Supplementary

Table S1. The gene combination, their partition, and models used for phylogenetic analyses. C123: the 13 protein coding genes (PCGs) with all three loci; C12: the protein coding genes with the first and second locus; T: the 22 tRNAs; R: the 2 rRNAs; P1: indicated that the 13 PCGs were partitioned by gene; P2: indicated that the 13 PCGs were partitioned by locus; partitions and models were inferred by PartitionFinder2 [50].

Partitions	IQ-TREE models	MrBayes models
C123-P1		
Subset1 = 3046−3831, 1−675	GTR + I+G:Subset1,	lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 10618−11139, 676−831	GTR + I+G:Subset2,	lset applyto = (2) nst = 6 rates = invgamma;
Subset3 = 832−2361	GTR + I+G:Subset3,	lset applyto = (3) nst = 6 rates = invgamma;
Subset4 = 2362−3045	GTR + I+G:Subset4,	lset applyto = (4) nst = 6 rates = invgamma;
Subset5 = 3832−4965, 6922−7272	GTR + I+G:Subset5,	lset applyto = (5) nst = 6 rates = invgamma;
Subset6 = 4966−5907	GTR + I+G:Subset6,	lset applyto = (6) nst = 6 rates = invgamma;
Subset7 = 5908−6921	TIM + I+G:Subset7,	lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 7273−7560	K81UF + G:Subset8,	lset applyto = (8) nst = 6 rates = gamma;
Subset9 = 7561−8898	GTR + I+G:Subset9,	lset applyto = (9) nst = 6 rates = invgamma;
Subset10 = 8899−10617	GTR + I+G:Subset10;	lset applyto = (10) nst = 6 rates = invgamma;
C123-P2		
Subset1 = 1−675\3, 6922−7272\3	GTR + I+G:Subset1,	lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 2363−3045\3, 2−675\3	TVM + I+G:Subset2,	lset applyto = (2) nst = 6 rates = invgamma;
Subset3 = 10620−11139\3, 3−675\3, 6924−7272\3	TRN + I+G:Subset3,	lset applyto = (3) nst = 6 rates = invgamma;
Subset4 = 676−831\3	TIM + I+G:Subset4,	lset applyto = (4) nst = 6 rates = invgamma;
Subset5 = 677−831\3	GTR + G:Subset5,	lset applyto = (5) nst = 6 rates = gamma;
Subset6 = 678−831\3	GTR + G:Subset6,	lset applyto = (6) nst = 6 rates = gamma;
Subset7 = 832−2361\3	GTR + I+G:Subset7,	lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 833−2361\3	TVM + I+G:Subset8,	lset applyto = (8) nst = 6 rates = invgamma;
Subset9 = 834−2361\3, 5910−6921\3	TIM + G:Subset9,	lset applyto = (9) nst = 6 rates = gamma;
Subset10 = 2362−3045\3	GTR + I+G:Subset10,	lset applyto = (10) nst = 6 rates = invgamma;
Subset11 = 2364−3045\3	HKY + I+G:Subset11,	lset applyto = (11) nst = 2 rates = invgamma;
Subset12 = 3832−4965\3, 3046−3831\3	GTR + I+G:Subset12,	lset applyto = (12) nst = 6 rates = invgamma;
Subset13 = 3047−3831\3, 3833−4965\3	GTR + I+G:Subset13,	lset applyto = (13) nst = 6 rates = invgamma;
Subset14 = 3048−3831\3, 3834−4965\3	TIM + I+G:Subset14,	lset applyto = (14) nst = 6 rates = invgamma;
Subset15 = 4966−5907\3	GTR + I+G:Subset15,	lset applyto = (15) nst = 6 rates = invgamma;
Subset16 = 4967−5907\3	K81UF + I+G:Subset16,	lset applyto = (16) nst = 6 rates = invgamma;
Subset17 = 7275−7560\3, 7563−8898\3, 4968−5907\3, 8901−10617\3	GTR + I+G:Subset17,	lset applyto = (17) nst = 6 rates = invgamma;
Subset18 = 5908−6921\3	GTR + I+G:Subset18,	lset applyto = (18) nst = 6 rates = invgamma;
Subset19 = 5909−6921\3	GTR + I+G:Subset19,	lset applyto = (19) nst = 6 rates = invgamma;
Subset20 = 6923−7272\3	TVM + I+G:Subset20,	lset applyto = (20) nst = 6 rates = invgamma;
Subset21 = 7273−7560\3	TVM + G:Subset21,	lset applyto = (21) nst = 6 rates = gamma;
Subset22 = 7274−7560\3	K81UF + G:Subset22,	lset applyto = (22) nst = 6 rates = gamma;
Subset23 = 7561−8898\3	TVM + I+G:Subset23,	lset applyto = (23) nst = 6 rates = invgamma;
Subset24 = 8900−10617\3, 7562−8898\3	GTR + I+G:Subset24,	lset applyto = (24) nst = 6 rates = invgamma;
Subset25 = 8899−10617\3	GTR + I+G:Subset25,	lset applyto = (25) nst = 6 rates = invgamma;
Subset26 = 10618−11139\3	GTR + I+G:Subset26,	lset applyto = (26) nst = 6 rates = invgamma;
Subset27 = 10619−11139\3	GTR + I+G:Subset27;	lset applyto = (27) nst = 6 rates = invgamma;
C123R-P1		
Subset1 = 1−675, 3046−3831	GTR + I+G:Subset1,	lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 10618−11139, 676−831	GTR + I+G:Subset2,	lset applyto = (2) nst = 6 rates = invgamma;
Subset3 = 832−2361	GTR + I+G:Subset3,	lset applyto = (3) nst = 6 rates = invgamma;
Subset4 = 2362−3045	GTR + I+G:Subset4,	lset applyto = (4) nst = 6 rates = invgamma;
Subset5 = 3832−4965	GTR + I+G:Subset5,	lset applyto = (5) nst = 6 rates = invgamma;
Subset6 = 4966−5907	GTR + I+G:Subset6,	lset applyto = (6) nst = 6 rates = invgamma;

Subset7 = 5908–6921 TIM + I+G:Subset7, lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 6922–7272 TIM + I+G:Subset8, lset applyto = (8) nst = 6 rates = invgamma;
Subset9 = 7273–7560 K81UF + G:Subset9, lset applyto = (9) nst = 6 rates = gamma;
Subset10 = 7561–8898 GTR + I+G:Subset10, lset applyto = (10) nst = 6 rates = invgamma;
Subset11 = 8899–10617 GTR + I+G:Subset11, lset applyto = (11) nst = 6 rates = invgamma;
Subset12 = 11140–12359 GTR + I+G:Subset12, lset applyto = (12) nst = 6 rates = invgamma;
Subset13 = 12360–13116 GTR + G:Subset13; lset applyto = (13) nst = 6 rates = gamma;

C123R-P2

Subset1 = 1–675\3, 6922–7272\3 GTR + I+G:Subset1, lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 3833–4965\3, 2–675\3, 2363–3045\3, 3047–3831\3 TVM + I+G:Subset2, lset applyto = (2) nst = 6 rates = invgamma;
Subset3 = 10620–11139\3, 3–675\3 HKY + I+G:Subset3, lset applyto = (3) nst = 2 rates = invgamma;
Subset4 = 676–831\3 TIM + I+G:Subset4, lset applyto = (4) nst = 6 rates = invgamma;
Subset5 = 677–831\3 GTR + G:Subset5, lset applyto = (5) nst = 6 rates = gamma;
Subset6 = 6924–7272\3, 678–831\3 GTR + I+G:Subset6, lset applyto = (6) nst = 6 rates = invgamma;
Subset7 = 832–2361\3 GTR + I+G:Subset7, lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 833–2361\3 TVM + I+G:Subset8, lset applyto = (8) nst = 6 rates = invgamma;
Subset9 = 5910–6921\3, 834–2361\3 TIM + G:Subset9, lset applyto = (9) nst = 6 rates = gamma;
Subset10 = 2362–3045\3 GTR + I+G:Subset10, lset applyto = (10) nst = 6 rates = invgamma;
Subset11 = 2364–3045\3 TRN + G:Subset11, lset applyto = (11) nst = 6 rates = gamma;
Subset12 = 3832–4965\3, 3046–3831\3 GTR + I+G:Subset12, lset applyto = (12) nst = 6 rates = invgamma;
Subset13 = 3048–3831\3, 3834–4965\3 TIM + I+G:Subset13, lset applyto = (13) nst = 6 rates = invgamma;
Subset14 = 4966–5907\3 GTR + I+G:Subset14, lset applyto = (14) nst = 6 rates = invgamma;
Subset15 = 4967–5907\3 K81UF + I+G:Subset15, lset applyto = (15) nst = 6 rates = invgamma;
Subset16 = 4968–5907\3 TRN + G:Subset16, lset applyto = (16) nst = 6 rates = gamma;
Subset17 = 5908–6921\3 GTR + I+G:Subset17, lset applyto = (17) nst = 6 rates = invgamma;
Subset18 = 5909–6921\3 GTR + I+G:Subset18, lset applyto = (18) nst = 6 rates = invgamma;
Subset19 = 6923–7272\3 TVM + I+G:Subset19, lset applyto = (19) nst = 6 rates = invgamma;
Subset20 = 7273–7560\3 TVM + G:Subset20, lset applyto = (20) nst = 6 rates = gamma;
Subset21 = 7274–7560\3 K81UF + G:Subset21, lset applyto = (21) nst = 6 rates = gamma;
Subset22 = 7563–8898\3, 7275–7560\3 K81UF + I+G:Subset22, lset applyto = (22) nst = 6 rates = invgamma;
Subset23 = 7561–8898\3 TVM + I+G:Subset23, lset applyto = (23) nst = 6 rates = invgamma;
Subset24 = 7562–8898\3 GTR + I+G:Subset24, lset applyto = (24) nst = 6 rates = invgamma;
Subset25 = 8899–10617\3 GTR + I+G:Subset25, lset applyto = (25) nst = 6 rates = invgamma;
Subset26 = 8900–10617\3 GTR + I+G:Subset26, lset applyto = (26) nst = 6 rates = invgamma;
Subset27 = 8901–10617\3 K81UF + G:Subset27, lset applyto = (27) nst = 6 rates = gamma;
Subset28 = 10618–11139\3 GTR + I+G:Subset28, lset applyto = (28) nst = 6 rates = invgamma;
Subset29 = 10619–11139\3 TVM + I+G:Subset29, lset applyto = (29) nst = 6 rates = invgamma;
Subset30 = 11140–12359 GTR + I+G:Subset30, lset applyto = (30) nst = 6 rates = invgamma;
Subset31 = 12360–13116 GTR + G:Subset31; lset applyto = (31) nst = 6 rates = gamma;

C123T-P1

Subset1 = 3046–3831, 1–675 GTR + I+G:Subset1, lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 676–831, 10618–11139 GTR + I+G:Subset2, lset applyto = (2) nst = 6 rates = invgamma;
Subset3 = 832–2361 GTR + I+G:Subset3, lset applyto = (3) nst = 6 rates = invgamma;
Subset4 = 2362–3045 GTR + I+G:Subset4, lset applyto = (4) nst = 6 rates = invgamma;
Subset5 = 3832–4965 GTR + I+G:Subset5, lset applyto = (5) nst = 6 rates = invgamma;
Subset6 = 11513–11576, 4966–5907 GTR + I+G:Subset6, lset applyto = (6) nst = 6 rates = invgamma;
Subset7 = 5908–6921 GTR + I+G:Subset7, lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 6922–7272 TIM + I+G:Subset8, lset applyto = (8) nst = 6 rates = invgamma;
Subset9 = 7273–7560, 11205–11264 K81UF + G:Subset9, lset applyto = (9) nst = 6 rates = gamma;
Subset10 = 7561–8898 GTR + I+G:Subset10, lset applyto = (10) nst = 6 rates = invgamma;
Subset11 = 8899–10617 GTR + I+G:Subset11, lset applyto = (11) nst = 6 rates = invgamma;
Subset12 = 11140–11204, 11454–11512, 11760–11825 TVM + I+G:Subset12, lset applyto = (12) nst = 6 rates = invgamma;
Subset13 = 12288–12351, 11265–11327 GTR + I+G:Subset13, lset applyto = (13) nst = 6 rates = invgamma;
Subset14 = 11895–11958, 11328–11388 TVM + I+G:Subset14, lset applyto = (14) nst = 6 rates = invgamma;
Subset15 = 11389–11453, 12024–12092 HKY + G:Subset15, lset applyto = (15) nst = 2 rates = gamma;

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Subset16 = 11577–11630, 12487–12551        TVM + G:Subset16,        lset applyto = (16) nst = 6 rates = gamma;
Subset17 = 11631–11701, 11826–11894        TVM + I+G:Subset17,      lset applyto = (17) nst = 6 rates = invgamma;
Subset18 = 11702–11759                     HKY + G:Subset18,        lset applyto = (18) nst = 2 rates = gamma;
Subset19 = 12352–12420, 11959–12023        TIM + G:Subset19,        lset applyto = (19) nst = 6 rates = gamma;
Subset20 = 12093–12154, 12223–12287        GTR + I+G:Subset20,      lset applyto = (20) nst = 6 rates = invgamma;
Subset21 = 12155–12222, 12421–12486        TVM + G:Subset21;        lset applyto = (21) nst = 6 rates = gamma;
C123T-P2
Subset1 = 1–675\3, 6922–7272\3             GTR + I+G:Subset1,       lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 2363–3045\3, 2–675\3             TVM + I+G:Subset2,       lset applyto = (2) nst = 6 rates = invgamma;
Subset3 = 2364–3045\3, 3–675\3, 6924–7272\3 TVM + I+G:Subset3,      lset applyto = (3) nst = 6 rates = invgamma;
Subset4 = 676–831\3                        TIM + I+G:Subset4,       lset applyto = (4) nst = 6 rates = invgamma;
Subset5 = 677–831\3                        GTR + G:Subset5,         lset applyto = (5) nst = 6 rates = gamma;
Subset6 = 678–831\3                        GTR + G:Subset6,         lset applyto = (6) nst = 6 rates = gamma;
Subset7 = 832–2361\3                       GTR + I+G:Subset7,       lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 833–2361\3                       TVM + I+G:Subset8,       lset applyto = (8) nst = 6 rates = invgamma;
Subset9 = 834–2361\3, 5910–6921\3          TIM + G:Subset9,         lset applyto = (9) nst = 6 rates = gamma;
Subset10 = 2362–3045\3, 11577–11630        GTR + I+G:Subset10,      lset applyto = (10) nst = 6 rates = invgamma;
Subset11 = 3832–4965\3, 3046–3831\3        GTR + I+G:Subset11,      lset applyto = (11) nst = 6 rates = invgamma;
Subset12 = 3833–4965\3, 3047–3831\3        GTR + I+G:Subset12,      lset applyto = (12) nst = 6 rates = invgamma;
Subset13 = 3048–3831\3, 3834–4965\3        TIM + I+G:Subset13,      lset applyto = (13) nst = 6 rates = invgamma;
Subset14 = 12487–12551, 4966–5907\3        GTR + I+G:Subset14,      lset applyto = (14) nst = 6 rates = invgamma;
Subset15 = 4967–5907\3                     K81UF + I+G:Subset15,    lset applyto = (15) nst = 6 rates = invgamma;
Subset16 = 7275–7560\3, 7563–8898\3,
4968–5907\3, 8901–10617\3                  GTR + I+G:Subset16,      lset applyto = (16) nst = 6 rates = invgamma;
Subset17 = 5908–6921\3                     GTR + I+G:Subset17,      lset applyto = (17) nst = 6 rates = invgamma;
Subset18 = 5909–6921\3                     GTR + I+G:Subset18,      lset applyto = (18) nst = 6 rates = invgamma;
Subset19 = 6923–7272\3                     TVM + I+G:Subset19,      lset applyto = (19) nst = 6 rates = invgamma;
Subset20 = 11205–11264, 7273–7560\3        TVM + G:Subset20,        lset applyto = (20) nst = 6 rates = gamma;
Subset21 = 7274–7560\3                     K81UF + G:Subset21,      lset applyto = (21) nst = 6 rates = gamma;
Subset22 = 7561–8898\3, 11702–11759        TVM + I+G:Subset22,      lset applyto = (22) nst = 6 rates = invgamma;
Subset23 = 8900–10617\3, 7562–8898\3       GTR + I+G:Subset23,      lset applyto = (23) nst = 6 rates = invgamma;
Subset24 = 8899–10617\3                    GTR + I+G:Subset24,      lset applyto = (24) nst = 6 rates = invgamma;
Subset25 = 10618–11139\3                   GTR + I+G:Subset25,      lset applyto = (25) nst = 6 rates = invgamma;
Subset26 = 10619–11139\3                   TVM + G:Subset26,        lset applyto = (26) nst = 6 rates = gamma;
Subset27 = 10620–11139\3                   HKY + G:Subset27,        lset applyto = (27) nst = 2 rates = gamma;
Subset28 = 11140–11204, 11760–11825,
11454–11512                                TVM + I+G:Subset28,      lset applyto = (28) nst = 6 rates = invgamma;
Subset29 = 12288–12351, 11265–11327        GTR + I+G:Subset29,      lset applyto = (29) nst = 6 rates = invgamma;
Subset30 = 11895–11958, 11328–11388        TVM + I+G:Subset30,      lset applyto = (30) nst = 6 rates = invgamma;
Subset31 = 11389–11453, 12024–12092        HKY + G:Subset31,        lset applyto = (31) nst = 2 rates = gamma;
Subset32 = 11513–11576                     K81UF + I+G:Subset32,    lset applyto = (32) nst = 6 rates = invgamma;
Subset33 = 11631–11701, 11826–11894        TVM + I+G:Subset33,      lset applyto = (33) nst = 6 rates = invgamma;
Subset34 = 11959–12023, 12352–12420        TIM + G:Subset34,        lset applyto = (34) nst = 6 rates = gamma;
Subset35 = 12093–12154, 12223–12287        GTR + I+G:Subset35,      lset applyto = (35) nst = 6 rates = invgamma;
Subset36 = 12421–12486, 12155–12222        TVM + G:Subset36;        lset applyto = (36) nst = 6 rates = gamma;
C123TR-P1
Subset1 = 3046–3831, 1–675                 GTR + I+G:Subset1,       lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 676–831, 10618–11139             GTR + I+G:Subset2,       lset applyto = (2) nst = 6 rates = invgamma;
Subset3 = 832–2361                         GTR + I+G:Subset3,       lset applyto = (3) nst = 6 rates = invgamma;
Subset4 = 2362–3045                        GTR + I+G:Subset4,       lset applyto = (4) nst = 6 rates = invgamma;
Subset5 = 3832–4965                        GTR + I+G:Subset5,       lset applyto = (5) nst = 6 rates = invgamma;
Subset6 = 11513–11576, 4966–5907           GTR + I+G:Subset6,       lset applyto = (6) nst = 6 rates = invgamma;
Subset7 = 5908–6921                        TIM + I+G:Subset7,       lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 6922–7272                        TIM + I+G:Subset8,       lset applyto = (8) nst = 6 rates = invgamma;
Subset9 = 7273–7560, 11205–11264           K81UF + G:Subset9,       lset applyto = (9) nst = 6 rates = gamma;
Subset10 = 7561–8898                       GTR + I+G:Subset10,      lset applyto = (10) nst = 6 rates = invgamma;
Subset11 = 8899–10617                      GTR + I+G:Subset11,      lset applyto = (11) nst = 6 rates = invgamma;
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Subset12 = 11140–11204, 11454–11512, 11760–11825
Subset13 = 11265–11327, 12288–12351
Subset14 = 11328–11388, 11895–11958
Subset15 = 11389–11453, 12024–12092
Subset16 = 11577–11630, 12487–12551
Subset17 = 11631–11701, 11826–11894
Subset18 = 11702–11759, 13772–14528
Subset19 = 11959–12023, 12352–12420
Subset20 = 12093–12154, 12223–12287
Subset21 = 12155–12222, 12421–12486
Subset22 = 12552–13771
C123TR-P2
Subset1 = 1–675\3, 6922–7272\3
Subset2 = 2363–3045\3, 2–675\3
Subset3 = 10620–11139\3, 3–675\3, 6924–7272\3
Subset4 = 676–831\3
Subset5 = 677–831\3
Subset6 = 678–831\3
Subset7 = 832–2361\3
Subset8 = 833–2361\3
Subset9 = 834–2361\3
Subset10 = 2362–3045\3, 11577–11630
Subset11 = 2364–3045\3
Subset12 = 3832–4965\3, 3046–3831\3
Subset13 = 3047–3831\3, 3833–4965\3
Subset14 = 3048–3831\3, 3834–4965\3
Subset15 = 12487–12551, 4966–5907\3
Subset16 = 4967–5907\3
Subset17 = 4968–5907\3, 8901–10617\3, 7275–7560\3, 7563–8898\3
Subset18 = 5908–6921\3
Subset19 = 5909–6921\3
Subset20 = 5910–6921\3
Subset21 = 6923–7272\3
Subset22 = 11205–11264, 7273–7560\3
Subset23 = 7274–7560\3
Subset24 = 7561–8898\3
Subset25 = 7562–8898\3
Subset26 = 8899–10617\3
Subset27 = 8900–10617\3
Subset28 = 10618–11139\3
Subset29 = 10619–11139\3
Subset30 = 11140–11204, 11760–11825, 11454–11512
Subset31 = 11265–11327, 12288–12351
Subset32 = 11895–11958, 11328–11388
Subset33 = 12024–12092, 11389–11453
Subset34 = 11513–11576, 12552–13771
Subset35 = 12155–12222, 11631–11701, 11826–11894
Subset36 = 12421–12486, 11702–11759
Subset37 = 11959–12023, 12352–12420
Subset38 = 12093–12154, 12223–12287
Subset39 = 13772–14528
C12-P2

TVM + I+G:Subset12, lset applyto = (12) nst = 6 rates = invgamma;
GTR + I+G:Subset13, lset applyto = (13) nst = 6 rates = invgamma;
TVM + I+G:Subset14, lset applyto = (14) nst = 6 rates = invgamma;
HKY + G:Subset15, lset applyto = (15) nst = 2 rates = gamma;
TVM + G:Subset16, lset applyto = (16) nst = 6 rates = gamma;
TVM + I+G:Subset17, lset applyto = (17) nst = 6 rates = invgamma;
GTR + G:Subset18, lset applyto = (18) nst = 6 rates = gamma;
TIM + G:Subset19, lset applyto = (19) nst = 6 rates = gamma;
GTR + I+G:Subset20, lset applyto = (20) nst = 6 rates = invgamma;
TVM + G:Subset21, lset applyto = (21) nst = 6 rates = gamma;
GTR + I+G:Subset22; lset applyto = (22) nst = 6 rates = invgamma;

GTR + I+G:Subset1, lset applyto = (1) nst = 6 rates = invgamma;
TVM + I+G:Subset2, lset applyto = (2) nst = 6 rates = invgamma;
TRN + I+G:Subset3, lset applyto = (3) nst = 6 rates = invgamma;
TIM + I+G:Subset4, lset applyto = (4) nst = 6 rates = invgamma;
GTR + G:Subset5, lset applyto = (5) nst = 6 rates = gamma;
GTR + G:Subset6, lset applyto = (6) nst = 6 rates = gamma;
GTR + I+G:Subset7, lset applyto = (7) nst = 6 rates = invgamma;
TVM + I+G:Subset8, lset applyto = (8) nst = 6 rates = invgamma;
TIM + G:Subset9, lset applyto = (9) nst = 6 rates = gamma;
GTR + I+G:Subset10, lset applyto = (10) nst = 6 rates = invgamma;
TRN + G:Subset11, lset applyto = (11) nst = 6 rates = gamma;
GTR + I+G:Subset12, lset applyto = (12) nst = 6 rates = invgamma;
GTR + I+G:Subset13, lset applyto = (13) nst = 6 rates = invgamma;
TIM + I+G:Subset14, lset applyto = (14) nst = 6 rates = invgamma;
GTR + I+G:Subset15, lset applyto = (15) nst = 6 rates = invgamma;
K81UF + I+G:Subset16, lset applyto = (16) nst = 6 rates = invgamma;
GTR + I+G:Subset17, lset applyto = (17) nst = 6 rates = invgamma;
GTR + I+G:Subset18, lset applyto = (18) nst = 6 rates = invgamma;
GTR + I+G:Subset19, lset applyto = (19) nst = 6 rates = invgamma;
TIM + I+G:Subset20, lset applyto = (20) nst = 6 rates = invgamma;
TVM + I+G:Subset21, lset applyto = (21) nst = 6 rates = invgamma;
TVM + G:Subset22, lset applyto = (22) nst = 6 rates = gamma;
K81UF + G:Subset23, lset applyto = (23) nst = 6 rates = gamma;
TVM + I+G:Subset24, lset applyto = (24) nst = 6 rates = invgamma;
GTR + I+G:Subset25, lset applyto = (25) nst = 6 rates = invgamma;
GTR + I+G:Subset26, lset applyto = (26) nst = 6 rates = invgamma;
GTR + I+G:Subset27, lset applyto = (27) nst = 6 rates = invgamma;
GTR + I+G:Subset28, lset applyto = (28) nst = 6 rates = invgamma;
GTR + I+G:Subset29, lset applyto = (29) nst = 6 rates = invgamma;
TVM + I+G:Subset30, lset applyto = (30) nst = 6 rates = invgamma;
GTR + I+G:Subset31, lset applyto = (31) nst = 6 rates = invgamma;
TVM + I+G:Subset32, lset applyto = (32) nst = 6 rates = invgamma;
HKY + G:Subset33, lset applyto = (33) nst = 2 rates = gamma;
GTR + I+G:Subset34, lset applyto = (34) nst = 6 rates = invgamma;
TVM + I+G:Subset35, lset applyto = (35) nst = 6 rates = invgamma;
K81UF + G:Subset36, lset applyto = (36) nst = 6 rates = gamma;
TIM + G:Subset37, lset applyto = (37) nst = 6 rates = gamma;
GTR + I+G:Subset38, lset applyto = (38) nst = 6 rates = invgamma;
GTR + G:Subset39; lset applyto = (39) nst = 6 rates = gamma;

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Subset1 = 1–450\2, 4615–4848\2          GTR + I+G:Subset1,      lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 1576–2030\2, 2–450\2          TVM + I+G:Subset2,      lset applyto = (2) nst = 6 rates = invgamma;
Subset3 = 451–554\2                     TIM + I+G:Subset3,      lset applyto = (3) nst = 6 rates = invgamma;
Subset4 = 452–554\2                     GTR + G:Subset4,        lset applyto = (4) nst = 6 rates = gamma;
Subset5 = 555–1574\2                    GTR + I+G:Subset5,      lset applyto = (5) nst = 6 rates = invgamma;
Subset6 = 556–1574\2                    TVM + I+G:Subset6,      lset applyto = (6) nst = 6 rates = invgamma;
Subset7 = 1575–2030\2                   GTR + I+G:Subset7,      lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 2555–3310\2, 2031–2554\2      GTR + I+G:Subset8,      lset applyto = (8) nst = 6 rates = invgamma;
Subset9 = 2556–3310\2, 2032–2554\2      GTR + I+G:Subset9,      lset applyto = (9) nst = 6 rates = invgamma;
Subset10 = 3311–3938\2                  GTR + I+G:Subset10,     lset applyto = (10) nst = 6 rates = invgamma;
Subset11 = 3312–3938\2                  K81UF + I+G:Subset11,   lset applyto = (11) nst = 6 rates = invgamma;
Subset12 = 3939–4614\2                  GTR + I+G:Subset12,     lset applyto = (12) nst = 6 rates = invgamma;
Subset13 = 3940–4614\2                  GTR + I+G:Subset13,     lset applyto = (13) nst = 6 rates = invgamma;
Subset14 = 4616–4848\2                  TVM + I+G:Subset14,     lset applyto = (14) nst = 6 rates = invgamma;
Subset15 = 4849–5040\2                  TVM + G:Subset15,       lset applyto = (15) nst = 6 rates = gamma;
Subset16 = 4850–5040\2                  K81UF + G:Subset16,     lset applyto = (16) nst = 6 rates = gamma;
Subset17 = 5041–5932\2                  TVM + I+G:Subset17,     lset applyto = (17) nst = 6 rates = invgamma;
Subset18 = 5042–5932\2, 5934–7078\2     GTR + I+G:Subset18,     lset applyto = (18) nst = 6 rates = invgamma;
Subset19 = 5933–7078\2                  GTR + I+G:Subset19,     lset applyto = (19) nst = 6 rates = invgamma;
Subset20 = 7079–7426\2                  GTR + I+G:Subset20,     lset applyto = (20) nst = 6 rates = invgamma;
Subset21 = 7080–7426\2                  TVM + I+G:Subset21;     lset applyto = (21) nst = 6 rates = invgamma;
C12R-P2
Subset1 = 1–1220                        GTR + I+G:Subset1,      lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 1221–1977                     GTR + G:Subset2,        lset applyto = (2) nst = 6 rates = gamma;
Subset3 = 1978–2605\2                   GTR + I+G:Subset3,      lset applyto = (3) nst = 6 rates = invgamma;
Subset4 = 1979–2605\2                   K81UF + I+G:Subset4,    lset applyto = (4) nst = 6 rates = invgamma;
Subset5 = 2606–3281\2                   GTR + I+G:Subset5,      lset applyto = (5) nst = 6 rates = invgamma;
Subset6 = 2607–3281\2                   GTR + I+G:Subset6,      lset applyto = (6) nst = 6 rates = invgamma;
Subset7 = 3282–3737\2                   GTR + I+G:Subset7,      lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 3283–3737\2, 8851–9299\2      TVM + I+G:Subset8,      lset applyto = (8) nst = 6 rates = invgamma;
Subset9 = 8850–9299\2, 3738–3971\2      GTR + I+G:Subset9,      lset applyto = (9) nst = 6 rates = invgamma;
Subset10 = 3739–3971\2                  TVM + I+G:Subset10,     lset applyto = (10) nst = 6 rates = invgamma;
Subset11 = 7902–8657\2, 3972–4495\2     GTR + I+G:Subset11,     lset applyto = (11) nst = 6 rates = invgamma;
Subset12 = 7903–8657\2, 3973–4495\2     GTR + I+G:Subset12,     lset applyto = (12) nst = 6 rates = invgamma;
Subset13 = 4496–5387\2                  TVM + I+G:Subset13,     lset applyto = (13) nst = 6 rates = invgamma;
Subset14 = 4497–5387\2, 5389–6533\2     GTR + I+G:Subset14,     lset applyto = (14) nst = 6 rates = invgamma;
Subset15 = 5388–6533\2                  GTR + I+G:Subset15,     lset applyto = (15) nst = 6 rates = invgamma;
Subset16 = 6534–6881\2                  GTR + I+G:Subset16,     lset applyto = (16) nst = 6 rates = invgamma;
Subset17 = 6535–6881\2                  TVM + I+G:Subset17,     lset applyto = (17) nst = 6 rates = invgamma;
Subset18 = 6882–7901\2                  GTR + I+G:Subset18,     lset applyto = (18) nst = 6 rates = invgamma;
Subset19 = 6883–7901\2                  TVM + I+G:Subset19,     lset applyto = (19) nst = 6 rates = invgamma;
Subset20 = 8658–8849\2                  TVM + G:Subset20,       lset applyto = (20) nst = 6 rates = gamma;
Subset21 = 8659–8849\2                  K81UF + G:Subset21,     lset applyto = (21) nst = 6 rates = gamma;
Subset22 = 9300–9403\2                  TIM + I+G:Subset22,     lset applyto = (22) nst = 6 rates = invgamma;
Subset23 = 9301–9403\2                  GTR + G:Subset23;       lset applyto = (23) nst = 6 rates = gamma;
C12T-P2
Subset1 = 8774–8838, 1–628\2, 7427–7491 GTR + I+G:Subset1,      lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 2–628\2                       K81UF + I+G:Subset2,    lset applyto = (2) nst = 6 rates = invgamma;
Subset3 = 629–1304\2                    GTR + I+G:Subset3,      lset applyto = (3) nst = 6 rates = invgamma;
Subset4 = 630–1304\2                    GTR + I+G:Subset4,      lset applyto = (4) nst = 6 rates = invgamma;
Subset5 = 7864–7917, 1305–1760\2        GTR + I+G:Subset5,      lset applyto = (5) nst = 6 rates = invgamma;
Subset6 = 6874–7322\2, 1306–1760\2      TVM + I+G:Subset6,      lset applyto = (6) nst = 6 rates = invgamma;
Subset7 = 6873–7322\2, 1761–1994\2      GTR + I+G:Subset7,      lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 1762–1994\2                   TVM + I+G:Subset8,      lset applyto = (8) nst = 6 rates = invgamma;
Subset9 = 5925–6680\2, 1995–2518\2      GTR + I+G:Subset9,      lset applyto = (9) nst = 6 rates = invgamma;
Subset10 = 1996–2518\2, 5926–6680\2     GTR + I+G:Subset10,     lset applyto = (10) nst = 6 rates = invgamma;
Subset11 = 2519–3410\2, 7989–8046       TVM + I+G:Subset11,     lset applyto = (11) nst = 6 rates = invgamma;
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Subset12 = 2520−3410\2, 3412−4556\2 GTR + I+G:Subset12,  lset applyto = (12) nst = 6 rates = invgamma;
Subset13 = 3411−4556\2 GTR + I+G:Subset13,  lset applyto = (13) nst = 6 rates = invgamma;
Subset14 = 4557−4904\2 GTR + I+G:Subset14,  lset applyto = (14) nst = 6 rates = invgamma;
Subset15 = 4558−4904\2 TVM + I+G:Subset15,  lset applyto = (15) nst = 6 rates = invgamma;
Subset16 = 4905−5924\2 GTR + I+G:Subset16,  lset applyto = (16) nst = 6 rates = invgamma;
Subset17 = 4906−5924\2 TVM + I+G:Subset17,  lset applyto = (17) nst = 6 rates = invgamma;
Subset18 = 6681−6872\2, 7492−7551 TVM + G:Subset18,  lset applyto = (18) nst = 6 rates = gamma;
Subset19 = 6682−6872\2 K81UF + G:Subset19,  lset applyto = (19) nst = 6 rates = gamma;
Subset20 = 7323−7426\2 TIM + I+G:Subset20,  lset applyto = (20) nst = 6 rates = invgamma;
Subset21 = 7324−7426\2, 7918−7988, 8113−8181GTR + I+G:Subset21,  lset applyto = (21) nst = 6 rates = invgamma;
Subset22 = 7800−7863, 7552−7614 HKY + I+G:Subset22,  lset applyto = (22) nst = 2 rates = invgamma;
Subset23 = 8182−8245, 7615−7675 TVM + I+G:Subset23,  lset applyto = (23) nst = 6 rates = invgamma;
Subset24 = 7676−7740, 8311−8379 HKY + G:Subset24,  lset applyto = (24) nst = 2 rates = gamma;
Subset25 = 8047−8112, 7741−7799 TVM + I+G:Subset25,  lset applyto = (25) nst = 6 rates = invgamma;
Subset26 = 8639−8707, 8246−8310 TIM + G:Subset26,  lset applyto = (26) nst = 6 rates = gamma;
Subset27 = 8380−8441, 8510−8574 GTR + I+G:Subset27,  lset applyto = (27) nst = 6 rates = invgamma;
Subset28 = 8442−8509, 8708−8773 TVM + G:Subset28,  lset applyto = (28) nst = 6 rates = gamma;
Subset29 = 8575−8638 TIM + I+G:Subset29;  lset applyto = (29) nst = 6 rates = invgamma;
C12TR-P2
Subset1 = 1−628\2, 8774−8838 GTR + I+G:Subset1,  lset applyto = (1) nst = 6 rates = invgamma;
Subset2 = 2−628\2 K81UF + I+G:Subset2,  lset applyto = (2) nst = 6 rates = invgamma;
Subset3 = 629−1304\2 GTR + I+G:Subset3,  lset applyto = (3) nst = 6 rates = invgamma;
Subset4 = 630−1304\2 GTR + I+G:Subset4,  lset applyto = (4) nst = 6 rates = invgamma;
Subset5 = 7864−7917, 1305−1760\2 GTR + I+G:Subset5,  lset applyto = (5) nst = 6 rates = invgamma;
Subset6 = 6874−7322\2, 1306−1760\2 TVM + I+G:Subset6,  lset applyto = (6) nst = 6 rates = invgamma;
Subset7 = 6873−7322\2, 1761−1994\2 GTR + I+G:Subset7,  lset applyto = (7) nst = 6 rates = invgamma;
Subset8 = 1762−1994\2 TVM + I+G:Subset8,  lset applyto = (8) nst = 6 rates = invgamma;
Subset9 = 5925−6680\2, 1995−2518\2 GTR + I+G:Subset9,  lset applyto = (9) nst = 6 rates = invgamma;
Subset10 = 5926−6680\2, 1996−2518\2 GTR + I+G:Subset10,  lset applyto = (10) nst = 6 rates = invgamma;
Subset11 = 2519−3410\2 TVM + I+G:Subset11,  lset applyto = (11) nst = 6 rates = invgamma;
Subset12 = 2520−3410\2, 3412−4556\2 GTR + I+G:Subset12,  lset applyto = (12) nst = 6 rates = invgamma;
Subset13 = 3411−4556\2 GTR + I+G:Subset13,  lset applyto = (13) nst = 6 rates = invgamma;
Subset14 = 4557−4904\2 GTR + I+G:Subset14,  lset applyto = (14) nst = 6 rates = invgamma;
Subset15 = 4558−4904\2 GTR + I+G:Subset15,  lset applyto = (15) nst = 6 rates = invgamma;
Subset16 = 4905−5924\2 GTR + I+G:Subset16,  lset applyto = (16) nst = 6 rates = invgamma;
Subset17 = 4906−5924\2 TVM + I+G:Subset17,  lset applyto = (17) nst = 6 rates = invgamma;
Subset18 = 6681−6872\2, 7492−7551 TVM + G:Subset18,  lset applyto = (18) nst = 6 rates = gamma;
Subset19 = 6682−6872\2 K81UF + G:Subset19,  lset applyto = (19) nst = 6 rates = gamma;
Subset20 = 7323−7426\2 TIM + I+G:Subset20,  lset applyto = (20) nst = 6 rates = invgamma;
Subset21 = 7324−7426\2 GTR + G:Subset21,  lset applyto = (21) nst = 6 rates = gamma;
Subset22 = 7427−7491, 8047−8112, 7741−7799 TVM + I+G:Subset22,  lset applyto = (22) nst = 6 rates = invgamma;
Subset23 = 7800−7863, 7552−7614 HKY + I+G:Subset23,  lset applyto = (23) nst = 2 rates = invgamma;
Subset24 = 8182−8245, 7615−7675 TVM + I+G:Subset24,  lset applyto = (24) nst = 6 rates = invgamma;
Subset25 = 8311−8379, 7676−7740 HKY + G:Subset25,  lset applyto = (25) nst = 2 rates = gamma;
Subset26 = 8442−8509, 8113−8181, 7918−7988 TVM + I+G:Subset26,  lset applyto = (26) nst = 6 rates = invgamma;
Subset27 = 8708−8773, 7989−8046 K81UF + G:Subset27,  lset applyto = (27) nst = 6 rates = gamma;
Subset28 = 8639−8707, 8246−8310 TIM + G:Subset28,  lset applyto = (28) nst = 6 rates = gamma;
Subset29 = 8510−8574, 8380−8441 GTR + I+G:Subset29,  lset applyto = (29) nst = 6 rates = invgamma;
Subset30 = 8575−8638 TRN + I+G:Subset30,  lset applyto = (30) nst = 6 rates = invgamma;
Subset31 = 8839−10058 GTR + I+G:Subset31,  lset applyto = (31) nst = 6 rates = invgamma;
Subset32 = 10059−10815 GTR + G:Subset32;  lset applyto = (32) nst = 6 rates = gamma;
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