

Supplemental Table S1 Cloning primers

Primer name	Primer sequence (5' to 3')
CCD4-1F	ATGGATGCTTTCTCTTCTACTTTCCT
CCD4-1R	CTACAGCTTATTAAGATCACTTTCCCG
CCD4-1 _{pro} F	AGCGAACAAGTGTGTACTGTCA
CCD4-1 _{pro} R	GTAGAAAGGAAAGTAGAAGAGAAAGCA

Supplemental Table S2 CDS sequence of LbCCOs from *L. barbarum*

Gene name	CDS sequence
<i>LbCCD4-1</i>	ATGGATGCTTTCTCTTCTACGTTCCCTTTCTACATTATCACAAACAC CCTAAATCTCTTCTTTCTCCTTATAATTATTCTCCCAATTCACCA TCTTCTCCTACTCTAAAAGTTTCCCTCCGTTAGAATTGAAGAAA GGCCACAAACTACCACTACTAGAACAAAACCACAAGAGAAGC CAACCCCTTCACCACCAAAAACCAACTCCAAAAAGAGAATTAC CTATAAAACCAATACCCTCAAGAAAACCTCTAGAACCATCATT TCCCTCCGTTATTTTCAATGCATTTGACGATTTTCGTAAATACTTT CATTGATCCTCCTTTGAGATCTTCTGTTGATCCAAGGTATGTTT TCTCTGACAATTTTCGCTCCAGTGGACGAGCTTCCTCCTACTGA ATGCGAAGTAGTGGAAGGCTCCCTTCCACCTTGCCTGGACGG CGCGTACATCCGAAATGGCCCTAACCCTCAATATCTTCCACGTG GACCTTACCATCTTTTTGACGGAGACGGAATGCTTCACTCTATT AGAATTTCTCAAGGCAAAGCTACACTCTGCAGCCGATACGTTA AAACCTTACAAGTACACCATTGAACGTGATGCCGGTTCTCCGGT TATCCCTAATGTGTTCTCCGGTTTCAACGGTCTAACAGCCTCGG CCGCGCGTGGTGCTATTACCGCGGCTCGAGCAATTGCAGGACA ATTCAATCCCACAAATGGTATAGGCCTAGCAAACACAAGCTTG GCTTTATTCGGGGGTAAACTTTTCGCTATTGGTGAATCTGATTT ACCATATGCAATAAAAATAGCCCCAGATGGTGATATTATTACCC TCGGCCGTCACGACTTTGACGGAAATCTTTTCATGAGCATGAC AGCACATCCCAAAATCGACCCAGAACTAACGAGGCTTTTGC TTTCCGTTATGGCCCGATGCCTCCGTTTTTAACTTACTTTTCGTAT CCAACCAAACGGTACGAAAACCCCGGACGTGCCAATATTCTC CATGACACGTCCGTCATTTCTTCATGATTTTGTCAATCACGAAGA AATACGCCATATTTTCGGACATACAAATAGGAATGAACCCAATT GAGTTAATCAGGGGTGGTTTACCCGTGGGTGCTGACTCGGGG AAAATCCCCCGACTTGGCGTAATTCCACGTTACGCCAAGGACG AGTCGAAAATGAGGTGGTTTGTATGTGCCAGGGTTTAATATTGT ACACGCGATAAACGCGTGGGATGAGGACGGTGGTGATACGAT AGTGTTGCTGGCACCGAATATATTATCGGTGGAACATACACTAG AGAGAATGGATATGATACATGCATGTGTTGAGAAAGTGAAGAT AGATTTGAAGACAGGAATGGTGAGCAGACATCCTGTTTCTACC AGGAATCTTGACTTTGGAGTCATCAATCCTGCTTATGTTGGGA AGAATAACAAGTATGTATATGCAGCCATTGGGGACCCTATGCC AAAGGTAACAGGGGTAGCAAATTAGACGTATCCGTAGCAGA AACAGATCGTCGCGATTGCATAGTGGCATGCCGACTATTTGGA GAAGGCTGCTTCGGTGGTGAGCCATTTTTTGTGGCTAAAGATG CAAACAATCCTGATGCTGATGAAGATGATGGCTACGTAGTGTC ATATGTGCACAATGAGAAGACAGGGGAATCAAGATTTTTTGGTC

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LbCCD4-2

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TATAG

LbCCD4-3

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LbNCED1

ACTTTCATAAATGCCAAAGACTTGGCAAATCAGGCCTAA

Supplemental Table S3 Protein sequence of CCOs from *L. barbarum*, *N. tabacum*, *A. thaliana*, *S. lycopersicum*, *Crocus sativus*, and *L. ruthenicum*

Gene name	Protein sequence
AtNCED	MASFTATAAVSGRWLGGNHTQPPLSSSQSSDLSYCSSLPMASRVTRKL NVSSALHTPPALHFPKQSSNSPAIVVKPKAKESNTKQMNLFQRAAAAA LDAAEGFLVSHEKLHPLPKTADPSVQIAGNFAPVNEQPVRRNLPPVVGK LPDSIKGVYVRNGANPLHEPVTGHHFFDGDGMVHAVKFEHGSASYAC RFTQTNRVQERQLGRPVPFKAIGELHGHTGIARLMLFYARAAAGIVD PAHGTGVANAGLVYFNGRLLAMSEDDLPHYQVQITPNGDLKTVGRFDF DGQLESTMIAHPKVDPESEGELFALSVDVSKPYLKYFRFSPDGTKSPD VEIQLDQPTMMHDFAITENFVVVPDQQVVFVKLPPEMIRGGSPVVYDKN KVARFGILDKYAEDSSNIKWIDAPDCFCFHLWNAWEEPETDEVVVIGS CMTPPDSIFNESDENLKSVLSEIRLNLKTGESTRRPIISNEDQQVNLEAG MVNRNMLGRKTKFAYLALAEPWPKVSGFAKVDLTTGEVKKHLYGDN RYGGEPLFLPGEGGEEDEGYILCFVHDEKTKWSELQIVNAVSLVEAT VKLPSRVPHYGFHGTFIGADDLAKQVV
AtNCED9	MTIITIISGMYIYSLLSQDAHHSQYGQNTNLVLKKPIPKPQTAAFNQEST MASTTLLPSTSTQFLDRTFSTSSSSSRPKLQSLSFSTLRNKKLVVPCYV SSSVNKKSSVSSSLQSPTEKPPSWKKLCNDVTNLIPKTTNQNPKLNPVQ RTAAMVLDAVENAMISHERRRHPHPKTADPAVQIAGNFFPVPEKPVVH NLPVTGTVPCEIQGVYVRNGANPLHKPVSGHHLFDGDGMVHAVRFD NGSVSYACRFTETNRLVQERECGRPVPFKAIGELHGHLGIAKLMLFNT RGLFGLVDPTGGLGVANAGLVYFNGHLLAMSEDDLPHYHVKTQTGD LETSGRYDFDGQLKSTMIAHPKIDPETRELFALSVDVSKPYLKYFRFT SDGEKSPDVEIPLDQPTMIHDFAITENFVVIPDQQVVFRLPEMIRGGSPV VYDEKKKSRFGILNKNAKDASSIQWIEVPDCFCFHLWNSWEEPETDEV VVIGSCMTPPDSIFNEHDETQSLSVLSEIRLNLKTGESTRRPVISEQVNLE AGMVNRNLLGRKTRYAYLALTEPWPKVSGFAKVDLSTGEIRKYIYGE GKYGGEPLFLPSGDGEEDGGYIMVFVHDEEKVKSELQLINAVNMKLE ATVTLPSRVPHYGFHGTFIGEDLSKQALC
AtNCED5	MACSYILTPNPTKLNLSFAPSDLDAPSPSSSVSFTNTKPRRRKLSANSVS DTPNLLNFPNYPSPNPIPEKDTSRWNPLQRAASAALDFAETALLRRER SKPLPKTVDPRHQISGNYPVPEQSVKSSLSVDGKIPDCIDGVYLRNGA NPLFEPVSGHHLFDGDGMVHAVKITNGDASYSCRFTETERLVQEKQLG SPIFPKAIGELHGHSIARLMLFYARGLFGLLNHKNGTGVANAGLVYF HDLRLAMSEDDLPHYQVRVTDNGDLETIGRFDGQLSSAMIAHPKIDP VTKELFALSVDVVKPYLKYFKFSPEGEKSPDVEIPLASPTMMHDFAIT ENFVVIPDQQVVFVKLSDMFLGKSPVKYDGEKISRFGILPRNAKDASEM VWVESPETFCFHLWNAWESPETDEVVVIGSCMTPADSIFNECDEQLNS VLSEIRLNLKTGKSTRRTIIPGSVQMNLEAGMVNRNLLGRKTRYAYLAI AEPWPKVSGFAKVDLSTGEVKNHFYGGKKYGGEPFFLPRGLESDGED DGYIMSFVHDEESWESELHIVNAVTLLEATVKLPSRVPHYGFHGTFTVN SADMLNQA

AtNCED6	<p>MQHSLRSDLLPTKTSRSHLLPQPKNANISRRILINPFKIPTLPDLTSPVP SPVKLKPTYPNLNLQKLAATMLDKIESSVIPMEQNRPLPKPTDPAVQ LSGNFAPVNECPVQNGLEVVGQIPSCCLKGVYIRNGANPMFPPLAGHHL FDGDGMIHAVSIGFDNQVSYSCRYTKTNRLVQETALGRSVFPKPIGELH GHSGLARLALFTARAGIGLVDGTRGMGVANAGVVFFNGRLLAMSED DLPYQVKIDGQGDLLETIGRFGFDDQIDSSVIAHPKVDATTGDLHTLSYN VLKKPHLRYLKFNTECGKKTRDVEITLPEPTMIHDFAITENFVVIPDQQM VFKLSEMIRGGSPVIYVKEKMARFGVLSKQDLTGSDINWVDVPDCFCF HLWNAWEERTEEGDPVIVVIGSCMSPPDTIFSESGEPTRVELSEIRLNM RTKESNRKVIVTGVNLEAGHINRSYVGRKSQFVYIAIADPWPKCSGIA KVDIQNGTVSEFNYPGSRFGGEPFCFVPEGEGEEDKGYVMGFVRDEEK DESEFVVVDATDMKQVA AVLRLPERVPYGFHGTFFVSENQLKEQVF</p>
AtNCED3	<p>MASFTATAAVSGRWLGGNHTQPPLSSSQSSDLSYCSSLP MASRVTRKL NVSSALHTPPALHFPKQSSNSPAIVVKPKAKESNTKQMNLFQRAAAAA LDAAEGFLVSHEKLHPLPKTADPSVQIAGNFAPVNEQPVRRLNPVVGK LPDSIKGVYVRNGANPLHEPVTGHHFFDGDGMVHAVKFEHGSASYAC RFTQTNRVQERQLGRPVPFKAIGELHGHTGIARLMLFYARAAAGIVD PAHGTGVANAGLVYFNGRLLAMSEDDLPYQVQITPNGDLKTVGRFDF DGQLESTMIAHPKVDPESEGELFALSVDVSKPYLKYFRFSPDGTKSPD VEIQLDQPTMMHDFAITENFVVVPDQQVVFKLPEMIRGGSPVVYDKN KVARFGILDKYAEDSSNIKWIDAPDCFCFHLWNAWEEPETDEVVIGS CMTPPDSIFNESDENLKSVLSEIRLNLKTGESTRRPIISNEDQQVNLEAG MVNRNMLGRKTKFAYLALAEPWPKVSGFAKVDLTTEGEVKKHLYGDN RYGGEPLFLPGEGGEDEGYILCFVHDEKTKWSELQIVNAVSLVEAT VKLPSRVPYGFHGTFIGADDLAKQVV</p>
AtNCED2	<p>MVSLTMPMSGGIKTWPQAQIDLGFRPIKRQPKVIKCTVQIDVTELT KRQLFTPRTTATPPQHNLRLNIFQKAAAIAIDAAERALISHEQDSPLPK TADPRVQIAGNYSVPPESSVRRNLTVEGTIPDCIDGVYIRNGANPMFEP TAGHHLFDGDGMVHAVKITNGSASYACRFTKTERLVQEKRLGRPVPF KAIGELHGHSGIARLMLFYARGLCGLINNQNGVG VANAGLVYFNNRL LAMSEDDLPYQLKITQTGDLQTVGRYDFDQGLKSAMIAHPKLDPVT ELHALSYDVVKKPYLKYFRFSPDG VKSPELEIPLETPTMIHDFAITENF VVIPDQQVVFKL GEMISGKSPV VFDGEKVSRLGIMPKDATEASQIIWV NSPETFCFHLWNAWESPETEEIVVIGSCMSPADSIFNERDESLRSVLSEI RINLRTRKTTRRSLLVNEDVNLEIGMVNRNRLGRKTRFAFLAIAYPWP KVSGFAKVDLCTGEMKKYIYGGEKYGGEPFFLPGN SGNGEENEDDGY IFCHVHDEETKTSELQIINAVNLKLEATIKLPSRVPYGFHGTFFVDSNELV DQL</p>
LbCCD4-1	<p>MDAFSSTFLSTLSQHPKSLLSPYNYSPNSPSSPTLKVSSVRIERPQTTT TRTKPQEKPTSPPKPTPKRELPIKPIPSRKPLEPSFSPVIFNAFDDFVNTF IDPPLRSSVDPRYVLSDNFAPVDELPTTECEVVEGSLPPCLDGAYIRNGP NPQYLPRGPYHLFDGDGMLHSIRISQGKATLCSRYVKTYKYTIERDAG SPVIPNVFSGFNGLTASAARGAITAARAIAAGQFNPTNGIGLANTSLALFG GKLFAIGESDLPYAIKIAPDGDII TLGRHDFDGNLFMSMTAHPKIDPETN EAFAFRYGPMPPFLTYFRIQPNGTKTPDVPIFSMTRPSFLHDFAITKKYAI FSDIQIGMNPIELIRGGSPVGADSGKIPRLGVIPRYAKDESKMRWFDVP GFNIVHAINAWDEDGGDTIVLLAPNILSVEHTLERMDMIHACVEKVKI</p>

	DLKTGMVSRHPVSTRNLDFGVINPAYVGKNNKYVYAAIGDPMPKVTG VAKLDVSVAETDRRDCIVACRLFGEGCFGGEPPFFVAKDANNPDADDD GYVVSYSVHNEKTGESRFLVMDAKSPNLDIVAAVKLPHRVPYGFHGLF VRESDLNKL
LbCCD3-1	MEFPIINEKFIGSRNKFAYLQVVVELAEVSGSGYTRFGGLAKLHFEEKKI STDEEDELIAEYHMF PKNTFCSGASFVQKPGGIDDDGWIMTYTHNE NENISQGAIWISWSFHAI RVLRLLVMAFCSYTFKVNC SFQRPSIPTNVK DLKGSISSVLKPPSRDLVHFPIVVD FPKAVKETSFKLLDAFVAFLFEFVD QPLLPSQSNFAPVEEIGEAVQVSTVQGKIPDDFPEGVYIRNGSNPLFGG LKSTKSIFGKSSHVWIEGEGMLHAIYFTREKRRGTWNIFYNNKHVQTD TFKMEIHRKRPGFLPAIEGDSPAILLAYILNGLRFGMTN KYLSNTNIFEH SKKYYSIAENHLPQEIDIHSLET LGNWNVSGAWNRPFTSHPKKAPGTG VLVIMGIYPRKPYFELGVISADGKKMVHKVDLKFNRCSLSHDIGVTER YNVIMDFPLTIDMIRLFRGESLIK YDKDGYARIGVM PRYGDANSIKWF DVQPCCVFHLINCFEDNDEVVVRGCRALESVLPRPSSKVNKFERSFEG SKATSSIENNNAKEEPFFHHVCEWTLNMRTGEVKEKNVTTKFSLEFPM INEKFIGLRNKF GYLQVVDLEASSISEGLAKYGG LAKLHFKEDEELIKA EYHMFPEGTFCSGATFVQKIQSADEDDGWVVTFTHNENTNV SQVYVV DAKSFAKQP VATITLPSRV PYGFHGAFMPSDQGH
LbCCD8	MASFASSATKIYYTKNRFDHGKDDQPYFGKV KINEKNKKNLDLKLVT NVAASQLPVIVPPPDQQVIKEEK KLAAWISVRQERWEGELIVEGELPL WLNGTYLRNGPGQWHIGNYNFRHLFDGYATLVRLHFENGRLIMGHR QIESEAYKAAKTSNKICYREFSEVPKPDNFLSYIGDMAKLLSGASLTDN ANTGVVKLGDGRVVCLTETIKGSIVIDPDTLDTLGKFEFSDSLGGLIHS AHPIVTDRELLTLIPDLIYNGYVVVRMEKGSNERKFIGRVNCRGGPAPG WVHSFPVTEHYIIVPEMPLRYCAQNLLKAEPTPLYKFEWHPHSGKGMH VVCKASGNIVASVEVPLFVTFHFINAYEEKDEDGRVTAVIADCCEHSAD TTILDKLRLLENLRSFNGKDDVLPDARVGRFRIPLDGSPYGELEAALDPN EHGRGMDMCMNPAYLGKKYRYAYACGAKRPCNFPNTLT KIDLFDKK AKNWYDEGAVPSEPFFVARPGATEEDDGVVISMISDKNGEGYALILDG STFEEIARAKFPYGLPYGLHGCWVPPK
LbNCED6-1	MSFSSSTVQTIKPHNSPSFCKILINPTKKNTSRTLPIRQFPPLVPPLPSTS PLVEPKIFPLKIEPPKLNPLQKLASSTLDMLEKSVVTKLEKKHKLNPTV DPEIQLEGNFAPVQENPVQHGLEVVVGQIPSTLNGVYVRNGANPLFEPIN GHHLFDGDGMIHAVNLDSSNNKASYSCRFTRTSRLVQEAAIGRPVFPK PIGELHGHLGLARLALFFARASFGLVDATKGIGVANAGLVYFNGKLLA MSEDDL PYRV RVTADGDLETDGRYNFDGQIDDPLIAHPKVPDPVRGELY TLSYNILKKPFLKFFKFDT CGNKSRDISISLQDPSMIHDFAITENNVIIPD YQVVFKLSEMLRGGSPVIHDPNRISRFGVLSKDDHDESRIRWIDVPNCF CMHLWNAWEEKNEDYDETIVIIGSCMSPPE SIFSGSDEHLKSELSEIRL NLRTGESTRRVIVSGMNLEAGQVNKNKLGRKTRYAFMAIAEPWPKCS GLAKVDLVTGNVTKFLYGDERFGGEPYFVPSKKEGEDEGYIMSHVR DDRKEESELVILTAANMKQVASVKIPTRVPYGFHGT FVSSQDLCNQSSS C
LbNCED6-2	MLEKSVVTKLEKKHKLNPTVDPEIQLEGNFAPVQENPVQHGLEVVVGQ IPSTLNGVYVRNGANPLFEPINRHHLFDGDGMIHAVKLDSSNNKASY CRFTRTSRLVQEAAIGRPVFPKPIGELHGHLGLARLALFFARASFGLVD

	<p>ATKGIGVANAGLIYFNDKLLAMSEDDL PYSVQVTADGDLET DGRYNF DGQIDDPLIAHPKVDPVTGELYT LSYNILKKPFLKFFKFDTCGNKSRDI SISLQDPSMVHDFAITENNVII PDYQVVFKLSEMLRGGSPVIHDPNKISR FSVLSKDDHDESRIRWIDVPNCFCMHLWNAWEEKNEDYDETIVIIGSC MSLPESIFSGSDEPLKSELSEIRLNLRTGESTRRVIVSGMNLEAGQVNTN KLGRKTKYAFMAIAEPWPKCSGLAKVDLVTGNVTKFLYGDERFGGEP YFVPSKKEGEDEGYIMCHVRDDRREESELVIVNAATMKQVASVKIPT RVPYGFHGT FVSSQDLCNQSSCC</p>
LbCCD3-2	<p>MAACIYACQINCRSQKPIIPKCKDLRASVSSTLKPFLT NLEHFPLIVDVP KVMKETAFKLLDTFVDLTFEFVDQPLSPSQSNFAPVDEIGEAVRVTAME GKIPNDFPEGVYVRNGSNPLYGGFKSTKSIFGKSSHLWIEGEGMLHAL YFTKEKGKGSKNILYKNKYVQTETFNMEKNRKKPGFLPNMEGDAL AVLMASLLNV LRYGVLHKYLSNTNVFEHSSKKYYSIAENHMPQEINIQT LET LGNWT VNGAWSQPFTAHPKYTKINILLMNYIVSQQKVP GSDELV IMGINPLIKPYLELGVISADGKQMVHKVDLKFNR CILCHEIGVTKRYN VILDFPLTIDISRLIRGEELIKYDKDEYARIGIM LRYGDANSIKWFEVEPC CVFHIINCFEDNDEVVVRACRSRRSII PRPKLTVDELELSLDGLNETSFS KNNVQLSKELFSFFHICEWRLNMKTGEVKMKTPTTTEDQFVMEFPIIN EHFIGLKNKFGYLQLVDSEAFS NYFDLMMTYILNLAKNSSGGFAKF GG LAKLHFEEREVEISKDDKEEDLIKVEYHIFPKNTFCTGATFVPKLEGV DEDDGWIVAFTHNENTNESQVYIIDAKKIKGEPVAIITLPCRVPYGFHG AFMPLNL</p>
LbCCD1	<p>MGEKKDEGVPMERSEGGWVVVKPKPTKKFGGKAIDWLEKVIVKLM YKTGPCHFLSGNFAPRVNLMGMKEENGVARIEGGVVVDPKPKKGV VAKAIDLLEWGMIKLMNDSTKPLHYLQGNFAPTHE TPPFKDLPVKGH LPECLNGEFVRVGP NPKFAPAAGYHWFDGDGMIHGLHIKDGKATYVS RFVRTSRLKQEEFFGGAKFMKIGDLKGLFGLFSVYIYMLRQKLKILD T SYGNGTANTAMIYHHGKLLALHEDVVKVLEDGDLQTLGMLDYDKRL QHSFTAHPKVDPVTGEMFTFGYAQT PPYATYRVISKDGMEDPVPITIPA AVMMHDFAITENYA IMMDLPLYFKPKEMVK NKQLAYSFDPTKKARFG VLPRYAKNESLIKYEMRFNMKNGLASEKKLSESAVD FPRVNENYTGR QSSVNVIDAKTMSAEPVAVVELPNRVPYGFHAF FVTEVFVKSGSASQSI DSMQLYSQLSSSILKEDDDGGVVVVVKPKPGKGLIAKAVDVLEWGIVK LMHDASKPLHYLQGNFAPTDETPPLNDLIVQGH LPECLNGEFVRVGP N PKFAPVAGYHWFDGDGMIHGLRVKD GKATYVSRYVRTSRLKQEEFFG GAKFMKIGDLKGLFGLFTVYMQMLRTKLKVLDTSYGNGTDALKVLE DGD LQTLGMLDYDKRLAHSFTAHPKVDPVTGEMFTFGYSHTPPYITY RVISKDGMQDPVPITIP EAIMMHDFAITENYA IMMDLPLCFRPKEMVK NNKLAFTFDGTTKKARFGVLARYANNEALIKWFELPNC FIFHNANAW E EGDEVVLITCRVQNPDLDMVNGGVKENLENFCNELYEMRFNMKSGA ASQKKLSESAVD FPRINESYTGRKSAVNVLDAKTMSTEPVAVVELPKR VPYGFHAF FVTEEQIQEQAKL</p>
LbCCD7	<p>MQAKACHNIINIPPKLLPPAKFPSTVSQITLPSHVPRAITITTSPTHEVYT PEIDDTITAFWDYQFLFVSQRSETTEPINLRVVEGSIPSDFPSGTYYLTGP GLFADDHGSTVHPLDGHGYLRTFEIDGGSGQVKFMARYIETEAQAEER DPVTGKWKFTHRGPFSVLKGGKMVGNTKVMKNVANTSVLQWGGRL FCLWEGGEPYEIDSKTLNTV GKFELIKNSELLPEDKKINGDFLDVAAQI</p>

	<p>LKPILYGVFKMTPKRLLSHYKIDTRRNRLIMSCNAEDMLLPRSNFTFY EFDSNFQLLQSQEFEIPDHLMIHDWAFTDTHYILFGNRIKLDIPGSMTAV CGLSPMISALSVNPSKPTSPIYLLPRFPNRKTKVQRDWKKPIEAPSQMW VLHVGNAFEEISDDNGNVNIQIQASGCSYEWFNQKMFGYDWQSGKL DPAMMNVEEGEEKLLPHLVQVSINLDANGNCTKCSVNDLNPQWNKA ADFPAMNPDFS GKKNEYVYAATSSGYRQALPHFPFDTVVKLNTADKS VQKWSAGRRRFIGEPVFIPKGTREDDGYLLVVEYAVSTQRCYLVILDA QRIGE KNEVVARLEVPRHLNFPLGFHGFHFWAPNNSGQGNLQNFKSKCK DSWSVLEDSNMVNIGN</p>
LbNCED2	<p>MKNLTRKTKINSALLTFPKQTNPNQTVPTKHSQTQRQSKPTSNNWNIFQ KAAAKALDIVESALVSRELQNPLPKTADPRVQISGNFAPVPEQPVRHNL PVTGTIPDCINGVYVRNGANPLFEPVAGHHLFDGDGMVHAVTVENGL VSYSCRFTETTRLVQERELGKPVFPKAIGELHGHSGIARLMLFYARGLF GLVDHSGKTGVANAGLVYFNNRLLAMSEDDVPYQVQVLPSPGDLET GRYDFAEQLKSTMIAPHPKIDPVSGELFALSVDVQKPYLKSFRFSTDG KKSPDVEIPLDVPTMMHDFAITENYVVIPDQQVVFKLQEMIKGGSPVI YDKNKKSRFGILPKNANDSENIWVESPETFCFHLWNAWEEPETDEVV VIGSCMTPPDSIFNECSENLSVLSEIRLNLKTGQSTKREIIQSSEQMNL EAGMVNKNKLGRKTQYAYLAIAEPWPKVSGFAKVDLSTGEVQKHMY GESRYGGEPLFLPRNVNAEREDDGYILAFCHDEKTKWSELQIVNAMT LELEATVKLPSRVPGYGFHGTFISSKDLQNQV</p>
LbCCD4-2	<p>MNAFTSTLLPYPKTLRSPNRTSSFSVNTKTSSYTSPKATAKSSSTKQH NKPPRKPLLEPSFPEVILNACDDFIDTFINPPHPSVDPKYVLTANFAPV DELPPTECEVVKGSLPPYLDGAYIRNGSNPQYLPRGPFHLFDGDGMLH STRISQGKAIFCSRYVKTYKYLLEKEAGFSIIPNLFSDFNSRISSVTRGAV SIARTKFGQFDPSNGIDLANTSLALFGGNLFALCESDLPYGIKLAPNGDI IPIGRHDFDGNLFMNMTAHPKIDPNTGEAFAFRYGPISPFLTYFRIDPNG TKSRDVPIFSMTHPSFVHDFAITKNYAIFPDIQIEMNPCALLTRDSPVGY NSKKVARLRVIPHYARDESEMKWFEVPGFNMINAINAWEEDDGDITIV VIAPNTISVEHFVERLDLIHASIEKVKIDLKTRMVRRYPVSTRNLDLASI NPAYVGKKNKYVQLIYDLYFFRTTFKRMNILFNYSLSNSSFYILYLFISL MVVEFFALLEFLKVKPYFVAVMSKLTAKRIQAMNAFTFSFTSTLLPHPKT LRSPNRTSSFSVNPKTSSYTSPKATAKSSSSKQHNKPPRKPLLEPSFPEVI LNACDDFIDTFINPPRHPSIDPKYVLTNNFAPVDELPPTECEVVKGSLPP CLDGAYIRNGSNPQYLPRGPFHLFDGDGMLHSTRISQGKAIFCSRYVK TYKYMVEKEAGFSIIPNLFSDFNSLMASVSRGAVSIARTNLGQFDPSNG IGLANTSLALLGGNLFALYETDLPYAIKLAPNGDIITIGRHDFDGNLSTN MTAHPKIDPNTSEAFASFSGPIPPFLTFFRIDPNGTKSRGVPIFSMTRPSF VHDFAITKNYAIFPDIQIEMNPFKPIITGGSPVGFNSRKVPRLGVIPRYAT NESEMKWFEVLGFNMVHAINAWEEDSGDTIVVIAPNLISA EHL SKMD LIHASIEKVKIDLKGTGTVSRNPMSTRNLELAGINPTYVGKKNKYIYAAI GDPWPKAKGVVKLDVSISEIEHRDCIVATRIFGPNCFCSEPFVVEKDPN NVFAADED DGYVVCYMHNESTREASFLVMDAKSHDLEIVAVVKLPRR VPYGFHGFHIFVKESDLNML</p>
LbCCD4-3	<p>MLSLFPSLPHYHYHTPKLFSPNRTSPFSSVNPKTSSYTSPKATAKSPSSKQ HDKPPRKPLLEPSFLEVSLNACEDFIDTFINPLHHPSVDPKCVLADNFAP VDELPPTECEVVKGKLPPCLDGAYIRNGPNPQYLPRGPFHLFDGDGML</p>

	HSTRISQGKAIFCSRYVQTYKYLVDKEARFSVVPNPFSDFNGLMASVS RGAVSIARTILGQFDPRNGIGRANTSLALFGGNLFALYEADLPYAIAKLAP DGDIIITIGRHDFDGNLSTTMTAHPKIDPNTNEAFALRYGPIPPFLTYFRID PNGTKSRGVPIFSMTRPSFVHDFAITKNYAIFPDIHIEVGPFALITCGSPL GSDSRKVPRLGVIPRYATDESEMKWFEVPGFNMIHAINAWEEDDGDTI VVIGTNIISVEHFFERWDLIHTSIEKVKIDLKTGTVSRHPVSTRNLELAVI NTAYIGKKNKYIYAAIGEPWPKAKGVVKLDISISETDRRDCIVATRIFGP NCFCSEPFVAKDPNNVFAADEDGGYVVCYMHDEIQENQVSW
LbNCED1	MATSSPATNTWIKPKISMPSSREFGHSSNSISLLKNKPNKITCSLQAPPIL HFPKQQSSNYQTPKTNPTIPTSKPTTKISHPKQENKSSSSSPWNLVQKAA AMALDAVESVLTKEHEHPLPKTADPRVQISGNFAPVPENPVVTQSLPVT GKIPKCVNGVYVRNGANPLFEPTAGHHFFDGDGMVHAVEFKNGSASY ACRFTETERLVQEKALGRPVPFKAIGELHGHSGIARLMLFYARGVFGL VDHSNGTG VANAGLVYFNNRLLAMSEDDLPHYHVRVTANGDLETDGR FDFDQGLKSTMIAHPKLDPVSGELFALSVDVIQKPYLKYFRFSKNGEK SNDVEIPVEDPTMMHDFAITTEKFVVIPDQQVVFVKMSEMIRGGSPVVYD KNKVSFRGILDKYAKDGSGLKWVEVPDCFCFHLWNAWEEPETDEIVV IGSCMTPPDSIFNECDEGLESVLSEIRLNLKTGKSTRKAIQNEEEQVNL EAGMVNRNKLGRKTQYAYLAIAEPWPKVSGFAKVDLFTGEINKFFYG DNKYGGEPFLPRDPNSKDEDDGYILAFVHDEKEWKSELQIVNAMTL KLEATVKLPSRVPYGFHGTFINAKDLANQA
LrCCD1A	MGRKEDDDGGVVVVVKPKPGKGLIAKAVDLLEWGIVKLMHDASKPLH YLQGNFAPTDETPPLNDLIVQGHLPECLNGEFVRVGPNNPKFAPVAGYH WFDGDGMIHGLRIKDGYATYVSRYVRTSRLKQEEFFGGAKFMKIGDL KGLFGLFTVYMQLLRTKLKVLDISYGNGTANTALVYHHGKLLALSEA DKPYALKVLEDGDLQTLGMLDYDKRLAHSFTAHPKVDPVTGEMFTF GYSHTPPYITYRVISKDGIMQDPVPITPEAIMMHDFAITENYAIMMDLP LCFRPKEMVKNNKLAFTFDGTTKARFGVLARYANNEALIKWFELPNC FIFHNANAWEEGDEVVLITCRVQNPDLDMVNGGVKENLENFCNELYE MRFNMKSGAASQKKLSESAVDFPRINESYTGRKQRYVYGTTLNSIAK VTGIIKFDLHAEPETGKSQLEVGGNVQGIFDLGPGRFGSEAVFVPRQPG TECEEDDGYLIFFVHDENTGKS AVNVIDAKTMSAEPVAVVELPKRVPY GFHAFFVTEEQIQEQAKL
LrCCD4	MDAFSSTFLSTLSQHPKSLLSPYNYSPNSPCSPALKVSSVRMEERPQTT TTRTKPQEKPTPSPPKPTPKKELPIKPIPSRTPLEPSFPSVIFNAFDDFINTF IDPPLRSSIDPRYVLSDNFAPVDELPPTECEVVEGSLPPCLDGAYIRNGP NPQYLPRGPYHLFDGDGMLHSIRISQGKATLCSRYVKTYKYTIERDAG SPVIPNVFSGFNGLTASAARGAITAARAIAAGQFNPTNGIGLANTSLALFG GKLFAIGESDLPYAIAKIAPDGDIIITLGRHDFDGNLFMSMTAHPKIDPETN EAFAFRYGPIPPFLTYFRIEPNGTKTPDVPIFSMTRPSFLHDFAITKKYAIF SDIQIGMNPIELIRGGSPVGADSGKIPRLGVIPRYAKDESKMRWFDVPG FNIVHAINAWDEDGGDTIVLVAPNLSVEHTLERMDLIHACVEKVKIDL KTGMVSRHPVSTRNLDFGVINPAYVGKNNKYVYAAIGDPMPKVTGVA KLDVSAETDRRDCIVACRLFGEGCFGGEPPFVAKDANNPEADEDGGY VVSYPVHNEKTGESRFLVMDAKSPNLDIVA AVKLPRRVPYGFHGLFVRE SDLNKL
LrNCED1	MATSSPATNTWIKPKISMPSSREFGHSSNSISLLKNKPNKITCSLQAPPIL

	<p>HFPKQQSSNYQTPKTNPTSKPTTKISHPKQENKSSSSSPWNLVQKAA AMALDAVESVLTKHELEHPLPKTADPRVQISGNFAPVPENPVQTQSLPVT GKIPKCVNGVYVRNGANPLFEPTAGHHFFDGDGMVHAVQFKNGSAS YACRFTETERLTQEKAALGRPVPFKAIGELHGHSGIARLMLFYARGVFG LVDHSNGTGVANAGLVYFNNRLLAMSEDDLPHYHVRVTANGDLETG RVDFDGLKSTMIHPKLDPVSGELFALSVDVIQKPYLKYFRFSKNGE KSNDVEIPVEDPTMMHDFATEKFVVIPDQQVVKMSEMILGGSPVVY DKNKVSFRGILDKYAKDGSGLKWVEVPDCFCFHLWNAWEEPETDEIV VIGSCMTPPDSIFNECDEGLSVLSEIRLNLKTGKSTRKAIQNEEEQVN LEAGMVNRNKLGRKTQYAYLAIAEPWPKVSGFAKVDLFTGEINKFFY GDNKYGGEPLFLPRDPNSKDEDDGYILAFVHDEKEWKSELQIVNAMT LRLEATVKLPSRVPGFHGTFINAKDLANQA</p>
LrNCED6	<p>MSFSSSTVQTIKPHNSPSFCKILINPTKINTSTALPIRQFPPLVPPLPSPST LVEPKIFPLKIEPPKLNPLQKLASSTLDMSEKSVVTKLEKKHKLNPVD PEIQLEGNFAPVQENPVQHGLEVVGQIPSTLNGVYVRNGANPLFEPTN GHHLFDGDGMIHAVKLDSSNNKASYSCRFTRTSRLVQEAAGRPVFPK PIGELHGHGLGLARLALFFARASFGGLVDATKGTGVANAGLIYFNGKLLA MSEDDLPHYSVRVTDGDLETGGRYNFDGQINDPLIAHPKVDPVRGELY TLYNLIKPKPFLKFFKFDTGCGNKSRLDISISLQDPSMIHDFAITENNVIIPV YQVVFKLSEMLRGGSPVIHDPNKISRFGVLSKDDHDESRIRWIDVPNCF CMHLWNAWEEKNEDYDETIVIIGSCMSPPEISIFSGSDEPLKSELSEIRLN LRTGDSTRRVIVSGMNLEAGQVNKNKLGQKTKYAFMAIAEPWPKCSG LAKVHLVTGNVTKFLYGDERFGGEPYFVPSKKEGEDEGYIMSHVRD DRKEESELVIVNAATMKQVASVKIPTRVPYGFHGTFFVSSQDLCNQSSSC</p>
NtCCD4	<p>MDAFSSTFLSTLSQHPKSLLSPNYSPNTSSSPILKVSSVRIERPQTTTTT TRTKPQEKPTSPYTPPKDTPKRQLPTKSITTKKPVESFSPSVIFNAFDDF VNTFIDPPLKPCVDPKYILSNNFAPVDELPPTECEVVVGSLLPPCLDGAYI RNGPNPQYLPRGPYHLFDGDGMLHSIKISQSKATLCSRYVKTYKYTIE REAGSPVFPNVFSGFNGLTASAARGAITAARAIAAGQFNPTNGIGLANTS LALFGGKLFALGESDLPYAVKLAPDGDITLGRYDFDGLFMSMTAHP KIDPDTNEAFAFRYGPMPPLTYFRIEPNGTKTPDVPIFSMTRPSFLHDF AITNKFAIFSDIQIGMNPLEFITGGSPVSSDSGKIPRLGVIPRYAKNESEM KWFDVPGINIVHAINAWDEDDGDTIVMVAPNILSVEHTLERMDMIHAS VEKVKIDLKSGMVSQRPLSTRNLDFGVINPAYVGKKNKYVYAAIGDP MPKIAGIAKLDVSVAEADRRDCIVACRLFGEGCFGGEPYFVANNSAAD EDDGYVVSFVHNEKTGESRFLVMDAKSPNLDIVA AVKLPRRVPGFH GLFVRETDLRKLM</p>
NtCCD7	<p>MQAKACHNIIPPKLLPPAKLPSTASHITLPSHVPRAITITTSPTHEVYTPV PEIDDTITAFWDYQFLFVSQRSEATEPITLRVVEGAIPTDFPSGKYILT PGLFADDHGSTVHPLDGHGYLRTFEIDGGSGQVKFMARYIETEAQAEE RDPVTGKWRFTHRGPFVSVLKGGKMVGNTKVMKNVANTSVLQWGGR LFCLWEGGDPYEIDSKTLKTVGKFELINNCKSLAEQKKLINGDFLDVA AQILKPILYGVFKMPPKRLLSHYKIDARRNRLLIASCNAEDMLLPRSNF TFYEFDSNFQLLQSQEFDIPDHLMIHDWAFTDTHYILFGNRIKLDIPGS MTAVCGLSPMISALSVNPSKATSPIYLLPRFSDHNQTNIVQRDWRKPI EAPTQMWVLHVGNAFEEDKENG NVNIQIQASGCSYQWFNFQKMFGY DWQSGKLDPSMMNVEEGEEKLLPHLVQVSISLDTNGNCTRSSVNDLN</p>

	TQWNKAADFPAMNPDYSGKKNEYVYAATSSGSRQALPHFPFDTVVKL NTADKSVRKWSAGRRRFIGEPVFIPRGITEDDGYLLVVEYAVSTQRCYL VILDAQIIGEKNEVVARLEVPRHLNFPLGFHGFWAPSNTGQGNLPNFES KCKDSWSMLEDNMVNLGNSKNSR
NtCCD1-1	MGRINGVARIEGGVVVVDPKPQTGLTAKAIDLLERVMVKLMHDSSKP LPFLQGNYPPTDETPPLTNLPVKGHLPECLNGEFVRVGPNNPKFAPVAGY HWFDGDGMIHGLQIKDGKATYVSRFVRTSRLKQEEFFGGAKFMKIGD LKGLFGLFSVYIYMLREKLKVLDTSYGNGAANTAMIYHHGKLLALHE GDKPYVVKVLEDGDLQTLGMLDYDKRLQHSFTAHPKVDPVTGEMFT FGYSQTPPYATYRVISKDGVMMQDPVPITIPASVMMHDFAITENYSIMMD LPLYFKPKEMVKNKKLVYSFDPTKKARFGILPRYAKNESLIKWFELPN CFIFHNANAWEEGDDVVLITCRLQNPDLDAINGTEKEQQRDGFTNELY EMRFNMKTGLASQKKLSESAVDPRVNENYTGRKQRYVYGTILNHM AKITGVVKFDLHAEPETGKTKLEVGGNVLGIFDLGPGRFGSEAIFVPC QPGTECEEDDGYLILFVHDENTGKSSVNVIDAKTMSAEPVAVVELPKR VPYGFHAFFVTEEQIQEQAKL
NtCCD1-2	MGRKEEINGVTRIEGGVVVVDPKPQNGLTAKAIDLLERVMAKLMHDS SKPLPFLQGNYPPTDETPPFKNLPVKGHLPECLNGEFVRVGPNNPKFAP VAGYHWFDGDGMIHGLHIKDGKATYVSRFVRTSRLKQEEFFGGAKFM KIGDLKGLFGLFSVYIYMLREKLKVLDTSYGNGTANTAMIYHHGKLL ALHEGDKPYVVKVLEDGDLQTLGMLDYDKRLQHSFTAHPKVDPVTG EMFTFGYSQTPPYATYRVISKDGVMMQDPVPITIPASVMMHDFAITENYS IMMDLPLYFKPKEMVKNKKLAYSFDPPTKKARFGILPRYAKNESLIKWF ELPNCFIFHNANAWEEGDDVVLITCRLQNPDLDAINGTEKEQQRDGFT NELYEMRFNIKTGLASQKKLSESAVDPRVNENYTGRKQRYVYGTILN HMAKITGIVKFDLHAEPETGKTKLEVGGNVLGIFDLGPGRFGSEAIFVP RQPGTECEEDDGYLILFVHDENTGKSSVNVIDAKTMSAEPVAVVELPK RVPYGFHAFFVTEEQILEQAKL
NtCCD1-3	MGRKEEDDTVERTEGGVVVNVNPKPKKGVIGKAIDLLEKVIKLMHDS TKPLHYLSGNFAPPTDETPPLKDLSVTGHLPECLNGEFVRVGPNNPKFAPV AGYHWFDGDGMIHGLRIKDGKATYVSRYVRTSRLKQEEFFGGAKFM KIGDLKGLFGLFTVYMQVLRAKLKVLDTITYGNGTANTALVYHHGKLL ALSEADKPYALKVMEDGDLQTLGMLDYDKRLAHSFTAHPKVDPVTG EMFTFGYSQNPPYITYRVISKGGIMQDPVPITIPPEIMMHDFAITENYAI MMDLPLCFRPKEMVKNQNLAFFFDATKNARFGVLPYRQAQSEALIKWF ELPNCFIFHNANAWEEGDEVVLITCRVQNPNDLMDVNGVVKEKLENFS NELYEMRFNMKSGAASQKKLSESAVDPRINENYTGRKQRYVYGTTL DSIAKVTGIIKFDLHAEPETGKAQLEVGGNVQGIFDLGPGRFGSEAVFV PRQPGTECEEDGGYLIFVHDENTGKSAVNVIDAKTMSAEPVAVVELP KRVYGFHAFFVTEEQIQEQAKL
NtCCD8B	MASFASSATKIYCTNILSHDRFDHGKDEPYFGKVKINEKTKKNLDLKL VTNVA SQLPVIVLPPDEVVKKEKKLAAWTSVRQERWEGELVVEGDLP LWLNGTYLRNGPGQWHIGNYNFRHLFDGYATLVRLHFENGRIMGHR QIESDAYKAAKHNNKICCREFSEVPKPDNFISYIGDMAKLLSGAPLTDN ANTGVVKLGDGRVVCLTETIKGSIVIDPNTLDTIGKFEFSDSLGGLIHSA HPIVTESEFWTLIPDLINPGYLVVRMEQGTNERNYIGRVSCRGGPAAG WVHSFPVTEHYIIVPEMPLRYCAQNLLKAEPTPLYKFEWHPHSGFMH

	<p>VMCKASGNIVASVEVPLFVTFHFINAYEEKDEDGRVSAVIADCCEHSA DTTILDKLRLENLRSFNGEDVLPDARVGRFRIPLDGSPYGELEAALNPN EHGRGMDMCSFNPSYLGKKYRYAYACGAKRPCNFPNTLTKIDLFEKK AKNWYDEGAVPFEPFFVPRPGATEEDDGVVISMISDKNGEGYALILDG STFEEIARAKFPYGFYGLHGCWVPPK</p>
NtCCD1-like	<p>MGRKEEINGVTRIEGGVVVVDPKPQNGLTAKAIDLLERVMMAKLMHDS SKPLPFLQGNYPPTDDETPPFKNLPVKGHLPECLNGEFVRVGPNNPKFAP VAGYHWFDDGDMIHGLHIKDGKATYVSRFVRTSRLKQEEFFGGAKFM KIGDLKGLFGLFSVYIYMLREKLKVLDTSYGNGTANTAMIYHHGKLL ALHEGDKPYVVKVLEDGDLQTLGMLDYDKRLQHSFTAHPKVDPVTG EMFTFGYSQTPPYATYRVISKDGVMMQDPVPITIPASVMMHDFAITENYS IMMDLPLYFKPKEMVKNKKLAYSFDPKTKARFGILPRYAKNESLIKWF ELPNCFIFHNANAWEEGDDVVLITCRLQNPDLDAINGTEKEQQRDGFT NELYEMRFNIKTGLASQKKLSESAVDFFPRVNENYTGRKQRYVYGITLN HMAKITGIVKFDLHAEPETGKTKLEVGGNVLGIFDLGPGRFGSEAFV RQPGTECEEDDGYLILFVHDENTGKSSVNVIDAKTMSAEPVAVVELPK RVPGYGFHAFVTEEQILEQAKL</p>
NtNCED3	<p>MASTTPASNTWIKPKLSMPSSRDLAYSSNSISLVKKQPNRQLPSINSSLQ APPILHFPKQSPNYQTPKTTTIPTSKPATISYPKQESTNSSSSSTTSPQWNL VQKAAAMALDAVESVLTKEHEHPLPKTADPRVQISGNFAPVPENPVS HSPPVTGKIPKCVQGVYVRNGANPLFEPTAGHHFFDGDGMVHAVQFK NGSASYACRFTETERLVQEKAALGRPVPFPAIGELHGHSGIARLMLFYA RGLFGLVDHSRGTGVANAGLVYFNNRLLAMSEDDLPYHVRVTPTGDL KTVGRFDFDQGLKSTMIAPKLDPVSGELFALSVDVIQKPYLKYFRFS KNGEKSNDVEIPVEDPTMMHDFATEKFVIIPDQQVVFVKMSEMIRGGS PVVYDKNKVSFRGVLDKYAKDGEGLKWVEVPDCFCFHLWNAWEEPE TDEIVVIGSCMTTPPDSIFNECDGGLKSVLSEIRLNLKTGKSTRRAIIQKE EDQVNLEAGMVNRNKLGRKTRFAYLAIAEPWPKVSGFAKVDLFTGEV EKFIYGDNKFGEPLFLPRDPNSKAEDDGYILAFVHNEKEWKSELQIV NAMTMKLEATVKLPTRVPYGFHGTFINAKDMANQA</p>
NtNCED1	<p>MASTTPASNTWIKPKLSMPSSRDLAYSSNSISLVKKQPNRQLPSINSSLQ APPILHFPKQSPNYQTPKTTTIPTSKPTTISYPKQESTNSSSSSTTSPQWNL VQKAAAMALDAVESVLTKEHEHPLPKTADPRVQISGNFAPVPENPVS HSLPVTGKIPKCVQGVYVRNGANPLFEPTAGHHFFDGDGMVHAVQFK NGSASYACRFTETERLVQEKAALGRPVPFPAIGELHGHSGIARLMLFYA RGLFGLVDHSRGTGVANAGLVYFNNRLLAMSEDDLPYHVRVTPTGDL KTVGRFDFDQGLKSTMIAPKLDPVSGELFALSVDVIQKPYLKYFRFS KNGEKSNDVEIPVEDPTMMHDFATEKFVIIPDQQVVFVKMSEMIRGGS PVVYDKNKVSFRGVLDKYAKDGEGLKWVEVPDCFCFHLWNAWEEPE TDEIVVIGSCMTTPPDSIFNECDEGLKSVLSEIRLNLKTGKSTRRAIIQKEE DQVNLEAGMVNRNKLGRKTRFAYLAIAEPWPKVSGFAKVDLFTGEVE KFIYGDNKFGEPLFLPRDPNSKAEDDGYILAFVHNEKEWKSELQIVN AMTMKLEATVKLPTRVPYGFHGTFINAKDMANQA</p>
SiCCD1A	<p>MGRKEDDGVVERIEGGVVVVNPKPRRGITAKAIDLLEWGIVKLMHDSS KPLHYLQGNFAPTDDETPPLNDLVVQGHLPCLNGEFVRVGPNNPKFAPV AGYHWFDDGDMIHGLRIKDGKATYVSRVVRTSRLKQEEFFGGAKFM KVGDLKGLFGLFTVYMQMLRTKLKVLDISYGNSTANTALVYHHGKLL</p>

	ALSEADKPYALKVLEDGDLQTLGMLDYDKRLTHSFTAHPKVDAVTGE MFTFGYAHTPPYITYRVISKDGMQDPVPITIPPEPIMMHDFAITENYAIM MDLPLCFRPKEMVKKNKLAFTFDATKKARFGVLPRYANNEALIRWFE LPNCFIFHNANAWEEGDEVVLITCRLVNPDLDMVNGAVKEKLENFCN ELYEMRFNMKSGAASQKKLSESAVDFPRINENYTGRKQRYVYGTTLN SIAKVTGVIKFDLHAEPETGKSQLEVGGNVQGIFDLGPGRFGSEAVFVP SRPGTEREEDDGYLIFVHDENTGKSAVNVIDAKTMSAEPVAVVELPK RVPYGFHAFFVTEEQIQEQAKL
SICCD7	MDLQFVSLPPNSKTKAKMQAKACHNINNIPPKLLPPAKLPSTVAMSPS QLTLPSHVARAITITTSPTHEVYTPEIDDTVAYWDYQFLFVSQRSEATE PVSLRVVEGSIPSDFPSGTYYLTGPGLFADDHGSTVHPLDGHGYLRTFE IDGSTGQVKFMARYIETEAQTEERDPVSGKWRFTHRGPFSVLKGGKM VGNTKVMKNVANTSVLQWGGRLFCLWEGGDPYEIDSKTLNTLGKFE LIKNSDQVLEDKKISHSDFLDVAAQLLKPILYGVFKMSPKRLLSHYKID TRNRLLIMSCNAEDMLLPRSNFTFYEFDSNFQLLSQFEFEIPDHLMIH DWAFTDTHYILFGNRIKLDIPGSMTAVCGLSPMISALSVNPSKPTSPIYL LPRFRNNNVERDWRKPIEAPSQMWWLHVGNAFEIDEQNGNLNIQIQ ASGCSYQWFNFQKMFGYDWQSGKLDPSMMNVEEGEEKLLPHLVQV CINLDKKGNCTKCSVNDLNPEWNKAADFPAMNPEFSGRKNRYIYAAT CTGSRQALPHFPFDAVVKLNAVDKSVQKWSAGRRRFIGEPVFIPRGTN KEDDGILLVVEYAVSTQRCYLVILDAQKIGEKNEVVARLEVPRHLNFP LGFHGFWAPTNSLANLQKIESKCKNSWSMMKDNMVKLGQ
SICCD1B	MGMNEEDGVARIEGVVVVDPKPKQNGVAAKAIDWVEWAIKLMNDST KPLPFLQGNFAPTDETPPLKNLPVIGHLPECLNGEFVRVGPNPKEFAPVA GYHWFDGDGMIHGLQIKDGKATYVSRFVRTSRLKQEEFFGGAKFMKI GDLKGLFGLFSVYIYMLREKLKVLDTSYGNGTANTAMIYHHGKLLAL HEGDKPYVVKILEDGDLQTLGMLDYDKRLQHSFTAHPKVDPVTGEM FTFGYSQTPPFATYRVISKDGVQMOPVPITIPASVMMHDFAITENYAIM MDLPLYFRPKEMVKKNQLAYSFDPTKKARFGVLPRYAKNESLIKWFE LPNCFIFHNANAWEEGDDVVLITSRLQNPDLDAIKGTEKEEQRDGFTN ELYEMRFNMKNGVASQKKLSEAAVDFPRINENYTGRKQRYVYGTTLN NVAQITGVVKFDLHAEPETGKTLEVGGNVPGIFDLGPGRFGSEAFVVP RQPGTECEEDDGYLILFVHDENTGKSSVNVIDAKTMSAEPVAVVELPK RVPFGFHAFFVTEEQIQEQAKM
SICCD8	MASLASSTTKIYCNKILPDMFDHGHGKSHLGSKLKNNEKNKKKLDLK LVTKVANQLPVIVPPPQDEVISKEKKLAAWTSVRQERWEGELVVEGEL PLWLNGTYLRNGPGQWHIGDYNFRHLFDGYATLVRLHFENGRLLIMGH RQIESDAYKAAKISKKICYREFSEVPKVDNFLSYIGDMAKLLSGASLTD NANTGVVKLGDGRVVCLTETIKGSIVIDPNTLDTIGKFEYSDSLGGLIH SAHPVVTDSFITLIPDLMPGYTVVRMEAGTNERKYIGRVSCRGGPA PGWVHSFPVTENYVIVPEMSLRYCAKNLLKAEPTPLYKFEWHPDSKA FVHVMCKASGNIVASVEVPLYVTFHFINGYEEKDEDGRVTAVIADCCE HSADTTILDKLRLNLRSFNGKDVLPDARVGRFRIPLDGSPYGELEAAL DPNEHGKGMDMCSMNPAYLGKKYRYAYACGAKRPCNFPNTLTIDLF DKKAKNWDYDEGAVPSEPFFVARPGATEEDDGVVISMISDKNGEGYALI LDGSTFEEIARAKFPYGLPYGLHGCWVPKI
SINCED6	MQTIKPLNSPSFSCKILINPSKKNTITLPRTRIPPLSSPSSSPSQSSSNSDES

	<p>KIFPLKIDPPKLNLFQKIASALDMLEKSIVTKLEKKHKLNRTVDPEIQL EGNFAPVHESSVQHGLEVVGHIPSNLTGVYVRNGANPLYKPINGHHLF DGDGMIHAVKLDKNNKASYSCRFTQTSRLVQEASLGRPVPFKPIGEL HGHLGLARLALFFARASLGLVDATKGTGVANAGLVYFNGRLLAMSED DLPYNVIKEDGDLESNGRYDFNGQINDPLIAHPKVDPITGEFYTLSYNI LKKPYLKLKFDTCGIKSRDISISLQNPSMIHDAITESHVIIPDYQVVFK LSEMIRRGSPVVHDPNKVSRFGVLSKDDHDESRIKWIDVPNCFCMHL WNAWEENHEESGRSTRRIIVSGMNLEAGQVNKTRLGEKTRYTFMAIA EPWPKCSGLAKIDLVTGNVTKFLHGDDRFGGEPYFVPSTKEGEDEGY LMSYVRDERNEKSELIINAKNMKQIALVKIPKRVPGFHGTFVSSQDL CNQFSC</p>
O24023.2	<p>MATTTSHATNTWIKTKLSMPSSKEFGFASNSISLLKNQHNQRQSLNINSS LQAPPILHFPKQSSNYQTPKNNTISHPKQENNNSSSSSTSKWNLVQKAA AMALDAVESALTKEHEHPLPKTADPRVQISGNFAPVPENPVCQSLPVT GKIPKCVQGVYVRNGANPLFEPTAGHHFFDGDGMVHAVQFKNGSAS YACRFTETERLVQEKAALGRPVPFKAIGELHGHSGIARLMLFYARGLFG LVDHSGGTGVANAGLVYFNNRLLAMSEDDLPYHVKVTPGTDLKTEG RFDGDLGQLKSTMIAHPKLDPVSGELFALSVDVIQKPYLKYFRFSKNGE KSNDVEIPVEDPTMMHDAITENFVVIPDQQVVFVKMSEMIRGGSPVVY DKNKVSFRGILDKYAKDGSCLKWVEVPDCFCFHLWNAWEEAETDEIV VIGSCMTPPDSIFNECDEGLKSVLSEIRLNLKTGKSTRKSIIENPDEQVN LEAGMVNRNKLGRKTEYAYLAIAEPWPKVSGFAKVNLTGEVEKFIY GDNKYGGEPLFLPRDPNSKEEDDGYILAFVHDEKEWKSELQIVNAMS LKLEATVKLPSRVPGFHGTFINANDLANQA</p>
K4CJJ1.1	<p>MTSTIANYRVSHSFSPSTSYSLDFTLPSKSISMKNHTTTTKTKIHSALLTL PKQNNTPKNQPQFQTSHWNFFQKAAAKALDIVESALVSRELQNPLPK TADPRVQIAGNFAPVPEQSVRHNLPVTGTIPDCINGVYVRNGANPLFEP VAGHHLFDGDGMVHAVTVENGVSYSRFTETERLVQERELGHPVFP KAIGELHGHSGIARLLLIFYARGVFGVLVDHSHGTGVANAGLVFFNNRLL AMSEDDVPYHVQVLPSGDLQTVGRYNFDDQLKSTMIAHPKIDPVSGE LFALSVDVVQKPYLKSFKFSPDGEKSPDVEIPLDVPTMMHDAITENY VVIPDQQVVFVKLQEMIKGGSPVIYDKNKKSRFGILPKNAENSENIIWVE SAETFCFHLWNAWEEPETDEVIVIGSCMTPPDSIFNECNENLKSVLSEIR LNLKTGESTRRQLLSPSDQVNLEAGMVNRNKLGRKTQFAYLAIAEPW PKVSGFAKVDLSTGEIKKHIYGDKRYGGEPLFLPRNVNSEKEDDGYIL AFCHDEKTWKSELQIVNAMTLELEATVKLPSRVPGFHGTFISSKDLQ NQV</p>
AtCCD1	<p>MAEKLSDGSIISVHPRPSKGFSSKLLDLLERLVVKLMHDASLPLHYLS GNFAPIRDETPPVKDLPVHGFLPECLNGEFVRVGPNNPKFDAVAGYHWF DGDGMIHGVRIKD GKATYVSRYVKTSRLKQEEFFGA AKFMKIGDLKG FFGLLMVNIQQLR TKLKILDNTYGNGTANTALVYHHGKLLALQEADK PYVIKVLEDGDLQTLGIIDYDKRLTHSFTAHPKVDPVTGEMFTFGYSHT PPYLTYRVISKDGIMHDPVPITISEPIMMHDAITETYAIFMDLPMHFRP KEMVKEKKMIYSFDPTKKARFGVLPYAKDEL MIRWFELPNC FIFHNA NAWEEEDEVLITCRLENPDLD MVSGKVKEKLENFGNELYEMRFNM KTGSASQKKLSASAVDFPRINECYTGKKQRYVYGTILDSIAKV TGIIF DLHAEAETGKRMLEVGGNIKGIYDLGEGRYGSEAIYVPRETAEEDDG</p>

	YLIFVHDENTGKSCVTVIDAKTMSAEPVAVVELPHRVPYGFHALFVT EEQLQEQLTI
AtCCD8	MASLITTKAMMSHHHVLSSSTRITTLYSDNSIGDQQIKTKPQVPHRLFAR RIFGVTRAVINSAAPSPLPEKEKVEGERRCHVAWTSVQQENWEGELTV QGKIPTWLNGTYLRNGPGLWNIGDHDHFRHLFDGYSTLVKLQFDGGRIF AAHRLLESDAYKAAKKHNRLCYREFSETPKSVIINKNPFSGIGEIVRLF SGESLTDNANTGVIKLGDGRVMCLTETQKGSILVDHETLETIGKFEYDD VLSDHMIQSAHPIVTETEMWTLIPDLVKPGYRVVRMEAGSNKREVVG RVRCRSGSWGPGWVHSFAVTENYVVIPEMPLRYSVKNLLRAEPTPLYK FEWCPQDGAFIHVMSKLTGEVVASVEVPAYVTFHFINAYEEDKNGDGK ATVIIADCCEHNADTRILDMLRLDTLRSSHGHDLPLDARIGRFRIPLDG SKYGKLETAVEAEKHGRAMDMCSINPLYLGQKYRYVYACGAQRPCNF PNALSKVDIVEKKVKNWHEHGMIPSEPPFFVPRPGATHEDDGVVISIVSE ENGGSFAILLDGSSFEELARAKFPYGLPYGLHGCWIPKD
AtCCD7	MLTKMSLPIPPKFLPPLKSPPIHHHQTTPPLAPPRAAISISIPDTGLGRTGT ILDESTSSAFRDYQSLFVSQRSETIEPVVIKPIEGSIPVNFPSGTYYLAGP GLFTDDHGSTVHPLDGHGYLRAFHDGNKRKATFTAKYVKTEAKKEE HDPVTDTWRFTHRGPFVSVLKGGKRFGNTKVMKNVANTSVLKWAGRL LCLWEGGEPYEIESGSLDTVGRFNVENNGCESCDDDDSSDRDLSGHDI WDTAADLLKPILQGVFKMPPKRFLSHYKVDGRRKRLLTVTCNAEDML LPRSNFTFCEYDSEFKLIQTKEFKIDDHMMIHDWAFTDTHYILFANRVK LNPIGSIAAMCGMSPMVSALS LNPSNESSPIYILPRFSDKYSRGGGRDWR VPVEVSSQLWLIHSGNAYETREDNGDLKIQIQASACS YRWFDFQKMFG YDWQSNKLDPSVMNLNRGDDKLLPHLVKVSM TLDSTGNCNSCDVEP LNGWNKPSDFPVINSSWSGKKNKYMYSAASSGTRSELPHFPFDMVVK FDLDSNLVRTWSTGARRFVGEPMFVPKNSVEEGEEEDDGYIVVVEYA VSVERCYLVILDAKKIGESDAVVSRLLEVPRNLTFPMGFHGLWASD
CsCCD1	MGEVAKEEIEERRSIVAVNPQPSKGLVSSAVDLIEKAVVYLFHDKSKPC HYLSGNFAPVVDETPPCPDLRVRGHLPECLNGEFVRVGP NPKFMPVAG YHWFDGDGMIHGMRIKD GKATYVSRYVKTSRLKQEEYFEGPKFMKIG DLKGFFGLFMVQMQLLR AKLKVIDVSYGVGTGNTALIYHHGKLLALS EADKPYVVVKVLEDGDLQTLGLLDYDKRLSHSFTAHPKVDPFTDEMFT FGYAHTPPYVTYRVISKDGVMRDPVPITIPASVMMHDFAITENYSIFMD LPLYFQPKEMVKGKGLIFSFDATKKARFGVLP RYAKDDSLIRWFELPN CFIFHNANAWEEGDEVVLITCRLENPD LDMVNGAVKEKLENFKNELY EMRFNMKTGAASQKQLSVSAVDFPRINESYTTRKQRYVYGTILDNITK VKGIIKFDLHAEPEAGKRKLEVGGNVQGIFDLGPGRYGSEAVFVPRER GIKSEEDDGYLIFVHDENTGKSEVNVIDAKTMSAEPVAVVELPNRVP YGFHAFFVNEEQLQWQQTDV
CsCCD2	MANKEEA EKRRKKKPKPLKVLITKVDPKPRKGMASVAVDLLEKAFVYL LSGNSAADRSSSSGRRRRKEHY YLSGNYAPVG HETPPSDHLPIHGSLPE CLNGVFLRVGP NPKFAPVAGYNWVDGDGMIHGLRIKD GKATYLSRYI KTSRFKQEEYFGRAKFMKIGDLRGLLGFF TILILVLR TTLKVIDISYGRG TGNTALVYHNGLLLALSEEDKPYVVVKVLEDGDLQTLGILDYDKKLSH PFTAHPKIDPLTDEMFTFGY SISPPYLT YRVISKDGVMQDPVQISITSPTI MHDFAITENYAIFMDLPLYFQPEEMVKGK FVSSFHPTKRARIGVLP RYA KDEHPIRWFDLPSCFMTHNANAWEE NDEVVLFTCRLESPDLDMLSGP

	AEEEIGNSKSELYEMRFNLKTGITSQKQLSVPSVDFPRINQSYTGRKQQ YVYCTLGNTKIKGIVKFDLQIEPEAGKTMLEVGGNVQGIFELGPRRYG SEAFVPCQPGIKSDEDDGYLIFFVHDENNGKSEVNVIDAKTMSAEPVA VVELPSRVYPYGFHALFLNEEELQKHQAET
CsCCD2L	MESPATKLPAPLLMLSSSPFLLPSPNKSSSIFLPRKLGPLPPKYYYYNCC HPKSRSISVVS MANKEEAETSKKKPKPLKVLITKVDPKPRKGMASVAV DLLEKAFVYLLSGNSAADRSSSSSGRRRRKEHYL SGNYAPVGHETPPS DHLPIHGS LPECLNGVFLRVGPNPKFAPVAGYNWVDGDGMIHGLRIKD GKATYLSRYIKTSRFBKQEEYFGRKFMKIGDLRGLLGFFTILILVLR TTL KVIDISYGRGTGNTALVYHNGLLLALSEEDKPYVVKVLEDGDLQTLGI LDYDKKL SHPFTAH PKIDPLTDEMFTFGYSISPPYLT YRVISKDGV MQD PVQISITSPTIMHDFAITENYAIFMDLPLYFQPEEMVKGKFVSSFHPTKR ARIGVLP RYAKDEHP IRWFDLPSCFMTHNANAWEE NDEVVLFTCRLES PDL DMLSGPAEEEIGNSKSELYEMRFNLKTGITSQKQLSVPSVDFPRIN QSYTGRKQQYVYCTLGNTKIKGIVKFDLQIEPEAGKTMLEVGGNVQG IFELGPRRYGSEAFVPCQPGIKSDEDDGYLIFFVHDENNGKSEVNVIDA KTMSAEPVAVVELPSRVYPYGFHALFLNEEELQKHQAET
CsCCD4b	MEYRLSSSLFHFPSPGNRIFLKHYP SHQDHPITKKKSISINKGGSISRNR SLAAVFC DALDDLITRHSFDPDALHPSVDPHRVLRDNFAPVSEL PPTPCR VVRGTIPSALAGGAYIRNGPNPNHLP SGAHHLFEGDGMLHSLLLPSSE GGRAAIFSSRFVETYKYLVTAKSRQAIFLSVFSGLCGFTGIARALVFFFR FLTMQVDPTKGIGLANTSLQFSNGRLHALCEYDLPYVVRLSPEDGDIS TVGRIENNVSTKSTTAHPKTD PVTGETFSFSYGPIQPYVTYSRYDCDGK KSGPDVP IFSFKEPSFVHDFAITEHYAVFPDIQIVMKPAEIVRGRRMIGPD LEKVPRLG LLLPRYATSDSEMRWFDVPGFNMVHVVN AWEEEEGGEVVVI VAPNVSP IENAI DRFDLLHVS VEMARIELKSGSVSRTL LLSAENLDFGLIH RGYSGRKSRYAYLGVGDPMPKIRGVVKVDFELAGRGE CVVARREFGV GCFGGE PFFVPASEGSGGEEDDGYVVSYLHDEGKGESSFVVM DARS PELEVVAE VVLPRRVPYGFHGLIVTEAELLSQQ
CsCCD4a	MDYRLSSSSLFHFPSPGNRIFLKQSQVLA FQNQPSHQDHPTTKKKSISI NKGGSISRNRSLAAVFC DALDDLITRHSFDPDALHPSVDPHRVLRGNFA PVSEL PPTPCR VVRGTIPSALAGGAYIRNGPNPNPQYLPSGAHHLFEGD GMLHSLLLPSSEGGRAAIFSSRFVETYKYLVTAKSRQAIFLSVFSGLCG FTGIARALVFFFRFLTMQVDPTKGIGLANTSLQFSNGRLHALCEYDLPY VVRLSPEDGDISTVGRIENNVSTKSTTAHPKTD PVTGETFSFSYGPIQPY VTYSRYDCDGKKSGPDVP IFSFKEPSFVHDFAITEHYAVFPDIQIVMKPA EIVRGRRMIGPDLEKVPRLG LLLPRYATSDSEMRWFDVPGFNMVHVVN AWEEEEGGEVVVIVAPNVSP IENAI DRFDLLHVS VEMARIELKSGSVSRT LLSAENLDFGLIHRGYSGRKSRYAYLGVGDPMPKIRGVVKVDFELAGR GECVVARREFGVGCFGGE PFFVPASEGSGGEEDDGYVVSYLHDEGKG ESSFVVM DARSPELEVVAE VVLPRRVPYGFHGLIVTEAELLSQQ
CsCCD8b	MQTNLIARARDWTSYLSMDHIRTLKVQKDKSAPIDRSVGPNGGTDRP TEYVKLQSVSLGQSICPNRLIDNVSLEVACVKNYTKRHNLSISISWYLN WFQRGTYLRNGPGLWHIDDNDFRHLFDGYATLVR LHFENGRLTFGHR QVESEAYKAAKKNGR LCYREFSEVPKTDNFLSYVGELASLFS GASLTD NANTGVVVVLGDGRVVCLTETVKGSIEVDPETLDTIGKFEYGDGLGGLV HSAHPIVTEREMWTLLPDLVRAGYAVVRMEAGTNERKVVG RVECRG

	GPAPGWVHSFPVTEHYVVVPEMSLRYCAKNLLKAEPPLYKFESHPE GSYVHVMCKASGKLVASVKVPNFVTFHFINAYEETDEEGRVTAVIADC CEHNDDTTILDKLRLQNLRSFTGQDVLPEARYGRFRIPFDGSDIGELGA ALDPNEHEKGMDMCSANPAYIGKKYRYAYACGAVRPCNFPNTLTKIDL VEKKAKNWYEEGAVPSEPFFVARPGATAEDDGVVISVISDKNGEGYAL VLDGSNFEEIARAKFPYGLPYGLHGCWVPPK
CsCCD8a	MADVGI LNKLEFSLRRRIVRLKRRHSINVACVKNYTKRHNLSISISWYL NWFQRGTYLRNGPGLWHIDDNDFRHLFDGYATLVRLHFENGRLTFGH RQVESEAYKAAKKNGRLCYREFSEVPKTDNFLSYVGELASLFSGASLT DNANTGVVVLGDGRVVCLTETVKGSIEVDPETLDTIGKFEYGDGLGG LVHSAHPIVTEREMWTLLPDLVRAGYAVVRMEAGTNERKVVG RVECR GGPAPGWVHSFPVTEHYVVVPEMSLRYCAKNLLKAEPPLYKFESHPE SGSYVHVMCKASGKLVASVKVPNFVTFHFINAYEETDEEGRVTAVIAD CCEHNDDTTILDKLRLQNLRSFTGQDVLPEARYGRFRIPFDGSDIGELG AALDPNEHEKGMDMCSANPAYIGKKYRYAYACGAVRPCNFPNTLTKID LVEKKAKNWYEEGAVPSEPFFVARPGATAEDDGVVISVISDKNGEGYA LVLDGSNFEEIARAKFPYGLPYGLHGCWVPPK
CsCCD7	MHSISHRLLLFPFSPAVNRTLLPPPRHPILTTLAAASTETLIDRPDKTLKI ATETETVIQDSPAAAYWDYQFLFLSQRAETRDPVPLRLVSGSLPTDFPR GTYYLTPGLFADDHGSTVHPLDGHGYLRAFEGEKGISYSARYIRTE AEREEREESGGWRFSYRGPFV LKGGRRVGNVKVMKNVANTS VVR WGGKLMCMWEGGNPYEIEEGTLDTVGTVDLVGREGDVSVEEKKLVR GWRKGLGEIGVDIAAGFLKPILQGVFGMPPKRLLSHYKIDPKRNRLLV LSCNAEDMLLPRSNFIFYEFDSEFN LKQKKEFIIPDQLMIHDWAFTDNN YIIIGNRIKLDVPGSMGAVSGMSPMISALSVNPSQQTSP IYLLPRSSHGE NGQRDWREPIEAPAQLWALHVSNAFEERDDTTGDLEIQLLVSVCSYQ WFNFQKMF GYNWKTGRLDPSFMNVVESKESLLPHLVQVSIQLDKKG ACHGCSIAGSSDQWNRPADFPAINAAYSGQRNSFTYAGTNSGSRRFLP HFPFDSVMKLNSSDGSVAMWSAGNRTFIGEPIYISKGEEEDDGYILVVE YAVSKQRCYLVILDARNIGGANAMVAKLEV PKHLNFPLGFHGFWSAR NH
CsNCED	MTSTATSFMIGHQSSLLDSKLSKSRKHRKPLPRTIHCSTSSSSHSVIIDRP SSTPSSYYPSSVIVREREEPLRSIDKT NKNVRTLDIKKAIEAPPMNIFQQ AVSAVLDAVEDSFITNLLDKFYPLPKTSDPAIQIAGNFAPVEEQPPHDES LPVTGRIPPFINGAYVRNGANPLFEPVAGHHLFDGDGMVHAVRLQNG KATYSCRFTETERLRQERAIGRPVFPKAIGELHGHSGIAACSLFYARGL AGIVDPHTGTGVANAGLIYFNDRLLAMSEDDL PYHVRI SQSGDLETVG RYDFDQGQLDSPMIAHPKIDPATKELFALSYNVIQKPFLKYFRFSPDGEK APDVEIPLAGPTMMNDFAITENFVVVPDQQVVF KLQEMIRGGSPVVY DKEKTARFGILPKYASDASEMKWVDVPECFCFHFVNAWEDSETGEVV VIGSSMTPADSIFNECDESLESVLSEIRLNPKTGKSTRRPILSPSNQFNLE AGMVNRNRIGRKTRFAYLAIAEPWPKVSGFAKVDLSTGEVEKLIYGD GKYGGEPYFVPREGSTREDDGYVLA FVHDEETSESELQIVNGTDMRL EASVKLPSRVPGYGFHGTFIGSKELETQA

Supplemental Table S4 Sequences Alignment of *CCD4-1s* and their promoters from *L. barbarum* and *L. ruthenicum*

Alinement of <i>LbCCD4-1</i> & <i>LrCCD4-1</i> nucleic acid sequence	LbCCD4-1	ATGGATGCTTTCTCTTCTACTTTTCCTTTCTACATTATCACAACACCCTAAATCTCTTCTTTCTCCTTACA	70
	LrCCD4-1	ATGGATGCTTTCTCTTCTACTTTTCCTTTCTACATTATCACAACACCCTAAATCTCTTCTTTCTCCTTACA	70
	LbCCD4-1	ATTATTCTCCCAATTCACCATGTTCTCCTGCTCTAAAAGTTTCCTCCGTTAGAATGGAAGAAAGGCCACA	140
	LrCCD4-1	ATTATTCTCCCAATTCACCATGTTCTCCTGCTCTAAAAGTTTCCTCCGTTAGAATGGAAGAAAGGCCACA	140
	LbCCD4-1	AACTACCCTACTAGAACAAAACCACAAGAGAAGCCAACCCCTTCACCACCAAAACCAACTCCAAAAAAA	210
	LrCCD4-1	AACTACCCTACTAGAACAAAACCACAAGAGAAGCCAACCCCTTCACCACCAAAACCAACTCCAAAAAAA	210
	LbCCD4-1	GAATTACCTATAAAACCAATACCCTCAAGAACACCTCTAGAACCATCATTCCCTCCGTTATCTTCAATG	280
	LrCCD4-1	GAATTACCTATAAAACCAATACCCTCAAGAACACCTCTAGAACCATCATTCCCTCCGTTATCTTCAATG	280
	LbCCD4-1	CATTGACGATTTCATAAACTTTTCATTGATCCTCCTTGAGATCTTCTATTGATCCAAGGTATGTTCT	350
	LrCCD4-1	CATTGACGATTTCATAAACTTTTCATTGATCCTCCTTGAGATCTTCTATTGATCCAAGGTATGTTCT	350
	LbCCD4-1	CTCTGACAATTTGGCTCCAGTGGAGGAGCTTCCTCCTACTGAATGCGAAGTAGTGGAAGGCTCCCTTCCA	420
	LrCCD4-1	CTCTGACAATTTGGCTCCAGTGGAGGAGCTTCCTCCTACTGAATGCGAAGTAGTGGAAGGATCCCTTCCA	420
	LbCCD4-1	CCTTGCCTAGACGGCGCGTACATCCGAAATGGCCCTAACCTCAATATCTTCCACGTGGACCTTACCATC	490
	LrCCD4-1	CCTTGCCTAGACGGCGCGTACATCCGAAATGGCCCTAACCTCAATATCTTCCACGTGGACCTTACCATC	490
	LbCCD4-1	TTTTTGACGGAGATGGAATGCTTCACTCTATTAGAATTTCCCAAGGCAAGGTACACTCTGCAGTCGATA	560
	LrCCD4-1	TTTTTGACGGAGATGGAATGCTTCACTCTATTAGAATTTCCCAAGGCAAGGTACACTCTGCAGTCGATA	560
	LbCCD4-1	CGTTAAACTTACAAGTACACCATGAACGTGATGCCGGTTCTCCGGTTATCCCTAATGTCTTCTCCGGT	630
	LrCCD4-1	CGTTAAACTTACAAGTACACCATGAACGTGATGCCGGTTCTCCGGTTATCCCTAATGTCTTCTCCGGT	630
	LbCCD4-1	TTCAACGGTCTAACAGCCTCGGCCGCGTGGTGCTATTACGCGGCTCGAGCAATTGCAGGACAATTCA	700
	LrCCD4-1	TTCAACGGTCTAACAGCCTCGGCCGCGTGGTGCTATTACGCGGCTCGAGCAATTGCAGGACAATTCA	700
	LbCCD4-1	ATCCCACAAATGGTATAGGCCTAGCAAACACAAGTTTGGCTTTATTCGGGGGTAAACTTTTCGCTATTGG	770
	LrCCD4-1	ATCCCACAAATGGTATAGGCCTAGCAAACACAAGTTTGGCTTTATTCGGGGGTAAACTTTTCGCTATTGG	770
	LbCCD4-1	TGAATCTGATTTACCATATGCAATAAAAAATAGCCCCAGATGGTGATATTATTACCCTCGGCCGTACGAC	840
	LrCCD4-1	TGAATCTGATTTACCATATGCAATAAAAAATAGCCCCAGATGGTGATATTATTACCCTCGGCCGTACGAC	840
	LbCCD4-1	TTTGACGGAAATCTTTTCATGAGCATGACAGCACATCCCAAAATCGACCCAGAACTAACGAGGCTTTTG	910
	LrCCD4-1	TTTGACGGAAATCTTTTCATGAGCATGACAGCACATCCCAAAATCGACCCAGAACTAACGAGGCTTTTG	910
	LbCCD4-1	CTTTCGGTTATGGCCCGATTCTCCGTTTTTAACTTACTTTCGATTGAACCAACGGTACGAAAACCC	980
	LrCCD4-1	CTTTCGGTTATGGCCCGATTCTCCGTTTTTAACTTACTTTCGATTGAACCAACGGTACGAAAACCC	980
	LbCCD4-1	GGACGTGCCAATATTCTCCATGACACGTCCGTCATTTCTTCATGATTTTGCAATCACGAAGAAATACGCC	1050
	LrCCD4-1	GGACGTGCCAATATTCTCCATGACACGTCCGTCATTTCTTCATGATTTTGCAATCACGAAGAAATACGCC	1050
	LbCCD4-1	ATATTTTCGGACATACAAATAGGAATGAACCAATAGGTTAATCATGGGTGGTTCACCCGTGGGTGCGG	1120
	LrCCD4-1	ATATTTTCGGACATACAAATAGGAATGAACCAATAGGTTAATCATGGGTGGTTCACCCGTGGGTGCGG	1120
	LbCCD4-1	ACTCGGGGAAAAATCCCCGACTTGGCGTAATTCACAGTTACGCCAAGGACGAGTCGAAAATGAGGTGGTT	1190
	LrCCD4-1	ACTCGGGGAAAAATCCCCGACTTGGCGTAATTCACAGTTACGCCAAGGACGAGTCGAAAATGAGGTGGTT	1190
	LbCCD4-1	TGATGTGCCAGGGTTTAATATTGTGCACGCGATAAACGCGTGGGATGAGGACGGTGGTGATACGATAGTG	1260
	LrCCD4-1	TGATGTGCCAGGGTTTAATATTGTGCACGCGATAAACGCGTGGGATGAGGACGGTGGTGATACGATAGTG	1260
	LbCCD4-1	TTGGTGGCACCGAATATATTATCGGTGGAACATACACTAGAGAGAAATGGATTGATACATGCATGTGTTG	1330
	LrCCD4-1	TTGGTGGCACCGAATATATTATCGGTGGAACATACACTAGAGAGAAATGGATTGATACATGCATGTGTTG	1330

Alinement of LbCCD4-1 & LrCCD4-1 amino sequences		LbCCD4-1	AGAAAGTGAAGATAGATTTGAAGACAGGAATGGTGAGCAGACATCCTGTTTCTACCAGGAATCTTGACTT	1400
		LrCCD4-1	AGAAAGTGAAGATAGATTTGAAGACAGGAATGGTGAGCAGACATCCTGTTTCTACCAGGAATCTTGACTT	1400
		LbCCD4-1	TGGAGTCATCAATCCTGCTTATGTTGGGAAGAATAACAAGTATGTATATGCAGCCATTGGGGACCCTATG	1470
		LrCCD4-1	TGGAGTCATCAATCCTGCTTATGTTGGGAAGAATAACAAGTATGTATATGCAGCCATTGGGGACCCTATG	1470
		LbCCD4-1	CCAAAGGTAACAGGGGTAGCAAAATTAGACGTATCCGTAGCAGAAACAGATCGTCGCGATTGCATAGTGG	1540
		LrCCD4-1	CCAAAGGTAACAGGGGTAGCAAAATTAGACGTATCCGTAGCAGAAACAGATCGTCGCGATTGCATAGTGG	1540
		LbCCD4-1	CATGCCGACTATTGGAGAAGGCTGCTTCGGTGGTGAGCCTTTTTTGTGGCTAAAGATGCAAAACATCC	1610
		LrCCD4-1	CATGCCGACTATTGGAGAAGGCTGCTTCGGTGGTGAGCCTTTTTTGTGGCTAAAGATGCAAAACATCC	1610
		LbCCD4-1	TGAGGCTGATGAAGATGATGGCTACGTAGTGTATGTGCACAATGAGAAGACAGGGGAATCAAGATTC	1680
		LrCCD4-1	TGAGGCTGATGAAGATGATGGCTACGTAGTGTATGTGCACAATGAGAAGACAGGGGAATCAAGATTC	1680
		LbCCD4-1	TTGGTCATGGATGCAAAGTCCCCTAATCTTGACATTGTGGCTGCCGTAAATTGCCTCGTCGTGCCTT	1750
		LrCCD4-1	TTGGTCATGGATGCAAAGTCCCCTAATCTTGACATTGTGGCTGCCGTAAATTGCCTCGTCGTGCCTT	1750
		LbCCD4-1	ATGGTTTTACGGGCTTTTCGTACGGGAAAGTGATCTTAATAAGCTGTAG	1800
		LrCCD4-1	ATGGTTTTACGGGCTTTTCGTACGGGAAAGTGATCTTAATAAGCTGTAG	1800
		LbCCD4-1	MDAFSSTFLSTLSQHPKSLSPYNYSPNSPCSPALKVSSVRMEERPQTTTTRTKPQEKPTSPPKPTPKK	70
		LrCCD4-1	MDAFSSTFLSTLSQHPKSLSPYNYSPNSPCSPALKVSSVRMEERPQTTTTRTKPQEKPTSPPKPTPKK	70
		LbCCD4-1	ELPIKIPISRTPLEPSFPSVIFNAFDDFINTFIDPPLRSSIDPRYVLSDNFAPVDELPPTECEVVEGSLP	140
		LrCCD4-1	ELPIKIPISRTPLEPSFPSVIFNAFDDFINTFIDPPLRSSIDPRYVLSDNFAPVDELPPTECEVVEGSLP	140
		LbCCD4-1	PCLDGAYIRNGPNQYLP RGPYHLFDGDGMLHSIRISQ GKATLCSRYVKTYKYTIERDAGSPVIPNVFSG	210
		LrCCD4-1	PCLDGAYIRNGPNQYLP RGPYHLFDGDGMLHSIRISQ GKATLCSRYVKTYKYTIERDAGSPVIPNVFSG	210
		LbCCD4-1	FNGLTASAARGAITAARAIAGQFNPTNGIGLANTSLALFGGKLF AIGESDLPYA I KIAPDGDII TLGRHD	280
		LrCCD4-1	FNGLTASAARGAITAARAIAGQFNPTNGIGLANTSLALFGGKLF AIGESDLPYA I KIAPDGDII TLGRHD	280
		LbCCD4-1	FDGNLFMSMTAHPKIDPETNEAFAFRYGP IPPFLT YFRIEPNGTKTPDVPIFSMTRPSFLHDAITKKYA	350
		LrCCD4-1	FDGNLFMSMTAHPKIDPETNEAFAFRYGP IPPFLT YFRIEPNGTKTPDVPIFSMTRPSFLHDAITKKYA	350
		LbCCD4-1	IFSDIQIGMNP IEL IIRGGSPVGADSGKIPRLGVI PRYAKDESKMRWFDVPGFNIVHAINAWDEDGGDTIV	420
		LrCCD4-1	IFSDIQIGMNP IEL IIRGGSPVGADSGKIPRLGVI PRYAKDESKMRWFDVPGFNIVHAINAWDEDGGDTIV	420
		LbCCD4-1	LVAPNILSVEHTLERMDLIHACVEKVKIDLKTGMVSRHPVSTRNLDFGVINPAYVGKNNKYVYAAIGDPM	490
		LrCCD4-1	LVAPNILSVEHTLERMDLIHACVEKVKIDLKTGMVSRHPVSTRNLDFGVINPAYVGKNNKYVYAAIGDPM	490
		LbCCD4-1	PKVTGVAKL DVSVAETDRRD C I VACRLFEGECFGGEPFFVAKDANNPEADED DGYVVS YVHNEKTGESRF	560
		LrCCD4-1	PKVTGVAKL DVSVAETDRRD C I VACRLFEGECFGGEPFFVAKDANNPEADED DGYVVS YVHNEKTGESRF	560
		LbCCD4-1	LVMDAKSPNLDIVA AVKLPRRVPYGFHGLFVRESDLNKL	599
		LrCCD4-1	LVMDAKSPNLDIVA AVKLPRRVPYGFHGLFVRESDLNKL	599
Alinement of LbCCD4-1 _{pro} & LbCCD4-1 _{pro} nucleic sequence		LbCCD4-1 _{pro}	CCCTTCTAATTTTTTTTCCCCGTCACCCTCGCCTTCACGACTCAACTATATTTCAATTACAAGTAAACATT	70
		LrCCD4-1 _{pro}	CCCTTCTAATTTTTTTTCCCCGTCACCCTCGCCTTCACGACTCAACTATATTTCAATTACAAGTAAACATT	70
		LbCCD4-1 _{pro}	AGACTTCTCCATAGAATCTCCAAATAAGCACCAATATTTTAAATACAGAAAAGAATTCTCATCAAATTTG	140
		LrCCD4-1 _{pro}	AGACTTCTCCATAGAATCTCCAAATAAGCACCAATATTTTAAATACAGAAAAGAATTCTCATCAAATTTG	140
		LbCCD4-1 _{pro}	AGGAGAAAATAAATGGGTGTATTCTTTAAGCTTCAGCAAAATTTAAATGTCTTAAATTTAGGTGAAAACACC	210
		LrCCD4-1 _{pro}	AGGAGAAAATAAATGGGTGTATTCTTTAAGCTTCAGCAAAATTTAAATGTCTTAAATTTAGGTGAAAACACC	210
		LbCCD4-1 _{pro}	AAAAAACCCATGAGTAATGTCAAGGGAATAGATGTGATTTTGAATAATTCTTGAAGTAAAGAGTGAG	280
		LrCCD4-1 _{pro}	AAAAAACCCATGAGTAATGTCAAGGGAATAGATGTGATTTTGAATAATTCTTGAAGTAAAGAGTGAG	280
		LbCCD4-1 _{pro}	AATGAAGCACATTGTGTTTTATTGGGATTTTTTAGAGCACAGTGTGTATGAAGAAATTAAGATCCATT	350
		LrCCD4-1 _{pro}	AATGAAGCACATTGTGTTTTATTGGGATTTTTTAGAGCACAGTGTGTATGAAGAAATTAAGATCCATT	350
		LbCCD4-1 _{pro}	GTAAAAAATTTAAAAACAAGTGCTTGGTTGCGTAAAGAAGAGAACTGCGTGACAAGGTAGCAGTATA	420
		LrCCD4-1 _{pro}	GTAAAAAATTTAAAAACAAGTGCTTGGTTGCGTAAAGAAGAGAACTGCGTGACAAGGTAGCAGTATA	420

LbCCD4-1 _{pro}	TATCATTATCCCACCTTTTGTAGTTAAGAAGATATTACTCAATTAATGAAATAAACAAATATAAATAGCTAC	490
LrCCD4-1 _{pro}	TATCATTATCCCACCTTTTGTAGTTAAGAAGATATTACTCAATTAATGAAATAAACAAATATAAATAGCTAC	490
LbCCD4-1 _{pro}	TAAATGAATCTAGCCTTTAAATTTCCGTTTGCCGCGTTGCATTATAAGAAGTGCTATTGTGAATTACT	560
LrCCD4-1 _{pro}	TAAATGAATCTAGCCTTTAAATTTCCGTTTGCCGCGTTGCATTATAAGAAGTGCTATTGTGAATTACT	560
LbCCD4-1 _{pro}	GGAGTCTGAAGCTAACGTTACTGGAGTTGAGCAAAGATATAGAGGGAGATCTCTGTAAATTGTCCATT	630
LrCCD4-1 _{pro}	GGAGTCTGAAGCTAACGTTACTGGAGTTGAGCAAAGATATAGAGGGAGATCTCTGTAAATTGTCCATT	630
LbCCD4-1 _{pro}	ATCTATAACATCCACGGGTACTTTTTTAAATATCACTAGAAGAACTGAATTTCAATTGTTTAATATT	700
LrCCD4-1 _{pro}	ATCTATAACATCCACGGGTACTTTTTTAAATATCACTAGAAGAACTGAATTTCAATTGTTTAATATT	700
LbCCD4-1 _{pro}	TGTTTAGAAATATGTGGTGCATTTAATTTTGGTCTCAAAAAACAAAATAAAATTTTAAGTTTACAGAC	770
LrCCD4-1 _{pro}	TGTTTAGAAATATGTGGTGCATTTAATTTTGGTCTCAAAAAACAAAATAAAATTTTAAGTTTACAGAC	770
LbCCD4-1 _{pro}	TAATGCTCTATTTTAAAAAGGCTTTTGGGACTCGCCTCTGAGTGGACACTTGCAAAAGTCGTGAAATTC	840
LrCCD4-1 _{pro}	TAATGCTCTATTTTAAAAAGGCTTTTGGGACTCGCCTCTGAGTGGACACTTGCAAAAGTCGTGAAATTC	840
LbCCD4-1 _{pro}	ACATGTAGGGTTTAGTTCTGTGAGGCTTAATGTGTCACGGTTATACAACACATTTGATATCAATTGCATA	910
LrCCD4-1 _{pro}	ACATGTAGGGTTTAGTTCTGTGAGGCTTAATGTGTCACGGTTATACAACACATTTGATATCAATTGCATA	910
LbCCD4-1 _{pro}	GACTAATAATGTCCTCAATGCTTATTTAGTACATGATGCGTTAAGGGCATTTTTGTAGCCTAATAGGTGAA	980
LrCCD4-1 _{pro}	GACTAATAATGTCCTCAATGCTTATTTAGTACATGATGCGTTAAGGGCATTTTTGTAGCCTAATAGGTGAA	980
LbCCD4-1 _{pro}	AGGAGGGGCAAATTTGATCCAATAGTGCGAAGGAGGGCATTTTTGAATCATTCTAATACGTTAAAGAGT	1050
LrCCD4-1 _{pro}	AGGAGGGGCAAATTTGATCCAATAGTGCGAAGGAGGGCATTTTGAATCATTCTAATACGTTAAAGAGT	1050
LbCCD4-1 _{pro}	AATTTTGACTCTTTCCGTATTATAAATTTAGAAATAAGGACATCAGGCGTTAATAACTGGACTATACTT	1120
LrCCD4-1 _{pro}	AATTTTGACTCTTTCCGTATTATAAATTTAGAAATAAGGACATCAGGCGTTAATAACTGGACTATACTT	1120
LbCCD4-1 _{pro}	TATTTCTATTTTTTTTCCACATATTTACGAATCTCTTAATCCACATACATGATTGTACTAAAGCTATT	1190
LrCCD4-1 _{pro}	TATTTCTATTTTTTTTCCACATATTTACGAATCTCTTAATCCACATACATGATTGTACTAAAGCTATT	1190
LbCCD4-1 _{pro}	GAGTTTAGCCGAATCTGTACGTAACCTTCTAGCTTGCCCTTGCTCACCGAACAAACTTTGTACTAAGTCA	1260
LrCCD4-1 _{pro}	GAGTTTAGCCGAATCTGTACGTAACCTTCTAGCTTGCCCTTGCTCACCGAACAAACTTTGTACTAAGTCA	1260
LbCCD4-1 _{pro}	CTAAACAATATTTGTAACATAAAAGGTCACCTCAATTTTGCTTAAGTATCATAAAAATTGACATTTAC	1330
LrCCD4-1 _{pro}	CTAAACAATATTTGTAACATAAAAGGTCACCTCAATTTTGCTTAAGTATCATAAAAATTGACATTTAC	1330
LbCCD4-1 _{pro}	ATTTACTTTTAGTGACATTCTACAATTTACTTAGATTTATTGAATCTATAATGAATCAATCAAGTTGG	1400
LrCCD4-1 _{pro}	ATTTACTTTTAGTGACATTCTACAATTTACTTAGATTTATTGAATCTATAATGAATCAATCAAGTTGG	1400
LbCCD4-1 _{pro}	GGAGATAAGCCAACTTGATATTTAGTTTTAGTAGAGTTTTAATGAAAAACGAAAAACCACCAATTGAC	1470
LrCCD4-1 _{pro}	GGAGATAAGCCAACTTGATATTTAGTTTTAGTAGAGTTTTAATGAAAAACGAAAAACCACCAATTGAC	1470
LbCCD4-1 _{pro}	CATACGTGAACCTTAACCTCAATTTATGATTGTCATAAACTTGACTTCCTTTTCAGTTTTAATAGAGTTC	1540
LrCCD4-1 _{pro}	CATACGTGAACCTTAACCTCAATTTATGATTGTCATAAACTTGACTTCCTTTTCAGTTTTAATAGAGTTC	1540
LbCCD4-1 _{pro}	CAGTAAAAAAAAGGAAAAATCAAAATAGATCATACGTGAAATTACTTTCAATTTATGTGTGCATAAACG	1610
LrCCD4-1 _{pro}	CAGTAAAAAAAAGGAAAAATCAAAATAGATCATACGTGAAATTACTTTCAATTTATGTGTGCATAAACG	1610
LbCCD4-1 _{pro}	CCTTAATTGGTCAGGTGAAAAGAGAATTAGAAATTTTGTAGTGAGATAAGCAAACCTTGATTCTTTTTAC	1680
LrCCD4-1 _{pro}	CCTTAATTGGTCAGGTGAAAAGAGAATTAGAAATTTTGTAGTGAGATAAGCAAACCTTGATTCTTTTTAC	1680
LbCCD4-1 _{pro}	GTATTATTAGAATTCTAATGAAAAATGGAAGATCGCCCGATTACTATAAAAAGAAAATTAGTTGTGCAGA	1750
LrCCD4-1 _{pro}	GTATTATTAGAATTCTAATGAAAAATGGAAGATCGCCCGATTACTATAAAAAGAAAATTAGTTGTGCAGA	1750
LbCCD4-1 _{pro}	TAATAGAGTGTCTTTCACTGCCCCACTTTAGGAAAGTGTGGTGTCCCTAAATGAATAGTCCCTGTCT	1820
LrCCD4-1 _{pro}	TAATAGAGTGTCTTTCACTGCCCCACTTTAGGAAAGTGTGGTGTCCCTAAATGAATAGTCCCTGTCT	1820
LbCCD4-1 _{pro}	TTTGCCTTACTCCTCACTCTCCTACTCCATAAATGGGCATGGAATCTCATAGTTAGATCATGCAAGCAC	1890
LrCCD4-1 _{pro}	TTTGCCTTACTCCTCACTCTCCTACTCCATAAATGGGCATGGAATCTCATAGTTAGATCATGCAAGCAC	1890
LbCCD4-1 _{pro}	TTATTTCTTTTTCCCTTTACTCTTTAGTATCAAACTTGTCTTCTTTCTTCAAGAAGAAACAGAA	1959

