NP_039820.1 ENTESDQYSLPGINTIILSKVGRSKIYSKF-----
145 NP_056790.1 GNRRADEAAKQAAALSTRVLAGTTKPKQEP IEP AQEKTRPRE-----
146 YP_002321513.1 DNTYRDPYSLPGINTIILQKVGRSKIYSKF-----
147 NP_955591.1 GNRMAADQAARKAAITETPD TSTLLI-----
148 YP_001956722.2 GNNLADKCLATQGSYVVNINTT-PSLDAELDQLLQGQY PK-----GF PKHY
149 NP_056902.1 GYTGEIQVIC TNIGKSNIKLIEGQKFAQLIILQHHSNSRQPWD-----
150 NP_056886.1 GNDVADSQATFQA-----
151 NP_041261.1 GNALADAAATQIFP-----

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001 YP_004442836.1 -----DLKSGFHQVAMD PESIPWTAFWAI-DGLYEWLVM
002 NP_056728.1 -----DCKSGFWQVL LDQESRPLTAFTCP-QGHYEWNV
003 YP_009508537.1 TYELRNDKCMVLR--KDGWREIPPSRERYKLIKEAHD--ISHAGREAVL
004 YP_004732983.2 -----DLKSGFHQVMMEEESIPWTA FISP-AGLYEWLVM
005 YP_009508407.1 -----PEKQ GK-----
006 NP_040939.1 -----ESRKTERGEKGFGSTGMYW-----IENIPLAEEDHTKWHQDA

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007 YP_003864102.1 - - - - - N L N T N L Q N A Q D T H A L H H L N A
008 YP_009002585.1 - - - - - D L K S G F H Q V A M H P E S I K W T A F W V P - D G L Y E W L V M
009 YP_003284237.1 - - - - - D L K S G F H Q V A M E E A S I P W T A F W A I - D G L Y E W L V M
010 YP_009268869.1 - - - - - E T R R T E R G N Q G F G S T G A Y W - - - - - I E N I P L A E E D H S K W H Q D A
011 YP_009506251.1 - - - - - D L K S G F H Q V A M A E E S I P W T A F W V P - Q G L Y E W L A M
012 NP_955611.1 - - - - - Y - - - - -
013 YP_008567619.1 - - - - - D L K S G F H Q V A M D P E S I E W T A F S T P - N G L Y E W L V M
014 NP_149413.1 - - - - - D L K S G F H Q V A M D P E S I P L T A F T A Y - N E L Y E W L V M
015 YP_004442824.1 - - - - - D L K S G F H Q V A M D P E S I P W T A F W A I - D G L Y E W L V M
016 YP_001931967.1 - - - - - D C K S G F W Q V L L D K P S Q E L T A F T C P - Q G H Y Q W L V M
017 YP_002455786.1 - - - - - T P L K P E G L H A L T H C N Q
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - - L Q L S P A D L H S F T H C G Q
021 YP_224289.1 - - - - - D L K S G F H Q V A M D P E S I P W T A F L A N - N E L Y E W L V M
022 YP_009182100.1 - - - - - D C K S G Y W Q I K L T P E S I P L T A F S T P - K G Q Y E W K V L
023 NP_705927.1 - - - - -
024 YP_009508577.1 K Y I L K E G Q V F V L R - - P E G E K I I P P K S D R L A L V K I A H E - - - F S H A G R E A T V
025 YP_004442830.1 - - - - - D L K S G F H Q V A M E E E S I E W T A F W A F - T G L Y E W L V M
026 NP_758887.1 - - - - - L E G I D K A Q E E H D K Y H N N W
027 YP_009508406.1 - - - - -
028 YP_610965.1 - - - - - D L K S G F H Q V A M S P E S I E W T A F I V L - G G L Y E W L V M
029 YP_001931961.1 - - - - - D C K S G F W Q V L L D E D S Q L L T A F T C P - Q G H Y Q W I V V
030 YP_241114.1 - - - - - F Q S A I D A A R K S H D L H H Q N S
031 YP_006732334.1 - - - - - D C K S G F W Q V F L D Q E S Q K L T A F T C P - Q G H F Q W R V V
032 YP_009041481.1 - - - - - D L K S G F H Q V A M D E A S I P W T A F L V P - G G L Y E W L V M
033 YP_001036293.1 - - - - - D L K S G F H Q V A M A P Q S V E W T A F L A P - G G L Y E W L V M
034 YP_605811.1 - - - - - D L K S G F H Q V A M D P E S I P W T A F W A I - D G L Y E W L V M
035 NP_955577.1 V Q K L E A H Y E P K R G T W E Y R G K T I M P E K Y A K E L I S H L H K L T H L S A R K M K T L L
036 YP_003208050.1 - - - - - D L K S G F H Q V A M D E E S I P W T A F C V P - G G L Y E W L V M
037 NP_789740.1 - - - - - L D G I D K A Q D E H E K Y H S N W
038 YP_004442839.1 - - - - - D L K S G F H Q V A M D P E S I P W T A F W A I - D G L Y E W L V M
039 YP_009507791.1 - - - - - M I M D S Q R G E G G F G S T G A Y V T Q I S S W M D N I E K A E D D H D K F H S D V
040 YP_004581513.1 - - - - - D L K A G F H Q I R M E E K S K P W T A F W T P - E G L Y E F E V M
041 NP_043933.1 - - - - - D C K S G F W Q V R L A P E T I Q L T A F S C P - Q G H Y E W L V M
042 YP_009507248.1 - - - - - Q D I I R H Y H D G K T N H R G I N E C Y
043 YP_002117531.1 - - - - - D L K S G F H Q V A M D P A S I E W T A F W A I - D G L Y E W L V M
044 YP_004347415.1 - - - - - D C K S G F Y H I K L E E D S K K Y T A F T V P - Q G Y Y V W I V L
045 NP_056891.1 - - - - - N I N T N L E S A Q N A H T L H H L N A
046 YP_009513242.1 K Y T L E D N K I I V E R - - P N G Q R I V P P K S D R E K I I S M A H N - - - I A H T G R D A T F
047 YP_009352866.1 - - - - - D L K S G F H Q V A M D E D S I P W T A F L V P - G G L Y E W L V M
048 YP_009165750.1 - - - - - D C K S G F W Q V L L D Q E S Q L L T A F T C P - T G H Y Q W K V V
049 NP_040840.1 - - - - - E T R K T E R G E Q G F G S T G M Y W - - - - - I E N I P L A E E E H N K W H Q D A
050 YP_004222728.1 - - - - - Y P L R E A K D L H T A L H I G P
051 YP_009506264.1 - - - - - D L K S G F H Q V A M E A E S I P W T A F W A I - D G L Y E W L V M
052 YP_567050.1 - - - - - I P L T P Q D L H K L T H C N S
053 YP_009508571.1 T Y Y M E D G K V K V N R - - P E G T K I I P P S L E R A G I V Q K A H N - - - L A H T G R E A T L
054 NP_056803.1 T Y Y L E D G K V K V S R - - P E G V K I I P P Q S D R Q K I V L Q A H N - - - L A H T G R E A T L
055 NP_955564.1 - - - - - A L E S A Q E S H A L H H Q N A
056 YP_009508411.1 - - - - - D L K S G F H Q V A M H P E S I E W T A F L T T - A G L F E W L V M
057 YP_009140788.1 - - - - - D L K S G F H Q V A M H P D S I E W T A F W V P - D G L Y E W L V M
058 YP_009508410.1 - - - - - S E P R G R - - - - -
059 NP_040333.1 L T K L G A T Y D D A K K C W V Y Q G K P V M P D Q F T F E L L D F L H Q L T H L S F S K T K A L L
060 YP_008992013.1 - - - - - D L K S G F W Q L G I E P S E R Y K T A F C I P - N A H F Q W T V L
061 NP_041734.1 - - - - - D L K S G F H Q V A M A E E S I P W T A F W V P - Q G L Y E W L V M
062 NP_056895.1 - - - - - L E T P E Q W H K L T H C N S
063 YP_009109689.1 A R A I G A T E N K D T R N W E K E G K I V L P Q K E A L A M I Q Q M H A W T H L G N R K L K L L I
064 YP_002519387.1 - - - - - D C K S G F W Q I R L N E N S K P L T A F S C P - M G Q Y E W N V V
065 YP_595725.1 - - - - - D L K S G F H Q V A M D E E S I P L T A F S A Y - N E L Y E W L V M
066 YP_009508551.1 T Y F L E D G K V K V S R - - P E G V K I I P P Q S D R Q K I V L Q A H N - - - L A H T G R E A T L
067 YP_001497148.1 A K A I G A I L N Q D T K D W E K E G K I V L P R K E A L A M I Q Q M H A W T H L S N R K L K S L I
068 NP_041186.1 - - - - - F Q S A I D A A R K S H D L H H Q N S
069 NP_663784.1 - - - - - L E K I E P A Q E E H E K Y H S I I
070 YP_009508443.1 - - - - - D L K S G F H Q V A M D P D S V Q W T A F W V P - D G L Y E W L V M
071 YP_003987465.1 - - - - - D P K S G F H Q V A M H P D S V P W T A F W A I - N G L Y E W L V M
072 NP_861410.1 - - - - - D A K S G Y W Q L R L H P Q S K P L T A F S C P P Q K H Y Q W N V L
073 YP_009345071.1 - - - - - D L K S G F H Q V A M A E E S I P W T A F A I P G K G L F E W M V M
074 YP_009508582.1 K Y I L K E G Q V F V L R - - P E G E K I I P P K S D R P A L V K V A H E - - - F S H A G R E A T V
075 NP_569141.1 - - - - - D C K S G F Y H L K L E D E S K K L T A F T V P - Q G F Y E W N V L
076 YP_002916057.1 - - - - - D L K S G F H Q I R M S K E S I P W T A F W T P - D G L Y E F L V M
077 NP_777384.2 - - - - - L E T P E Q W H K L T H C N S
078 YP_233110.1 - - - - - D L K S G F H Q V A M D P E S I P W T A F W A I - D G L Y E W L V M
079 NP_542258.1 - - - - - L P L N P T T L H Q I T H C N P

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080 YP_009130664.1 - - - - - D L K S G F H Q V A M H P Y S I E W T A F W V P - Q G L Y E W L A M
081 YP_009508566.1 K Y E Y N S P N L I V I R - - K E G Q R I I P P L S D R P K L V K Q A H E - - - L A H T G R E A T L
082 YP_006607892.1 - - - - - D C K S G F W Q V F L D Q E S Q L L T A F T C P - S G H Y Q W R V V
083 YP_009506270.1 - - - - - D L K S G F H Q V A M D P E S I P W T A F W A I - D G L Y E W L V M
084 NP_042513.1 - - - - - D A K S G F L Q L R L D E E T K P L T A F S C P P Q M H L E Y N V M
085 YP_006907834.1 - - - - - D C K S G F W Q V R L D E E S K S L T A F T C P - Q G H Y E W N V V
086 YP_004442827.1 - - - - - D L K S G F H Q V A M E E E S I E W T A F W A I - T G L Y E W L V M
087 YP_009408594.1 - - - - - D L K S G F H Q I A M E K E S I P W T A F I V P - Q G L Y E W L V M
088 YP_009508561.1 K Y V L K N N E L I V Q R - - P E G D K I I P P K A D R L P L V K T A H E - - - L A H T G R E A T L
089 NP_056907.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - I P L T P Q D L H K L T H C N S
090 YP_002308474.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - L P L S P A T L H E I T H C N P
091 YP_007761644.1 - - - - - D C K S G F Y Q V P M E Q D S I Q L T A F S T P - I G S Y E W L V M
092 NP_040550.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - Y P L R E A K D L H T A L H I G P
093 NP_758808.1 - - - - - D L K S G F H Q V A M D P D S V E W T A F L V P - Q G L Y E W L A M
094 YP_009345075.1 - - - - - D L K S G F H Q V A M E E S S I P W T A F W V P - D G L Y E W L V M
095 NP_068729.1 - - - - - D A K S G Y Y Q L R L H E N T K P L T A F S C P P Q K H Y E W N V L
096 NP_047255.1 V Q K L E A H Y E P K R G T W E Y R G K T I M P E K Y A K E L I S H L H K L T H L S A R K M K T L L
097 YP_006273075.1 - - - - - D L K S G F H Q V A M H P D S I E W T A F W V P - D G L Y E W L V M
098 YP_009508888.1 V Y T L E E G K V I V K R - - P E G T K I I P P L A D R K L L A S Q A H K - - - L S H S G R E A T L
099 NP_395469.1 - - - - - D V K S A Y W Q L R L T E E S K P L T A F S Y P P P K H Y E W N V L
100 YP_009508546.1 T Y F L E D G K V K V S R - - P E G V K V I P P Y S D R Q K I V L Q A H N - - - L A H T G R E A T L
101 NP_056762.1 - - - - - D L K A G F H H M K L K D D F K D W T T T F T C S - E G L Y T W N V C
102 YP_009508556.1 K Y T L E D N K I I V E R - - P A G K R I V P P K A D R E K I I S T A H N - - - I A H T G R D A T F
103 NP_569153.1 - - - - - D L K S G F H Q V A M H P D S I E W T A F W V P - S G L Y E W L V M
104 NP_043924.1 - - - - - E Q T E G R A K L S S T E G Y A L A Q Q Y H H L Y G H P S E E S L R
105 YP_009243641.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - P E E E H R Y F H N N A
106 YP_004300274.1 - - - - - D C K S G F Y H L K L T E E S K H L S A F N V P - Q G F Y E F N V L
107 NP_056848.1 - - - - - D C K S G F Y H I K L E E D S K K Y T A F T V P - Q G Y Y Q W K V L
108 YP_006495799.1 - - - - - D L K A G F H Q V L M E E S S I P W T A F I T P - V G F Y E W L V M
109 YP_009508409.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
110 NP_687035.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - L D R I E E A Q D D H A K Y H N N W
111 NP_045937.2 - - - - - A E L H D G V F M R G D L I V P P L E M L H A I L L A I H G V S H T H K
112 NP_612577.1 - - - - - D C K S G L W Q V L L D K E S Q L L T A F T C P - Q G H Y Q W N V V
113 NP_619548.1 - - - - - D C K S G F W Q V V L D E E S Q K L T A F T C P - Q G H F Q W K V V
114 NP_056880.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - A L E S A Q E S H A L H H Q N A
115 YP_009121747.1 - - - - - D L K S G F H Q V A M E E E S I P W T A F L I P - G G L Y E W L V M
116 YP_009113237.2 - - - - - D L K S G F H Q V A M H P E S I P W T A F W V P - Q G L Y E W L V M
117 YP_009508408.1 - - - - - D L K S G F H Q V A M D E G S I E W T A F W V P - D G L F E W L V M
118 NP_955579.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
119 YP_009229919.1 - - - - - D L K S G F H Q V A M D E E S I P W T A F I T P - E G L Y E W L V M
120 YP_004442833.1 - - - - - D L K S G F H Q V A M E E E S I E W T A F W A F - T G L Y E W L V M
121 NP_862833.2 - - - - - - - - - - - - - - - - - - - - - - - - - - - F Q S A I D A A R K S H N L H H Q N S
122 NP_040563.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - C F L E N I P S A T E D H E R W H T S P
123 YP_443922.1 W K Q K G A S Q G P E G L W R C H D G R L V A P A N L C P E L I R E A H G L T H E G K L K T L Q R V
124 NP_057933.2 L T K L G A I Y D K T K K Y W V Y Q G K P V M P D Q F T F E L L D F L H Q L T H L S F S K M K A L L
125 YP_009116631.1 - - - - - D L K S G F H Q V L M D E E S I P W T A F V T P - V G F Y E W K V M
126 YP_009513249.1 T Y E L Q N N K C M V L R - - K D G W R E I P P S R E R Y K L I K E A H N - - - I S H A G R E A V L
127 YP_223871.1 G H R L R G T K D P A G W W H L P D G R L L L P R A V G R K V L E Q T H R A T H L G E S K L T E L V
128 NP_127504.1 - - - - - D L K S G F W Q L G I H P N E R P K T G F C I P - D R H F Q W K V M
129 NP_044929.1 E Y K L V N G L C Y V D R R G E E G L K I I P P K A D R V K L C Q L A H D G P G S A H L G R S A L L
130 NP_057860.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - L Q L S P A D L H S F T H C G Q
131 NP_040973.1 - - - - - V V M D S E R G D N G Y G S T G V F S - - - - S W V D R I E E A E I N H E K F H S D P
132 NP_777317.1 - - - - - D L K S G F H Q V A M A E E S I P W T A F W A I - D G L Y E W L V M
133 NP_054716.1 E Y T L R D G Q V Y V K R - - T D G E K I I P S K D D R V K I L E L A H K G P G S G H L G K N T M Y
134 YP_001856242.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
135 NP_954565.2 - - - - - - - - - - - - - - - - - - - - - - - - - - - N I N T N L E S A Q N A H T L H H L N A
136 NP_569150.1 - - - - - D L K S G F H Q V A M D P E S I P W T A F W A I - D G L Y E W L V M
137 NP_659397.1 - - - - - D C K S G F W Q V L L D D E S Q K L T A F T C P - Q G H Y Q W R V V
138 YP_009513211.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - L T P D Q G R E F I Q R L H Q L T H L G P D K L L Q L V
139 YP_233107.1 - - - - - D L K S G F H Q V A M E E E S I P W T A F W A I - N G L Y E W L V M
140 YP_009109692.1 A R A I G A T E N K D T R N W E K E G K I V L P Q K E A L A M I Q Q M H A W T H L G N R K L K L L I
141 NP_057849.4 - - - - - - - - - - - - - - - - - - - - - - - - - - - L D G I D K A Q D E H E K Y H S N W
142 NP_049560.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - L Q L S P A E L H S L T H C G Q
143 YP_009506267.1 - - - - - D L K S G F H Q V A M H P D S I Q W T A F C V P - G G L Y E W L V M
144 NP_039820.1 - - - - - D L K S G F W Q V A M E E E S V P W T A F L A G - N K L Y E W L V M
145 NP_056790.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - L T P D R G K E F I K R L H Q L T H L G P E K L L Q L V
146 YP_002321513.1 - - - - - D L K S G F H Q V A M D P E S I P W T A F L T P - Q G L F E W L V M
147 NP_955591.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
148 YP_001956722.2 Q Y Q L E N G Q V M V T R - - P N G K R I I P P K S D R P Q I I L Q A H N - - - I A H T G R D S T F
149 NP_056902.1 - - - - - E N K I S Q R G D K G F G S T G V F W - - - - - V E N I Q E A Q D E H E N W H T S P
150 NP_056886.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - Y P L R E A K D L H T A L H I G P
151 NP_041261.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - I I S D P I H E A T Q A H T L H H L N A

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001 YP_004442836.1 PFGLKNAPAI FQRKMDNCFRG - TEKFIAVYID DILVFSET - VQQHKEHLK
002 NP_056728.1 PFGLKQAPS I FQRHMD EAFR - VFRKFCCVYVDD I LVFSNN - EEDHLLHVA
003 YP_009508537.1 LKIQENYWWPKMKKDISSFLSTCNVCKMVNPLNLKPI SPQA - IVHPTKPF
004 YP_004732983.2 PFGIQNAPAI FQRKMD ECFKG - TEDFIAVYID DILVFSNS - IREHEKHLQ
005 YP_009508407.1 - - - - - L LVFKD PVL IYQEE - - - - -
006 NP_040939.1 RSLHLEFE - - IPRTAAEDIVNQCEICKEARTPAVIR - - - GGNKRG - - - - V
007 YP_003864102.1 QTLRLMFK - - IPREQARQ I IKQCPTC - - VTYSVPVPH - - - LGVNPRGLLPN
008 YP_009002585.1 PFGLKNAPAV FQRKMD NVFKG - TEAFIAVYID DILVFSQS - EEEHIKHIR
009 YP_003284237.1 PFGLKNAPAV FQRKMD NCFRG - TEEFIAVYID DILIFSES - PQQHVQHKLK
010 YP_009268869.1 GSLHLDFG - - IPRTAAEDIVQQCEVCQENKMPSTIR - - - GSNRRG - - - - I
011 YP_009506251.1 PFGLKNAPAI FQRKMD VCFKG - TEDFIAVYID DILVFSET - MEEHENHIS
012 NP_955611.1 - - - - -
013 YP_008567619.1 PFGLKNAPAV FQRKMD NCFKG - MEDFIAVYID DILVFSEN - MRDHAQHLV
014 NP_149413.1 PFGLKNAPAV FQRKMD DCFRG - TERFIAVYID DILVFSET - EEKHA EHLW
015 YP_004442824.1 PFGLKNAPAI FQRKMD HCFH - - - EDFIAVYID DILVFSET - VQQHRQHKLK
016 YP_001931967.1 PFGLKQAPAI FQRHMQ IALN - EHSAYS CVYID DILVFSEN - EKDHEI HVS
017 YP_002455786.1 QALVSHG - - - ATPAQAKQLVQACRTCQ I INPQH HMP - - - RGHIRRGHFPN
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 TALT LQG - - - ATTTEASNI LRSCHACRKNNPQH QMP - - - QGHIRRG LLPN
021 YP_224289.1 PFGLKNAPAI FQRKMD TCFKG - TEAFIAVYID DILVFSET - EQLHRDHLR
022 YP_009182100.1 PFGLKNAPNI FQRRMD KIFKDCY - QFCGVYVDD I LVFSKD - KEEHL LHL D
023 NP_705927.1 - - - - -
024 YP_009508577.1 LRLQDKYWWPNMRKDVISHIRTCKPCLTTDGSNLTPIPPKP - QLRPEKPF
025 YP_004442830.1 PFGLKNAPAI FQRKMD NCFRG - TEKFITVYID DILVFSET - EEEHAIHLT
026 NP_758887.1 RALA QDFC - - IPNIVAKEIVAQC PKCQTK - - GEPIH - - - GQVDT S - - - - P
027 YP_009508406.1 - - - - - MSAIWENS LKAYFE - - - - -
028 YP_610965.1 PFGLKNAPAV FQRKMD HCFAG - TEKFIAVYID DILIFSAN - DEEHVEHLK
029 YP_001931961.1 PFGLKQAPS I FQRHMNNAFR - DFASYCCVYVDD I LVFSNN - IKDHYAHVA
030 YP_241114.1 HSLRLQFK - - ISREAA RQ I V KSCSTC - - PQFFVLPQ - - - YGVNPRGLRPN
031 YP_006732334.1 PFGLKQAPS I FQRHMQ NALR - GLEDYCLVYVDD I IVFSNS - EKEHYDHVL
032 YP_009041481.1 PFGLRNAPAI FQRKMD EVFAD - LKEFVS VYID DILVFSET - YEEHAAHLK
033 YP_001036293.1 PFGLKNAPAV FQRKMD NVFRG - TEEFIAVYID DILVFSET - EEEHLKHLR
034 YP_605811.1 PFGLKNAPAI FQRKMD NCFRG - TEEYIAVYID DILIFSDN - VSDHRKHL S
035 NP_955577.1 EREETGFYLPNRDLHLRQVTESCRACAQINAGKIKFGPDV - - RARGRRPG
036 YP_003208050.1 PFGLKNAPS V FQRKMD DCFKG - TEAFIAVYID DILVFSKN - EEEHQKHLQ
037 NP_789740.1 RAMASDFN - - LPPVVAKEIVASCDKCKQLK - - GEAMH - - - GQVDCS - - - - P
038 YP_004442839.1 PFGLKNAPAI FQRKMD NCFRG - TEEFIAVYID DILIFSDN - ISDHRKHLK
039 YP_009507791.1 VYLKQRF G - - IPRQVAEE IIRKCLCMIK - - GEVSY - - - GQLKIG - - - - E
040 YP_004581513.1 PFGLMNAPAD FQRKMD NAFRG - TDAFIAVYID DILVFSEN - EEEHEDHL L
041 NP_043933.1 PFGLKQAPAI FQRHMD ESSLNMY P QFCAVYVDD I IVFSKT - EEEHLGHVK
042 YP_009507248.1 LALS KRY YWPRMKDQITKFINECTICGQAKYDRNP I R - - - - PQFNIVPP
043 YP_002117531.1 PFGLKNAPAT FQRKMD MCFAG - TEHFIAVYID DILVFSET - EEDHVKHLH
044 YP_004347415.1 PFGYHNSPSIYQQFMDGIFR - PY YDFILVYID DILIFSKT - YEEHKI HLE
045 NP_056891.1 QTLRLMFN - - IPREQARQ I V KQCPI C - - VT YLPVPH - - - LGVNPRGLFPN
046 YP_009513242.1 LKVSSKYWWPNLRKDVVKVIRQCKQCLVTNAANLTSPPI LR - PEKPLKPF
047 YP_009352866.1 PFGLRNAPAI FQRKMD EVFGD - LKDFIAVYID DILVFSET - HEQHAQH I K
048 YP_009165750.1 PFGLKQAPS I FQRHMNNAFR - EFEEFC CVYVDD I LVFSKN - ETEHRKHI V
049 NP_040840.1 VSLHLEFG - - IPRTAAEDIVQQCDVCQENKMPSTLR - - - GSNKRG - - - - I
050 YP_004222728.1 RALSKACN - - ISMQQAREV VQTC PHC - - - NSAPALE - - - AGVNPRGLGPL
051 YP_009506264.1 PFGLKNAPAV FQRKMD GCFKG - TEEFIAVYID DILVFSET - PQQHVQH L R
052 YP_567050.1 RALVSSG - - - ATPQQA KSL LQT CYTCNIINSQH HMP - - - QGHIRRG LMPN
053 YP_009508571.1 LKIANLYWWPNMRKDVVRQLGR CQQCLVTNAF NQTS GP I LR - PTRPLKPF
054 NP_056803.1 LKIANLYWWPNMRKDVVKQLGRCKQCLITNASNKTS GP I LR - PDRPQKPF
055 NP_955564.1 AALRFQFH - - ITREQAREIVKLC PNC - - PDWGHAPQ - - - LGVNPRGLKPR
056 YP_009508411.1 PFGLKNAPAV FQRKMD NCFRG - MEDFLAVYID DILVFSNS - EEEHMRHLE
057 YP_009140788.1 PFGLKNAPS I FQRKMD ECFNG - TEEFIAVYID DILVFSED - EKSHAKHLR
058 YP_009508410.1 - - - - - I LVHTDPVKIFEE E - - - - -
059 NP_040333.1 ERNYC PYYMLNRDRTLKDI TETCQACAQVNASKSAVKQGT - - RVRGHRPG
060 YP_008992013.1 PFGLKTAPS I FQKSMIKIFQP - LLSNALIYID DILLFSGS - HDDHHRLLN
061 NP_041734.1 PFGLKNAPAV FQRKMD QCFKG - TEEFIAVYID DILVFSEN - MAEHTKHIG
062 NP_056895.1 RALS RWP NPRISA WDPRSPATLCETCQRLNPTGGGK - - - MRTIQRGWAPN
063 YP_009109689.1 EK - - TDFLI PRAS TLIEQVTSACKVCQQVNAGATRVPA GK - - RTRGNRPG
064 YP_002519387.1 PFGLKQAPGLFQR FMDNSFK - EYSAFCAVYVDD I LVFSKT - LDEHYDHLE
065 YP_595725.1 PFGLKNAPAI FQRKMD QCFRG - TEGFIAVYID DILVFSED - EEQHA EHLW
066 YP_009508551.1 LKIANLYWWPNMRKDVVKQLGR CQQCLITNASNKASGP I LR - PDRPQKPF
067 YP_001497148.1 EK - - TDFLI PKAGTLIEQVTSACKVCQQVNAGATRVPE GK - - RTRGNRPG
068 NP_041186.1 HSLRLQFK - - ISREAA RQ I V KSCSTC - - PQFFVLPQ - - - YGVNPRGLRPN
069 NP_663784.1 KELTHKFG - - IPLLVARQIVNSCAQCQK - - GEAIH - - - GQVNAE - - - - I
070 YP_009508443.1 PFGLKNAPAV FQRKMD NCFRG - TEDFIAVYID DILVFSRS - QEEHAQHKLK

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071 YP_003987465.1 PFGLKNAPAVFQORKMDHCFRG-TEDFIAVYIDDDILVFSET-PEQHKHLE
072 NP_861410.1 PFGLKQAPGIYQNFMDKNLE-GLENFCLAYIDDDILVFTNSSREEHLSKLL
073 YP_009345071.1 PFGLKNAPSVFQORKMDLCFTG-LEKFVAVYIDDDVLIFSNS-EQEHLEHLD
074 YP_009508582.1 LRLQDKYWWPNNMRKDVISHIRMCCKPCLTTDSSNLTPIPPKP-QQRPKKPF
075 NP_569141.1 PFGYKNAPGRYQHFMNDNYFN--QLENCIVYIDDDILLYSRT-QDEHIKLE
076 YP_002916057.1 PFGLVNAPADDFQORKMDNAFRG-TEAFIAVYIDDDILIFSET-EEDHEQHLL
077 NP_777384.2 RALSRWPNPRISAWDPRSPATLCCECTQRLNPTGGGK--MRTIQRGWAPN
078 YP_233110.1 PFGLKNAPAI FQORKMDNCFRG-TEEFIAVYIDDDILIFSND-ISDRKHALS
079 NP_542258.1 HALRNHG--ATASEAHAIVQACHTCKVINPQGRLP--QGYIRRGHAPN
080 YP_009130664.1 PFGLKNAPAVFQORKMDNCFKG-TENFIAVYIDDDILVFSET-EREYARHLE
081 YP_009508566.1 LRLQNQYWWPCKMRKDVSHCLRTCMPCLQTNSTNLTTRPFQ-QIRPSKPF
082 YP_006607892.1 PFGLKQAPSI FQQRHMQNAFR-SFEKFCCVYVDDILVFSND-EQDHHRHVM
083 YP_009506270.1 PFGLKNAPAVFQORKMDSCFRG-TEEFIAIYIDDDILVFSET-VQQHKEHL
084 NP_042513.1 PMGLKQAPSQFQRFMDNNLRL-GLDISLAYIDDDIIVFTKGT KDYHLKQVA
085 YP_006907834.1 PFGMKQAPSI FQQRHMDAEAFK-VFRKFCCIYVDDILVFSND-EQNHQLHVA
086 YP_004442827.1 PFGLKNAPAI FQORKMDLCFQG-TESFIAVYIDDDILIFSQN-EEHAEHL
087 YP_009408594.1 PFGLKNAPAI FQORKMDNCFKG-TEDFIAVYIDDDILVFSNN-EQDHHRLH
088 YP_009508561.1 LKLQTTTHWWPNMRKDIITVLRQCKPCLQTDSTNLTPIPPVS-QPRPVKPF
089 NP_056907.1 RALVSSG--ATPQQAKSL LQTCYTCNIINSQHHP--QGHIRRGLMPN
090 YP_002308474.1 PALCNHG--ATATETKAIVRACHTCKITNPQGRLP--QGHIRRGHAPN
091 YP_007761644.1 PFGLATAPSI FQAKMDNVLE-DHHDYCLVYIDDDIIVFSRT-LEEHKIHVI
092 NP_040550.1 RALSKACN--ISMQQAREVVQTCPHC--NSAPALE--AGVNPRGLGPL
093 NP_758808.1 PFGLKNAPAVFQORKMDAVFKG-CEKFLAVYIDDDILVFSNN-EEDHAKHLV
094 YP_009345075.1 PFGLKNAPAI FQORKMDNCFKG-TEEFIAVYIDDDILVFSQT-EEEHVRHLQ
095 NP_068729.1 SFGLKQAPSIYQRFMDQSLK-GLEHICLAYIDDDILIFTKGSKEQHVNDVR
096 NP_047255.1 EREETQGFYLPNRDLHLRQVTESCRACQINAGKIKFGPDV--RARGRPG
097 YP_006273075.1 PFGLKNAPSVFQORKMDECFKG-TEDFIAVYIDDDILVFSNN-EKDHAHLK
098 YP_009508888.1 LKLSNTYWWPNMRKDVVKVIGQCQCCLVTNPSNLTSGPILR-PERPTKPF
099 NP_395469.1 PMGLKQAPGI FQEFMNRSLH-NLEHICLVYVDDIIIFSEKDKNDHLSKVL
100 YP_009508546.1 LKIANLYWWPNMRKDVVKQLGRCQCCLITNASNKASGPILR-PDRPQKPF
101 NP_056762.1 PFGIANAPCAFQRFMQESFG--DLKFALLYIDDDILIASNN-EKEHIEHLK
102 YP_009508556.1 LKVSSKYWWPNLRKDVVKVIRQCKQCCLVTNAANLTSPPI LR-PEKPLKPF
103 NP_569153.1 PFGLKNAPAI FQORKMDHCFKG-TEAFIAVYIDDDILVFSKT-EQDHEKHLQ
104 NP_043924.1 KVLTKRFFVWEDMGQHCKEITNTCLTCAKYKVL RAGP--PMGVGRSAEGPC
105 YP_009243641.1 GSLHHRWR--ISWKQAKDILSNQCICK-PLHLRRTS--IGVNPRGLAPD
106 YP_004300274.1 MFGYKNAPGRYQCYMDSYFS--KLENCIVYIDDDILLYSKT-KDEHETLLK
107 NP_056848.1 PFGYHNSPSI FQQFMDRI FR-PYYDFIIVYIDDDILVFSKT-IEEHKIHIA
108 YP_006495799.1 PFGIANAPAVFQORKMDNCFHK-LREFVAVYIDDDILVFSNS-LQEHESH LR
109 YP_009508409.1 -----MSVKWEKSVQAYFE-----
110 NP_687035.1 RSMVQEF G--LPNIVAKEIVAACP KCQIR--GEPKH--GQVDAS---I
111 NP_045937.2 GGIMSYFSKFWTHPKASQTIDLILGHQCQICLKHNPKYKSRLQGHRPLPSR
112 NP_612577.1 PFGLKQAPSI FPKTYANSHSNQYSKYCCVYVDDILVFSNTGRKEHYIHVL
113 NP_619548.1 PFGLKQAPSI FQQRHMQTALN-GADKFCMVYVDDILVFSNS-ELDHYNHVY
114 NP_056880.1 AALRFQFH--ITREQAREIVKLCPEC--PDWGHA PQ--LGVNPRGLKPR
115 YP_009121747.1 PFGLKNAPAI FQORKMDKCFKD-TEEFIAVYIDDDILVYSNS-EADHERHLK
116 YP_009113237.2 PFGLKNAPAI FQORKMDNCFMG-TEEFIVVYIDDDILVFSQN-EQDHERHIR
117 YP_009508408.1 PFGLKNAPAVFQORKMDNCFRG-MEDFVAVYIDDDILVFSKT-PEEHAVHLE
118 NP_955579.1 -----
119 YP_009229919.1 PFGLKNAPAI FQORKMDNCFRG-TEEFIAVYIDDDILVFSET-EEQHAKHLQ
120 YP_004442833.1 PFGLKNAPAI FQORKMDNCFRG-TEAFIAVYIDDDILIFSND-PEEHAKHLE
121 NP_862833.2 HSLRLQFK--ISREAA RQIVKSCSTC--PQFFVLPQ--YGVNPRGLRLPN
122 NP_040563.1 DILVRQFH--LPKRIAKEIVARQCQECKRT-TTSPVR--GTNPRG---R
123 YP_443922.1 SYTWWHFPMKEMTD LFCDNCTICGNYNPKPKYQTPMGHYP--VPNACFQD
124 NP_057933.2 ERSHPYMYMLNRDRTLKNITETCKACAQVNASKSAVKQGT--RVRGHRPG
125 YP_009116631.1 PFGLANAPAVFQORKMDQCFAG-TSEFIAVYIDDDILVFSKT-LKEHEKHL
126 YP_009513249.1 LKIQENYWWPKMKKDISSFLSTCNVCKMVNPLNLKPI SPQA-IVHPTKPF
127 YP_223871.1 RK--HYLICGIYRAARDITTRCVACAQVNPGAAPVEKGLNSRIRGAAPG
128 NP_127504.1 PFGLKTAPSLFQKAMIKIFQP-ILFSALVYIDDDILLFSET-LEDHIKLLN
129 NP_044929.1 LKLQQKYWWPRMHIDASRIVLNCTVCAQTNSTNQKPRPPLV-IPHDTKPF
130 NP_057860.1 TALT LQG--ATTTEASNILRSCHACRKNNPQH QMP--QGHIRRGLLPN
131 NP_040973.1 QYLRTEFN--LPKMVAEEIRRKCPVCRIR--GEQVG--GQLKIG---P
132 NP_777317.1 PFGLKNAPAI FQORKMDECFRG-MEEFIAVYVDDILIFSNS-VQDHKRHLQ
133 NP_054716.1 IKILNKYWWPNLIKDISKYIRTCNTNCIITNTDNVNPKNYSIV-QEKTGLPF
134 YP_001856242.1 -----
135 NP_954565.2 QTLRLMFN--IPREQARQIVKQCPIC--VTYLPVPH--LGVNPRGLFPN
136 NP_569150.1 PFGLKNAPAI FQORKMDNCFRG-TEDFIAVYIDDDILVFSET-IHQHKEHLK
137 NP_659397.1 PFGLKQAPSI FQQRHMQDALR-GLEEFSLVYVDDIIVFSND-KNDHQDHVM
138 YP_009513211.1 GR--TSFHIPNLQSVVREITSKCQVC AVTNAVTTYREPGR--RQRGDRPG
139 YP_233107.1 PFGLKNAPAI FQORKMDNCFRG-TEKFIIVYIDDDILIFSND-KEAHRTHLR
140 YP_009109692.1 EK--TDFLI PRASTLIEQVTSACKVCQQVNA GATRVPAKG--RTRGNRPG
141 NP_057849.4 RAMASDFN--LPPVVAKEIVASCDKQCQLK--GEAMH--GQVDCS---P
142 NP_049560.1 AALT LQG--ATTTEASNILRSCHACRKNNPQH QMP--RGHIRRGLLPN
143 YP_009506267.1 PFGLKNAPSVFQORKMDNCFRG-TENFIAVYIDDDILVFSRT-PEEHAEHL

144 NP_039820.1 PFGLKNAPAI FQRKMDNVFKG - TEKFIAVYID DILVFSET - AEQHSQHLY
 145 NP_056790.1 NR - - TSL LIPNLQSAVREVT SQCQACAMTNAV TTYRET GK - - RQRGDRPG
 146 YP_002321513.1 PFGLKNAPAI FQRKMDNCF SR - YSDFIAVYID DILVFSES - ERDHEKH LR
 147 NP_955591.1 - - - - -
 148 YP_001956722.2 LKVSSKYWWPNLRKD VVKVIRQCKQC LVTNAATLA APPILR - PERPVKPF
 149 NP_056902.1 KILARNYK - - IPLTVAKQITQ ECPHCTKQ - - GSGPA - - - GCV MRS - - - - P
 150 NP_056886.1 RALSKACN - - ISMQQAREVVQT CPHC - - - NSAPALE - - - AGV NPRGLGPL
 151 NP_041261.1 HTLRLLYK - - ITREQARDIVKACKQC - - VVATPVPH - - - LGV NPRGLVPN

001 YP_004442836.1 KFMEICERNGLVLSPTKMKIGTRQVDFLGATIG - NSKIKLQPHI IQKIAE
 002 NP_056728.1 MILQKCNQHGIILSKKKAQLFKKINFLGLEID - EGT HKPQGHILEHINK
 003 YP_009508537.1 DKFYMDYIGPLPPSEGYVHVLVVVDAATGFTWLYPTKAQTSKATIKVLT -
 004 YP_004732983.2 RMLSICKEHGLVLSPTKMKIAVPGIDFLGAHIR - NSRVSLQPHI IKKIAD
 005 YP_009508407.1 - - - - - AEKLKRR - - - - -
 006 NP_040939.1 NHWQVDYT - HYEN - - - IILLVWVETNSGLIYA EKVKGESGQEFRIKVMH
 007 YP_003864102.1 MLWQMDIT - HCSEFN NLKYIHVSIDTFSGFILATLQTGEATKHVIAHLLH
 008 YP_009002585.1 VMLEKCRENGLVLSPTKMKIAQRKVEFLGAILE - AGRIQLQPHI IKKVVN
 009 YP_003284237.1 KFMEICEKNGLVLSPTKMKIGVSQVDFLGATIG - QSKIRLQPHI IKKIAD
 010 YP_009268869.1 DHWQVDYT - HYED - - - KIILLVWVETNSGLIYA ERVKGETGQEFRI MTIR
 011 YP_009506251.1 RMLEICKRHGLVLSPNKMSIAQEEIEFLGTIIS - KGRMKLQAHVIKKIVS
 012 NP_955611.1 - - - - -
 013 YP_008567619.1 AMLEVCKKNGLILSPTKMKIGLGTIDFLGATIG - NSKVKLQEHIVKKILD
 014 NP_149413.1 KMLQICKKNGLILSPSKYKIGVKRVDFLGSTIG - DNQLAVQEHIVSK IAD
 015 YP_004442824.1 VFFDICEKNGLVLSPTKMKIGTRQIDFLGATIG - DSRIKLQPHI IKKIAD
 016 YP_001931967.1 KVLNRCINLGIILSKKKSQ LFKETIDFLGISID - KGTHSPKPHILENIHN
 017 YP_002455786.1 HTWQGDVT - HLKHKRTRYCLHVWVDTFSGAVSCVCKKKETSSDLIKTLLH
 018 YP_009109694.1 - - - - -
 019 NP_789739.1 - - - - -
 020 NP_955619.1 HIWQGDIT - HFKYKNTLYRLHVWVDTFSGAISATQKRKETSSEA ISSLLQ
 021 YP_224289.1 KFLEISKANGLILSPTKMKIGVKTIDFLGASIG - NSKIKLQPHI IKKIAD
 022 YP_009182100.1 IINKIVQNGIIIGRTKYELVRESIDFLGVTIC - KGKIKLQPHI LTHLME
 023 NP_705927.1 - - - - -
 024 YP_009508577.1 DKFFIDYIGPLPPSHGFVYVLVVVDAATGFTWLYPTKAPSTNATITSLN -
 025 YP_004442830.1 KMLEICKRNGLILSPTKMKIGVKVIDFLGSTIG - QNQLDLQPHI VQKIVD
 026 NP_758887.1 GTWQMDCT - HMEG - - - - KVI IAAVHVASRYLEAEVIP TETGKETAHFLK
 027 YP_009508406.1 - - - - - GRSTEPEYLNLYTV - DKPTNKHLATNLT YLN
 028 YP_610965.1 VFCAIVEKHGLILSSNNKMQLGKREIDFLGATLG - NRKIKLQAHIIKKIAA
 029 YP_001931961.1 QVLRKCAELGIILSKKKAQLFKCRINFLGLDID - EGT HRPQNHI LEHIHK
 030 YP_241114.1 HLWQTDVT - HIPQFGR LKYVHVSIDTF SNFLMASLHGTGSTRHC IQHLLF
 031 YP_006732334.1 SVLRRVESLGIILSEKKANLFKEKINFLGLEID - RGTHTPQNHI LEHLHG
 032 YP_009041481.1 RMLQRCKKFGVLVLSPTKMKIATREIDFLGATIK - DGRIKLQDHI IKKIST
 033 YP_001036293.1 ILLQICQQHGLVLSPTKMKIGTKTIEFLGAVIG - NRKIKLQEHIIKKIAD
 034 YP_605811.1 KFLEICKANGLVLSPTKMKIGAREIDFLGATIG - NSRIKLQPHI IKKIE
 035 NP_955577.1 THWEVDFT EIKPGMYGYKYL LVFIDTFSGWAEAYPAKHETAKVVAKKLLE
 036 YP_003208050.1 KFLEIVEKEGLVLSPTKMKIAVPEVEFLGA IIG - NSTIKLQPHI IRKIAD
 037 NP_789740.1 GIWQLDCT - HLEG - - - KVLIVAVHVASGYIEAEVIP AETGQETAYFLLK
 038 YP_004442839.1 KFLEICKANGLVLSPTKMKIGTPEIDFLGATIG - NSKIKLQPHI IKKVIE
 039 YP_009507791.1 GIWQIDCT - HLEK - - - LILLVCIQTTS GFVVVYNLKR EDAKETGLAFLN
 040 YP_004581513.1 NLAQIVRREGLILSPTKMKIGVKEVDFLGIKIQ - GNKIQLOEHILKKIGD
 041 NP_043933.1 IVLNRC KALGIVLSKKKAQLCKTTINFLGLVIE - RGNLKVQSHIGLHLVA
 042 YP_009507248.1 ATKPLETVHMDLFTVQNEKYITFIDVFTKYGQAYHLRDGT AISILQALLR
 043 YP_002117531.1 QMLHICEKEGLVLSPTKMKIGATSIDFLGATIG - RSKIRLQPHI IKKITE
 044 YP_004347415.1 IFRNI I IKHGI VLSKKKAEIGKQKIEFLGVKIE - QGGIELQPHI IDKILE
 045 NP_056891.1 MIWQMDVT - HYSEFGNLKYIHVSIDTFSGFLLATLQTGETTKHVITHLLH
 046 YP_009513242.1 DKFYIDYIGPLPPSNGYLHLV LVVDGMTGTFVWLYPTKAPSTSATVKALN -
 047 YP_009352866.1 RMLLRCKKHGLVLSPSKMKIAQKEIEFLGATLT - GGQIKLQDHI VKKIAA
 048 YP_009165750.1 AILEQCKNLGIILSKKKAHLFKTKINFLGLEID - QGSHKPQNHI LEHIHK
 049 NP_040840.1 DHWQVDYT - HYED - - - KIILLVWVETNSGLIYA ERVKGETGQEF RVQTMK
 050 YP_004222728.1 QIWQTDFT - LEPRMAPRSWLAVTVDTASSAIVVTQHGRVTSVAAQHHWAT
 051 YP_009506264.1 KFLEIVKKNGLVLSPTKMKIGVSQIDFLGATIG - QSRIKLQPHI IKKVTE
 052 YP_567050.1 HIWQGDVT - HYKYKRNR YCLHVWVDTF SNAVSITCKTKETSSETVSALLH
 053 YP_009508571.1 DKFFIDYIGPLPPSNGYLHLV LVVVD SMTGFTWLYPTKAPTTNATVKA LN -
 054 NP_056803.1 DKFFIDYIGPLPPSQGYLYVLVIVDGMTGFTWLYPTKAPSTSATVKS LN -
 055 NP_955564.1 VLWQMDVT - HVSEFGK LKYVHVTVDTYSHFTFATARTGEATKDV LQHLAQ
 056 YP_009508411.1 QMLSVCEANGLVLSPTKMKIGTSNIEFLGARIG - NHKIQLOEHIIKKIAD
 057 YP_009140788.1 IMLGICKRNGLVLSPTKMKIAVQEVEFLGAQIG - NQKIKLQPHI VIKKIVE
 058 YP_009508410.1 - - - - - KLKL - - - - -
 059 NP_040333.1 THWEIDFTEVKPGLYGYKYL LVFIDTFSGWVEAFPTKKETAKVVTKK LLE
 060 YP_008992013.1 QFYDIVHSHGIMLSAKKSTIATDTIEFLGMIK - DGHYQPGKHVAQELLH
 061 NP_041734.1 IMLKICQENGLVLSPSKICLAQREIEFLGTVIS - QGQMKLQAHVIKKIVN
 062 NP_056895.1 HIWQADIT - HYKYKQFTYALHV FVD TYSGATHASAKRGLTTQMTIEGLLE

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063 YP_009109689.1 VYWEIDFTEVVKPHYAGYKYLLVFVDTFSGWVEAFPTRQETAHIVAKKILE
064 YP_002519387.1 TVLRKCIETGIILSKKKAIEVAKTKINYLGFTIS-NGEIELQSHILENIKL
065 YP_595725.1 KMLQICKRNLGLILSPSKYKIGVKVDFLGSTIG-DNQLAVQEHIIKKIAE
066 YP_009508551.1 DKFFIDYIGPLPPSQGYLYVLVVDGDMTGFTWLYPTKAPSTSATVKS LN-
067 YP_001497148.1 VYWEIDFTEVVKPHYAGYKYLLVFVDTFSGWVEAYPTRQETAHVVAKKILE
068 NP_041186.1 HLWQTDVT-HIPQFGRCLKYVHVSIDTFSNFLMASLHTGESTRHC IQHLLF
069 NP_663784.1 GVWQMDYT-HLEG-----KIIIVAVHVASGFIEAEVIPPQESGRQTALFLLK
070 YP_009508443.1 QMLEICRRNGLVLSPTKMKIGTQVVEFLGAVIG-NRKIQQLQSHIIKKIAD
071 YP_003987465.1 IFLEQIARKNGLVLSPTKMKVGQVQVDFLGATIG-NSRIQLQPHIIQKVVDQ
072 NP_861410.1 VVLERCKEKGILILSKKKAIIARQTDIFLGLTLQENGEIKLQPNVLEKLEL
073 YP_009345071.1 RFFERVQQHGLVLSPTKMKIGVRKVDLGTVIS-NGLLHMQEHILKKIAA
074 YP_009508582.1 DKFFIDYIGPLPPSHGFAYVLVVDAAATGFTWLYPTKAPSTNATITSLN-
075 NP_569141.1 KFAHIIENSGISLSKTKAEIMKNQIEFLGIQID-KNGIKMQTHIVQKIIN
076 YP_002916057.1 KFAQIVEKNGILILSPTKMKIGVKSVDLGVKIH-QNKVQLQEHILKKIGD
077 NP_777384.2 HIWQADIT-HYKYKQFTYALHVFDVTSYGATHASAKRGLTTQMTIEGLE
078 YP_233110.1 KFLEICKANGLVLSPTKMKIGAKEIDFLGATIG-NSKIKLQPHIIKKIIE
079 NP_542258.1 VIWQGDVT-HLHYKRYKYCLLVWVDVTSYGVSVSVCRRKETGSDCVASLLA
080 YP_009130664.1 IMLEICKKNGLILSNSKMKIAVSTIDFLGATIG-NRKIKLQEHIIKKIAD
081 YP_009508566.1 DKYYIDYIGPLPPSEGSYVLVVDVDSATGFCWLYPTKAPSTRATVKS LN-
082 YP_006607892.1 ALLQRCNQGLGIILSKKKAQLFQEKINFLGLEID-QGSHKPKQNHILEHIHK
083 YP_009506270.1 KFMEICERNGLVLSPTKMKIGTRQVDFLGATIG-NSKIKLQPHIIQKIID
084 NP_042513.1 RVLIIQLGNHGVILSKEKAKIAFEEIEFLGLKILKNGFIEPQKHLLEKIAE
085 YP_006907834.1 MILQKCYQHGIILSKKKAQLFKERINFLGLEID-QGTHRPQSHILEHIQK
086 YP_004442827.1 KMMEICKKNGILILSPTKMKIGVKVVDLGVSTVG-ENHLDLQPHIVQKIVD
087 YP_009408594.1 VMLNICKQHGILILSPSKMMIAVPEVYFLGAVLG-KQKLKLQPHIIQKIAN
088 YP_009508561.1 DKFFIDYIGPLPPSHGFSYVLVIVDARTGFTWLYPTKAPSTNATINS LN-
089 NP_056907.1 HIWQGDVT-HYKYKRNRYCLHVWVDVTSNAVSITCKTKETSSETVSALLH
090 YP_002308474.1 TIWQGDVT-HLQYKKYKYCLLVWVDVTSYGVAVAVSCRRKETSECVASLLA
091 YP_007761644.1 TIAKTLKKNIGIVISKKKMEGLTKINFLGCEIE-NGRIILQNHVLENLSK
092 NP_040550.1 QIWQTDFT-LEPRMAPRSWLAVTVDTASSAIVVTQHGRVTSVAAQHHWAT
093 NP_758808.1 IMLQRCKEHGLVLSPTKMNIAVREVNFLGATIG-SRKVKLQENIIKKILD
094 YP_009345075.1 RFFQICQKHGLVLSKDKMAIAVPQIEFLGAIIG-NRKIKLQPHIIRKIAN
095 NP_068729.1 IVLQRIKEKGIISKKKSKLIQQEIEYLGGLKIQQNGEIDLSPTQEKILQ
096 NP_047255.1 THWEVDFTETIKPGMYGYKYLLVFIDTFSGWAEAYPAKHETAKVVAKKLLE
097 YP_006273075.1 AMLEICKRNLGLVLSPSKMKIAVQEEVEFLGAQIG-NQRIQLQPHVKKIVE
098 YP_009508888.1 DKFFIDYIGPLPPSNGYLHLVLVVDVDMATGTFVWLYPTKAPSANATVKA LN-
099 NP_395469.1 QVLKRCEDEGIILSNQYKPAKIAHKEIDDFGLHIS-EGEIIQLPHILEKLVL
100 YP_009508546.1 DKFFIDYIGPLPPSQGYLYVLVVDGDMTGFIWLYPTKAPSTSATVKS LN-
101 NP_056762.1 IFFNRVKEVGCVLSKKKSKMFLKEVEYLGVEIK-EGKISLQPHIVDKIKK
102 YP_009508556.1 DKFYIDYIGPLPPSNGYLHLVLVVDGDMTGTFVWLYPTKAPSTSATVKA LN-
103 NP_569153.1 IMLAICQKNGILILSPTKMKIAQAEIEFLGAIIH-KGLIKLQPHIVQKLLT
104 NP_043924.1 QKLQVDHVGPLGPGTHGYRYLTMTMVDVYTGWFWAKPCRGPPTGATIAALE
105 YP_009243641.1 ALWQMDVT-HIPEFGHLKYVHVVIDTYSRFIWAATPQGGGETVKHVI AHLE
106 YP_004300274.1 KFYHIVKEAGVSLSEKKAIIIGNVQIEFLGIEID-KSGVKMQNHIVTKIVQ
107 NP_056848.1 KFRDITLANGLIISKKKTELCKEKIDFLGVQIE-QGGIELQPHIINKILE
108 YP_006495799.1 QMLEVCRKNGLVLSPTKMKVAVTTEVEFLGAIIG-NGKIKLQPHIVKKISE
109 YP_009508409.1 -----SHKPELEYLDLSSL-EKPLKSI AHNLAYLN
110 NP_687035.1 ETWQMDCT-HLEG-----KVIIIVAVHVASGFIEAEVIPPRETGKETAHFLLK
111 NP_045937.2 PFAHLQIDFVQMCVKKPMYALVIDVFSKWPEIIPCNKEDAKTVCDILMK
112 NP_612577.1 NILRRCEKLGIIILSKKKAQLFKEKINFLGLEID-QGTHCPQNHILEHIHK
113 NP_619548.1 AVLKIVEKYGIILSKKKANLFKEKINFLGLEID-KGTHCPQNHILENIHK
114 NP_056880.1 VLWQMDVT-HVSEFGKLKYVHVTVDTYSHFTFATARTGEATKDVLQH LAQ
115 YP_009121747.1 IMLGKCQENGLVLSPTKMKIAVPEVEFLGAIIG-RNKIKLQPHIIKKICD
116 YP_009113237.2 AMLKICKENGLILSPSKMKIGQTKVEFLGAIID-KGKIRLQPNVKKVCD
117 YP_009508408.1 KMLAVCQRNGLVLSPTKMKIGTPTIEFLGATIG-NRKIKLQEHIIKKIAD
118 NP_955579.1 -----
119 YP_009229919.1 IMLEICEKNGLVLSANKMKIAVKEVEFLGAVIC-DRKIKLQPHIIKKITS
120 YP_004442833.1 EMLRICKANGLILSPTKYKIGVKVVDLFGSTIG-ENQLHLQPHIVQKIID
121 NP_862833.2 NLWQTDVT-HIPHFGRCLKYVHASIDTFSNFLMASLHTGESTRHC IQHLLF
122 NP_040563.1 FLWQMDNT-HWNK-----TIIWVAVETNSGLVEAQVIPEETALQVALCILQ
123 YP_443922.1 ISIDYTDMGADQVRGGKRYLLVMVDRFSRWVEAIP TAKEDAKSVIKWLQT
124 NP_057933.2 THWEIDFTEIKPGLYGYKYLLVFIDTFSGWIEAFPTKKETAKVVTKKLLE
125 YP_009116631.1 IMLGICRDNGLVLSPSKMKLAATEIDFLGATIG-DGRIKLQPHIIKKIAE
126 YP_009513249.1 DKFYMDYIGPLPPSEGSYVHLVVDVDAATGFTWLYPTKAQTSKATIKV LN-
127 YP_223871.1 EHWEADFTEMITAKGGYKYLLVLVDVTFSGWVEAYPAKRETSQVVIKHLIH
128 NP_127504.1 QFISLVKKFGVMLS AKKMI LAQNKIQFLGMDFA-DGTFSPAGHISLELQK
129 NP_044929.1 QVWYMDYIGPLPPSNGYQHALLVIVDAGTGFTWIYPTKAQTANATVKA LT-
130 NP_057860.1 HIWQGDIT-HFKYKNTLYRLHVWVDTFSGAISATQKRKETSSEAIS SLLQ
131 NP_040973.1 GIWQMDCT-HFDG-----KIIILVGIHVESGYIWAQIISQETADCTVKAVLQ
132 NP_777317.1 RFFEVC TKEGLVLSPTKMKIGVREVDFLGATIG-NSKIKLQPHIITKIID
133 NP_054716.1 QKYYMDYIGPLPPSDGYVHVLVIVDEGTGYTWLYPTKAQTANATVKA LN-
134 YP_001856242.1 -----
135 NP_954565.2 MIWQMDVT-HYSEFGNLKYIHVSIDTFSGFLLATLQTGETTKHVITHLLH

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136 NP_569150.1 KFM TICEKNG LVL SPTKMKIGTRQIDFLGATIG-NSKIKLQPHI IKKIE
 137 NP_659397.1 KVLRRIESLGIILSKKKANL FKEKINFLGLEID-RGTHTPQNHI LDHIHT
 138 YP_009513211.1 VYWEVDFT EVKPGRYGNRYLLVFIDTFSGWVEAFPTKTETALTVCCKILE
 139 YP_233107.1 QFITICEENGLVLSPTKMKIGVQQVDFLGATIG-DSKVR LQPHIVKKVLE
 140 YP_009109692.1 VYWEIDFT EVKPHYAGYKYLLVFVDTFSGWVEAFPTRQETAHIVAKKILE
 141 NP_057849.4 GIWQLDCT-HLEG- - - -KVILVAVHVASGYIEAEVIPAETGQETAYFLK
 142 NP_049560.1 HIWQGDIT-HFKYKNTLYRLHVWVDTFSGAISATQKKKETSSEAISLLQ
 143 YP_009506267.1 KMLSICKENGLVLSPTKMKIGTPTVEFLGATIG-NSKIKLQPHI IKKID
 144 NP_039820.1 TMLQLCKENGLVLSPTKMKIGTPEIDFLGASLG-CTKIKLQPHIISKICD
 145 NP_056790.1 VYWEVDFT EIKPGRYGNKYLLVFIDTFSGWVEAFPTKTETALIVCKKILE
 146 YP_002321513.1 VMLQVCQENGLVLSPTKMKVAVKTIEFLGAILG-NQCVQLQPHI IQKIVD
 147 NP_955591.1 - - - - -
 148 YP_001956722.2 DKFFIDYIGPLPPSNGYLHVLVVVD SMTGFVWLYPTKAPSTSATVKALN-
 149 NP_056902.1 NHWQADCT-HLDN- - - -KIILTFVESNSGYIHATLLSKENALCTSLAILE
 150 NP_056886.1 QIWQTDFT-LEPRMAPRSWLAVTVD TASSAIVVTQHGRVTSVAVQHHWAT
 151 NP_041261.1 AIWQMDVT-HFTPF GKQRFVHVTVDTFSGFILATPQTGEASKNVISHVIH

001 YP_004442836.1 TKDEELKEFRGLRRWLGI LNYARS- -YIPNLGKILGPLYSKTNPNGE- -R
 002 NP_056728.1 FP-DTLEDKKQLQRF LGILTYASD- -YIPKLAQIRKPLQAKLKENVP- -W
 003 YP_009508537.1 -HLTGLAIPKVLHSDQGS AFTSEE- - - -FAQWAKERNIQLEFSTP- -
 004 YP_004732983.2 KKDDDELMTLKG LRSWLGVINYVRQ- -YIPKCGTLLGPLYAKTSEHGD- -R
 005 YP_009508407.1 - - - - -
 006 NP_040939.1 -WYALFG-PESLQSDNGPAFAAE P- - - - -TQLLMQYLG VKHTTGIP- -
 007 YP_003864102.1 -CFSILGPPRQLKTDNGPGYTSRN- - - - -FHDFCSKLN IKHTTGIP- -
 008 YP_009002585.1 FKDEDLQETKGLRSFLGL LNYARA- -YIPQMGRILSPLYAKVSPKGE- -K
 009 YP_003284237.1 FEDEKLKETKGLRSWLGI LNYARN- -YIPNLGKTLGPLYSKVSP TGE- -K
 010 YP_009268869.1 -WYGLFA-PKS LQSDNGPAFVAEP- - - - -TQLLMKYLG ITHTTGIP- -
 011 YP_009506251.1 KAQMELSTTKGLRSFLGL LNYARI- -YIPNLGRKLSPLYAKVSP TGE- -K
 012 NP_955611.1 - - - - -
 013 YP_008567619.1 FNTDGLLEDKKNLRSWLGI LNYARA- -YIPNLGRILGPLYAKVSP TGE- -R
 014 NP_149413.1 FDEERLKTKEGLKSWLAT LNYARN- -HIKDMGKLLGPLYPKTSEKGA- -K
 015 YP_004442824.1 IKDEELKEVRGLRKWLGI LNYARN- -YIPNLGKTLGPLYSKTSPNGE- -R
 016 YP_001931967.1 FP-ERFKDVNQCRKFLGI IITYAMR- -YIPELSRKRMFLQDKLKKNPV- -W
 017 YP_002455786.1 -AISVLGKPF SVNTDNGPAYLSQE- - - - -FHEFCTTLCIKHSTHIP- -
 018 YP_009109694.1 - - - - -
 019 NP_789739.1 - - - - -
 020 NP_955619.1 -AIAYLGKPSYINTDNGPAYISQD- - - - -FLNMCTSLAIRHTTHVP- -
 021 YP_224289.1 FDDHRLKETKGLRAWLGIL LNYARN- -YIPNLGKTLGPLYSKISPNGE- -K
 022 YP_009182100.1 FP-DKLKDR LQVQQFLGCVNYAGK- -FIQRLAELCSVLHTKLKDKHK- -W
 023 NP_705927.1 - - - - -
 024 YP_009508577.1 -ILLGTAVPRVLHSDQGS AFTSST- - - - -FADWAKEKGIQLEFSTP- -
 025 YP_004442830.1 FSEEK LKTKEGLKSWLA LNYARG- -HIKNLGRTLGPLYPKTSEKGE- -R
 026 NP_758887.1 -LAGRWP-VKHLHTDNGPNFTSEK- - - - -VATVCWWAQIEHTTGIP- -
 027 YP_009508406.1 HQ-EKLF SKVSLKH FYQLHEEIQQ- -LKAENLKL RKDLVALTREVVE- -
 028 YP_610965.1 FPEAQLAEKKGLRSWLGI LNYARS- -YIPRLGILLGPLYQKTS PHGD- -K
 029 YP_001931961.1 FP-NKIEDKKQLQRF LGILTYASD- -YIPQLASMRAPLQEKLKEDVP- -W
 030 YP_241114.1 -CFSTSGI PQT LKTDNGPGYTSRS- - - - -FQRFLCSFQIQHKTGIP- -
 031 YP_006732334.1 FP-DRLEDKKQLQRF LGVLT YADS- -YIPKLAEK RKPLQVKLKKDQV- -W
 032 YP_009041481.1 VDEKSLETTKGLRSWLGI INYARG- -YIPNCGTLLGPLYSKVGLHGD- -K
 033 YP_001036293.1 FSDDELKTTKGLRSWLGI LNYARA- -YMPNMGRILGPLYSKVSPNGE- -K
 034 YP_605811.1 TKDEELKETKGLRKWLGV LNYARA- -YIPNLGKTLGPLYSKTSPNGE- -K
 035 NP_955577.1 EIFPRYGI PQVLGSDNGPAFISQV- - - - -SQSVATLLGINWKLHCA- -
 036 YP_003208050.1 IPEEQ LKEKKGLRGWLGI LNYART- -YIPNLSTLLGPLYQKTS PHGD- -K
 037 NP_789740.1 -LAGRWP-VKTIHTDNGSNFTGAT- - - - -VRAACWWAGIKQEF GIP- -
 038 YP_004442839.1 TRDEELKEVKGLRKWLGV LNYARA- -YIPNLGKTLGPLYSKTSGNGE- -R
 039 YP_009507791.1 -LFSQYY-VTEIQTDNGPNFANER- - - - -ITGICFHFYGIKHKGIP- -
 040 YP_004581513.1 FKEKDL LTKKGLRSWLGI LNYARQ- -YIPNLGKLLGPLYGKTSPTGE- -I
 041 NP_043933.1 FP-DQLSDRNALQRF LGILNYISA- -YFPKIANLRSPLQVKLKK EIT- -W
 042 YP_009507248.1 -FCTHHGLPITIVTDNGTEFSNQL- - - - -FSEFVRIHKI IHHKTLP- -
 043 YP_002117531.1 AKEEELQTTKGLRAWLGIL LNYARS- -YIPNLGKTLGPLYSKVSP TGE- -K
 044 YP_004347415.1 KH-IKIKSKKELQSILGLVNQIRN- -FLPNLSKILLPIQKKLKIKNEEVW
 045 NP_056891.1 -CFSIIIGLPKQIKTDNGPGYTSKN- - - - -FQEF CSTLQIKHITGIP- -
 046 YP_009513242.1 -MLTSIAIPKVLHSDQGA AFTSST- - - - -FADWAKEKGIQLEFSTP- -
 047 YP_009352866.1 VDDKS LQTTKGLRSWLGI INYTRA- -YIPNCGTLLGPLYSKVGLHGD- -K
 048 YP_009165750.1 FP-DRLEDKKQLQRF LGILTYASD- -YIPKLAQIRKPLQAKLKKDVT- -W
 049 NP_040840.1 -WYAMFA-PKS LQSDNGPAFVAES- - - - -TQLLMKYLG IHTTGIP- -
 050 YP_004222728.1 -AIAVLGRPKAIKTDNGSCFTSKS- - - - -TREWLARWGIAHTTGIP- -
 051 YP_009506264.1 FQEEKLNNTKGLRQFLGI LNYARN- -YIPNLGKTLGPLYSKISP KGE- -K
 052 YP_567050.1 -AITILGKPLSINTDNGSAFLSQE- - - - -FQAF CASWHIKHSTHVP- -
 053 YP_009508571.1 -VLTSLIAVPKVIHSDQGA AFTSST- - - - -FADWAKERGIQLEFSTP- -
 054 NP_056803.1 -VLTSLIAIPKVIHSDQGA AFTSST- - - - -FAEWAKERGIHLEFSTP- -

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055 NP_955564.1 -SFA YMG I P Q K I K T D N A P A Y V S R S - - - - - I Q E F L A R W K I S H V T G I P - - -
056 YP_009508411.1 F P E S E L M T T K G M R A W L G I L N Y A R S - - Y I P N L G K T L G P L Y S K V S P N G E - - K
057 YP_009140788.1 F N E A E L K E K K G M R S W L G I L N Y A R A - - Y I P N L G R L L S P L Y A K T S P T G D - - K
058 YP_009508410.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
059 NP_040333.1 E I F P R F G M P Q V L G T D N G P A F V S K V - - - - - S Q T V A D L L G V D W K L H C A - - -
060 YP_008992013.1 F P - D Q Q L S K K Q V Q Q F L G I I N Y I R D - - F I P H V D H Y T R H L S A L L K K K P P - - -
061 NP_041734.1 K A N I E L E T T K G L R S F L G L L N Y A R I - - Y I P N L G R K L S P L Y A K T S P T G E - - K
062 NP_056895.1 - A I V H L G R P K K L N T D Q G A N Y T S K T - - - - - F V R F C Q Q F G I S L S H H V P - - -
063 YP_009109689.1 E I F P R F G L P K V I G S D N G P A F V S Q V - - - - - S Q G L A R I L G I N W K L H C A - - -
064 YP_002519387.1 F P - S R I P D K K S L Q R F L G I L T Y A D Q - - Y I R K L A E W R K P L Q R K L K K D T V - - W
065 YP_595725.1 F D D E K L K T K E G L K S W L A T L N Y A R N - - H I K D M G K L L G P L Y P K T S E K G E - - R
066 YP_009508551.1 - V L T S I A I P K V I H S D Q G A A F T S S T - - - - - F A E W A K E R G I H L E F S T P - - -
067 YP_001497148.1 E I F P R F G L P K V I G S D N G P A F V S Q V - - - - - S Q G L A R T L G I N W K L H C A - - -
068 NP_041186.1 - C F S T S G I P Q T L K T D N G P G Y T S R S - - - - - F Q R F C L S F Q I H H K T G I P - - -
069 NP_663784.1 - L A S R W P - I T H L H T D N G P N F T S Q E - - - - - V K M V A W W V G I E Q S F G V P - - -
070 YP_009508443.1 F S D E E I K T T K G L R S W L G I L N Y A R N - - Y I P N L G K I L G P L Y S K T S P S G E - - K
071 YP_003987465.1 F D N K D L Q T T K G L R S F L G I L N Y A R S - - Y I P Q M G K L L G P L Y S K V S P T G E - - K
072 NP_861410.1 F P - D A I E D R K Q L Q R F L G C L N Y I A D K G F L K E I A K E T K N L Y P K V S I T N P - - W
073 YP_009345071.1 F G P E Q Y K S K K D L R S W L G L I N Y A R N - - H I P N V G R M L G P I Y A K T S P Q G E - - P
074 YP_009508582.1 - I L L G T A V P R V L H S D Q G S A F T S S A - - - - - F A D W A K E K G I Q L E F S T P - - -
075 NP_569141.1 L D - E N I D T K K K L Q S F L G I V N Q V R E - - Y I P K L A E N L K P L Q K K L K K D V E - - Y
076 YP_002916057.1 F R E E D L L T K K G L R S W L G I L N Y A R Q - - H I P N L G K M L G P L Y G K T S P T G E - - I
077 NP_777384.2 - A I V H L G R P K K L N T D Q G A N Y T S K T - - - - - F V R F C Q Q F G I S L S H H V P - - -
078 YP_233110.1 T K D E E L K E T K G L R K W L G V L N Y A R A - - Y I P N L G K T L G P L Y S K T S I N G E - - K
079 NP_542258.1 - A I S I L G K P H S I N T D N G T A Y L S Q E - - - - - F Q Q F C S S L S I K H S T H I P - - -
080 YP_009130664.1 Y P E K E L M N A K G L R S W L G I L N Y A R S - - Y I P Y L G K Q L G P L Y S K V S P T G E - - R
081 YP_009508566.1 - F L L G I A V P K I L H S D Q G S A F T S S D - - - - - F A N W A K E K E I T L E F S T P - - -
082 YP_006607892.1 F P - D K I E D K K Q L Q R F L G I L T Y A S D - - Y I P K L A E I R K P L Q S K L K K D V P - - W
083 YP_009506270.1 I K D E E L K E V K G L R K W L G I L N Y A R S - - Y I P K L G K I L G P L Y S K T S P N G E - - R
084 NP_042513.1 F P - D Q L Q D R K Q I Q K F L G C L N Y I G E K G F F K E L A K E R K V L Q K M L S E K L P - - W
085 YP_006907834.1 F P - D I I E S K L Q L Q R F L G V L T Y A S D - - Y I P K L A Q I R K P L Q A K L K E N V Q - - W
086 YP_004442827.1 F D E E K L K T K K G L K S W L A I L N Y A R G - - H I K N M G K I L G P L Y P K T S E K G E - - K
087 YP_009408594.1 F K D A D L Q E K K G L R S W L G I L N Y A R S - - Y I P N L G S K L G P L Y E K T S P H G D - - K
088 YP_009508561.1 - L L L G T A I P K V L H S D Q G S A F T S A T - - - - - F A E W A K D R S I Q L E F S T P - - -
089 NP_056907.1 - A I T I L G K P L S I N T D N G S A F L S Q E - - - - - F Q A F C A S W H I K H S T H V P - - -
090 YP_002308474.1 - A I S I L G K P H T I N T D N G A A Y L S Q E - - - - - F Q Q F C T S L S I K H T T H V P - - -
091 YP_007761644.1 F P - S E I K D K K E L Q S F L G I I N Y A A S - H Y S I E V T K L R V P L Q K K L K K N Y I - - W
092 NP_040550.1 - A I A V L G R P K A I K T D N G S C F T S K S - - - - - T R E W L A R W G I A H T T G I P - - -
093 NP_758808.1 F D T E K L Q S K K G L R S F L G I L N Y A R N - - H I P N L G K I A G P L Y S K T S I Y G D - - I
094 YP_009345075.1 F P D D Q L K E K K G L R S W L G I L N Y A R N - - Y I P K L G Q L L G P L Y N K T S P M A D - - K
095 NP_068729.1 F P - D E L E D R K Q I Q R F L G C I N Y I A N E G F F K N L A L E R K H L Q K K I S V K N P - - W
096 NP_047255.1 E I F P R Y G I P Q V L G S D N G P A F I S Q V - - - - - S Q S V A T L L G I N W K L H C A - - -
097 YP_006273075.1 F N E A E L K E K K G M R S W L G I L N Y A R A - - Y I P N L G R L L S P L Y A K T S P T G D - - K
098 YP_009508888.1 - M L T S I A V P K V I H S D Q G A A F T S S T - - - - - F A D W A K E K G I H L E Y S T P - - -
099 NP_395469.1 F P - D E I E N R K Q L Q R F L G N L N Y I S E K G F F K D F A K Y R K E L Q K K V S E K V P - - W
100 YP_009508546.1 - V L T S I A I P K V I H S D Q G A A F T S S T - - - - - F A E W A K E R G I H L E F S T P - - -
101 NP_056762.1 F D K N K L N T L K G L Q A Y L G L L N Y A R G - - Y I K D L S K L V G P L Y K K T G K N G Q - - R
102 YP_009508556.1 - M L T S I A I P K V L H S D Q G A A F T S S T - - - - - F A D W A K E K G I Q L E F S T P - - -
103 NP_569153.1 F T N K Q L E E V K G L R S W L G L L N Y A R S - - Y I P H M G R L L S P L Y A K V S P T G E - - R
104 NP_043924.1 E H I S I W G V P Y S I Q S D N G T A F T S K A - - - - - M Q E W A N T Y G I E W K V G A I - - -
105 YP_009243641.1 - S F A V L G I P Q T I K T D N G P A Y S S N K - - - - - F K R F L T Q Y K I H H I T G I E - - -
106 YP_004300274.1 C E - E V L D T K K K L Q S F L G L I N Q V R E - - Y V P N I A K E L L F L Q K K L K K D V E - - Y
107 NP_056848.1 K H - T K I K N K T E L Q S I L G L L N Q I R H - - F I P H L A Q I L L P I Q K K L K I K D E E I W
108 YP_006495799.1 V D D E S L R T L K G L R S W L G I I N Y A R N - - Y I P N C G T L L G P L Y S K T S E N G D - - R
109 YP_009508409.1 Y Q - E K L Q S K V L L K H L Y T I Q E K I S E - - L E A E N K R L R K D L V S L T K E V E - - -
110 NP_687035.1 - L L A R W P - V K H L H T D N G P N F T S Q N - - - - - V A A V C W W G N I E H T T G I P - - -
111 NP_045937.2 D I I P R W G L P D Q I D S D Q G T H F T A K I S - - - - - Q E L T H S I G V A W K L H C P G - -
112 NP_612577.1 F P - D R I E D K K Q L Q R F L G I L T Y A S D - - Y I P K L A S I R K P L Q S K L K E D S T - - W
113 NP_619548.1 F P - D R L E D K K H L Q R F L G V L T Y A E T - - Y I P K L A E I R K P L Q V K L K K D V T - - W
114 NP_056880.1 - S F A Y M G I P Q K I K T D N A P A Y V S R S - - - - - I Q E F L A R W K I S H V T G I P - - -
115 YP_009121747.1 F D E E K L K T K A G L R S F L G I L N Y A R N - - Y I P R L S I L L G P L Y E K T N P H G D - - K
116 YP_009113237.2 F K M E H L E T K T G L R S W L G L L N Y A R P - - Y M P D L G K M L G P L Y A K V S P N G E - - R
117 YP_009508408.1 F N D E E L K T T K G L R S W L G I L N Y A R N - - Y I P N L G K I L G P L Y S K V S P S G E - - K
118 NP_955579.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
119 YP_009229919.1 V P E D S L K E K K G L R S W L G I L N Y A R T - - Y I P K L G T L L G P L Y E K T S P H G D - - K
120 YP_004442833.1 F D E E K L K T K K G L K S W L A I L N Y A R G - - H I K N M G R I L G P L Y P K T S E K G E - - R
121 NP_862833.2 - C F S I S G I P Q T L K T D N G P G Y T S R S - - - - - F Q R F C L S F Q I H H K T G I P - - -
122 NP_040563.1 - L I Q R Y T - V L H L H S D N G P C F T A H R - - - - - I E N L C K Y L G I T K T T G I P - - -
123 YP_443922.1 E L I P R Y G V P R Q I R S D N G S H F S N Q H - - - - - L R Q V E E R F G I V H K F G S V - - -
124 NP_057933.2 E I F P R F G M P Q V L G T D N G P A F V S K V - - - - - S Q T V A D L L G I D W K L H C A - - -
125 YP_009116631.1 V D D E S L K T L K G L R S W L G V L N Y A R N - - Y I P K C G T L L G P L Y S K T S E H G D - - R
126 YP_009513249.1 - H L T G L A I P K V L H S D Q G S A F T S E E - - - - - F A Q W A K E R N I Q L E F S T P - - -
127 YP_223871.1 D I I P R F G L P V Q I G S D N G P A F V A K V - - - - - T Q Q L C E A L N V S W K L H C A - - -

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128 NP_127504.1  F P - D T N L S V K Q I Q Q F L G I V N Y I R D - - F I P E V T E H I S P L S D M L K K K P P - - -
129 NP_044929.1  - H L T G T A V P K V L H S D Q G P A F T S S I - - - - - L A D W A K D R G I Q L E H S A P - - -
130 NP_057860.1  - A I A Y L G K P S Y I N T D N G P A Y I S Q D - - - - - F L N M C T S L A I R H T T H V P - - -
131 NP_040973.1  - L L S A H N - V T E L Q T D N G P N F K N Q K - - - - - M E G V L N Y M G V K H K F G I P - - -
132 NP_777317.1  M R D E E I K E T R G L R K W L G I L N Y A R S - - Y I P R L G Q T L G P L Y S K V S P N G E - - K
133 NP_054716.1  - H L T G T A I P K V L H S D Q G S A F T S A T - - - - - L V A W A K D K G I Q M E Y S S P - - -
134 YP_001856242.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
135 NP_954565.2  - C F S I I G L P K Q I K T D N G P G Y T S K N - - - - - F Q E F C S T L Q I K H I T G I P - - -
136 NP_569150.1  M K D E E L K E V K G L R K W L G I L N Y A R S - - Y I P K L G K I L G P L Y A K T S P N G E - - R
137 NP_659397.1  F P - D R I E D K K Q L Q R F L G V L T Y A D S - - Y I P K L A E K R K P L Q V K L K K D Q V - - W
138 YP_009513211.1 E I L P R F G I P K V L G S D N G P A F V A Q V - - - - - S Q G L A T Q L G I D W K L H C A - - -
139 YP_233107.1  T K E E S L S E T K A L R R W L G I L N Y A R A - - Y I P D L G K I L G P L Y S K T S G K G E - - R
140 YP_009109692.1 E I F P R F G L P K V I G S D N G P A F V S Q V - - - - - S Q G L A R I L G I N W K L H C A - - -
141 NP_057849.4  - L A G R W P - V K T I H T D N G S N F T G A T - - - - - V R A A C W W A G I K Q E F G I P - - -
142 NP_049560.1  - A I A Y L G K P N Y I N T D N G P A Y I S Q D - - - - - F L D M C T P L A I R H T T H V P - - -
143 YP_009506267.1 F K E E E L K T T K G L R S W L G I L N Y A R S - - Y I P N L G K T L G P L Y S K I S P T G E - - R
144 NP_039820.1  F S D E K L A T P E G M R S W L G I L S Y A R N - - Y I Q D I G K L V Q P L R Q K M A P T G D - - K
145 NP_056790.1  E I L P R F G I P K V L G S D N G P A F V A Q V - - - - - S Q G L A T Q L G I N W K L H C A - - -
146 YP_002321513.1 F D E E H L Q T K Q G I R S W L G I L N Y A R T - - Y I P N I G T L L A P F Y E K T S P H G D - - K
147 NP_955591.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
148 YP_001956722.2 - M L T S I A V P K V I H S D Q G A A F T S A T - - - - - F A D W A K N K G I Q L E F S T P - - -
149 NP_056902.1  - W A R L F S - P K S L H T D N G T N F V A E P - - - - - V V N L L K F L K I A H T T G I P - - -
150 NP_056886.1  - A I A V L G R P K A I K T D N G S C F T S K S - - - - - T R E W L A R W G I A H T T G I P - - -
151 NP_041261.1  - C L A T I G K P H T I K T D N G P G Y T G K N - - - - - F Q D F C Q K L Q I K H V T G I P - - -

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001 YP_004442836.1 R M N R Q D W V I V D K I K D L V K N - L P E L E L P P N N A M M - - - - I I E T D G C M E G W G G
002 NP_056728.1  R W T K E D T L Y M Q K V K K N L Q G - F P P L H H P L P E E K L - - - - I I E T D A S D D Y W G G
003 YP_009508537.1 - Y H P Q S S G K V E R K N S E I K K L L T K L L V G R P L K W Y N L - - I S S V Q L A L N N T H V
004 YP_004732983.2 R W H P K D W E I V R Q I K K M V Q S - L P D L E L P P P H A V I - - - - I I E S D G C M E G W G G
005 YP_009508407.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
006 NP_040939.1  - W N P Q S Q A I V E R A H Q L L K S T L K K F Q P Q F V - - - - - - - - - - - - - - - - - A V E S A I
007 YP_003864102.1 - Y N P Q G Q G I V E R A H L S L K T T I D K I K K G E W - - - - - - - - - - - - - - - - - Y P T K G T P R N I L
008 YP_009002585.1 K L N K E D W K L V R Q I K E Q V Q Q - L P D L E L P P Q E C F I - - - - I L E T D G C M E G W G G
009 YP_003284237.1 R M N H Q D W V L I N K V K R Q V K E - L E D M E L P P V E A C I - - - - V L E T D G C M E G W G G
010 YP_009268869.1 - W N P Q S Q A L V E R T H Q T L K N T I E K F V S M F A - - - - - - - - - - - - - - - - - S F D S A I
011 YP_009506251.1 K L N K Q D W N L I N E I K Q M V Q K - L P D L D I P P I E S C I - - - - V I E S D G C M E G W G G
012 NP_955611.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
013 YP_008567619.1 K M N Q Q D W G I V A Q I K K I I Q E - L P E L E L P P E D C C I - - - - V I E T D G C M S G W G G
014 NP_149413.1  G L N S E D W K L I S R I K T M V R S - L P S L T I P P E D A Y I - - - - I I E T D A C A T G W G A
015 YP_004442824.1 R M N S Q D W A I V R K I K E Q V L N - L P D M E L P P K E A V M - - - - I I E T D G C M E G W G G
016 YP_001931967.1 T W T S E D T R L L Q K L K L S L K E - F P K L H I P Q P G Q Q L - - - - I L E T D A S Q K Y W G G
017 YP_002455786.1 - Y N P T S S G L V E R T N G I L K T L L Y K Y F L D H P - - - - - - - - - - - - - - - - - D L P L E S A V
018 YP_009109694.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
019 NP_789739.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
020 NP_955619.1  - Y N P T S S G L V E R S N G I L K T L L Y K Y F T D K P - - - - - - - - - - - - - - - - - D L P M D N A L
021 YP_224289.1  R M N A Q D W A L V T Q V K R Q V Q N - L P E L E L P P E K C K M - - - - V I E T D G C M E G W G G
022 YP_009182100.1 K F T E D D V K R V Q L I K K V C A N - L P E L T L P P P T W K I - - - - V L Q T D A S D H H W A G
023 NP_705927.1  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
024 YP_009508577.1 - Y H P Q S S G M V E R K N R E I K R L I T K L L V G R P T K W Y P L - - L P T I Q L A L N N T Y S
025 YP_004442830.1 S L N S E D W R I I R R M K Q E V Q K - L P K L S I P P Q D A Y I - - - - V I E T D G S M N G W G G
026 NP_758887.1  - Y N P Q S Q G V I E A K N H H L K Q I I G Q V R D Q A E - - - - - - - - - - - - - - - - - K L E T A V
027 YP_009508406.1 N R P L T E K K V Q D L I L K I T E Q - - P K E I E Q Q A V R L S - - - - - - - - - - - - - - - - - E D L K I K L E R V E
028 YP_610965.1  R M K P H D W E L V A Q I K Q M V Q S - L P D L E V P P K D S F I - - - - V L E T D G C M E G W G G
029 YP_001931961.1 N W K H S D T E Y V E E I K K S L T D - F P K L H H P A T D E K L - - - - I I E C D A S G K Y W G G
030 YP_241114.1  - Y N P Q G Q G I V E R A H Q R L K H Q L L K Q K K G N E - - - - - - - - - - - - - - - - - L Y S P - S P H N V L
031 YP_006732334.1 S W S Q S D T D Y I K K I K K G L I N - F P K L Y L P K P E D S L - - - - I I E T D A S D N F W G G
032 YP_009041481.1 R W K S S D W Q L V R K V K A A V E N - L P E L E I P P K N C H I - - - - I I E T D G C M E G W G G
033 YP_001036293.1 R L N A E D W R L I R E V R T T I R A - L P D L E L P P A D S F I - - - - V I E A D G C M E G W G G
034 YP_605811.1  R M N S Q D W K V V Q L I K N Q V Q N - L P D L D I P P A G A T M - - - - V L E T D G C M E G W G G
035 NP_955577.1  - Y R P Q S S G Q V E R M N R S I K E T L T K L T L E T G S K D W V L - - L L P L V L Y R V R N T P
036 YP_003208050.1 R L K A Q D Y A L I R Q I K A L V Q N - L P D L K I P P A D S Y I - - - - V L E T D G C M E G W G G
037 NP_789740.1  - Y N P Q S Q G V V E S M N K E L K K I I G Q V R D Q A E - - - - - - - - - - - - - - - - - H L K T A V
038 YP_004442839.1 R M N S Q D W K I V Q N I K T Q V Q R - L P D L E I P P T S A I I - - - - I L E T D G C M E G W G G
039 YP_009507791.1 - I N P Q S Q A L V E N F N R T L K V W V D K F K E V T E - - - - - - - - - - - - - - - - - T L E A A V
040 YP_004581513.1 R F N A Q D W K L V R E I K R K V Q Q - L P P L E I P P K D C C I - - - - V L E A D G C M E G W G A
041 NP_043933.1  S W T E K D T E T V R K I K S L V K T - L P D L Y N P S P E D K P - - - - I I E C D A S D D H H W A
042 YP_009507248.1 - H S P S D N G N I E R F H S T I L E H I R I L K L Q H K D E P I V N L M P Y A I I G Y N S S I H S
043 YP_002117531.1 R M N H Q D W A L V K K V K D S V Q N - L P D M E L P P K Q C C I - - - - V I E T D G C M D G W G G
044 YP_004347415.1 E W T K E D E Q N I I K L K D Y C K D N V I K M T Y P V E E K D M N W - - I I E V D A S K E Y Y G N
045 NP_056891.1  - Y N P Q G Q G I V E R A H L S L K T T I E K I K K G E W - - - - - - - - - - - - - - - - - Y P R K G T P R N I L
046 YP_009513242.1 - Y H P Q S S G K V E R K N S D I K R L L T K L L I G R P A K W Y D L - - L P V V Q L A L N N S Y S

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047 YP_009352866.1  RWKASDWQLVKQIKRLVQI-LPTLEIIPP KDCHI-----IIETDGCMEGWGG
048 YP_009165750.1  SWTDSDTSLMIKIKKGLKS-FPTLYHPKEEDNL-----IIECDASDSFWGG
049 NP_040840.1      -WNPQSQALVERTHQTLKNTLEKLIPMFN-----AFESAL
050 YP_004222728.1  -GNSQGQAMVERANRLKDKIRVLAEGDG-----F--MKRIPASKQGELL
051 YP_009506264.1  RMNKQDQWALVQQIKKQVAN-LPEMELPPRDAVM-----ILET DGCMDGWGG
052 YP_567050.1      -YNSTSSGLVERTNGIVKALLNKYLLDSP-----NLPLDNAI
053 YP_009508571.1  -YHPQSSSGKVERKNSDIKRLLT KL LVGRPTK WYDL--LPVVQLALNNTYS
054 NP_056803.1      -YHPQSSSGKVERKNSDIKRLLT KL LVGRPTK WYDL--LPVVQLALNNTYS
055 NP_955564.1      -YNPQGQAIVERETHQNIKAQLNKLQKAGK-----YYTP--HHL
056 YP_009508411.1  RMNAQDQWALVRKVKISIQN-LPELEIIPPKN CVI-----IETDGCMEGWGG
057 YP_009140788.1  RMNSQDQWKLVSQIKEEVQK-LPDLEIIPPEDSFI-----ILET DGCMTGWGG
058 YP_009508410.1  -----
059 NP_040333.1      -YRPQSSSGQVERMNRTIKETLT KL TLATGSRD WVL--LLPLALYRARNT P
060 YP_008992013.1  EWND DHTNAVTTLKKIAQNP PPKHQTHPTKKIL-----QTDASDQYWSA
061 NP_041734.1      RFNRQDQWHLIKEIKDMVQK-LPNLAIPP ARCYI-----IIESDGCMEGWGA
062 NP_056895.1      -YNPTSSSGLVERTNGLLKL LLSKYHLDEP-----HLPMTQAL
063 YP_009109689.1  -YRPQSSSGQVERMNRTIKETLT KL TL TETGLKDWRR--LLSLALLRARNT P
064 YP_002519387.1  EWNDSDTQYVEKFKRNLKE-FPKLHHPLPDEYL-----IETDASHEHWAG
065 YP_595725.1      RLNSEDWKLINRIKTMVRT-LPNLTIPPEDAYI-----IETDACATGWGA
066 YP_009508551.1  -YHPQSSSGKVERKNSDIKRLLT KL LVGRPTK WYDL--LPVVQLALNNTYS
067 YP_001497148.1  -YRPQSSSGQVERMNRTIKETLT KL TL TETGLKDWRR--LLSLALLRARNT P
068 NP_041186.1      -YNPQGQGIVERAHQRIKHQLLQKKGNE-----LYSP-SPHNAL
069 NP_663784.1      -YNPQSQGVVEAMNHHLKNQISRIREQAN-----TIETIV
070 YP_009508443.1  RMNAQDQWELVRKVKKIVNE-LPDLEIIPP EKCCI-----IETDGCMSGWGG
071 YP_003987465.1  RMNKQDQWAIIEKIKQMEVQ-LPELELPPNGSVI-----VIETDGCMEGWGG
072 NP_861410.1      HWSDLDSKLVNQIKKKCKD-LSPLYFPKPEDYL-----IETDASGDTWAG
073 YP_009345071.1  KMNAQDQWKIIQDIQAQIHQ-LPTLEIPDKDAVI-----IETDGCMTGWGA
074 YP_009508582.1  -YHPQSSSGMVERKNIKRILIT KL LVGRPTK WYPL--IPTIQLALNNTYS
075 NP_569141.1      SFDEKDKEQIKKIKILCKK-LPKLYFPDENKKFTY--IVETDSSNYSYGG
076 YP_002916057.1  RFNAQDQWKLVR EIKRKIQQ-LPPLEIIPP KDCCI-----VLEADGCMDGWGA
077 NP_777384.2      -YNPTSSSGLVERTNGLLKL LLSKYHLDEP-----HLPMTQAL
078 YP_233110.1      KMNSQDQWKVVQLIKNQVQN-LPDLDIPPAEATM-----VLET DGCMEGWGG
079 NP_542258.1      -YNPTSSSGLVERTNGILKTLISKYLLDNH-----HLPLETAI
080 YP_009130664.1  KMNQQDQWAI VKQIKEKVQN-LPDLELPPP DCHI-----VLET DGCMDGWGG
081 YP_009508566.1  -YHPQSSSGKVERKKNQEIKKLLT KL LVGRPAKWYPL--IPSVQLALNNTYS
082 YP_006607892.1  TWT HDDINYSKIKKLNLS-FPTLYHPKCLDTL-----IETDASGSFWGG
083 YP_009506270.1  RMNSQDQWKIVKEVKEIVAN-LPDLELPP EKAIM-----IETDGCMDGWGG
084 NP_042513.1      KWNDLATLAVKRLKQVCKN-LPRLYVAKPSD L--ILTTDASDTTWGA
085 YP_006907834.1  RWTPEDTLYMKKVKKNLNG-FPPLHHPLPEEKL-----IETDASDNYWGG
086 YP_004442827.1  RLNSEDWKIIIRKMKEEVRRLPKMAIPPEDAYI-----VIETDGS MNGWGG
087 YP_009408594.1  RFKPSDWALVKELKAQIQN-LPDLEIAPASAYI-----VLET DGSMTGWGG
088 YP_009508561.1  -YHPQSSSGMVERKKNKEIKRLIT KL LVGRPTK WYPL--LPTVQLALNNTYS
089 NP_056907.1      -YNSTSSSGLVERTNGIVKALLNKYLLDSP-----NLPLDNAI
090 YP_002308474.1  -YNPTSSSGLVERTNGILKTLISKYLLDDH-----HLP LDTAI
091 YP_007761644.1  SWTEQDKQIVEQIKTICQN-LPALELPKNGDKL--VLT TDASDKHWAG
092 NP_040550.1      -GNSQGQAMVERANRLKDKIRVLAEGDG-----F--MKRIPTSKQ GELL
093 NP_758808.1      RFSASDWKLIN EIKAI VEK-LPPLDY PPEQAYI-----IIESDGCMEGWGA
094 YP_009345075.1  RMTASDWNLVKKIKEKVQA-LPDMELPPKDAFV-----IETDGC TEGWGA
095 NP_068729.1      KWD TIDTKMVQSIKGIQS-LPKLYNASIQDFL--IVETDASQHSWSG
096 NP_047255.1      -YRPQSSSGQVERMNRSIKETLT KL TL TETGSKDWVL--LLPLVLVYRV RNT P
097 YP_006273075.1  RMNAQDQWKLVAQIKEEVQK-LPDLELPPEDCFI-----ILET DGCMTGWGG
098 YP_009508888.1  -YHPQSSSGKVERKNSDIKRLLT KL LVGRPTK WYDL--LSTVQLALNNAYS
099 NP_395469.1      KWTSYDTTQVQALKTLCQR-LPKLYNAKESD L--IIATDASNGHWGA
100 YP_009508546.1  -YHPQSSSGKVERKNSDIKRLLT KL LVGRPTK WYDL--LPVVQLALNNTYS
101 NP_056762.1      IFNKEDWNIIFKIEREVSK-IKPLERPKETDYI-----IETDASEEGWGA
102 YP_009508556.1  -YHPQSSSGKVERKNSDIKRLLT KL LIGRPAKWYDL--LPVVQLALNNTYS
103 NP_569153.1      RMNRQDQWALIDKIRAQVQN-LPALELPPADCFI-----IETDGCMDGWGG
104 NP_043924.1      -YHPQSQGKVERKHRL LKDR LK RATH EGKNWVQALPSILLFINS MHP RDQ
105 YP_009243641.1  -YNPQGQAII ERAHGT LKLYIKKLKKRGERELELP--PLIALQNNPRAVL
106 YP_004300274.1  HFDSQDQEK LKKIKEKCSN-LPKLLFPDET KQFDW--IVETDASEISYGG
107 NP_056848.1      TWTKEDEEKIKLIQDYSKNLVIKMKYPINKEDMNW--IIEVDASNNAYGS
108 YP_006495799.1  RMSPPQDQWKLVRKVKELVKS-LPDLELPPAGAYV-----VIETDGCMEGWGG
109 YP_009508409.1  NRPLTERK VQELIVNITSQ--PKEIEQQAVKLS-----KDLQLKLD RVE
110 NP_687035.1      -YNPQSSGSVSESMNRQLKEIISQIRDDCE-----RLETAV
111 NP_045937.2      --HPRS SGI VERTNRTLKSKIIKAQEQLQLSKWTE--VLPYV LLEMRAT P
112 NP_612577.1      TWND TDSQYMAKIKKLNLS-FPKLYHPEPNDKL--VIETDASEEFWGG
113 NP_619548.1      NWTQSDSDYVKKIKKNLGS-FPKLYLPKPEDHL--IIETDASDSFWGG
114 NP_056880.1      -YNPQGQAIVERETHQNIKAQLNKLQKAGK-----YYTP--HHL
115 YP_009121747.1  RMKPSDYEIVRKIKAKVQQ-LPD LQIPPD DAYI-----TIETDGCMDGWGG
116 YP_009113237.2  RFNRREDRELRLKLT EKIRN-LPDLELPPP NAYI-----IIESDGCMTGWGG
117 YP_009508408.1  RMNGQDQWELVRKVQLVQK-LPDLEIIPP KDCCI-----LIETDGCMDGWGG
118 NP_955579.1      -----
119 YP_009229919.1  RMKPSDWELVKKIKAQVQN-LPDMEIIPP EKAHI--VIETDGSMEGWGA

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001 YP_004442836.1 VCKWKEQSGQPRWSEK - - - - -
002 NP_056728.1 MLKAIKINEGTNT - - - - -
003 YP_009508537.1 VSTKYTPHQLMFG - - - - -
004 YP_004732983.2 ICKWKNSKGESKGER - - - - -
005 YP_009508407.1 - - - - -
006 NP_040939.1 A - - - - -
007 YP_003864102.1 N - - - - -
008 YP_009002585.1 VCKWKKKEYDPKNTER - - - - -
009 YP_003284237.1 VCKWKLPQN - KASEK - - - - -
010 YP_009268869.1 A - - - - -
011 YP_009506251.1 ICKWKKAKEDSRTTGR - - - - -
012 NP_955611.1 - - - - -
013 YP_008567619.1 VCKWKPMACDPKNTER - - - - -
014 NP_149413.1 VCKWKKSKADPRSEL - - - - -
015 YP_004442824.1 VCKWKKNISQPRLEER - - - - -
016 YP_001931967.1 ILKAEVIHSNN - EI - - - - -
017 YP_002455786.1 S - - - - -
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 S - - - - -
021 YP_224289.1 VCKWTTVG - - - KAQEK - - - - -
022 YP_009182100.1 TIGAISPDKKEE - - - - -
023 NP_705927.1 - - - - -
024 YP_009508577.1 VHYKKTPHQLLFG - - - - -
025 YP_004442830.1 ICCWKKSKNDPRSTEQ - - - - -
026 NP_758887.1 Q - - - - -
027 YP_009508406.1 TLLKKIEGSVL - - - - -
028 YP_610965.1 ICKWKQAKKDPRGKEK - - - - -
029 YP_001931961.1 ILKAIHQSE - - - - -
030 YP_241114.1 N - - - - -
031 YP_006732334.1 VLKAQTTEGQ - - - - -
032 YP_009041481.1 VCKWCPPNKRRTKGEER - - - - -
033 YP_001036293.1 VCKWKKLKKDFRRNER - - - - -
034 YP_605811.1 VCKWKLHPSDTRLAEK - - - - -
035 NP_955577.1 GPHGLTPPFEILYGAPPPMAHFF - - - - -
036 YP_003208050.1 VCKWKPNKHSPKSEQE - - - - -
037 NP_789740.1 Q - - - - -
038 YP_004442839.1 ICKWKAKPSDTRLNEK - - - - -

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039 YP_009507791.1 Q-----
040 YP_004581513.1 VCKWKQSA YDPR SKER-----
041 NP_043933.1 I LKAKL PEGKE-----
042 YP_009507248.1 FTKCRPFDLLNGHFDPRD-----
043 YP_002117531.1 VCKWKLTRHDSKTTEK-----
044 YP_004347415.1 CLKYK--KDKIEY-----
045 NP_056891.1 N-----
046 YP_009513242.1 PSSKYTPHQLLFG-----
047 YP_009352866.1 ICKWCPIRKKAKKEER-----
048 YP_009165750.1 I LKAKT IDEDK-----
049 NP_040840.1 A-----
050 YP_004222728.1 A-----
051 YP_009506264.1 ICKWKMPGAT-KASEK-----
052 YP_567050.1 S-----
053 YP_009508571.1 PSLKHTPHQLLFG-----
054 NP_056803.1 PVLKYTPHQLLFG-----
055 NP_955564.1 A-----
056 YP_009508411.1 VCKWKLFADPKATEK-----
057 YP_009140788.1 VCKWKPKRNDPRR SER-----
058 YP_009508410.1 -----
059 NP_040333.1 GPHGLTPYEILYGAPPPLVNF P-----
060 YP_008992013.1 VLLEEHN GK RH-----
061 NP_041734.1 VCKWK LAKEDSRTTEK-----
062 NP_056895.1 S-----
063 YP_009109689.1 N RFG LTPYEILYGGPPPLSTLL-----
064 YP_002519387.1 VLKSRGTDN-----
065 YP_595725.1 VCKWKKNKADPRNTEQ-----
066 YP_009508551.1 PVLKYTPHQLLFG-----
067 YP_001497148.1 N RFG LTPYEILYGGPPPLSTLL-----
068 NP_041186.1 N-----
069 NP_663784.1 L-----
070 YP_009508443.1 VCKWKKFLKDP RVTEQ-----
071 YP_003987465.1 ICKWKFP GAP-RNQEK-----
072 NP_861410.1 CLKAAEL-----
073 YP_009345071.1 ICKWKKKEKDPKSTEK-----
074 YP_009508582.1 VHYKKTPHQLLFG-----
075 NP_569141.1 VLKYRYNKEKIEH-----
076 YP_002916057.1 ICKWKQFAYDPR SKER-----
077 NP_777384.2 S-----
078 YP_233110.1 VCKWK LHPSDTRLAEK-----
079 NP_542258.1 S-----
080 YP_009130664.1 VCKWKPKQCDGRQMEK-----
081 YP_009508566.1 PKIKLTPHQLLFG-----
082 YP_006607892.1 I LKARTENS DS-----
083 YP_009506270.1 VCKWKDNSSQPRWSEK-----
084 NP_042513.1 V LMAVPNAYEEFLSFVTNNRPSDLKTF LKQKEGSSRYAEKSVPEK LNSMH
085 YP_006907834.1 I LKAIHIDLSTNES-----
086 YP_004442827.1 VC YWKKSKADPRSTEQ-----
087 YP_009408594.1 VCKWKKAKGDPRSTER-----
088 YP_009508561.1 PRTKLTPHKL LFG-----
089 NP_056907.1 S-----
090 YP_002308474.1 S-----
091 YP_007761644.1 V LQFYRKIEQE VF EK-----
092 NP_040550.1 A-----
093 NP_758808.1 ICKWK LAEYDPKSSEQ-----
094 YP_009345075.1 VAKWRPFGKASRGTEK-----
095 NP_068729.1 CLRALPKGKQKIGLDEFGIPTADLCTGS-----SSA
096 NP_047255.1 GPHGLTPFEILYGAPP PMAHFF-----
097 YP_006273075.1 ICKWKPKRNDPRRMEK-----
098 YP_009508888.1 P I LKHTPHQLLFG-----
099 NP_395469.1 VMTAVTP---VHITNYGISLEDLF-----
100 YP_009508546.1 PVLKHTPHQLLFG-----
101 NP_056762.1 VLVCKPDKYS GK DTEK-----
102 YP_009508556.1 PSSKYTPHQLLFG-----
103 NP_569153.1 VCKWKVAQYDPRSSER-----
104 NP_043924.1 FSAYELMTGRVPHLGG-----
105 YP_009243641.1 S-----
106 YP_004300274.1 V LKYKYHQDKIEY-----
107 NP_056848.1 CLKYKPKNSKIEY-----
108 YP_006495799.1 VCKWKHKKGESASA EK-----
109 YP_009508409.1 D I LRRLEGAVT-----
110 NP_687035.1 Q-----
111 NP_045937.2 KKHGLSPHEIVMG-----

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112 NP_612577.1 I L K A I H N S H - - - - -
113 NP_619548.1 V L K A R A L D G V - - - - -
114 NP_056880.1 A - - - - -
115 YP_009121747.1 I C K W K K K K E D P R R D E K - - - - -
116 YP_009113237.2 V C K W K T G E S D P R T T E R - - - - -
117 YP_009508408.1 V C K W K A F T H D P R K D E R - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 V C K W K P N Q S D P K S T E R - - - - -
120 YP_004442833.1 V C L W K K S K N D P K S T E Q - - - - -
121 NP_862833.2 N - - - - -
122 NP_040563.1 S - - - - -
123 YP_443922.1 A G T H L S P H E I M T G R V M P G P P R E - - - - -
124 NP_057933.2 G P H G L T P Y E I L Y G A P P L V N F P - - - - -
125 YP_009116631.1 V C K W K P M K A D S A S K E E - - - - -
126 YP_009513249.1 V S T K Y T P H Q L M F G - - - - -
127 YP_223871.1 G R E G L S P F E I L Y G L K P P V V P R V - - - - -
128 NP_127504.1 V L L E E H N G K R K - - - - -
129 NP_044929.1 T R Q K Y T P H Q L M Y G - - - - -
130 NP_057860.1 S - - - - -
131 NP_040973.1 S - - - - -
132 NP_777317.1 I C K W K I F G - - P R T S E K - - - - -
133 NP_054716.1 A K I G K T P H Q L M Y G - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 N - - - - -
136 NP_569150.1 V C K W K T D S L Q P R W S E K - - - - -
137 NP_659397.1 V L K A Q T T E G E - - - - -
138 YP_009513211.1 G Q F G L T P Y E I L H G G P P P V L A S G - - - - -
139 YP_233107.1 I C K W K L N K G E P R S A E K - - - - -
140 YP_009109692.1 N R F G L T P Y E I L Y G G P P P L S T L L - - - - -
141 NP_057849.4 Q - - - - -
142 NP_049560.1 S - - - - -
143 YP_009506267.1 V C K W R P K K N D P K S T E K - - - - -
144 NP_039820.1 V C K W K M S K H D P R S T E R - - - - -
145 NP_056790.1 G R F G L T P Y E I L Y G G P P P I L E S G - - - - -
146 YP_002321513.1 I C K W K H K K N D P R S S E R - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 P S S K Y T P H Q L L F G - - - - -
149 NP_056902.1 Q - - - - -
150 NP_056886.1 A - - - - -
151 NP_041261.1 S - - - - -

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001 YP_004442836.1 - - - - - I C A Y A S G K F N P I K S T I
002 NP_056728.1 - - - - - E L I C R Y A S G S F K A A E K N Y
003 YP_009508537.1 - - - - - I D C N L P F A N K D T L D W T R
004 YP_004732983.2 - - - - - I C A Y A S G K F P T V K S T I
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - - A A L V A I N I
007 YP_003864102.1 - - - - - H A L F I I L N F
008 YP_009002585.1 - - - - - I C A Y A S G K F H P I K S T I
009 YP_003284237.1 - - - - - I C A Y A S G K F S P I K S T I
010 YP_009268869.1 - - - - - A A L I T L N I
011 YP_009506251.1 - - - - - I C A Y A S G K F G V I K S T I
012 NP_955611.1 - - - - -
013 YP_008567619.1 - - - - - V C A Y C S G K F D P P K S T I
014 NP_149413.1 - - - - - I C R Y A S G K F D K P K G T C
015 YP_004442824.1 - - - - - V C A Y A S G K F T P I K S T I
016 YP_001931967.1 - - - - - T E E I C C Y A S G T F K Q A E L N Y
017 YP_002455786.1 - - - - - K A L W T I N H
018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 - - - - - I A L W T I N H
021 YP_224289.1 - - - - - V C A Y A S G K F T P I K S T I
022 YP_009182100.1 - - - - - V I C A Y R S G T F K P A E Q N Y
023 NP_705927.1 - - - - -
024 YP_009508577.1 - - - - - V D G N V P F A N Q D T L D L T R
025 YP_004442830.1 - - - - - I C R Y A S G K F A K P K S T I
026 NP_758887.1 - - - - - M A V L I H N F
027 YP_009508406.1 - - - - - L - - - - -
028 YP_610965.1 - - - - - V A A Y A S G R F P V P K S T I
029 YP_001931961.1 - - - - - E R I C R Y T S G S F K K A E L N Y
030 YP_241114.1 - - - - - H A L Y V L N F

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031 YP_006732334.1 - - - - - E L I C - - - - - S T V Q E
032 YP_009041481.1 - - - - - V C A Y V S G K F P T V K S T I
033 YP_001036293.1 - - - - - V C A Y A S G K F D P P K S T I
034 YP_605811.1 - - - - - V C A Y A S G R Y H P I K S T I
035 NP_955577.1 - - - - - D T D I S S F A T S P T - M Q A H L
036 YP_003208050.1 - - - - - V A A Y A S G K F P V V K S T I
037 NP_789740.1 - - - - - - - - - - M A V F I H N F
038 YP_004442839.1 - - - - - I C A Y A S G S Y N P I K S T I
039 YP_009507791.1 - - - - - - - - - - L A V H A L N H
040 YP_004581513.1 - - - - - I A A Y A S G K F Q P I K S T I
041 NP_043933.1 - - - - - V I C R Y A S G T F K P A E K N Y
042 YP_009507248.1 - - - - - P L D I D L T E H I L Q Q Y A Q N H
043 YP_002117531.1 - - - - - T C A Y A S G K F S P V K S T I
044 YP_004347415.1 - - - - - I C R Y N S G T F K E H E K N Y
045 NP_056891.1 - - - - - - - - - - H A L F I I L N F
046 YP_009513242.1 - - - - - V D S N T P F A N S D T L D L S R
047 YP_009352866.1 - - - - - I C A Y V S G K F L T V K S T I
048 YP_009165750.1 - - - - - E Y I C R Y T S G S F K Q A E L N Y
049 NP_040840.1 - - - - - - - - - - G T L I T L N I
050 YP_004222728.1 - - - - - - - - - - K A M Y A L N H
051 YP_009506264.1 - - - - - V C A Y A S G R F P A V K S T I
052 YP_567050.1 - - - - - - - - - - K A L W T L N Q
053 YP_009508571.1 - - - - - I D S N T P F A N Q D T L D L T R
054 NP_056803.1 - - - - - I D S N T P F A N Q D T L D L T R
055 NP_955564.1 - - - - - - - - - - H A L F V L N H
056 YP_009508411.1 - - - - - V C A Y A S G K F N P P K S T I
057 YP_009140788.1 - - - - - I C A Y A S G K F N P V K S T I
058 YP_009508410.1 - - - - - - - - - - - - - - - -
059 NP_040333.1 - - - - - D P D M A K V T H N P S - L Q A H L
060 YP_008992013.1 - - - - - F C A H A S G Q F K H S E K N Y
061 NP_041734.1 - - - - - I C A Y A S G K F G V V K S T I
062 NP_056895.1 - - - - - - - - - - R A L W T H N Q
063 YP_009109689.1 - - - - - N - S F S P S N S K T D - L Q A R L
064 YP_002519387.1 - - - - - L E R L C R Y T S G S F K P A E I N Y
065 YP_595725.1 - - - - - I C R Y A S G K F D K P K G T C
066 YP_009508551.1 - - - - - I D S N T P F A N Q D T L D L T R
067 YP_001497148.1 - - - - - N - S F S P S D P K T D - L Q A R L
068 NP_041186.1 - - - - - - - - - - H A L Y V L N F
069 NP_663784.1 - - - - - - - - - - M A V H C M N F
070 YP_009508443.1 - - - - - V C A Y A S G R F D P P K S T I
071 YP_003987465.1 - - - - - V C A Y A S G R F Q P I K S T I
072 NP_861410.1 - - - - - L F P K G T K N K V V E R - L C K Y T S G I F S S A E Q K Y
073 YP_009345071.1 - - - - - I C A Y A S G P Y N P L K S T I
074 YP_009508582.1 - - - - - V D G N V P F A N Q D T L D L T R
075 NP_569141.1 - - - - - H C R Y Y S G S Y T E P Q E K W
076 YP_002916057.1 - - - - - I T A Y A S G K F Q P I K S T I
077 NP_777384.2 - - - - - - - - - - R A L W T H N Q
078 YP_233110.1 - - - - - V C A Y A S G R Y H P I K S T I
079 NP_542258.1 - - - - - - - - - - K S L W T I N H
080 YP_009130664.1 - - - - - I C A Y A S G K F N P P K S T I
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084 NP_042513.1 D K S H G E K A E K S V S R Q T S Q G R S S S Q S Q Q S Y I G S F M I T K W S S G T F K P A E E N Y
085 YP_006907834.1 - - - - - I E L V C R Y A S G S F K P A E Q N Y
086 YP_004442827.1 - - - - - V C R Y A S G K F N K P K S T I
087 YP_009408594.1 - - - - - V C A Y A N G K F P T V K S S I
088 YP_009508561.1 - - - - - V D G N V P F A N Q D T L D L T R
089 NP_056907.1 - - - - - - - - - - K A L W T L N Q
090 YP_002308474.1 - - - - - - - - - - K T L W T I N H
091 YP_007761644.1 - - - - - D L R V S R Y C S G T W N Q T E Q N W
092 NP_040550.1 - - - - - - - - - - K A M Y A L N H
093 NP_758808.1 - - - - - I C A Y A S G K F S P I K S T I
094 YP_009345075.1 - - - - - A F A Y A S G R F P A L Q S T I
095 NP_068729.1 S S D N S P A E I D K C H S A S K Q D T H V A S K I K K L E N E L L L C K Y V S G T F T D T E T R Y
096 NP_047255.1 - - - - - D T D I S S F A T S P T - M Q A H L
097 YP_006273075.1 - - - - - V C A Y A S G K F S P I K S T I
098 YP_009508888.1 - - - - - V D A N I P F A N Q D T L D L T R
099 NP_395469.1 - - - - - P K E Q H T A Q A L S S Q Y Q F F G - - T K D F V Q K E L L T K Y A S G T F T D T E K R Y
100 YP_009508546.1 - - - - - I D S N T P F A N Q D T L D L T R
101 NP_056762.1 - - - - - I A G Y A S G N F G E K K T W
102 YP_009508556.1 - - - - - V D S N T P F A N S D T L D L S R
103 NP_569153.1 - - - - - V C A Y A S G K F N P P K S T I

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104 NP_043924.1 - - - - - Y H P H P L E T A K E E E V R I F L R A
105 YP_009243641.1 - - - - - Q V L F T L N F
106 YP_004300274.1 - - - - - H C R Y Y S G T F K D N E K N W
107 NP_056848.1 - - - - - L C R Y N S G T F K E N E Q K Y
108 YP_006495799.1 - - - - - V C A Y A S G K F P A I K S T I
109 YP_009508409.1 - - - - - V - - - - -
110 NP_687035.1 - - - - - M A T H I H N F
111 NP_045937.2 - - - - - R P M K T T Y L S D M S P L W A T
112 NP_612577.1 - - - - - E Y I C R Y A S G S F K A A E R N Y
113 NP_619548.1 - - - - - E L I C R Y S S G S F K Q A E K N Y
114 NP_056880.1 - - - - - H A L F V L N H
115 YP_009121747.1 - - - - - I C A Y A S G K F K V V Q S T I
116 YP_009113237.2 - - - - - V C A F A S G T F S P I K S T I
117 YP_009508408.1 - - - - - I C A Y A S G K F D P P K S T I
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - - P C A Y A S G K F P A V K S T I
120 YP_004442833.1 - - - - - I C R Y A S G K F A K P K S T I
121 NP_862833.2 - - - - - H A L V L N F
122 NP_040563.1 - - - - - L A L V S L N -
123 YP_443922.1 - - - - - G G H M P A L D V H Q I G M T D Y V
124 NP_057933.2 - - - - - D P D M T R V T N S P S - L Q A H L
125 YP_009116631.1 - - - - - I C A Y A S G K F P T V K S T I
126 YP_009513249.1 - - - - - I D C N L P F A N K D T L D W T R
127 YP_223871.1 - - - - - G C D K L A S I T N Q T - L L K S L
128 NP_127504.1 - - - - - I C G F A S G K F K V S E Q H Y
129 NP_044929.1 - - - - - A D C N L P F E N L D T L D L T R
130 NP_057860.1 - - - - - I A L W T I N H
131 NP_040973.1 - - - - - L A V H S L N F
132 NP_777317.1 - - - - - V C A Y A S G K F N P I K S T I
133 NP_054716.1 - - - - - V D C N L P F Q D L S T L D L T R
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137 NP_659397.1 - - - - - E L I C R Y S S G T F K P A E L N Y
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139 YP_233107.1 - - - - - I C A Y A S G R F N P I K G A I
140 YP_009109692.1 - - - - - N - S F S P S N S K T D - L Q A R L
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142 NP_049560.1 - - - - - I A L W T I N H
143 YP_009506267.1 - - - - - I C A Y A S G K F D I P K S T I
144 NP_039820.1 - - - - - I C A Y A S G S F N P I K S T I
145 NP_056790.1 - - - - - E T L G P D D R F L P V - L F T H L
146 YP_002321513.1 - - - - - V C D Y A S G K F P V V K S S I
147 NP_955591.1 - - - - -
148 YP_001956722.2 - - - - - I D S N T P F A N S D T L D L S R
149 NP_056902.1 - - - - - L A L I T C N K
150 NP_056886.1 - - - - - K A M Y A L N H
151 NP_041261.1 - - - - - H A L F Q L N F

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001 YP_004442836.1 D - - - A E I Q A V I N S L D K F K I Y Y L D K K E L I I R T D S Q A I V S F Y K K S S D H K P S R
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003 YP_009508537.1 E E E L A L L Q E I R E S L Q H P V R P P - - - T C S G W S P Y V G Q L V Q E R V Y R P S Q L R P K
004 YP_004732983.2 D - - - A E I Y A V M A S L E N F K I Y Y L D K R E I T I R T D C Q A I I S F Y D K T A I K K P S R
005 YP_009508407.1 - - - - -
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007 YP_003864102.1 L N L D D - Q G K S A A D R F W H S - - - - - D P K K Q L A M V K W K D P L D N S
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010 YP_009268869.1 K R K G G L G - T S P M D I F I F N K E Q Q R I Q Q Q S T R N Q S K F R F C Y Y R V R K R G H P G E
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018 YP_009109694.1 - - - - -
019 NP_789739.1 - - - - -
020 NP_955619.1 L N V L T N C H K T R W Q L H H S P R L Q P I P E T H S L - - S N K Q T H W Y Y F K L P G L N S R Q
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022 YP_009182100.1 S T Q E K E V L A I I R T I Q K A K I F V L K P - F L V R T D S K F A A L - F L D K K I N E S L A R

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023 NP_705927.1 - - - - -
024 YP_009508577.1 EEELSLSLSEVRTSLPSTP - - PASKRAWLPSVGLLVQERVVARPSQLRPK
025 YP_004442830.1 E - - - AEITGVLQSLKFRLLYYIDKAEITVRTDSSAIERFYNNKSTEHKPSSE
026 NP_758887.1 KRKGIGIGEYSPGERIVDIIATD - LLTTKLQHNIIQKIQNFRVYYREGRDQQ
027 YP_009508406.1 - - - - -
028 YP_610965.1 D - - - AEIYACTETLSALKIHYLDRKEIILRTDCQAIISFYNNKSSVNNKPSR
029 YP_001931961.1 HSNEKEIILAVIRVIAKFTIYLTPLLEFLIRTDNKNFTF - FMNTNVKGDYKQ
030 YP_241114.1 LTLDA - EGNSAAQRFWGE - - - - - RSSCKKPLVRWKDPLTNL
031 YP_006732334.1 HSNQQ - - - - - KPITIVMKKNY - - - - -
032 YP_009041481.1 D - - - AEIFAVMESLSALKIIFFLDKKEITVRTDCQAIIAFYNNKQAQNNKPSR
033 YP_001036293.1 D - - - AELFAVMNSMDKFKIHYLDRKELLIRSDCQALISFYNNKSSNNKPSR
034 YP_605811.1 D - - - AEVHAVINSLEKFKIYYLDKKELIIRTDSCQAIIVAFYKKQADHKPSR
035 NP_955577.1 RALQLVQEEIQRPPLAAAYREKLETPVVPHPFKPGDSVWVRRHQTKNLEPR
036 YP_003208050.1 D - - - AEIHACMGTLALKIHYLDRKEITLRTDCQAIVSFHNKMAQNNKPSR
037 NP_789740.1 KRKGIGIGYSAGERIVDIIATD - IQTKELQKQITKIQNFRVYYRDSRNPL
038 YP_004442839.1 D - - - AEVHAVINSLEKFKIYYLDKKELIIRTDSCQAIIVAFYKKQADHKPSR
039 YP_009507791.1 KRKGGLGGITPYELVYQ - QESIRIQELYSIPHKFLKDSWIIYKDRKDKL
040 YP_004581513.1 D - - - AEIFAIMNAMEAFKIYYLDKKEMIIRTDCEAIVSFNNKSAANNKPSR
041 NP_043933.1 HSNEKEILSIIKAIKAFRAYILPYKFLVVRTDNTNAAV - FVRTNIAGDYKQ
042 YP_009507248.1 RQQMKQVYEIINETSLANRTALIESRNKTREREVEYIPQQQVFIKNPLAS
043 YP_002117531.1 D - - - AEIQAVICSLDKFKIFYLDKQEVVIRTDSCQAIISFFDKTSQNNKPSR
044 YP_004347415.1 DINRKELIAIYKGLEHYAIFTTQGGKLVRTDNSQAYYWIKNKSKIKNSIDM
045 NP_056891.1 LNLDD - QNKSAADRFWHN - - - - - NPKKQFAMVKWKDPLDNT
046 YP_009513242.1 EEELSLSLQEIIRSSLHQPTSP - - PASSRSWSPSVGQLVQERVVARPASLRPR
047 YP_009352866.1 D - - - AEIFAVMESLSALKIYFLDKKEITVRTDCQAIISFYNNKQAQNNKPSR
048 YP_009165750.1 HSNEKEILAAMNTIKKFSGYLTPVKFLIRTDNKNFTF - FLNTNKKGDYKQ
049 NP_040840.1 KRKGGLG - TSPMDIIFIFNKEQQRIQQQSKSKQEKIRFCYRTRKRGHPGE
050 YP_004222728.1 FERGE - NTKTPIQKHWRP - - - - - TILTEGPPVKIRIETG - E
051 YP_009506264.1 D - - - AEIQAVINSLDKFKIYYLDKKKALTIRTDSCQAIVSFYAKIAQNNKPSR
052 YP_567050.1 LNVMSQQWKTRWQLHHGPRLRPIPETPRP - - SRAPTNNWYKYKLPGLTNQR
053 YP_009508571.1 EEELSLSLQEIIRSSLHQPTSP - - PASTRSWSPIGGQIVQERVPRPASLRPR
054 NP_056803.1 EEELSLSLQEIIRASLYQPSTP - - PASSRSWSPVVGQLVQERVVARPASLRPR
055 NP_955564.1 VNMDN - QGHATAERHWGP - - - - - ISADPKPMVMWKDLLTGS
056 YP_009508411.1 D - - - AEIFAVMNSLEKFKIHYLDKEHIVIRTDSCQAIISFYNNKSVDNKPSR
057 YP_009140788.1 D - - - AEIHAVMNSLEKFKIYYLDKRELIIRTDSCQAIISFFNKSAMNNKPSR
058 YP_009508410.1 - - - - -
059 NP_040333.1 QALYLVQHEVWRPLAAAYQEQLDRPVVPHPFRVGDVTWVRRHQTKNLEPR
060 YP_008992013.1 HVIYKEIILTVKYGIKKFEFHLISHTFLINMDNSSFPRIFFDFKNKLLLDKQ
061 NP_041734.1 D - - - AEIYALIKALESFKIFYLDKKHLVVRTDCQAIIVTFYNNKSTHKKPSR
062 NP_056895.1 INLLP - ILKTRWELHHSPPPLAVISSEGGET - - PKGSDKLFYKLPQGNNRR
063 YP_009109689.1 KGLQAVQAQIWAPLAELYRP - - GHSQTSHPFQVGDSDVYVRRHRSQGLEPR
064 YP_002519387.1 HSNEKEVLAVKRTITKFKGYLASSEFLVVRTDNKYFTY - FLRTSIKDDYKQ
065 YP_595725.1 D - - - AEIYGVMNGLEKMRIFYLDKREITVRTDSSAIERFYNNKSAEHKPSSE
066 YP_009508551.1 EEELSLSLQEIIRTSLYHPSTP - - PASSRSWSPVVGQLVQERVVARPASLRPR
067 YP_001497148.1 KGLQAVQAQIWTPLAELYRP - - GHPQTSHPFQVGDSDVYVRRHRSQGLEPR
068 NP_041186.1 LTLDT - EGNSAAQRFWGE - - - - - RSSCKKPLVRWKDPLTNL
069 NP_663784.1 KRRGGIGDMTPAERLINMITTE - QEIQFLQRKNSNFKNFQVYYREGRDQL
070 YP_009508443.1 D - - - AEIHAVMNSLDKFKIHYLDKEEIIIRTDSCQAIISFYNNKSAENKPSR
071 YP_003987465.1 D - - - AEIQAVINSLDKFKIYYLNQKELVVRTDCQAIVSFYKEMANNKPSR
072 NP_861410.1 TVHEKETLAALKTMRKWKAEELLPKFTLRTDSSYVTG - FARHNLKANYNQ
073 YP_009345071.1 D - - - AEISAVLHALETFKIFYLSQPTIIIRTDSCQAIISFYNNKSFNNKPSR
074 YP_009508582.1 EEELSLSLSEVRTSLPSTP - - PASRRSWLPSVGLLVQERVVARPSQLRPK
075 NP_569141.1 EINRKELFALYKCLLAFEPYIVYTRFIVRTDNTQVKWWITR - KVQDSVTT
076 YP_002916057.1 D - - - AEIFAIMNAMEAFKIYYLDKKEMVIRTDSCQAIVSFFNKSASNNKPSR
077 NP_777384.2 INLLP - ILKTRWELHHSPPPLAVISSEGGET - - PKGSDKLFYKLPQGNNRR
078 YP_233110.1 D - - - AEVHAVINSLEKFKIYYLDKKELIIRTDSCQAIIVAFYKKQADHKPSR
079 NP_542258.1 LNVLPSCQKTRWQLHQAQPLPSISENTLP - - PRASPKWYKYKIPGLTNPR
080 YP_009130664.1 D - - - AEIHAVMNSLNSFKIYYLDKKELIIRTDSCQAIISFFNKSASNNKPSR
081 YP_009508566.1 EEELALLSEIIRTTLSTVSPEFPSTAKTWTSPVGLLVQERVYRPSQLRPK
082 YP_006607892.1 HSNEKEIILAVMNTIKKFTGYLTPVKFLIRTDNKNFTH - FLKINLKGDYKQ
083 YP_009506270.1 D - - - AEIQAVINSLDKFKIYYLDKKELVIRTDSCQAIVSFYKKSDDHKPSR
084 NP_042513.1 TVHEKELLAFVNALKKKFQIDLRPVKFIQTDNSWVQG - FLVNKLKETYNR
085 YP_006907834.1 HSNDKETLAVIRTIQKFSIYLTVPVRFVVRTDNTHFY - FLNINLYKGDYSKM
086 YP_004442827.1 E - - - AEIFGVLSLEKFRLLYYIDKAEITVRTDSSAIEKFYNNKSTEHKPSSE
087 YP_009408594.1 D - - - AEIFACMETLDAALKIHYLDKEEITLRTDCQAIISFYNNKSAANNKPSR
088 YP_009508561.1 EEELSLSLAELRSSFLPSASP - - PASSRSWRPSVGLLVQERVVARPSQLRPK
089 NP_056907.1 LNVMSQQWKTRWQLHHGPRLRPIPETPRP - - SRAPTNNWYKYKLPGLTNQR
090 YP_002308474.1 LNVLSSCQKTRWQLHQAQPLPPVPENLPL - - PEPVPKWYKYKIPGLTSSR
091 YP_007761644.1 STFGKELRAIKLALQKFKLFLFEP - FTLYSDNLAVIN - FLKKDLNEKRSQ
092 NP_040550.1 FERGE - NTKTPIQKHWRP - - - - - TVLTEGPPVKIRIETG - E
093 NP_758808.1 D - - - AEITAAMEGLEAFKIHYLDKQKITLRTDCQAIISFCNKTSVNNKPSR
094 YP_009345075.1 D - - - AEISALINGLESFKIHYLDKGEIMVRTDCHAIVSFYNNKLHANNKPSR
095 NP_068729.1 PIAELEVLAVGKVKLEKWRIDLQTRFLLRTDSKYFAG - FCRYNIKTDYRN

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096 NP_047255.1 RALQLVQEEIQRPLAAAYREKLETPVVPHPFKPGDSVWVRRHQTKNLEPR
 097 YP_006273075.1 D--AEIHAVMNTLEKCLKIYYLDKKELIIRTDCAIISFFNKSALNKPSPR
 098 YP_009508888.1 EEELSLLQEIRESLIQPPSP--PASSRSWTPAVGLLVQERVVARPASLRPR
 099 NP_395469.1 PIHELETLAVLQTFRKWKVDLLSKPFILKTDSKYVTG-FLRYKIKANYNQ
 100 YP_009508546.1 EEELSLLQEIIRTSLYQPSTP--PASVRSWSPVVGQLVQERVVARPASLRPR
 101 NP_056762.1 TSLDYEIEAINEALNKFQIY--LDKDFITRTDCEAIVKGIKTEDYKKRSK
 102 YP_009508556.1 EEELSLLQEIIRSSLHQPPSSP--PASSRSWSPSVGQLVQERVVARPASLRPR
 103 NP_569153.1 D--AEIHAVMNSLNNFKIYYLDKSSLCRLRTDCAIISFFNKSNNVKNKPSR
 104 NP_043924.1 THDCMQNKKWEEQLEKVTKAEASHSHWTQQRSPNLEPGCIVLVRKFRTGDAFS
 105 YP_009243641.1 MNLPQGDIIQTTAERHFEE-----KSEPLIHEDVWVRPLMET
 106 YP_004300274.1 EINRKELLSVFKCLYAFEPYIVYNKFILRTDNTQVKYWL TG-KLDNSVTT
 107 NP_056848.1 DINRKELIAVYQGLQSYSLFTCEGNKLVRTDNSQVYVWIKNDTNKKSIEF
 108 YP_006495799.1 D---AEMHGVMSNSLEKFQIYFMDKGEVTIRTDCAIVAFAFYEKLNANKPSR
 109 YP_009508409.1 -----
 110 NP_687035.1 KRKGGIGGISSAERLVNMLTTQ-LELNTLQNQIQKIILNFKVYYREGRPV
 111 NP_045937.2 DTLVTYMNKLTRQLSAYHQVVDQWPSTSLPPGPEPGSWCMLRNPKKSSN
 112 NP_612577.1 HSNEKELLAVIRVIKFSIYLTTPSRFLIRTDNKNFTY-FVNINLKGDRKQ
 113 NP_619548.1 HSNDKELLAVKQVITKFSAYLTPVRFTVRTDNKNFTY-FLRINLKGDSKQ
 114 NP_056880.1 VNMDN-QGHTAAERHWGP-----ISADPKPMVMWKDLLTGS
 115 YP_009121747.1 D--AEINACINSLEKCLKIYYLDKKEITLRTDCAIISFYNNKTSNKNASR
 116 YP_009113237.2 D--AEIHAVMNSLVKFKLYYIGRQKITIRTDCAIISFVNKSANSKPSR
 117 YP_009508408.1 D--AEIHAVMNSLDKFKIHYLDKREILIRTDCAIISFYNNKSMENKPSR
 118 NP_955579.1 -----
 119 YP_009229919.1 D--AEIFAVMEGLKNFKIYYLDRGAVTIRTDCAIISFYNNKSAQNKPSPR
 120 YP_004442833.1 E--AEISGVLCSLKFRLLYYLDKAEITVRTDSCAIERFYNNKSTEHKPSE
 121 NP_862833.2 LTLD A-EGNSAAQRFWGE-----RSSCKKPLVRWKDPLTNL
 122 NP_040563.1 KKRGGIGGHTPYEIIYLESEHTKYQDQLEQQFSKQKIEKWCYVRNRRKE--
 123 YP_443922.1 RKLTLSAALSIIQIRVAEGELTDDQDQPRVKVGDWVRICKVHKRKKWADPR
 124 NP_057933.2 QALYLVQHEVWRPLAAAYQEQLDRPVVPHPYRVGDTVWVRRHQTKNLEPR
 125 YP_009116631.1 D--AEIFAVMESLEKFKIFYMNKDEV TIRTDCAIITFYEKLNAKKPSR
 126 YP_009513249.1 EEELALLQEIRESLQHPVQPP--TCSGWSPYVVGQLVQERVYRPSQLRPK
 127 YP_223871.1 QALQATRSLARATLRDQLPQKEAQQDRTPLEFPQPGDLVFVKKHDFQQLGPR
 128 NP_127504.1 HSTFKEILAVKNGIKKFNFFLIHTNFLVEMDMRAFPKMIRLNPKIIVPNSQ
 129 NP_044929.1 EEQLAVLKEVRDGLLDLYPSPSQTTARSWTPSPGLLVQERVVARPAQLRPK
 130 NP_057860.1 LNVLTNCHKTRWQLHHS PRLQPIPETHS L--SNKQTHWYFYFKLPGLNSRQ
 131 NP_040973.1 KRRGRIGGMAPYELLAQ-QESLRIQDYFSAIPQK-LQAQWIIYKDKDKK
 132 NP_777317.1 D--AEIQAVINS LDKFKIYYLDKKELVIRTDSCAIVATFYKRMADHKPSR
 133 NP_054716.1 EEQLAVLQEIIRTALEQPAQHP--TLPKWTPCPGLLVQERVNRPAQLRPK
 134 YP_001856242.1 -----
 135 NP_954565.2 LNLDD-QNKSAADRFWHN-----NPKKQFAMVKWKDPLDNT
 136 NP_569150.1 D--AEIQAVINS LDKFKIYYLDKKELIIRTDSCAIVSFYKKSSDHKPSR
 137 NP_659397.1 HSNEKELLAVKQVITKFSIYLTTPVCFTVRTDNVNLLKGFMMNKKITGDSKQ
 138 YP_009513211.1 KALEVVRTQIWDQIKEAYRP--GTVAIPHPPFQVGDRLVRRHRS G SLEPR
 139 YP_233107.1 D--AEIQAVIYSLEKFKIYYLDKRELILRTDSCAIVRFYKCEHKKPSR
 140 YP_009109692.1 KGLQAVQAQIWAFLAEILYRP--GHSQTSHPPFQVGDSDVYVRRHRSQGLEPR
 141 NP_057849.4 KKRGGIGGYSAGERIVDIIATD-IQTKELQKQITKIQNFVYRDSRNPL
 142 NP_049560.1 LNVLTNCHKTRWQLHHS PRLQPIPETRSL--SNKQTHWYFYFKLPGLNSRQ
 143 YP_009506267.1 D--AEIHAVMNCMDKFKIHYLDKKELIIRTDCHA IMAFYNNKSSCNKPSR
 144 NP_039820.1 D--AEIQAAIHGLDKFKIYYLDKKELIIRSDCEAIIKFYNNKTNNKPSR
 145 NP_056790.1 KALEIVRTQIWDQIKEVYKP--GTVTIPHPPFQVGDQVLVRRHRPSSLEPR
 146 YP_002321513.1 D--AEIHAAMFTLEKCLKIYYLDKEEIIILRTDCAIISYNNKSNKPSR
 147 NP_955591.1 -----
 148 YP_001956722.2 EEELSLLQEIIRSSLYLPSTP--PASIRAWSPPSVGQLVQERVVARPASLRPR
 149 NP_056902.1 GRE-SMGGQTPWEVFTINQAQVIHEKLL LQQAQS--SKKFCFYKIPGEHD
 150 NP_056886.1 FERGE-NTKTPIQKHWRP-----TVLTEGPPVKIRIETG-E
 151 NP_041261.1 LQLDS-QGRSAADRLWHP-----QTSQQHATVMWRDPLTSV

001 YP_004442836.1 VRWLAFTDYITGTGLDVKFEHIDGKDNVLADTL SRLVK-----
 002 NP_056728.1 GRNIRWQAWLSHYS--FDVEHIKGTDNHFA DFLSREFNKNVNS-----
 003 YP_009508537.1 WRKPTKVLEILNPRTVIIVDHLGQRKPVSIDNLKPTAHQHNG-----
 004 YP_004732983.2 VRWINFCDYITNTGIKVQFEHIK GQDNQLADQLSR-----
 005 YP_009508407.1 -----
 006 NP_040939.1 GKDQPRYCGKGKEPIVVKDIESEKYLVIPIYKDAKFIPPTKEKE-----
 007 YP_003864102.1 WNGPDPVLIWGRGSVCVYSQA HDAARWLPERLVRQINNENQ--SRESYS
 008 YP_009002585.1 LRWINFTDYVTGLGIPVNFQHVKGEDNRLADALSR-----
 009 YP_003284237.1 VRWLTFSDFISGLGVQVSFEHIDGKDNTIANTLSRLVH-----
 010 YP_009268869.1 WLGP TQVLWEGEGAIVIKDKNLEKYLVI AKKDVKFIPQPKEIQTE-----
 011 YP_009506251.1 IRWITFLDYITGLGVSVTIEHIDGKDNH LADTL SR-----
 012 NP_955611.1 -----
 013 YP_008567619.1 VRWIGFTDYITGLGIDVKFQHIDGKENS LADSL SR-----
 014 NP_149413.1 IRWIRFMDYITGAGPTIVIEHIK GKHNGLADIL SRLKA-----

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015 YP_004442824.1 VRWLA FVDYITGTGLNIRFEHIDGKDNILADTLSRLVQ-----
016 YP_001931967.1 GRLVRWQMWFVKHYN--FKVEHIKGTSNFLADYLSREYNEI-----
017 YP_002455786.1 WKGPVQSLQEAAG-AALLQVSDGSPQWIPWRL LKKTVC PKPDDPEPAGHV
018 YP_009109694.1 -----
019 NP_789739.1 -----
020 NP_955619.1 WKGPQEALQEAAG-AALIPVSASSAQWIPWRL LKRAACPRPVG-GPADPK
021 YP_224289.1 VRWLMLTDFISGTGLEIKFEHINGCENILADSL SRLVQ-----
022 YP_009182100.1 GRLIRWQIMLRQYY--LDIEHIPGVSNYLPNALTREMAGCNIIYQIKMVN
023 NP_705927.1 -----
024 YP_009508577.1 WKKPTPILEVVDNDRTVVILDNQGQRRRTV SIDNLKLT PHQD-----
025 YP_004442830.1 VRW IHFMDVISGAGPEIKFEHIK GKENTLADL LSR LN-----
026 NP_758887.1 WKGP AELIWKGE GAVVIKEGTDLKVVPRRKAKIIRDYG--KTVDSDPNVE
027 YP_009508406.1 -----
028 YP_610965.1 VRWLAFTDFITGLGIDVQFEHIKGEQNV LADTLSRLTFVLL-----
029 YP_001931961.1 GRLVRWQQWLSRYS--FKVEHITGVKNIFADFLTREFQSKNSIEL-----
030 YP_241114.1 WYGPD PVLIWGRGHVCVFPQDAEAPRWIPERLVR AAEELPDISNATHDIE
031 YP_006732334.1 -----
032 YP_009041481.1 VRWLAFCDYINGNGLSVKFEHIKGEENV LADQLSR-----
033 YP_001036293.1 VRWIAFND FVTGLGIDVTFEHI D GKDNQLADSLSR-----
034 YP_605811.1 TRWLMLIDYITGLGINVKFEHI D GKENV LADTLSRLVQ-----
035 NP_955577.1 WKGP--HIVLLTTP TALKVDG--VAAWIHASHVKAAGPTTNQD LSDSPSS
036 YP_003208050.1 VRWISFTDFITGLGIKVNIEHIDGKDNV LADTLSRLIFKIQ-----
037 NP_789740.1 WKGP AKLLWKGE GAVVIQD NSDIKVVPRRKAKIIRDYG--KQMAGDDCVA
038 YP_004442839.1 TRWLMLIDYITGLGINVKFEHI D GKENV LADTLSRLVQ-----
039 YP_009507791.1 WKGP TQVYYWGE GAVLIK DEN-NKYLLIPRRRI RRVPA PKDLTQEDGFNQ
040 YP_004581513.1 ARWISFTDYITGTGIKIRIEHIDGKDNILADYLSR-----
041 NP_043933.1 SRLVRWQMALREYS--FDIEHVS GQKNV LADIMTRELAKT-----
042 YP_009507248.1 RQKVAPRYTQD T V LADLP IHIYTSKRG P VAKARLKRVPKGN-----
043 YP_002117531.1 VRWLTFTDFITGIGIPVRF E H I S G K D N L L A D T L S R L V L -----
044 YP_004347415.1 KNVKGILAKIIMYD--FDIEI IDGKT NIVADFLSRNGTDDATITG-----
045 NP_056891.1 WHGPD PVLIWGRGSVCVYSQTYDAARWLPERLVRQVSNNNQ--SRE--
046 YP_009513242.1 WHKPTSILEVVNPR T V V I L D H L G N R R T V S V D N L K L T A H Q N -----
047 YP_009352866.1 VRWLAFCDYINGNGLCVKFEHI KGEENFLADHLSR-----
048 YP_009165750.1 GRLIRWQMWF S RYS--FTVEHLP GNKNVFADFLTREFNN-----
049 NP_040840.1 WQGPTQVLWGGDGAIVVKDRGTDRYLVIAN KDVKFIPPPKEIQKE-----
050 YP_004222728.1 WEKGWNVLWGRGYAAVKNRD TDKVIVWP SRKV KPDITQKDEVTKKDEAS
051 YP_009506264.1 VRWLTFSDFITGLGVVTFEHI D GKDNV LADTLSRLV-----
052 YP_567050.1 WKGPLQSLQEAAG-AALLSID-GSPQWIPWRL LKKTVC PRPDGSELVAHA
053 YP_009508571.1 WHKPSRIVDILNERTVVI V D H L G N N R T V S I D N L K L T P H Q -----
054 NP_056803.1 WHKPS TVLEV LNPR T V V I L D H L G N N R T V S I D N L K P T S H Q -----
055 NP_955564.1 WKGP D V L I T A G R G Y A C V F P Q D A E T P I W V P D R F I R P F T E R K E A T P T P G T A E
056 YP_009508411.1 VRWVAFNDYLTGLGIEVKIEHIQG V H N T L A D A L S R -----
057 YP_009140788.1 VRWISFTDFITGLGINVEFEHI D GKDNV LADSLSR-----
058 YP_009508410.1 -----
059 NP_040333.1 WKGP--YTVLLTTP TALKVDG--IAAWIHAAHVKAADTRI-----EP
060 YP_008992013.1 LLNLK T W F A K ---YDFTVQH I K G N Q N L I P D F L T R P A I N K P S L I S S I Q T I
061 NP_041734.1 IRWITFSDYITGLGVPTIEHIDGKENQLADTLSR-----
062 NP_056895.1 WLGPLPALVEASG-GALLATN--PPVWVPWRL LKAFKCPKNDGPEDAHNR
063 YP_009109689.1 WKGP--YIVLLTTP TAIKVDG--IATWIHASHAKAAPGTP-----GP
064 YP_002519387.1 GRLIRWQQWF S H Y K --FNVEHLAGTHNFTADSLTREFANKPP-----
065 YP_595725.1 IRWIRFMDYITGAGPEIVIEHIK GKSNGLADIL SRLKA-----
066 YP_009508551.1 WHKPS TVLKV LNPR T V V I L D H L G N N R T V S I D N L K P T S H Q -----
067 YP_001497148.1 WKGP--YIVLLTTP TAIKVDG--IAAWIHASHAKAAPKTP-----GP
068 NP_041186.1 WYGPD PVLIWGRGHVCVFPQDAEAPRWIPERLVR AAEELPDASDATHDPE
069 NP_663784.1 WKGP GELLWKGE GAVIVKVGTDIKVVP RRKAKIIRDYGG RQELDSSPHLE
070 YP_009508443.1 VRWIAFNDFITGLGISVHFEHI D GKHNQLADALS R-----
071 YP_003987465.1 VRWLTFSDFITGIGVPVKFEHI D GEDNLLADTLSRLV-----
072 NP_861410.1 GRLVRWQLEFLQYP--ARVEYIKGEKNSLADTLTREWKQ-----
073 YP_009345071.1 LRWIRLSDWLTGTGVAYKFEHI KGE LNNLADHLSRNPEIALT-----
074 YP_009508582.1 WRKPTPILEVVDNDRTVVILDNQGQRRRTV SIDNLKLT PHQD-----
075 NP_569141.1 KEIRRLVLN I L N F T --FTIEI INTNKNVVADYLSRQSYPN-----
076 YP_002916057.1 ARWISFTDYITGTGIKIRIEHIDGKDN T LADYLSR-----
077 NP_777384.2 WLGPLPALVEASG-GALLATN--PPVWVPWRL LKAFKCPKNDGPEDAHNR
078 YP_233110.1 TRWLMLIDYITGLGINVKFEHI D GKENV LADTLSRLVQ-----
079 NP_542258.1 WSGPVQSLKEAAG-AALIPVG-GSHLWIPWRL LKRGICPRPESNAVADPE
080 YP_009130664.1 VRWVSFTDFITGTGLEIRFQHIDEKDNALADALS R-----
081 YP_009508566.1 WKKPTPILEV LNERTVVIDNN-GQRRRTVSVDNLKYTPHQKD-----
082 YP_006607892.1 GRLVRWQMWF S RYV--FEVEHLSGDKNVFADFLTREFHY-----
083 YP_009506270.1 VRWLAFTDYITGTGLEVKFEHI D GKDNV LADTLSRLVK-----
084 NP_042513.1 GRLARWSMFIQQFD--FISLHIAGKENYLADTLTREWK TSSR-----
085 YP_006907834.1 GRNIRWQGWLQNYV--FDVDHIKGTNNCLADFLSREFNGA-----
086 YP_004442827.1 IRWIKFMDFISGAGPEIKFEHI K GKDN T LADL LSR LN-----
087 YP_009408594.1 VRWLN FADFITGTGVKIVFEHI D GRQNV LADSL SRLIT YMS-----

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088 YP_009508561.1 WKKPVIIICELINDRTVVIVDKAGNKRRTVSIIDNLKLTTPHQKNS - - - - -
089 NP_056907.1 WKGPLQSLQEAAG - AALLSID - GSPQWIPWRL LKKTVCPRPDGSELVAHA
090 YP_002308474.1 WSGPVQSVKEAAG - AALIPVG - TRHIWIPWRL LKRGACPRPGDSVTTESK
091 YP_007761644.1 -REIRDKLDILQYQGWM TLKHIPGTKNV LADALTRGLSN - - - - -
092 NP_040550.1 WEKGWNVLVWGRGYAAVKNRDTDKVIWVPSRKVKPDVTQKDEVTKKDEAS
093 NP_758808.1 VRWLKFIIDYITNTGIDVKFEHIDA KNNVLADT LSR L V N - T L Q D L P - - W L D
094 YP_009345075.1 LRWAKLLDYLTGTGVQIT LEHIDGRDNILADQLSRLSSYIS - - - - -
095 NP_068729.1 GRLIRWQDLRLQAYQ - - PYVELIKSENPFADTLTREWSKPPSS - - - - -
096 NP_047255.1 WKG P - - H I V L L T T P T A L K V D G - - V A A W I H A S H V K A A G P T T N Q D L S D S P S S
097 YP_006273075.1 VRWVAFTDFITGIGINVEFEHIDGRDNVLADSLSR - - - - -
098 YP_009508888.1 WHKPVKILEVLNPRTVVILDLHLGNRRTVSV DNLKLTANQ - - - - -
099 NP_395469.1 GRFIRWQLELSQFN - - YRTFYIKGSENYGPD TLTREWKEL - - - - -
100 YP_009508546.1 WHK P S T V L E V L N P R T V V I L D H L G N N R T V S I D N L K P T S H Q - - - - -
101 NP_056762.1 TRWIKLRDNL LK D G Y K P T F E H I K G N K N F L P N F L S R E G D F I L K C L Q N P D S T
102 YP_009508556.1 WHRPTTVLEV V N P R T V I I L D H L G N R R T V S V D N L K L T A H Q D - - - - -
103 NP_569153.1 VRWIAFTDFLTGLGIPVNI EHIDGKNNHLADALSR - - - - -
104 NP_043924.1 PKWEGPYVITETTKYAAKVAQMSDKVTQHSGWIHRTHLVLFPSQNKRWAD
105 YP_009243641.1 EWVPAQLLVKGKGYGLVLLQNGK - QQWL PACRIQVRRTTGQETIATASAV
106 YP_004300274.1 KEIRRLVVKINCYN - - F D V V V I K S K D N C F A D Y L S R E V K K - - - - -
107 NP_056848.1 RNI KY L L A K I A V Y N - - F E I Q L I D G K T N I I A D Y L S R Y N S S D T D G R Y D E A N T
108 YP_006495799.1 VRWLNFCDYITNTGVKVVFEHIK GKDNVLADT LSR - - - - -
109 YP_009508409.1 - - - - -
110 NP_687035.1 WKGPARLIWKGE GAVVIKEGEDIKVVP RRKAKI IKDYGERKTMDSEGSME
111 NP_045937.2 WEGPFLIILLSTPTAVKVEGRPTWIHL DHCKLLRSSSLSSSLG - - - - -
112 NP_612577.1 GRLVRWQM WLSQYD - - F D V E H I A G T K N V F A D F L Q E N T L T N Y V - - - - -
113 NP_619548.1 GRLVRWQN WFSKYQ - - F D V E H L E G V K N V L A D C L T R D F N A - - - - -
114 NP_056880.1 WKGPDVLITAGRGYACVFPQDAETPIWVPDRFIRPFTERKEATPTPGTAE
115 YP_009121747.1 VRWLKFSDIITGTGVTINMEHIDGKNNVLADSLSRMVKLCFTGCT - - EQE
116 YP_009113237.2 VRWISFTDFITGCGSEVRFEHIEGKENQLADHL SR - - - - -
117 YP_009508408.1 IRWIAFSDFISGLGISVHFEHIEGRHNQLADALSR - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 VRWLGF L D F I T G S G V D V T F E H V E G K N N M L A D A L S R L T S N L C Y A E C P E N Q K
120 YP_004442833.1 VRWLKFMDFISGAGPEIKFEHIK GKDN T L A D L L S R L N - - - - -
121 NP_862833.2 WYGPD P V L I W G R G H V C V F P Q D A E A P R W I P E R L V R A A E E F P D T S N A S N D T E
122 NP_040563.1 WKG P Y K V L W D G D G A A V I E E E G K T A L Y P H R H M R F I P P P D S D I Q D G S S - - - -
123 NP_443922.1 WTGP - - Y E V K E V T S H S V Q V K G K S G A P W H H L T H C T P A P A P D R - - - - -
124 NP_057933.2 WKG P - - Y T V L L T T P T A L K V D G - - I A A W I H A A H V K A A D P G G - - - - - G P
125 YP_009116631.1 VRWLAFCDYITNSGVRMKFEHIK GKDNQLADNLSR - - - - -
126 YP_009513249.1 WRKPTKVLEILNPRTVIIVDHLGQRKS V S I D N L K P T A H Q H N G - - - - -
127 YP_223871.1 WDGP - - Y T V V L S T P T A V K V A G - - K T P W I H Y S R L K K A P D N Q - - - - -
128 NP_127504.1 LLRWAQWFSP - - - - Y Q F E V K H L K G K D N I L A D F L S R P H E F S Q R L K N S P K V L
129 NP_044929.1 WRKPTPIKKVLNERTV I I D H L G - Q D K V V S I D N L K P A A H Q K L A - - - - -
130 NP_057860.1 WKG P Q E A L Q E A A G - A A L I P V S A S S A Q W I P W R L L K R A A C P R P V G - G P A D P K
131 NP_040973.1 WKG P M R V E Y W G Q G S V L L K D E E - K G Y F L I P R R H I R R V P E P C A L P E G D E - - -
132 NP_777317.1 VRWLAFTDYITGTGLDIKFEHIDGKENILADT LSR L V N - - - - -
133 NP_054716.1 WKKPTPILKVLNPKTVV I A G P G G Q E R I V S I D N L K K T P H H D T S - - - - -
134 YP_001856242.1 - - - - -
135 NP_954565.2 WHGPD P V L I W G R G S V C V Y S Q T Y D A A R W L P E R L V R Q V S N N N Q - - - S R E - - -
136 NP_569150.1 VRWLAFTDYITGTGLEIKFEHIDGKDNVLADT LSR L V K - - - - -
137 NP_659397.1 GRLIRWQM WFSHYT - - F K V D H L K G E Q N V L A D Y L T R E F H N G N V I H D D - - - -
138 YP_009513211.1 WKG P - - Y L V L L T T P T A V K V D G - - I A A W V H A S H L K P A P P G A P - - - - -
139 YP_233107.1 VRWMTLT D Y I S G C G V K V Y F E H I D G K D N T L A D E L S R L V Q A - - - - -
140 YP_009109692.1 WKG P - - Y I V L L T T P T A I K V D G - - I A T W I H A S H A K A A P G T P - - - - - G P
141 NP_057849.4 WKG P A K L L W K G E G A V V I Q D N S D I K V V P R R K A K I I R D Y G - - K Q M A G D D C V A
142 NP_049560.1 WKG P Q E A L Q E A A G - P A L I P V I A S S A Q W I P W R L L K R A A C P R P V G - A P P I P K
143 YP_009506267.1 VRWIAFNDFLTGLGIPVTIEHIDGKNNVLADALSR - - - - -
144 NP_039820.1 VRWLTFSDFLTGLGITVTFEHIDGKHNG LADALSRMIN - - - - -
145 NP_056790.1 WKG P - - Y L V L L T T P T A V K V D G - - I A A W V H A S H L K P A P P S A P - - - - -
146 YP_002321513.1 ARWIAFTDYITNTGTNIKFEHIEGKLNVLADALSR - - - - -
147 NP_955591.1 - - - - -
148 YP_001956722.2 WHKPTPVLEV INPRAVVI L D H L G N R R T V S V D N L K L T A Y Q K - - - - -
149 NP_056902.1 WKG P T R V L W K G D G A V V V N D E G - K G I I A V P L T R T K L L I K P N - - - - -
150 NP_056886.1 WEKGWNVLVWGRGYAAVKNRDTDKVIWVPSRKVKPDITQKDEVTKKDEAS
151 NP_041261.1 WKGPD P V L I W G R G S A C I Y D Q K E D G P R W L P E R L I R H I N N Q T A P L C D R P S N P

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001 YP_004442836.1 - - - I I C H K E K H P S E T I L I N V A E E I L Q K G S I G A K R K L G E M I S G Y E A W M T R -
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - T R T C D D P E G M D G M E C S Q T T T - - - - -
004 YP_004732983.2 - - - - - L A Q N V C A I Q V I P E S A - - - - - H E A L S I I L E Q D - - - - -
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -

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007 YP_003864102.1 P-----
008 YP_009002585.1 -----LISVIFEAGQQWQE-----ESTRMQHLLTQLIGE-----
009 YP_003284237.1 ---ILIKEEDQELINKIMVLWEKKTE-----
010 YP_009268869.1 -----
011 YP_009506251.1 -----LVWSQFP-----IEPPEEEPLKSQ-----
012 NP_955611.1 -----
013 YP_008567619.1 -----LTCSLIR-QWHHLEP-----VITTMEEAALVQE Q-----
014 NP_149413.1 ---KLAEA-PSEEVVLLAKALKEIAYYPDHPQVPKLI EWGKQILD PFPKF
015 YP_004442824.1 ---IIIHKEAHPAMSI LIDAAEEVVRKYNPHS AARLGRMIEAVKDWQDNQ
016 YP_001931967.1 -----
017 YP_002455786.1 ETDHQHHG-----
018 YP_009109694.1 -----
019 NP_789739.1 -----
020 NP_955619.1 EKDHQHHG-----
021 YP_224289.1 ---TLLQG WQH QH L N G I L L A L E E L Y Q K P N P E V A K K I G Q I I M K V L E-----
022 YP_009182100.1 HGKAPRMDLRDVITSKARARENQ Q L E N E D I H W K Q H L A S T S R S F A K R K D V P
023 NP_705927.1 -----
024 YP_009508577.1 ---GTSNEPDGMDPLEQKKKYDNHDI-----
025 YP_004442830.1 ---KVLKVEASTEMITLARALREIDYDQDHPAFKKIHEYSQKV KWP-----
026 NP_758887.1 A-----
027 YP_009508406.1 -----
028 YP_610965.1 -QVPDPFSPPI TELCQALKEIQATSTTPVG VWN--RFQTQICKT-----
029 YP_001931961.1 -----
030 YP_241114.1 -----
031 YP_006732334.1 -----
032 YP_009041481.1 -----ITALLFVQEWPTQEE-----VEELGTF LTAIDDT-----
033 YP_001036293.1 -----LVTS LVRHEGK WQQQ-----RKALV IIEEMMQK-----
034 YP_605811.1 ---VLITRVHHPAETQLVEAVMEVLSNPKKEALDKVNHFIFLTQQWIAEQ
035 NP_955577.1 DDPSRWKVQRTQNPLKIRLSRGT-----
036 YP_003208050.1 -EEGALMALERRPEWEPRPPPRVDNNSPMNI IYGLIHQDQQELIN-----
037 NP_789740.1 SRQDED-----
038 YP_004442839.1 ---VLVTKIHHPAEEQLVD A V L E V L K N P K E V A I K K V N H F I L L T E R W I A G F
039 YP_009507791.1 TEQESNNA-----
040 YP_004581513.1 -----LVFSLIIAEWKTQ-EKSIAPLQAPRITLTKXSCSKQQEPLL-----
041 NP_043933.1 -----
042 YP_009507248.1 ---TLLQDSAATDNTCDASSRDKT-----
043 YP_002117531.1 ---CMVQGWTHDGIKAITPAITAIKDDSDSARVAAIIMKVL P-----
044 YP_004347415.1 -----
045 NP_056891.1 -----
046 YP_009513242.1 --NGTTNDSGTMAPVEEDES GSPSS-----
047 YP_009352866.1 -----ITALLVTGPWPTEEE-----AEELGTF LAVADD T-----
048 YP_009165750.1 -----
049 NP_040840.1 -----
050 YP_004222728.1 PLFAGISDWAPWKSEQEGL-----
051 YP_009506264.1 ---MFLQED-----KYDDL I Q K A L K-----
052 YP_567050.1 ATDHQHHG-----
053 YP_009508571.1 --DGTSNV SSTMDHLE-----
054 NP_056803.1 --NGTTNDTATMDHLEQNEQSS-----
055 NP_955564.1 KTPPRDEKDQQESPKNESSPHQREDGLATSAGVDLRSGGGP-----
056 YP_009508411.1 -----LVGSLVFHTEAWN SR-----KEALMVAEACINK-----
057 YP_009140788.1 -----LINSFFLT EWN-----QLKEQSMMELEE-----
058 YP_009508410.1 -----
059 NP_040333.1 PSESTWRVQRSQNPLKIRLTRGTS-----
060 YP_008992013.1 PVIALNRQLPFKALTQRHFPMNISFQSAYQLQ-----
061 NP_041734.1 ---LVYT T W N Q S-----QTHQPEEEEELEKSQ-----
062 NP_056895.1 SSDG-----
063 YP_009109689.1 TSSGTWRRLRRSE D P L K I R L S R T-----
064 YP_002519387.1 -----
065 YP_595725.1 ---KLAQNEPTEEMILLTQAIREV I P Y P D H P Y T E Q L R E W G N K I L D P F P T F
066 YP_009508551.1 --NGTTNDTATMDHLEQNE-----
067 YP_001497148.1 ETPKTWKLRSENPLKIRLSRV-----
068 NP_041186.1 -----
069 NP_663784.1 GAREDGEMACPCQVPEIQNKRP R G G A L C S P P Q G G M G M V D L Q Q G N I P T T R K
070 YP_009508443.1 -----LVGALI QNSEKWSQR-----THIIRAMGLAIEQ-----
071 YP_003987465.1 ---MMLHEEAYTEPLQRILPLLSKKE-----
072 NP_861410.1 -----
073 YP_009345071.1 ---KLVSTLISEWQDLPEP-----IYHLLSETLSMGEE-----
074 YP_009508582.1 ---GTSNEPNGVDPLEQEKEHDNNDI-----
075 NP_569141.1 -----
076 YP_002916057.1 -----LVFSLIIAEWKTQGRRSTAHHQASMAQTIGSCSKQQEPLL-----
077 NP_777384.2 SSDG-----
078 YP_233110.1 ---VLITKVHHPAETQLVEAVMEVISNPKKEALDKVNHFIFLTQQWIAER
079 NP_542258.1 TKDHQ L H G-----

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080 YP_009130664.1  - - - - - L V H G L V S K P D F H S D Q - - - - - T I L L V E L A I A E A Q - - - - -
081 YP_009508566.1  - - - G E T Y D S S - - - - -
082 YP_006607892.1  - - - - -
083 YP_009506270.1  - - - I I F H Q E K H Q S E E I L I N A V E K T L K K G D A S T R Q K I N D L V K R Y E S W M N T G
084 NP_042513.1      - - - - -
085 YP_006907834.1  - - - - -
086 YP_004442827.1  - - - R A L K A E A T I E L V T L A Q A L K E I D Y D Q D H I A F E K I K R Y A E N I K W P - - - -
087 YP_009408594.1  - - - - - T E W Q T L E E A D Q A A Q A Q L S I Q T N L L L - - - - -
088 YP_009508561.1  - - H G S T P D I T G M D V M E Q E E E P G N M D - - - - -
089 NP_056907.1      A T D H Q H H G - - - - -
090 YP_002308474.1  H K D L Q L H G - - - - -
091 YP_007761644.1  - - - - -
092 NP_040550.1      P L F A G I S D W I P W E D E Q E G L Q G E T A S N K Q E R P G E D T L A A N E S - - - - -
093 NP_758808.1      E P H Q D Q T V S L M Q E I E D A P L E I K Q R - - - S L T C L Q R L I C R S F M E D S T - - E E
094 YP_009345075.1  - K E G K L V T S Q Q Q Q A L K V L D Q V Y Q A K D H Q R W K D P A L I A C L H Q L F P X - - - -
095 NP_068729.1      - - - - -
096 NP_047255.1      D D P S R W K V Q R T Q N P L K I R L S R G T - - - - -
097 YP_006273075.1  - - - - - L I N S F F L T E W S - - - - - L K K E E A V A E L E K - - - - -
098 YP_009508888.1  - - N G S T N D S T T M A G L G Q N A E S Q - - - - -
099 NP_395469.1      - - - - -
100 YP_009508546.1  - - N G T T N D I T T M D H L E Q N E - - - - -
101 NP_056762.1      E S Y S I D S S E S I P L Y I D S K E S H S I E S D D S I P L Y R D K L L P L V E R L K E K S A - -
102 YP_009508556.1  - - N G T T N D S G T M A P V E K D E S G P S S S - - - - -
103 NP_569153.1      - - - - - L V T G F V F A E P Q C Q D K F Q D D L G K L E A A L Q E K K E A P Q A M - - - - -
104 NP_043924.1      P G N P G N Q P D E D C T G K K G T V S T A D M S P T T S T T R D R G I N M G T E Q T H R R R S P R
105 YP_009243641.1  - - - - -
106 YP_004300274.1  - - - - -
107 NP_056848.1      - - - - -
108 YP_006495799.1  - - - - - L T Q T L A A V R E M P A E Q - - - - - E E I L R Q A L N N T E V Q - - - - -
109 YP_009508409.1  - - - - -
110 NP_687035.1      G V R E A N K Q M E G D S D L Q D Q E - - - - -
111 NP_045937.2      - - - G P V N Q L L S - - - - -
112 NP_612577.1      - - - - -
113 NP_619548.1      - - - - -
114 NP_056880.1      K T P P R D E K D Q Q E S P K N E S S P H Q R E D G L A T S A G V D L R S G G G P - - - - -
115 YP_009121747.1  T E V L E K G L A A M G E I F E E N V K L S N E K N G Y E E I I Q I S S Y C Q K F I E D N S R L K N
116 YP_009113237.2  - - - - - L I N T L I L Y D E H C T Q R - - - - - Q E L N L L I P A I E E N K - - - - -
117 YP_009508408.1  - - - - - L V L S L V Q V P D E W H H Q - - - - - Q G L T S K I E D A L E Q - - - - -
118 NP_955579.1      - - - - -
119 YP_009229919.1  E E L A T L A E K A W N E L S D G T K A G Y N T A K L T M E L A H L M M T W M D E L S M S S R E S T
120 YP_004442833.1  - - - A A L K A E P T Q E L I T L A K A L K E I E Y D E D N P V F K K I K E Y S E K I K W P - - - -
121 NP_862833.2      - - - - -
122 NP_040563.1      - - - - -
123 YP_443922.1      - T L T E V R S D L I A S N L A I N S E S P D N - - - - -
124 NP_057933.2      S S R L T W R V Q R S Q N P L K I R L T R E A P - - - - -
125 YP_009116631.1  - - - - - L T Q L I T F V K W L P T E L - - - - - K D L A A E L T R K D D G T - - - - -
126 YP_009513249.1  - - T R T C D D P E G M D G M E C S Q T T T - - - - -
127 YP_223871.1      - - - E E W T V S P T S D P L R V K L T R R A K P - - - - -
128 NP_127504.1      M F Q R R T R S S S T K S K A D S S Q S T G S S Y K L S H N L P E N P P E V F N L D Y P W D T S V F
129 NP_044929.1      - - Q T P D S A E I C P S A T P C P P N T S L W Y D L D T G T W T C Q R C G Y Q C P D K Y H Q P Q C
130 NP_057860.1      E K D H Q H H G - - - - -
131 NP_040973.1      - - - - -
132 NP_777317.1      - - - F L C F A G T N E E V K E L A V Q A I T Q E Q K - N P M G L K R L G Q I L Q H K E E R V H Y L
133 NP_054716.1      - - N D S T R M D A V E V P T E C Q - - - - -
134 YP_001856242.1  - - - - -
135 NP_954565.2      - - - - -
136 NP_569150.1      - - - I I L H P E K H Q S E G V L I N A V E E V F H K G N T D A K Q R V N D V V K R Y E D W L S K G
137 NP_659397.1      - - - - -
138 YP_009513211.1  - - D E S W E L E K T D H P L K L R V R R R R N E S T A - - - - -
139 YP_233107.1      - - - I L I N K E E S P I I L S L I K A T T E V L Q K E N P I S R S R L A L C I S R A L G - - - -
140 YP_009109692.1  T S S G T W R L R R S E D P L K I R L S R T - - - - -
141 NP_057849.4      S R Q D E D - - - - -
142 NP_049560.1      K K T T N T M G K F L T T L I L F F Q F C P L I L G D Y S P S C C T L T I G V S S Y H S K P C N P A
143 YP_009506267.1  - - - - - L V C S I I K N P V Y W Q S K - - - - - E E L L K Q T E E A L E Q - - - - -
144 NP_039820.1      - - - - - F I V E K N D E S P Y R F T S S V E D A L K V C N - - - - -
145 NP_056790.1      - - D E S W E L E K T D H P L K L R I R R R R D E S A K - - - - -
146 YP_002321513.1  - - - - - I T C Y L C T A G S Q G C L A P E E - - - - - D D H M K V M E T L P E E I N - - - -
147 NP_955591.1      - - - - -
148 YP_001956722.2  - - D G T P N E S A A V V A M E K D E - - - - -
149 NP_056902.1      - - - - -
150 NP_056886.1      P L F A G I S D W I P W E D E Q E G L Q G E T A S N K Q E R P G E D T L A A N E S - - - - -
151 NP_041261.1      N T A P G P K G S P - - - - -

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001 YP_004442836.1 IQEHKIKTLTLIEK - - - - - P I F K C G C R - - - -
002 NP_056728.1 - - - - -
003 YP_009508537.1 - - - - E T S V D S S - - - - -
004 YP_004732983.2 - - - - C T A Q E L M A Q - - - - - F N S M L Q A N L R - - - -
005 YP_009508407.1 - - - - -
006 NP_040939.1 - - - - -
007 YP_003864102.1 - - - - -
008 YP_009002585.1 - - - H Y K F E A S G K K - - - - - H H Q L K E T L T A L I T S - - - -
009 YP_003284237.1 - - - - - D V M H I N D N - - - - - P L L V C G C G - - - -
010 YP_009268869.1 - - - - -
011 YP_009506251.1 - - - Q L N Y W E - - - - - Q V T H T A W P M M A S - - - -
012 NP_955611.1 - - - - -
013 YP_008567619.1 - - - Q N P T P G S T K A - - - - - L K Q A L H Q A N Q W L S S - - - -
014 NP_149413.1 K K D M F E R T E H I M M A - - - - - T Q E P T L L C G C R - - - -
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018 YP_009109694.1 - - - - -
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020 NP_955619.1 - - - - -
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127 YP_223871.1 - - - - -
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073 YP_009345071.1 Q G I M L G E T I - - - - -
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 Y K L K E G Y S E - - - - -
077 NP_777384.2 - - - - -
078 YP_233110.1 A T Y T R I G L E - - - - -
079 NP_542258.1 - - - - -
080 YP_009130664.1 - - - - -
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 - - - - -
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 I K M K L E D - - - - - I Q
087 YP_009408594.1 P K Y W R P R K T - - - - -
088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 G D W L P E A R R - - - - -
094 YP_009345075.1 P A S R Q K T T M - - - - -
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - -
097 YP_006273075.1 G R F T H L K Q P - - - - -
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 D N W W P S T S T - - - - -
104 NP_043924.1 - - - - -
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - -
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 - - - - -
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 S S W A K S Q S K P K E S - - - - - K C
116 YP_009113237.2 - - D K Q S R T G - - - - -
117 YP_009508408.1 - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 K G W S R P T R R - - - - -
120 YP_004442833.1 V E L R L A K - - - - - I F
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 S S P E S T L R Q Q R P E - - - - - Q P
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -

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001	YP_004442836.1	SE-----EPEGHNEGC-----TIE
002	NP_056728.1	-----
003	YP_009508537.1	-----
004	YP_004732983.2	-----
005	YP_009508407.1	-----
006	NP_040939.1	-----
007	YP_003864102.1	-----
008	YP_009002585.1	-----RRTTSGSQRQETTG-----PVT
009	YP_003284237.1	RYHEELQEKKLDLMQINEALEA-----AED
010	YP_009268869.1	-----
011	YP_009506251.1	-----SATTCQALQQGTTG-----RLT
012	NP_955611.1	-----
013	YP_008567619.1	-----
014	NP_149413.1	HDDYEEHRSSVIDRPRPTDDHFRPWGDVITYWLNKEAEECHTRGDNVEGAEE
015	YP_004442824.1	KETMGEDYNESEQEVIRNNQAT-----AIE
016	YP_001931967.1	-----
017	YP_002455786.1	-----
018	YP_009109694.1	-----
019	NP_789739.1	-----
020	NP_955619.1	-----
021	YP_224289.1	EMAREEGQNLEEDYWENVFNE-----VFD
022	YP_009182100.1	FDNNHTMLKCLKCPPINKLTPEFMDWFENGFIQSFAALKRTSDYSLLPTDFI
023	NP_705927.1	-----
024	YP_009508577.1	-----
025	YP_004442830.1	AEQD-EEFEELCEIYKELEQQE-----ILRNQATD
026	NP_758887.1	-----
027	YP_009508406.1	-----
028	YP_610965.1	-----IMHGATHHTPTCGTS-----MNS
029	YP_001931961.1	-----
030	YP_241114.1	-----
031	YP_006732334.1	-----
032	YP_009041481.1	QLTRSSARNWRPPGDAPVDETM-----PTG
033	YP_001036293.1	-----
034	YP_605811.1	ALSLEDWFEEPEPDPPDPVDRQ-----KIE
035	NP_955577.1	-----
036	YP_003208050.1	-----TDAWPNYLEDVNV-----HDV
037	NP_789740.1	-----
038	YP_004442839.1	SLLLNMDWPDEESDPPDSPSPA-----RTE
039	YP_009507791.1	-----
040	YP_004581513.1	-----KACQEMWVHNSKQA-----DRP
041	NP_043933.1	-----
042	YP_009507248.1	-----
043	YP_002117531.1	RQQLDNIKRQLDSDKRNRAHSI-----
044	YP_004347415.1	-----
045	NP_056891.1	-----
046	YP_009513242.1	-----

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047 YP_009352866.1 Q L T P S S V K S W K P P K A V Q V A G I I - - - - - T T E
048 YP_009165750.1 - - - - -
049 NP_040840.1 - - - - -
050 YP_004222728.1 - - - - -
051 YP_009506264.1 - - - - -
052 YP_567050.1 - - - - -
053 YP_009508571.1 - - - - -
054 NP_056803.1 - - - - -
055 NP_955564.1 - - - - -
056 YP_009508411.1 - - - - -
057 YP_009140788.1 - - - - - N A N H G V H Q D E T E I I - - - - - G P T
058 YP_009508410.1 - - - - -
059 NP_040333.1 - - - - -
060 YP_008992013.1 - - - - -
061 NP_041734.1 - - - - - R E T I W P L L P L E T T G - - - - - L A T
062 NP_056895.1 - - - - -
063 YP_009109689.1 - - - - -
064 YP_002519387.1 - - - - -
065 YP_595725.1 T - - M E E E L M K E V T K L K I E E Q E F E E Y - - - - - Q A T P R A M S P V A A E
066 YP_009508551.1 - - - - -
067 YP_001497148.1 - - - - -
068 NP_041186.1 - - - - -
069 NP_663784.1 - - - - -
070 YP_009508443.1 - - - - -
071 YP_003987465.1 R M E E L F D R L Q F N - - - T N E P H G G - - - - - P L E
072 NP_861410.1 - - - - -
073 YP_009345071.1 - - - - - S P T S K E K P K P P T I T - - - - - S V S
074 YP_009508582.1 - - - - -
075 NP_569141.1 - - - - -
076 YP_002916057.1 - - - - - M G S Q E M S V H N L Q L I - - - - - D S P
077 NP_777384.2 - - - - -
078 YP_233110.1 A L N L E D W F E E P E P D P P N P V D R Q - - - - - R I E
079 NP_542258.1 - - - - -
080 YP_009130664.1 - - - - -
081 YP_009508566.1 - - - - -
082 YP_006607892.1 - - - - -
083 YP_009506270.1 - - - - -
084 NP_042513.1 - - - - -
085 YP_006907834.1 - - - - -
086 YP_004442827.1 K E Q N P Y D F E D W D D L L K E T - - - - - Q E E Y K L E
087 YP_009408594.1 - - - - - I F K C R Q - - - - -
088 YP_009508561.1 - - - - -
089 NP_056907.1 - - - - -
090 YP_002308474.1 - - - - -
091 YP_007761644.1 - - - - -
092 NP_040550.1 - - - - -
093 NP_758808.1 - - - - - D L L Q I Q L A K E I I E K - - - - - V R E
094 YP_009345075.1 - - - - - L G T T K K H S N M H R V R - - - - - F - -
095 NP_068729.1 - - - - -
096 NP_047255.1 - - - - -
097 YP_006273075.1 - - - - - N V H H G V H P E G M G I I - - - - - G L I
098 YP_009508888.1 - - - - -
099 NP_395469.1 - - - - -
100 YP_009508546.1 - - - - -
101 NP_056762.1 - - - - -
102 YP_009508556.1 - - - - -
103 NP_569153.1 - - - - - N S L T S E A K L Q G T T H - - - - - M P I
104 NP_043924.1 - - - - -
105 YP_009243641.1 - - - - -
106 YP_004300274.1 - - - - -
107 NP_056848.1 - - - - -
108 YP_006495799.1 - - - - -
109 YP_009508409.1 - - - - -
110 NP_687035.1 - - - - -
111 NP_045937.2 - - - - -
112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 P G A H A W D E E I A R R Q Q L H N R S M K - - - - - Y N Q
116 YP_009113237.2 - - - - - V Q G T H P G I T S M V T H - - - - - Y P P
117 YP_009508408.1 - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 - - - - - S Q G T S P S S E E K D V R - - - - - D D V

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120 YP_004442833.1 KEQGTQEYEEESMEKLVIKDNSPLPYQE - - - - NPEDAYQADFIQEDYQPE
121 NP_862833.2 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
122 NP_040563.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
123 YP_443922.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
124 NP_057933.2 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
125 YP_009116631.1 GTTGMTLTS HQHWND EPPQH GSS - - - - - - - - - - - - - - - - WPL
126 YP_009513249.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
127 YP_223871.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
128 NP_127504.1 FQENKCI PKEI WPGSS GSWNY GNSDHPHGQWIRDALREYREMNDYFQDAQ
129 NP_044929.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
130 NP_057860.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
131 NP_040973.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
132 NP_777317.1 SDDNEAGINDLQNTTYDPGDDN - - - - - - - - - - - - - - - - NWE
133 NP_054716.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
134 YP_001856242.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
135 NP_954565.2 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
136 NP_569150.1 SEDSLWEEELLREQENLRAEQEY - - - - - - - - - - - - - - - - LIE
137 NP_659397.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
138 YP_009513211.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
139 YP_233107.1 ADDEGWAYQTEDLINPEDLANS - - - - - - - - - - - - - - - - DID
140 YP_009109692.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
141 NP_057849.4 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
142 NP_049560.1 NLDHILEPSIPWKS KLLTPVQLTLQSTNYTCIVCIDRASLSTWHVLYFPN
143 YP_009506267.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
144 NP_039820.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
145 NP_056790.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
146 YP_002321513.1 - - - - - - - - KTEFVKPEKPSSS - - - - - - - - - - - - - - - - YVT
147 NP_955591.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
148 YP_001956722.2 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
149 NP_056902.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
150 NP_056886.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
151 NP_041261.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

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001 YP_004442836.1 DAFDILLDVSNDDQWARS - - - - - - - - - - - - - - - - - -
002 NP_056728.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
003 YP_009508537.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
004 YP_004732983.2 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
005 YP_009508407.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
006 NP_040939.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
007 YP_003864102.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
008 YP_009002585.1 GYHPP - - - - - - - - - - - - - - - - - - - - - - - - - - - -
009 YP_003284237.1 QDRREGVISDADFEPNVIRDD - - - - - - - - - - - - - - - - - -
010 YP_009268869.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
011 YP_009506251.1 DSH - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
012 NP_955611.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
013 YP_008567619.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
014 NP_149413.1 DAVDLTDVSNDDQWRRS - - - - - - - - - - - - - - - - - -
015 YP_004442824.1 DALDILLDVSNDDQWGRS - - - - - - - - - - - - - - - - - -
016 YP_001931967.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
017 YP_002455786.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
018 YP_009109694.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
019 NP_789739.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
020 NP_955619.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
021 YP_224289.1 HEEITEFYPDGGD PG - - - - - - - - - - - - - - - - - -
022 YP_009182100.1 KVIEQIWA IKDIGNTL FIMMYSAPGEWNYKDCSYYYPHYLVRIYDRVPSV
023 NP_705927.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
024 YP_009508577.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
025 YP_004442830.1 DPLDWNEVSND D - - - - - - - - - - - - - - - - - -
026 NP_758887.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
027 YP_009508406.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
028 YP_610965.1 SY-ASLDNSKS - - - - - - - - - - - - - - - - - -
029 YP_001931961.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
030 YP_241114.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
031 YP_006732334.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
032 YP_009041481.1 TSSL - - - - - - - - - - - - - - - - - - - - - - - - - - - -
033 YP_001036293.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
034 YP_605811.1 DILDLQDVSNDD - - - - - - - - - - - - - - - - - -
035 NP_955577.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
036 YP_003208050.1 RR-KIQNITRH - - - - - - - - - - - - - - - - - -
037 NP_789740.1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
038 YP_004442839.1 DIFDLANVSND D - - - - - - - - - - - - - - - - - -

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042	YP_009507248.1	- - - - -
043	YP_002117531.1	- - - - -
044	YP_004347415.1	- - - - -
045	NP_056891.1	- - - - -
046	YP_009513242.1	- - - - -
047	YP_009352866.1	I C S Q P W K K G K G - - - - -
048	YP_009165750.1	- - - - -
049	NP_040840.1	- - - - -
050	YP_004222728.1	- - - - -
051	YP_009506264.1	- - - - -
052	YP_567050.1	- - - - -
053	YP_009508571.1	- - - - -
054	NP_056803.1	- - - - -
055	NP_955564.1	- - - - -
056	YP_009508411.1	- - - - -
057	YP_009140788.1	T F Q M S R D Q T R I S K G S F T I S E K N C L M P - - - - -
058	YP_009508410.1	- - - - -
059	NP_040333.1	- - - - -
060	YP_008992013.1	- - - - -
061	NP_041734.1	D C Q L P N K T Q P P - - - - -
062	NP_056895.1	- - - - -
063	YP_009109689.1	- - - - -
064	YP_002519387.1	- - - - -
065	YP_595725.1	D V L D L Q D V S N D D - - - - -
066	YP_009508551.1	- - - - -
067	YP_001497148.1	- - - - -
068	NP_041186.1	- - - - -
069	NP_663784.1	- - - - -
070	YP_009508443.1	- - - - -
071	YP_003987465.1	D D D Q A S L L D A V G L - - - - -
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073	YP_009345071.1	- - - - -
074	YP_009508582.1	- - - - -
075	NP_569141.1	- - - - -
076	YP_002916057.1	Y C M K R P R R P G E A S - - - - -
077	NP_777384.2	- - - - -
078	YP_233110.1	D I L D L L N V S N D D - - - - -
079	NP_542258.1	- - - - -
080	YP_009130664.1	- - - - -
081	YP_009508566.1	- - - - -
082	YP_006607892.1	- - - - -
083	YP_009506270.1	- - - - -
084	NP_042513.1	- - - - -
085	YP_006907834.1	- - - - -
086	YP_004442827.1	D A L D L D D F M N D D Q W R R A - - - - -
087	YP_009408594.1	- - - - -
088	YP_009508561.1	- - - - -
089	NP_056907.1	- - - - -
090	YP_002308474.1	- - - - -
091	YP_007761644.1	- - - - -
092	NP_040550.1	- - - - -
093	NP_758808.1	K L H S I - - - - -
094	YP_009345075.1	- - - - -
095	NP_068729.1	- - - - -
096	NP_047255.1	- - - - -
097	YP_006273075.1	A C Q A L G D M T Q D - - - - -
098	YP_009508888.1	- - - - -
099	NP_395469.1	- - - - -
100	YP_009508546.1	- - - - -
101	NP_056762.1	- - - - -
102	YP_009508556.1	- - - - -
103	NP_569153.1	G Y P H A I G T T S N C V K W S S Y - - - - -
104	NP_043924.1	- - - - -
105	YP_009243641.1	- - - - -
106	YP_004300274.1	- - - - -
107	NP_056848.1	- - - - -
108	YP_006495799.1	- - - - -
109	YP_009508409.1	- - - - -
110	NP_687035.1	- - - - -
111	NP_045937.2	- - - - -

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112 NP_612577.1 - - - - -
113 NP_619548.1 - - - - -
114 NP_056880.1 - - - - -
115 YP_009121747.1 ALWLIDESWGPPLSMPRYCKL - - - - -
116 YP_009113237.2 CCTGMNNSPPTRML - - - - -
117 YP_009508408.1 - - - - -
118 NP_955579.1 - - - - -
119 YP_009229919.1 KYPKTSGMTKNI - - - - -
120 YP_004442833.1 DVLDDLDDFTNDDQWRRS - - - - -
121 NP_862833.2 - - - - -
122 NP_040563.1 - - - - -
123 YP_443922.1 - - - - -
124 NP_057933.2 - - - - -
125 YP_009116631.1 TRNSPRVRM - - - - -
126 YP_009513249.1 - - - - -
127 YP_223871.1 - - - - -
128 NP_127504.1 DPYPAYSKVDLTQEELNTRLRITRSYGSSSEADADMVKRSIYTVQSNIVKDS
129 NP_044929.1 - - - - -
130 NP_057860.1 - - - - -
131 NP_040973.1 - - - - -
132 NP_777317.1 DAVDISAYDSIDAFWDAHT - - - - -
133 NP_054716.1 - - - - -
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T G I T L V A L L P L V I L A G P C I L R Q L R H L P S R V R H P H Y S L I N P E S C L

1	2	3	4	5	6	7	8	9
Variable		Average			Conserved			

 - Insufficient data - the calculation for this site was performed on less than 10% of the sequences.