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FIGURE 1

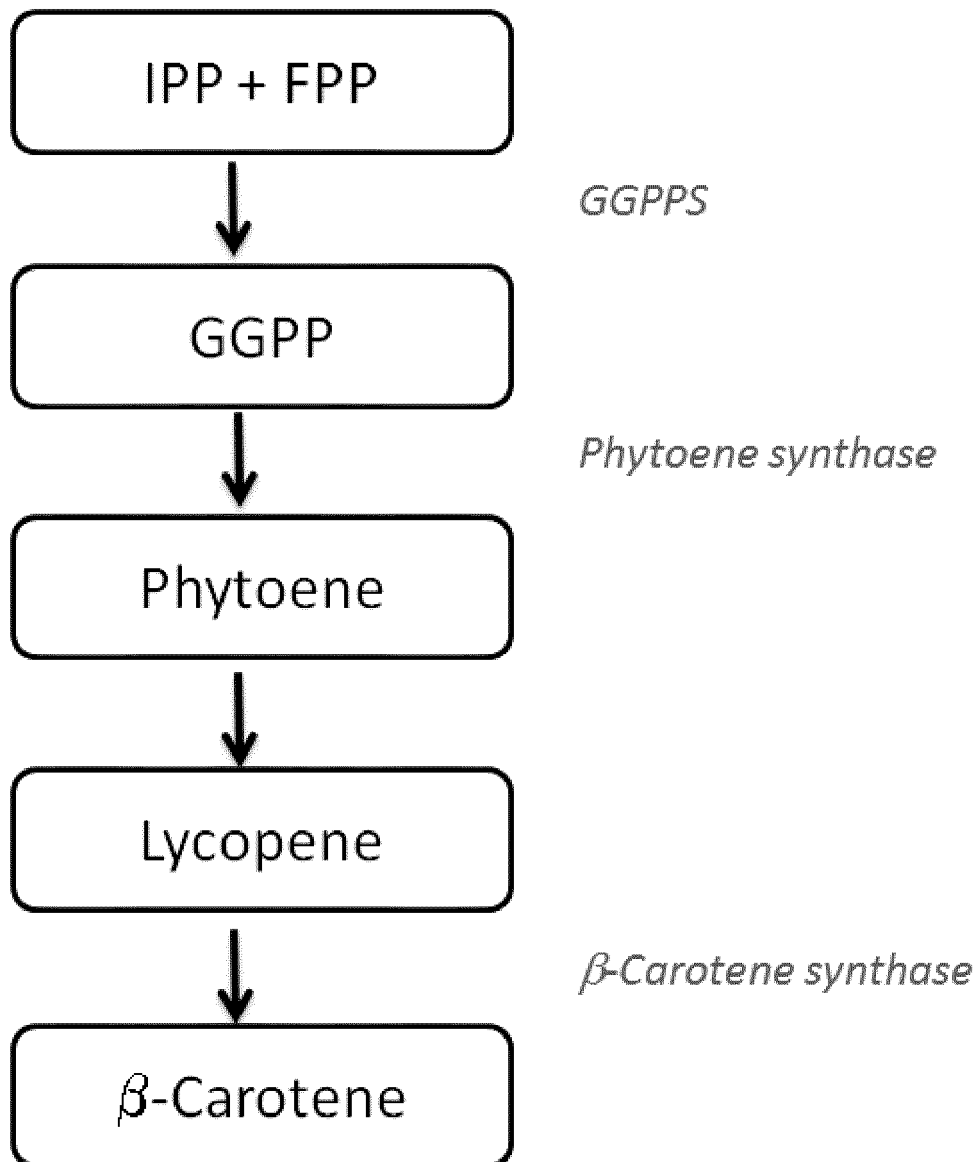


FIGURE 2

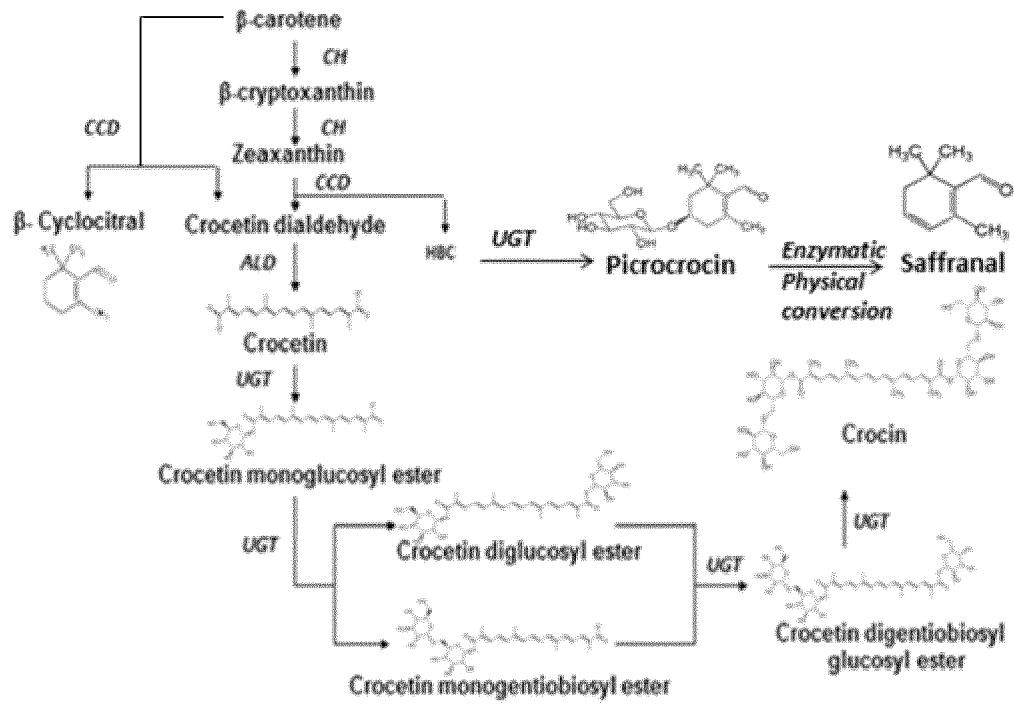
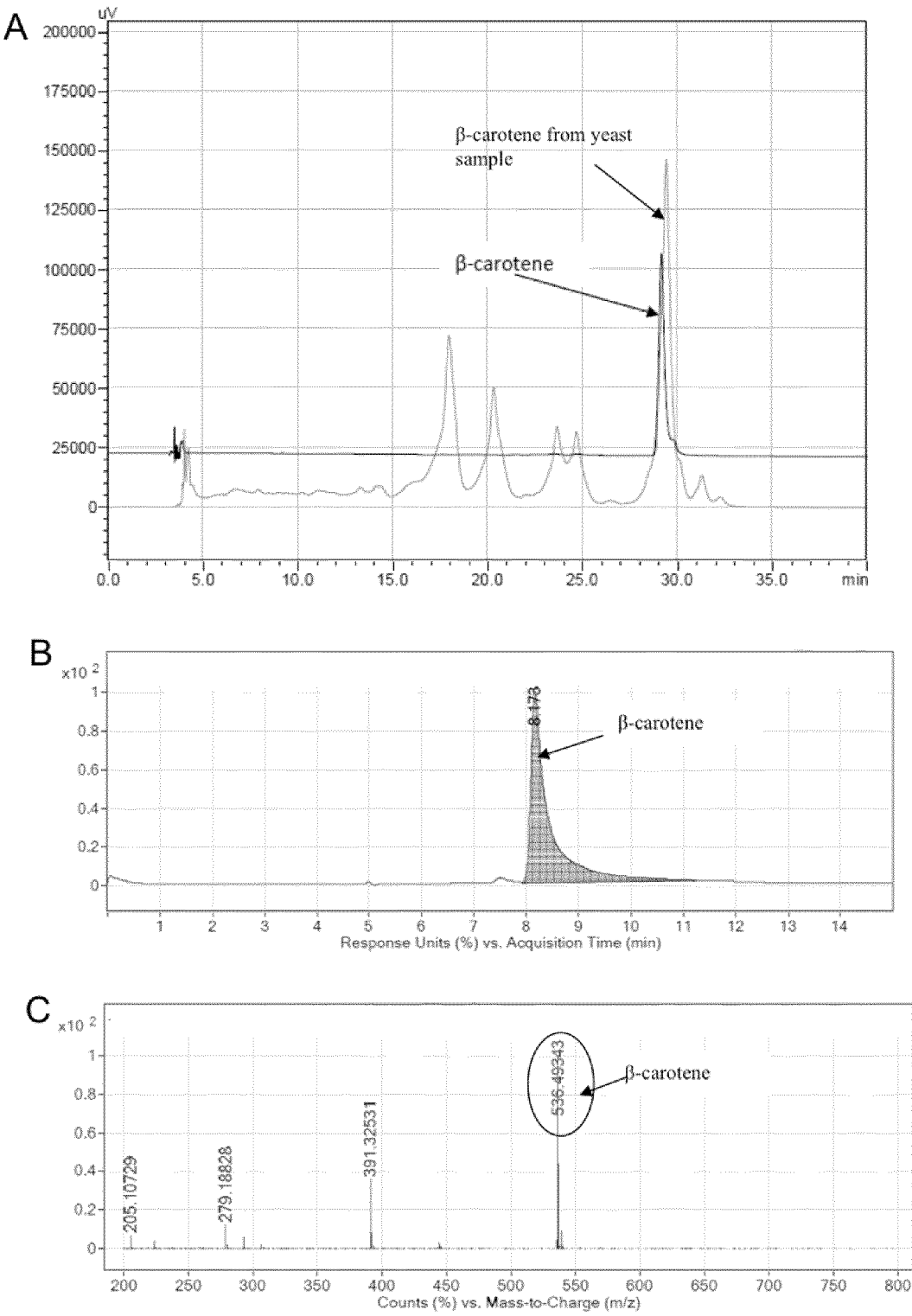


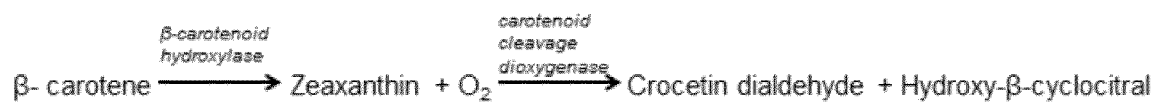
FIGURE 3



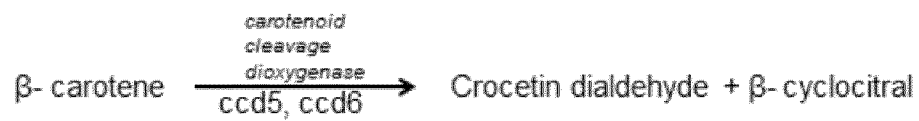
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FIGURE 4

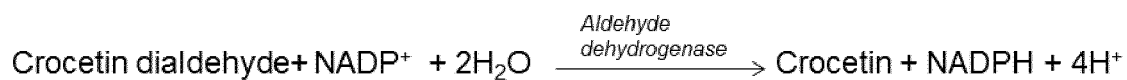
A



B



C



D

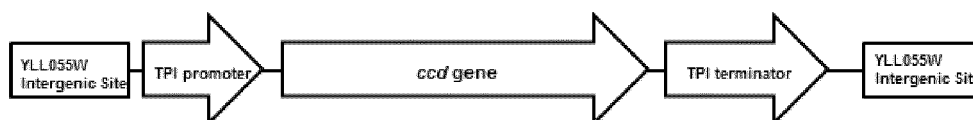


FIGURE 5

CCD1a Nucleotide (SEQ ID NO: 01)

ATGGCAAACAAAGAGGAAGCAGAAAAGAGAAAGAAGAAACCAAAGCCTTTGAAAGTACTAATTACAAAAG
 TAGATCCAAAACACGTAAGGGAATGGCATCTGTAGCTGTTGATTTGCTAGAGAAAGCCTTTGTTTACTT
 ACTGTACGGTAATTCTGCGGCAGACAGATCCTCTGGTAGACGTAGACGTAAAGAGCACTATTACTTATCT
 GGCAACTATGCTCCTGTCGGTCATGAAACTCCACCTTCTGACCATCTTCCAGTGCACGGGAGCCTGCCTG
 AATGCTTGAATGGAGTTTTCTAAGAGTGGGTCCAAATCCTAAGTTTGTCTCCAGTGCAGGGTATAACTG
 GGTCGATGGCGACGGTATGATTGATGTTTGAAGAATCAAAGATGGTAAGGCCACTTACTTATCCAGATAC
 ATCAAAACTTCAAGATTCAAACAAGAGGAATACTTTGGTAGGGCCAAGTTTATGAAAATAGGCGATCTTA
 GAGGATTACTAGGATTTTTCAATACTTATCTTAGTTTTGAGGACAACCTTTGAAGGTTATCGACATCTC
 TTACGGTAGAGGCACGGGTAACACCGCTTTAGTTTATCATAATGGGCTACTTTTAGCCCTCTCTGAGGAA
 GATAAACCATACGTCGTTAAAGTGGTGAAGATGGAGACTTACAAACGTTAGGTATTTTGGACTACGATA
 AAAAGTTATCTCATCCATTCAGTCTCATCAAAAATCGACCCATTAACAGATGAAATGTTACATTTCGG
 ATACTCACTGTCTCCTCCATATTTGACTTACAGGGTAATTTCAAAGATGGTGTGATGCAAGATCCAGTC
 CAAATCTCAATTACATCTCCTACTATAATGCATGACTTTGCTATCACCGAAAATTACGCTATCTTTATGG
 ATCTTCCATTGTACTTCCAACCAGAGGAAATGGTGAAAGGGAAATTTGTTTCTCATTTCACCCTACAAA
 AAGAGCTAGAATCGGTGTTCTCCCTAGATACGCAGAAGATGAACATCCAATCAGATGGTTTGACCTGCCA
 AGTTGTTTTATGACCCACAACGCCAACGCATGGGAGGAAAATGATGAAGTCGTTTTGTTTACCTGTGAC
 TCGAATCCCAGACCTGGATATGTTGTCAGGTCCAGCAGAAGAGGAAATAGGGAATAGTAAGTCTGAACT
 GTATGAGATGAGATTCAATCTCAAAACAGGTATAACATCCCAGAAACAATAAGTGTACCTTCAGTGGAT
 TTTCTAGAAATTAACCAGTCATACACTGGTAGAAAGCAACAATACGTTTACTGTACTCTGGGAAATACCA
 AGATTAAGGGCATTGTGAAGTTTGATCTTCAGATCGAACCAGAAGCGGGCAAAACAATGCTTGAAGTAGG
 TGGCAATGTACAAGGTATTTTTGAACTAGGCCCTCGAAGATATGGCTCTGAAGCTATATTTGTCCCATGC
 CAACCTGGTATCAAGAGTGACGAAGATGATGGATATTTGATCTTTTTCGTTCACGATGAAAACAATGGCA
 AGAGTGAGGTCAATGTTATTGATGCTAAAACAATGTCAGCCGAACCAGTTGCAGTAGTTCAACTACCAAG
 CAGAGTTCCTTACGGTTTCCATGCTTTGTTCTTAATGAAGAGGAGTTGCAGAAACATCAAGCGGAAACA
 TAA

CCD1a Protein (SEQ ID NO: 02)

MANKEEAEKR KKKPKPLKVL ITKVDPKPRK GMASVAVDLL EKAFVYLLYG NSAADRSSGR
 RRRKEHYLS GNYAPVGHET PPSDHLPVHG SLPECLNGVF LRVGPNPKFA PVAGYNWVDG
 DGMIHGLRIK DGKATYLSRY IKTSRFKQEE YFGRAKFMKI GDLRGLLGFF TILILVLRIT
 LKVIDISYGR GTGNTALVYH NGLLLALSEE DKPYVVKVLE DGDLOTGLIL DYDKKLSHPF
 TAHPKIDPLT DEMFTFGYSL SPPYLTYRVI SKDGVMDPV QISITSPTIM HDAITENYA
 IFMDLPLYFQ PEEMVKGKVF SSFHPTKRAR IGVLPRYAED EHPIRWFDLP SCFMTHNANA
 WEENDEVVLF TCRLESPDL MLSPGAEIEI GNSKSELYEM RFNLKTGITS QKQLSVPSVD
 FPRINQSYTG RKQQYVYCTL GNTKIKGIVK FDLQIEPEAG KTMLEVGGNV QGIFELGPRR
 YGSEAFVPC QPGIKSDEDD GYLIFFVHDE NNGKSEVNVI DAKTMSAEPV AVVQLPSRVP
 YGFHALFLNE EELQKHQAET

CCD1b Nucleotide (SEQ ID NO: 03)

ATGGGCGAAGTGGCAAAAGAGGAAGTTGAAGAGAGAAGATCAATCGTGGCAGTGAATCCACAACCATCAA
 AAGGGCTTGATCTTCAGCCGTGGATCTAATTGAGAAAGCTGTGGTTTACTTGTTCACGACAAAAGCAA
 ACCATGCCATTACTTGAGTGGGAACCTTCGCACCTGTTGTTGACGAAACACCTCCATGTCCAGACCTCCCA
 GTTAGAGGTCATCTGCCTGAATGTCTGAATGGCGAGTTGTTAGGGTAGGTCCAAATCCAAAGTTTCATGC
 CAGTGGCTGGATATCATTGGTTTGATGGGGACGGTATGATACATGGCATGAGAATTAAAGATGGCAAAGC
 CACCTATGTTTCAAGATACGTTAAAACTTCTAGATTAAAAACAAGAGGAATACTTTGAAGGCCCAAAGTTT
 ATGAAAATCGGAGACTTAAAAGGTTTCTTCGGTTTGTTTATGGTACAGATGCAACTATTGAGAGCTAAGT
 TGAAGGTGATTGATGTTTCATACGGTGTGGAACCTGGAACACAGCACTGATATATCATCACGGTAAACT
 ACTGGCTCTTTCTGAAGCTGACAAGCCTTATGTCGTTAAAGTTTGTAGAGGACGGCGATCTCCAAACATTA
 GGCTTGTTGGATTATGACAAGAGACTATCTCATTCCTTTACGGCTCATCCAAAAGTCGATCCTTTTACAG
 ACGAAATGTTTGTCTTCGGTTACGCCATACTCCTCCATACGTTACTTATAGAGTTATTTCTAAGGATGG
 AGTAATGAGAGATCCAGTCCCAATAACTATTCCAGCGAGTGTTATGATGCACGATTTTGCCATCACCGAA
 AACTACTCCATCTTTATGGATTGCTCTTTACTTTCAACCAAAGGAAATGGTCAAAGGTGGCAAGTTAA
 TCTTCTCATTTGATGCTACGAAAAAGGCAAGATTCGGCGTCCTACCTCGTTACGCTAAAGATGATTCCTT
 CATCCGTTGGTTTGAATTGCCAAATTGCTTCATCTTTCATAATGCAAACGCTTGGGAAGAGGGGACGAA

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FIGURE 5 CONT.

GTAGTACTTATTACATGTAGATTAGAAAACCTGATTTGGATATGGTAAACGGTGTGTGTTAAGGAAAAGT
 TAGAAAATTTCAAAAACGAGCTTTATGAAATGAGATTCAATATGAAAACAGGAGCAGCGAGCCAAAAGCA
 ATTGTCAGTGTCTGCCGTTGATTTCCCTCGTATTAATGAAAGTTACACAACCTCGAAAGCAAAGATACGTC
 TACGGTACTATATTAGATAATATCACAAAAGTGAAAGGAATTATCAAGTTTGATCTTCACGCGGAGCCAG
 AAGCAGGAAAGAGAAAAGTTAGAGGTTGGGGGTAAAGTACAGGGTATTTTTGATCTGGGTCTCGGTAGATA
 CGGATCTGAAGCAGTCTTTGTACCTAGAGAAAGAGGTATCAAAATCCGAGGAAGATGATGGTTACTTAATC
 TTCTTTGTTACAGACGAAAATACTGGTAAGTCTGAAGTCAATGTGATTGATGCTAAAACAATGTCTGCCG
 AACCAGTTGCTGTCTAGAACTACCTAACAGGGTCCCATACGGCTTTCATGCCTTCTTTGTCAATGAAGA
 GCAATTGCAATGGCAGCAAACCGACGTATAA

CCD1b Protein (SEQ ID NO: 04)

MGEVAKKEVE ERRSIVAVNP QPSKGLVSSA VDLIEKAVVY LFHDKSKPCH YLSGNFAPVV
 DETPPCPDLP VRGHLPECLN GEFVRVGNP KFMPVAGYHW FDGDGMIHGM RIKDGKATYV
 SRYVKTSRLK QEEYFEGPKF MKIGDLKGF GLFMVQMQLL RAKLKVIDVS YGVGTGNTAL
 IYHHGKLLAL SEADKPYVVK VLEDGDLQTL GLLDYDKRLS HSFTAHPKVD PFTDEMFAFG
 YAHTPPYVTY RVISKDGVMR DPVPITIPAS VMMHDFATE NYSIFMDLPL YFQPKEMVKG
 GKLI FSFDAT KKARFGVLP YAKDDSLIRW FELPNCIFH NANAWEEGDE VVLITCRLEN
 PDLDMVNGVV KEKLENFKNE LYEMRFNMKT GAASQKQLSV SAVDFPRINE SYTTRKQRYV
 YGTILDNITK VKGI IKFDLH AEPEAGKRKL EVGGNVQGI DLGPGRYGSE AVFVPRERGI
 KSEEDDGYLI FFVHDENTGK SEVNVIDAKT MSAEPVAVVE LPNRVPYGFH AFFVNEEQLO
 WQQTADV

CCD2 Nucleotide (SEQ ID NO: 05)

ATGGTGCTAACCCCTACAATCGGTGAAAAATCTTACAATAGACAAGACTGGCAGAAAGGGTATCAGTCCC
 AACCAAATGAATATGATTACGAGGTGAAGATATCGAAGGTCAAATCCCACCAGACCTACAAGGCACTGT
 ATTCAAAAACGGCCAGGTCTACTAGACATCGCCGAACAGCTATCGCTCACCCATTTGACGGTGATGGT
 ATGATTAGTGCTATCTCTTTTAACCACGGGAGAGTCCACTATAGAAACAGATTTCGTAAAGACCGAAGGAT
 ACCTTAAAGAGAAGGAGGCCGGTAAGCCTTTATACCGAGGTGTGTTTGGGACGAAAAGCCTGGTGGCAT
 ATTTGGCAACGCTTTTGATTTGAGATTGAAAAACATCGCGAATACAAATGTGATCTACTGGGGTAATAAG
 CTGCTGGCTTTATGGGAAGCTGCTGAACCTCACAGACTAGACGCAAAGACGTTGAATACTATTGGATTAG
 ATTATCTGGATGGAATATTGGAAAAAGGCGACGCGTTTGCGACACATCCTAGAATTGATCCAGCCTGTAT
 TTTTGATAACCATCAACCTTGCCTCGTCAATTTTGCGATCAAAACAGGATTAAGCTCTGCTATCACATTG
 TACAAAATTTTACCAACTGGGAAGCTCCTTAGAAGGCATACATAGTATCCCAGGTTTCTGTTTCATTCT
 ATGACTTCGTTATCACTCCACATTATGCTATCTTTTCCAAAACCCAGTTGCCTACAATCCTTTCCCTTT
 CCTGTTTGGCCTTAAAGGTGCTGGTGAGTGCCTGATTAAACCAACCTGATAAGTTGACTCGTATAATCATA
 ATTCCAAGAGATGCAAATAAGGGTGAAGTTAAAGTCCTTGAAACTCCATCTGGCTTTGTTTTTACCCT
 CTAATGCATTTGAACAAGGAGAGAAAATCTACATTGATTCTATTTGTTACCAATCCTTGCCTCAACTAGA
 TTCAAACCTCTCTTTTCACTCTGTGATTTGACTCTCTTGCTCCAGGACATCTGTGGAGATTCACTCTC
 AATCTTAGTGAAAATACAGTAACACGTGAATGTATTTTGAACATTGTTGTGAGTTCCCTTCTATCAATC
 CAGCTAAAGTGGGTAGAGATTACTGCTATCTCTACATTGCAGCAGCCATCACGCAACCGGGAATGCTCC
 ATTACAAGCTATATTGAAATTAGATTTGTTAAACAGGGGAGAAGCAGTTGCACTCATTTGCACCAAGAGGC
 TTTGCCGGTGAACCAATATTGTACCAAAACCTGACGGTATAGCAGAAGATGACGGCTGGTTATTAGTTG
 TTACTTACGATGCGGCAAACCATAGGTCAAATGTTGTTATTTTGGATGCCAAGGATATCACAACTCATT
 AGGAGTCATACATCTAAAACATCATATTCATACGGTTTGCATGGATCATGGACAAGACAATGCTTCTAA

CCD2 Protein (SEQ ID NO: 06)

MVLTPTIGEK SYNQDWQKG YQSQPNEYDY EVEDIEGQIP PDLQGTVFKN GPGLLDIAGT
 AIAHPFDGDG MISAI SFNHG RVHYRNRVFK TEGYLKEKEA GKPLYRGVFG TKKPGGIFGN
 AFDRLRLKNIA NTNVIYWGK LALWEAAEP HRLDAKTLNT IGLDYLDGIL EKGDAFAAHP
 RIDPACIFDN HQPCLVNFAI KTGLSSAITL YEISPTGKLL RRHHSIPGF CFIHDFVITP
 HYAIFQNPV AYNPFPFLFG LKGAGECVIN QPDKLRIII IPRDANKGEV KVLETPSGFV
 FHHSNAFEQG EKIIYIDSICY QSLPQLDSNS SFQSVDFDSL APGHLWRFTL NLSENTVTR
 CILEHCCEFP SINPAKVGRD YCYLYIAAAH HATGNAPLQA ILKLDLLTGE KQLHSFAPRG
 FAGEPIFVPK PDGIAEDDGW LLVVITYDAAN HRSNVVILDA KDITNSLGVI HLKHHIPYGL
 HGSWTRQCF

FIGURE 5 CONT.**CCD3 Nucleotide (SEQ ID NO: 07)**

ATGAAAGCATGGGCAAAATCTCTGGAAAAGCCTGCCGTCGAGTTTTCCGAAACCCAACCTTATTGT
 CAGGTAAAATCCCTGACGGTTTAAAGAGGGAGCCTCTATAGAAATGGTCCAGGCAGACTCGAAAGAGGGAA
 ACAAAAAGTAGGTCATTGGTTTTGATGGTGATGGCGCTGTACTTGCAGGTCATTTCATGATAAAGGCGTT
 TCAGCTACTTACCGTTACGTTCAAACCTGCCGGGTATCAGCAAGAGTCAGCAGCTAATCAATACCTTTTCC
 CAAATTACGGTATGAATGCTCCTGGGTTTTTCTGGAACAATTGGGGAAAGGAAGTTAAAAACGCTGCTAA
 TACGTCTGTCTTAGCCTTACCAGATAAACTGTTGGCATTGTGGGAAGGAGGTTTTCCACACAAATTGGAT
 CTACAATCACTAGAAACATTGGGTTTGGACAATTTGAGTTCATTACAGGCTAAGGAGACTTTTTCTGCAC
 ATCCAAAACCTTGATTTGTCTAGAGGAGAGATATTCAACTTCGGCGTCACAATTCAGCAAAGGTATCTCT
 AAACCTTATACAAATCTGACTCTACGGGACAAATTTATCCAGAAAAATACATTTGAACTCGATAGGCTAAGT
 TTGTTGCATGATTTTCGTTTTGGCCGGTCAATATCTAGTGTTTTTCGTCCCACCTATCAAAGCGGATAAGC
 TGAGTATTTTGTAGGTTTTAAGACCTTTTTAGACGCTATGCAATGGCAACCAGAACTGGGAAC TAGAAT
 ACTCATCTTTGAACGTGACAGTTTGCAATTAGTTTCTGAATCCGTAAGTATTCTGGTTTTCAATGGCAC
 TTCGCAAACGGTTGTGTTAATGATCAAGGCAATCTTGAGATAGTATTCTGTGAGATACGATGATTTCAAGA
 CTAATCAATTCCTAAAGGAAGTTGCTACAGGCGAAACAGAAACCTCGCAATTGGAAAGCTGGCATCCAT
 CACTATTAACCCATTGTCTGCCAAAGTCATTAATCAGGAAATCTTATCAGACCTGTCTTGTGACTTTCCA
 GTTGTCTCTCCACAATTGGTGGGACAAAAGTGGCAAAATACATTCCTTGCTGTGCATCGACCTGATTTCAG
 ATATTAGAAGAGAGATCATCGGATTACCAGCTTGTTACAACCATTCACAGGTAAGCTAACATCGCCTA
 TCTTGAAAATAACTGTTACGGTTCTGAACCTATTTTTGTATGCGATGGATTATCTCCAGAAACAGGTTGG
 TTGATCGTTGTGGTTTACGATGGTAACAACCACTCCTCCCAAGTCAGAATATATGACTCTCAGCAACTTG
 AAAAGGACCCTCTTTGCTGCTTACAATTGCCAAGTGTTATACCACCTTCATTTACGGGTACATGGCAGGA
 GAAAAGCGAGAAAGGCGCTGAAGCCATTAGCACTGAGAAAAGAGGCTTTTACCTTGAAAATGGCTTTCTG
 TAA

CCD3 Protein (SEQ ID NO: 08)

MKAWAKSLEK PAVEFSETQL TLLSGKIPDG LRGSLYRNGP GRLEGRKQKV GHWFDDGDGAV
 LAVHFHDKGV SATYRYVQTA GYQQESAANQ YLFPNYGMNA PGFFWNNWVK EVKNAANTSV
 LALPDKLLAL WEGGFPHKLD LQSLETLGLD NLSSLQAKET FSAHPKLDLS RGEIFNFGVT
 ISAKVSLNLY KSDSTGQIIQ KNTFELDRLS LLHDFVLAGQ YLVFFVPPIK ADKLSILLGF
 KTFSDAMQWQ PELGTRILIF ERDSLQLVSE SVTDSWFQWH FANGCVNDQG NLEIVFVRYD
 DFKNQFLKE VATGETETLA IGKLASITIN PLSAKVINQE ILSDLSCDFP VVSPQLVGQK
 WQNTFLAVHR PDSDIRREII GLPACYNHST GKLTIAYLEN NCYGSEPIFV CDGLSPETGW
 LIVVVYDGNH HSSQVRIYDS QQLEKDPLCC LQLPSVIPPS FHGTWQEKSE KGAEAISTEK
 RGFYLENGFL

CCD4 Nucleotide (SEQ ID NO: 09)

ATGACTGCTAACAGATGTGAACACACAGAACTGAATCTAGAAATCGAAGGACAATTACCAGAGGATTTGC
 AAGGCCACTTTTTTCATGGTCGCTCCTGTTGGGACCGTGGATTCTGGTGGTACTCCATTCCCTGATGGAGA
 CTCTCTGCTTAATGGTGATGGCATGATATATCGACTAGATTTTGATTGCCAGGCGAGGCTAAAATCACC
 ACTAGATTAGCTAAGCCTCCAGACTACTATGCAGACAAGGCAACGTTTTTTGAAATCTCAATACCAAAAGT
 ACAGATTCAGAAATCATGGGATTGTTAGATTTTCTACGCATTGGGTTTTTCGAAACGAATTGAACACAGC
 GTTTCTAGTCATGCCAAGCGGTAAGGAAGATGTTCTGGATAGGCTCCTTGTTACTTACGATGGCGGCAGA
 CTTTACGAATTGGATACAGAAACCTTGAAGTAGTGACGCCAGTGGGTTGGAATCAGGAGTGGAGAGCCG
 AAATGAACAAACCTCAATTTCCATTCAAGACCATTCTCTCAACAGCTCATCCAGCATTGATTTCCAACAC
 AGGTGAAATGTTTACTGTTAACTATGGGAGAGCCATCATGAACCTTCTCAAAGACTGCCATTGCCATT
 GAATTGGACGAATTGCCAAAAGACATCTACCAATTGATGAGGGCTATTATCGGTTTTTCTAATGCAAATA
 TGTTGAGAAATATCTTTCAACTGAACATTATGTGGGGCCAAAGGTATTTTACAGCAAGCAATCAATGTAAT
 TAAGTATTTGTTGGGGGAAGATATCGAAAATTTCTGTCTACCTCCTGAGATGGGACGGTACTGGAAATCTA
 GAAAGATGGAAACTAAGATTACCAGATGGTTCTCCTGTTAAATCGAACAAACTATCCATCAAATAGGTG
 TATCAAAGGACTATGTCATCTTAATGGATACTGCTTTTCATAGTCGGTTTGAACAATTAATCAACAATCC
 AATTCCAGAAAATAAGCAACTTGAGGAACTAATCAGAAATCTTCTAGAATCACCTAATAGACCAGATAGT
 TACATCTACATCGTCAGGAGAAGAGAATTGATTTCCGGCCAATATCCAATTGATTCAGACAAAGAGGTAA

FIGURE 5 CONT.

CTGTAATTGCTAAAAAGTTGATAATTCCTCTTCCTGCTGCACATTTTCTAGTTGATTACGAAAATCCAGA
 TGGTAAAATCACTTTACATGTGGCTCATATCGCTTCATGGGACGTTGCTGAGTGGATTAGAAAAGTACGAT
 TTGTCAAGCATACCCACCATAACCATCCAATCGCAAAAAGAGTTTACTCTATGGAGCCAAACGAAATGGATA
 TTTCTAGACTAGGAAGATATGTTATTGACGGTAATAGAGGAGAAGTTATTCAATCCAATGTAATATACAG
 TTCTCCATACACATGGGGCACAGGCTTATATGCCTACAGAGATAGACTGTCAAGTGGGCGTCAGCCAAAA
 AGGTTAGATGACATATACTGGATATCCTTCGGCTTATGGCAAGAGACAATGACAAAGTTCTCTACGACC
 TTTACAAGGACGCGCCTTACAGAGCTGTGCCTCTAGAGGACCTCTTAAACTTGGCCAAACAGGGCGTTCC
 TAGCTCCCTTTTGTAGATTGCACACTCCAGACGACTCTTTGAAAATCGCAGACTCTTATCAATTTCTTAGA
 GGTTACATTGGAGGGAGCCACAGTTCATACCAAGGCACACCTCTGAGGAAAAACAGTACAGAAGGTTACA
 TCATTTGTTCTGTTTTTACACCAAGATCAAGTGAGTTCTGGATCTTCGATGGGGGTGATCTGGCCAAAGG
 ACCATTAACCAAATTAAGACATCAAGATTTGAATTTTGGTTACTCTTTGCATACAGCCTGGCTACCTACA
 ATCGGACGTCGTCAAGTGTCATATAACATTCCAGTAAAATCAGATTTTCAACAATTAGTCAAGGATTTCAT
 CACCTGATATACAGAAATTGTTTGAAGATGAGATATATCCTTTCTTCTCTGATAATGGACACTTGGT
 TTA

CCD4 Protein (SEQ ID NO: 10)

MTANRCEHTE LNLEIEGQLP EDLQGHFFMV APVGTVDSSG TPFPGDSSL NGDGM IYRLD
 FDCPGEAKIT TRLAKPPDY ADKATFLKSQ YQYRFRNHG IVRFSYALGF RNELNTAFLV
 MPSGKEDVLD RLLVTYDGR PYELDTETLE VVTPVGWNQE WRAEMNKPQF PFKTILSTAH
 PAFDSNTGEM FTVNYGRAIM NLLKRLPFAI ELDELPKDIY QLMRAI IGFS NANMLRNIFQ
 LNIMWAKGIL QQAINVIKYL LGEDIENFVY LLRWDTGNL ERWKLRLPDG SPVKIEQTIH
 QIGVSKDYVI LMDTAFIVGL EQLINNP IPE NKQLEELIRN LLESPNRPDS YIYIVRRREL
 ISGQYPIDSD KEVTVIKKL IIPLPAAHFL VDYENPDGKI TLHVAHIASW DVAEWIRKYD
 LSAYPPYHPI AKRVYSMEPN EMDISRLGRY VIDGNRGEVI QSNVIYSSPY TWGTGLYAYR
 DRLSSGRQPK RLDDIYWISF GLWQETMTKF LYDLYKDAPY RAVPLEDLN LAKQGVPSL
 FRLHTPDDSL KIADSYQFPR GYIGGSPQFI PRHTSEENST EGYI ICSVFT PRSSEFWIFD
 GGDLAGGPLT KLRHQDLNFG YSLHTAWLPT IGRRQVSINI PVKSDFQQLV KDSSPDIQKL
 FEDEIYPFFP SDNGHLV

CCD4a Nucleotide (SEQ ID NO: 11)

ATGGATTACAGACTTAGTAGTTTCTTTGTTTCATTTTCCATCCCCAGGCAATAGAATCTTTCTAAAAC
 AATCTCAAGTTCTGGCTTTTCAAAATCAACCATCACACCAAGACCATCCAACCTACGAAGAAGTCTAT
 TAGTATTAACAAAGGTGGTTCCATCAGCAGAAACAGAAGTCTTGCTGCTGTTTTCTGTGACGCATTAGAT
 GATCTGATAACACGACATTCATTTGACCCAGACGCATTACATCCTTCTGTGATCCTCATAGGGTACTTA
 GAGGGAATTTGCCCCCTGTATCTGAATTACCACCAACTCCATGCCGTGTTGTAAGAGGCACTATTCCATC
 AGCGTTGGCAGGCGGAGCCTACATTAGAAATGGACCTAATCCAAATCCTCAATACCTGCCAAGTGGTGCC
 CATCACTTGTGTTGAAGGTGATGGTATGCTACATTCTCTACTATTACCATCATCCGAAGGCGGTAGAGCTG
 CAATCTTTTCTAGCAGATTTGTGCGAACTTATAAGTACCTGGTGACAGCCAAATCAAGACAAGCTATTTT
 CCTTTAGTATTTTCTGGTCTTTGCGGATTACAGGTATCGCAAGAGCCTTGGTTTTCTTTTTCAGATTT
 CTAACAATGCAAGTCGATCCAACAAAAGGAATAGGTTTGGCCAACACCTCTTTCAGTTTCAGTAACGGCA
 GACTGCACGCTTTATGTGAATATGATCTCCCATACGTTGTTCTGCTGAGCCCTGAGGATGGAGATATTTT
 TACCGTAGGGAGAATTGAGAATAACGTTTCAACAAAATCTACCACAGCTCATCAAAAACCTGATCCAGTC
 ACAGGAGAAACATTTTCTTCTCTTATGGGCCTATCCAGCCTTATGTGACCTATTCTAGATACGACTGTG
 ATGGAAAAGAAATCAGGTCCTGATGTTCTTATCTTTTTCATTCAAAGAGCCATCCTTTGTCCATGATTTTCG
 TATCACTGAGCACTACGCAGTTTTCCCTGATATTGAGATAGTTATGAAACCAGCAGAAATCGTAAGAGGT
 AGACGTATGATTGGTCTGATTTGGAAAAAGTGCCAAGGTTAGGCCTCCTTCCAAGATACGCCACATCTG
 ATTCTGAAATGAGATGGTTTGACGTACCTGGCTTCAATATGGTACATGTTGTTAACGCATGGGAAGAGGA
 GGGCGGAGAAGTAGTCGTGATCGTAGCGCCAAACGTGTCCCCTATTGAAAATGCAATCGACAGATTTGAC
 CTATTGCATGTGTCTGTGCGAAATGGCTAGAATCGAATTAAAGTCAGGGTCTGTTTCCAGAACTTTGCTGT
 CAGCCGAAAATTTGGACTTCGGTTTAATACACAGAGGATACTCCGGCAGGAAGTCTAGATACGCTTACTT
 GGGCGTTGGCGATCCTATGCCTAAAATCAGAGGTGTAGTCAAGGTTGACTTCGAATTGGCTGGTAGAGGT
 GAATGTGTTGTGGCTAGGAGAGAATTTGGTGTGGCTGCTTTGGTGGGGAGCCATTTTCTGCTCCAGCAT

FIGURE 5 CONT.

CTGAAGGATCTGGTGGTGAAGAGGATGATGGGTACGTTGTGTCATATTTGCACGATGAGGGAAAAGGTGA
ATCATCATTTGTGCGTTATGGACGCAAGATCACCAGAGTTAGAAGTTGTAGCGGAAGTGGTCTTCCACGT
AGAGTGCCATACGGTTTTTCATGGATTGATAGTTACTGAAGCTGAACTCTTAAGTCAACAATAA

CCD4a Protein (SEQ ID NO: 12)

MDYRLSSSSL FHFSPGNRI FLKQSQVLAF QNQP SHQDHP TTKKKSISIN KGGSISRNR
LAAVFCDALD DLITRHSFDP DALHPSVDPH RVL RGNFAPV SELPPTPCR VVRGTIPSALA
GGAYIRNGPN PNPQYLP SGA HHLFEGD GML HSLLLPSSEG GRAAIFSSRF VETYKYLVT
KSRQAI FLSV FSGLCGFTGI ARALVFFFRF LTMQVDPTKG IGLANTSLQF SNGRLHALCE
YDLPYVVRSL PEDGDISTVG RIENNVSTKS TTAHPKTD PV TGETFSFSYG PIQPYVTYSR
YDCDGKKSGP DVPIFSFKEP SFVHDFAIT E HYAVFPDIQI VMKPAEIVRG RRMIGPDLEK
VPRLGLLP RY ATSDSEMRWF DVPGFNMVHV VNAWEEEGGE VVIVAPNV S PIENAI DRFD
LLHVSVE MAR IELKSGSVSR TLLSAENLDF GLIHRGYSGR KSRYAYLG V DPMPKIRGVV
KVDFELAGRG ECVVARREFG VGC FGGE PFF VPASEGSGGE EDDGYVVS YL HDEGKGESSF
VMDARSPEL EVVAEVVLP R RVPYGFHGLI VTEAELLSQQ

CCD4b Nucleotide (SEQ ID NO: 13)

ATGGAGTACAGATTGTCCTCTTCTCTATTTTCATTTTCCTTCCCCAGGTAACAGAATTTTCTAAACATT
ACCCAAGCCACCAAGACCATCCAATTACCAAAAAGAAAGCATCTCAATTAACAAAGGAGGATCAATCTC
TAGAAATCGTTTCATTAGCGGCAGTTTTCTGTGACGCTTTAGATGACTTGATCACACGACATTCATTTGAT
CCAGACGCCCTTCATCCATCAGTTGACCCACATAGAGTGCTCAGAGGCAATTTTGCTCCAGTATCTGAAT
TACCTCCAACACCTTG TAGAGTAGTTCTGTGGGACTATCCCTTCTGCCCTGGCAGGTGGTGCTTACATTAG
AAATGGTCCAAATCCAAATCACCTCCCAAGTGGTGACATCATCTGTTTGAAGGTGACGGTATGCTACAC
TCTTTGCTGTTACCAAGTAGTGAAGGTGGTAGAGCCGCTATTTTCTCATCTAGATTCTGTTGAGACTTACA
AGTACTTGTTGAGAGAAGAGCAGGACGACCAATCTTCCTTTCTGTTTTTAGCGGCCTTTGTGGGTTTAC
TGGTATTGCTAGAGCCCTTGATTTTTCTTCAGATTCCTTACAATGCAAGTCGATCCAATAAGGTATC
GGCCTCGCCAATACAAGCCTACAATTTTCTAACGGGAGACTGCGATGCGTTGTGTGAATATGACCTGCCAT
ACGTTGTTTCGATTATCACCTGAAGATGGTGACATTTCTACCGTTGGTCGTATAGAAAATAACGTTTCTAC
AAAATCCACTACAGCTCATCCAAAGACGACCCAGTCAACAGGCGAAACCTTCTCTTTTCAGTTATGGTCCA
ATCCAACCATACGTGACTTATAGTAGGTATGATAGACACGGTAAAAAGTCTGGACCTGATGTTCCAATTT
TCTCTTTTAAGGAACCTTCCTTTGTGCACGATTTTCGCAATAACAGACCACTACGCAGTTTTTCCAGATAT
CCAGATAGTCATGAAACCTGCAGAGATCGTCAGAGGCAGGAGAATGATAGGCCAGATTTGGAGAAGGTT
CCAAGATTGGGTCTTTTACCTAGATACGCAACATCAGATTAGAAATGAGATGGTTTGTATGTACCTGGAT
TCAACATGGTTTCATGTTGTCAATGCTTGGGAGGAGGAAGGCGGAGAAGTAGTGGTTATTGTGGCTCCTAA
CGTATCTCCAATAGAAAACGCCATCGATAGACTAGATTTGATCCATGTCTCCGTAGAAATGGCAAGAGTT
GATTTGAGATCCGGTTCTGTCTCCAGAACTTTACTCTCAGCAGAAAATTTGGATTTTGGGGTAATTCATA
GAGGTTACAGTGGCAGAAAGAGTAGATATGCTTACTTGGGCGTTGGCGACCTATGCCTAAGATCAGAGG
TGTCGTCAAAGTCGATTTTGAATTGGCTGGGAGAGGTGAATGCGTAGTGGCTCGTAGGGAGTTTGGGGTT
GGATGCTTTGGAGGTGAACCATTTTTCGTCCCTGCCTCCGAAGGATCTGGCGGAGAGGAAGATGATGGCT
ATGTTGTGTCTTACTTGCACGATGAAGGAAAAGGTGAATCATCATTTGTGGTAATGGATGCTAGGTCACC
TGAGCTAGAAGTGGTTGCCGAAGTTGTATTACCTAGAAGAGTCCCATACGGATTCCACGGTCTATTTGTG
ACTGAAGCGGAACCTTTTATCACAGCAATAA

CCD4b Protein (SEQ ID NO: 14)

MEYRLSSSLF FHFSPGNRIF LKHYP SHQDH PITKKKSISI NKGSISRNR SLAAVFC DAL
DDLITRHSFD PDALHPSVDP HRVLRGNFAP VSEL PPTPCR VVRGTIPSAL AGGAYIRNGP
NP NHLPSGAH HLFEGD GMLH SLLLP SSEG RAAIFSSRFV ETYKYLVERR AGRPIFLSVF
SGLCGFTGIA RALVFFFRFL TMQVDPTKGI GLANTSLQFS NGR LHALCEY DLPYVVR LSP
EDGDISTVGR IENNVSTKST TAHPKTD PV TGETFSFSYG I QPYVTYSR DRHGK KSGPD
VPIFSFKEPS FVHDFAITDH YAVFPDIQIV MKPAEIVRGR RMIGPDLEKV PRLGLLP RYA
TSDSEMRWFD VPGFNMVHV NAWEEEGGEV VVIVAPNVSP IENAI DRDL IHVSVEMARV
DLRSGSVSRT LLSAENLDFG VIHRGYSGRK SRYAYLGVD PMPKIRGVVK VDFELAGRGE

FIGURE 5 CONT.

CVVARREFGV GCFGGEFFV PASEGSGGEE DDGYVVSYLH DEGKGESSFV VMDARSPELE
VVAEVVLP RR VPYGFHGLFV TEAELLSQQ

CCD5 Nucleotide (SEQ ID NO: 15)

ATGTCAATTAAAGACACAGTTCAAAATACAGTTAATGTTTCTAACTTTTCTAGATCACAACTAGGTCAAC
CAGATGAAAACAATTTGTACCAAGCTGTCGCGACTATTACAGAAGGTAGATGGCCTGAAAACTTATCCGG
TTATGTGTTTCATCGTCTGCCCTTTTCATCGTAAAAATGATAGGCACCTATTTTCAGGAGAAGGTGTTATT
ATCAAATGGGATTTGCAGGGTAAAAACAATCAAGTCAATGTGTATTCCAAGAAGTTGAAAACTTGGGACT
CCTTCTGGAGAAAAGTTTGGCCAATCTTTAACATCTCTCAAGCTACATTTCTGCTGTCTGTAGTATATT
AGGATGCTCTGAAATTGCTAACACAGCTATGATAAACTTGAAAAAGTAGCAGAGGACCAACAGTTGGAG
GAAACAAGATTGATCTTGACAGCCGATGCTGGCCGTTACTGGGAAGTAGATCCAGTATCTTTGGATACTA
TTACACCAATCGGGTACTTTGATCAACATATTGTGAGCGTCCCACTTTTCATTCTTTCCAGTCTGGAAAA
TACCGCCCATCCATTTTACGATAAAAAAGACGAAGGAGTTCATCACCTGTGAATTGAAGCTAAAACTGGTT
TCTGGTGGTATGCTCAAAGATTTGGACAAATCTGCTTACATTGTGTTGTGGGATCAACAAAAGCAACTTA
AGCCTTGAAAAGTGAAGGTGCCATCTGGATGGTAGCCCACTCTGTTATCGTTACCGAAGATTACAT
TATGATACCAGACATGCCATTCCAGATGGGAGTTGCAAACTCTAGGTATCAGGATAAAAGCCTGAGGAA
ACTTACCCTAAGACACAAATCTACCTAGTTAAAAAGACAAGACTTAAAGGAAGAGGAACTACTGTGCCAT
CTCAACTCATTACATTCAATGGAGACTCTTACCATTTTCTCTGTAATTATCATTCTACAAATGGTCAAAT
ACAATTAGTAGCTATTCAAACGCAACTATTAGTTTGACAGAAGCGATCGAAAAGGACGATATACAACAT
TTTACTGGACAAGGCTATCCTCCTGAATACCACGGCATTCCTTGATGTTTTCTTTTGATCCAGGAGTAT
TGAGAAAGGTAGTAATTGAAGATGCAAGAGTTATGTCTGAACAGGCTTTTCATACATCCAGGTTGGTTCTC
TACAACCTCTCTACACCGCCGACCCTAGAGAATCTGAGCAAGGCTACTCAGCGATCTACCAGGTGTATGCT
GGATATGTCTAGAGAACTGATCTGTAGAAGGCAGTACATGGATTTTAGAGATCAATCAAATAGAATCCTTA
GAGATGCTGAGTTACCATGCCACGATCTACCATCTGTTCTAGCAAAAGTCTCCTTCGATAAAAGACTGGAA
CCAATTGACAGAACAAATATCCCAAGAGAAAAAGGCCTCTAATACTCATGTCTAGTCTCTTGGTAGAGGC
CTGTTAGATTTTTACGTTTGTCTCTGATGGGTATATTCTAGACTCAATCCAATTCATCCACAGGAGCAGG
GCTACTTGTTCACCACTGTCTTACACCTACTAGAGTGTTAGAAGCATGGTTGTTCAACCCAGATAACTT
GAAGGATGGCCCAATTGCTAAACTAAGTTTACCAGAGGACGTACATTTTGGGTTTACGCTGCACTCAGAA
TACTTTGAACAAGTACTTCTTACCAAGACCAAGTGTGTCAAGTTAATCGAGTTTTTAAGCGCACTTA
GATCATTAGTTTTAGTACCTGTTGAATTTTTCTAGGTCTGCCAGCAGCCATCTACAATAGACAAGTTAA
AAAGTAA

CCD5 Protein (SEQ ID NO: 16)

MSIKDTVQNT VNVS NF SRSQ LGQPDENNLY QAVATITEGR WPENLSGYVF IVC PFHRKND
RHLFSGEGVI IKWDLQKNN QVNVYSKKLK TWDSFWRKVL PIFNISQATF PAVVSILGCS
EIAN TAMI KL EKVAEDQQL ETRLILTADA GRYWEVDPVS LDTITPIGYF DQHIVSVPLS
FFPVLENTAH PFYDKKTKEF ITCELKLLKV SGGMLKDLK SAYIVLWDQK QQLKPWKLQK
AILDGSPHSV IVTEDYIMIP DMPFQMGVAK LLGIRIKPEE TYPKTQIYLV KRQDLKEEET
TVPSQLITFN GDSYHFLCNY HSTNGQIQLV AIQNATISLT EAIEKDDIQH FTGQGYPPEY
HGIPWMFSD PGVLRKVIE DARVMSEQAF IHPGWFSTTL YTADPRESEQ GYSAIYQVYA
GYVRELICRR QYMDFRDQSN RILRDAELPC HDLPSVLAKV SFDKDNQLT EQISQEKKAS
NTHVSHLGRG LLDFYVCPDG YILDSIQFIP QEQGYLFTTV LTPTRVLEAW LFNPDNLKDG
PIAKLSLPED VHFQFTLHSE YFEQVLPSPR PSVSQVNRVL SALRSLVLVP VEFFLGRPAA
IYNRQVKK

CCD6 Nucleotide (SEQ ID NO: 17)

ATGAACATGTCAAATAAGGACACAGTGCAAAATACTGTAACTGTCCAATTTTAGTAGAAGCCAGCTCG
GTAGACCAGATGAAAAAATCTGTACAAAGCCGTGGCAACTATAGCCGAAGGCCATTGGCCAGAAAACTT
AAGTGGCTATGTTTTCATAGTCTGCCCTTTTACAGAAAGAATGACAGACATTTGTTTTCTGGTGAAGGA
GTTATCATTAAGTGGGATCTGCAAGGGAACAAATCAAGTGAATGTGTACTCCAAAAGCTGAAAACAT
GGGATTCATTTTGGAGAAAGGTGCTACCTATCTTTAACATTTTCAAGCAACATTTCTGTTGTCTC
AATCTTAGTTTGTTCAGAAATTGCTAATACTGTATGGTCAAATTTGGAGAAAGTCAGTGAAGATAAACAG
TTGGAAGAGACAAGACTAATTCTCACTGCTGATGCTGGCAGATACTGGGAAGTAGACCCAGTCAGCCTAG
ACACCATTACTCCAATAGGTTACTTTGACCAACATATTGTTTCCGTTCTCTCTATTTTCCCTGTACT
TGAAAATACAGCTCATCTTTTTTACGACAAAAGACGCAGGAGTTCATAACATGCGAATTGAAATTGAAG

FIGURE 5 CONT.

TTGATCTCTGGAGGGATGTTAAAAGATTTGGACAAATCTGTCTACATCGTATTGTGGGATCAACAAAAGC
 AATTAAAGCCTTGGAAGCTCCAAGGTGCAATCTTGATGGTTCTCCACATTCACTTATTGTGACTGAAGA
 TTACATCATGATCCAGATATGCCATTTCAAATGGGCGTCGCCAAATTACTTGGGATCAGAATTAAACCA
 GAAGAGACTTACCCAAAAACCCAAATATACTTAGTGAAAAGACAAGATTTGAAAGAGGAAGAGACTACGG
 TTCCATCCAGGCTCATTACATTCAATGGTGACTCTTATCACTTCCTATGCAATTACCACTCAACAAATGG
 TCAGATCCAACCTGTAGCCATCCAAAACGCTACAATTTCACTTACTGAAGCAATTGAAAAAGACGATATC
 CAACATTTACGCGGTGAGGGTTATCCACCTGAATACCACGGTATTCCTTGATGTTCTCTTTTGATCCAG
 GCGTTTTGAGAAAAGTTGTCATTGAAGATGCTAGAGTTATGTCTGAACAGGCTTTTATCCATCCAGGTTG
 GTTCAGTACAACCTTATACACAGCAGATCCACGTGAGTTGGAACAAGGATACTCTGCGATATATCAAGTA
 TATGCGGGCTACGTTAGAGAACTAATCTGTAGACGACAATATATGGATTGTAGGGATCAATCTAACAGAA
 TCTTACGTGATGCTGAACCTTCTTGTGATGACTTGCCATCTGTGTTGGCAAAGGTTCCATTGATAAGGA
 CTGGAATCAATTAACAGAACAAATTTCTCAAGAGAAAAAGGCATCAGACACACATGTCTCACATCTGGGC
 CGTGGATTATTGGACTTTTACGTGTGTCCAGATGGATATATCTTAGATTCTATACAATTCATACCACAAG
 AGCAGGGATATCTGTAAACAACTGTTTTAACACCTACTAGAGTACTAGAAGCCTGGTTGTTTAACCCAGA
 TAATTTGAAAGATGGACCTATCGCTAAGTTGAGCCTACCAGAGGATGTTCACTTTGGTTTTACCCTGCAC
 TCAGAGTACTTTGAACAGGTACTTCTTCTCCAAGACCATCTGTTTCCCAAGTCAATAGAGTTTTGTGAG
 CCTTAAGTCCCTTGTATTAGTTCTGTAGAATTTTCTTAGGGAAACCAGCAGCCATCTACAACAGACA
 AGTTAAAAAGTAA

CCD6 Protein (SEQ ID NO: 18)

MNMSNKDVTQ NTVNVSNSFR SQLGRPDENN LYKAVATIAE GHWPENLSGY VFIVCPFHRK
 NDRHLFSGEG VIKWDLQK NNQNVVYSK LKTWDSFWRK VLPIFNISQA TFPVVSILG
 CSEIANTAMV KLEKVSEDKQ LEETRLILTA DAGRYWEVDP VSLDTITPIG YFDQHIVSVP
 LSIFPVLENT AHPFYDKKTQ EFITCELKLLK LISGMLKDL DKSVYIVLWD QKQQLKPWKL
 QGAILDGSFH SVIVTEDYIM IPDMPFQMGV AKLLGIRIKP EETYPKTQIY LVKRQDLKEE
 ETTVPSRLIT FNGDSYHFLC NYHSTNGQIQ LVAIQNATIS LTEAIEKDDI QHFTGQGYPP
 EYHGIPWMFS FDPGVLRKV IEDARVMSEQ AFHPGWFS TLYTADPREL EQGYSAYQV
 YAGYVRELIC RRQYMDCRDQ SNRILRDAEL PCHDLPSVLA KVPFDKDNQ LTEQISQEKK
 ASDTHVSHLG RGLLDFYVCP DGYILDSIQF IPQEQGYLLT TVLTPTRVLE AWLFNPDNLK
 DGPIAKLSLP EDVHFGFTLH SEYFEQVLPS PRPSVSQVNR VLSALRSLVL VPVEFFLGP
 AAIYNRQVKK

CCD7 Nucleotide (SEQ ID NO: 19)

ATGAAAGCATGGGCTAAGAGTTTGGAGAAACAGCGGTTGAATTTTCCGAAACTCAATTGACACTCTTAT
 CCGGTAAATCCAGATGGTCTTAGAGGCTCTTTATACAGAAACGGGCTGGCAGATTAGAAAGGGGAAA
 GCAAAAGGTCGGTCATTGGTTTGATGGCGATGGTGCAGTGCTTGCAGTGCATTTTCATGATAACGGGGCT
 AGTGCTACTTACCGATACGTTCAAACCGCAGGTTATCAACAGGAATCTGCTGCTAATCAATATTTGTTCC
 CTAACCTACGGCATGAATGCTCCTTCTTTCTTTTGAATAACTGGGGTAAGGAGGTGAAAAATGCGGCCAA
 CACTTCAGTATTGGCTTTGCCTGATAAACTATTAGCCTTGTGGGAAGGTGGATTCCCACATAAGCTAGAT
 TTGCAGTCTCTTGAAACACTCGGTCTGGACAATCTCTCCAGATTGCAAGCTAAGGAGACATTTTCCGCAC
 ACCCAAAGTTGGACCTTAGCAGAGGTGAAATCTTCAATTTCCGAGTAACCTATTGGAGCGAAAAGTTTCTCT
 TAATCTGTACAAATCTGATTCTACCGGTGAGATAATACAGAAAAACACATTTGAACTTGACAGACTATCC
 CTATTGCACGATTTTGTCTCGCTGGTCAATACCTGGTCTTTTTCGTGCCACCTATTAAAGCAGACAAAT
 TACTTATCTGCTAGGCTTTAAACATTCTCTGATGCCATGCAATGGCAACCAAGTTAGGTACGCGTAT
 TCTGATCTTTGAAAGAGATTCTCTAGAATTAGTTTCAAGATCAGTTACTGACTCTTGGTTTCAATGGCAC
 TTCGCCAACGGATGTGTTAATGAACAAGGAAATTTGGAAATAGTCTTTGTAAGATACGATGACTTTAAAA
 CTAATCAATTTTGAAGAGGTTCCAACCGGAGAAACAGAACTTTGGCCATTGGCAAACTGGCTAGTAT
 TACAATTAACCCATTATCAGCAAAGGTCATTAACCAAGAGATTCTAAGTGACTTATCATGTGATTTCCCT
 GTCGTGTACCACTACCTCGTAGGACAAAAGTGGCAAAATACTTTCCTTGCCGTTATAGACCAGATTCTG
 ACATCAGGAGAGAGATCATCGGCTTGCCAGCATGTTACAATCATAGTACAGGCAAATTGACAATCTCTTA
 TCTAGAAAATAACTGCTATGGGTGAGAACCAATCTTCGTTTGCAGTGGGTTGAGCCCTGAAACAGGTTGG
 TTGATAGTCGTAGTGATGATGGTAATAACTCACTCATCTCAGGTTAGAATCTACGATAGCCAACAACCTTG
 AAAAGAGCCATTATGTTGCTTACAATTACCTTCAGTTATACCTCCATCATTTTCATGGTACTTGGCAGGA
 GAAGTCTGAAAAGGTATCCACCTAA

FIGURE 5 CONT.CCD7 Protein (SEQ ID NO: 20)

MKAWAKSLEK	PAVEFSETQL	TLLSGKIPDG	LRGSLYRNGP	GRLERGKQKV	GHWFDGDGAV
LAVHFHDNGA	SATYRYVQTA	GYQQESAANQ	YLFPNYGMNA	PSFFWNNWVK	EVKNAANTSV
LALPDKLLAL	WEGGFPHKLD	LQSLETGLD	NLSRLQAKET	FSAHPKLDLS	RGEIFNFGVT
IGAKVSLNLY	KSDSTGQIIQ	KNTFELDRLS	LLHDFVLAGQ	YLVFFVPPIK	ADKLLILLGF
KTFSDAMQWQ	PKLGTRILIF	ERDSLELVSE	SVTDSWFQWH	FANGCVNEQG	NLEIVFVRYD
DFKTNQFLKE	VPTGETETLA	IGKLASITIN	PLSAKVINQE	ILSDLSCDFP	VVSPQLVGQK
WQNTFLAVHR	PDSDIRREII	GLPACYNHST	GKLTISYLEN	NCYGSEPIFV	CDGLSPETGW
LIVVVYDGNN	HSSQVRIYDS	QQLEKEPLCC	LQLPSVIPPS	FHGTWQEKSE	KVST

FIGURE 6

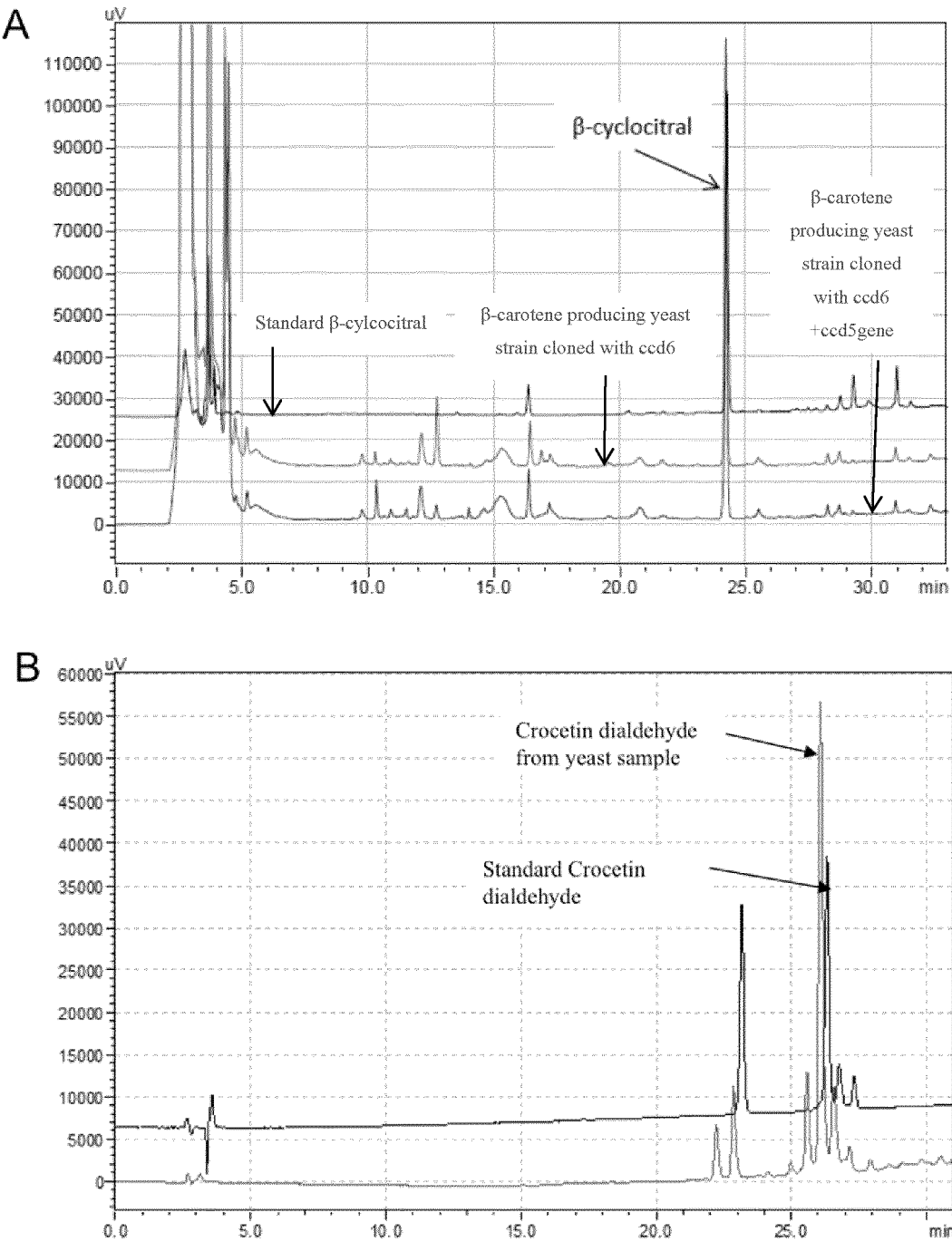


FIGURE 7**ALD1 Nucleotide (SEQ ID NO: 21)**

ATGGTATCTACGGGATGTTCTGGTAATGGTGCAAAAGGAACAAATGGTGGTATAGTTGTACCAGAAATCA
AATTACCAAACCTCTTTATCAACGGGGAGTTTGTGACAGTGTGTCCGGTTCCACTTTTGGAAACAAGAGA
TCCACGTAATGGTGATGTTATCGCAAATATTGCAGAAGGCGATAAAGAGGATGTAGACCTAGCCGTCAAA
GCTGCGAGAGAGGCCTTTGATCACGGTAAGTGGCCTAGAATGTCCGGTTATGAAAGGGGACGTATTATGA
TGAAGTTTGCGGATCTGATAGAAGCCTTTATCGAAGAGTTAGCTGCATTGGACACTCTTGATGCAGGCAA
GCTGTTGTCTATGGGAAAGGCTGTTGATATTCTGTGCTGCCGTTTCATATCATCAGATACTACGCCGGTGCC
GCTGACAAAATTTCATGGATACACATTGAAGCTGTCTCAGAAATTACAAGGTTACACACTAAAGGAACCTA
TAGGTGTTGTTGGGGTAATCATCCCTTGGAATTTCCCAACAACTATGTTTTTCTCAAAGTGTACCTGC
CTTGGCCGACAGTTGTACAAATGGTCTGTTAAACAGCGGAACAACTCCATTATCAGCATTATACCTACGCC
CATTGGCCCAAGCTAGCTGGCGTTCTGATGGGGTGATAAACGTGGTTCTTGCTTTGGACCAACAGCAG
GTGCAGCTTTATCTTCTCACATGGACGTCGATAGTGTTGCTTTACGGGCTCTGCTGAAATTGGTAGAGC
CATAATGGAATCCGCAGCTAAGTCTAAGTGAATAATGTTAGCCAGAACTGGGTGGCAAACTCTCAATG
ATCGTGTGTTGATGATGCTGATGTGATATGGCTGTCTCTTTGAACTCTTAGCAGTATTTTTCAATAAGG
GTGAAGTTTGTGTTGCAGTTCTAGAGTGTACGTGCAGGAGGGCATATATGATGAATTTGTTAAAGAGC
GGTCGAAGCTGCTAGAAGCTGGAAAGTCGGGGACCTTTTCGATCAAAGTAGAAATATGGGTCCACAAGTA
GATAAAGATCAATTTGAATCAGTCTGAAATACATTGAGCATGGCAAATCAGAGGGTGCAACCTTGTTAA
CTGGAGGCAAACCAGCAGCCGATAAAGGGTACTACATTGAACCAACTATTTTCGTCGACGTTACAGAAGA
TATGAAAATAGCTCAAGAGGAAATCTTTGGTCCAGTGATGTCTTAATGAAGTTCAAACAGTTGAGGAA
GGAATCGACTGCGCGAACAATACCAAGTATGGGTGGCTGCTGGTATTCTCTCACAGGACCTTGACCTAA
TCAACACTGTATCTCGATCAATCAAAGCTGGCATTATTTGGGTAACTGTTACTTTGGATTGATCTTGA
TTGCCCATACGGAGGGTATAAGATGTCTGGAATATGCAGAGAATCAGGCATGGACGCTCTTGACAATTAT
CTACAACTAAGTCAGTGGTTATGCCATTGCACAACAGTCCTTGTTGTAA

ALD1 Protein (SEQ ID NO: 22)

MVSTGCSNG AKGTNGGIVV PEIKFTKLFI NGEFVDSVSG STFETRDPRN GDVIANIAEG
DKEDVDLAVK AAREAFDHGK WPRMSGYER RIMMKFADLI EAFIEELAAL DTL DAGKLLS
MGKAVDIPAA VHII RYYAGA ADKIHGYTLK LSSELQGYTL KEPIGVVGV I PWNFPPTMF
FLKVSPALAA GCTMVVKPAE QTPLSALYYA HLAKLAGVPD GVINVVPFG PTAGAALSSH
MDVDSVAFTG SAEIGRAIME SAAKSNLKNV SPELGGKSPM IVFDDADVDM AVSLNLSLAVF
FNKGEVCVAG SRVYVQEGY DEFVKRAVEA ARSWKVGDPF DQSRNMGPQV DKDQFESVLK
YIEHGKSEGA TLLTGKPAE DKGYYIEPTI FVDVTEDMI AQEEIFGPVM SLMKFKTVEE
GIDCANNTKY GLAAGILSQD LDLINTVRS IKAGIIWVNC YFGFDLDCPY GGYKMSGNCR
ESGMDALDNY LQTKSVV MPL HNSPWL

ALD2 Nucleotide (SEQ ID NO: 23)

ATGGAATTAGAAGTGAGAAGAGTCAGACAGGCCTTTTTATCCGGTAGATCAAGACCATTGAGATTGAGAT
TACAACAATTAGAAGCACTTAGACGTATGGTGAGGAAAGAGAAAAAGATATCCTGACCGCAATCGCCGC
TGACCTATGCAAATCTGAGTTTAACGTATATTCTCAGGAAGTTATAACTGTGCTAGGGGAGATAGACTTT
ATGCTAGAAAATCTGCCAGAATGGGTAACAGCAAAACCAGTTAAAAAGAACGTTTTGACAATGTTAGACG
AAGCATATATTCAACCTCAACCATTAGGTGTTGTACTTATTATCGGTGCATGGAATTACCCATTTGTTCT
GACAATACAACCACTCATAGGAGCTATCGCTGCGGGTAACGCTGTTATCATAAAACCTAGTGAGTTGTCT
GAGAACACTGCTAAGATTTTGGCCAAATTGTTACCACAATACTTAGACCAAGACCTTTACATTGTCATTA
ACGGGGGTGTCGAGGAACTACTGAACTTTTGAAGCAAAGATTTGATCATATCTTTTACACAGGAAATAC
GGCTGTAGGCAAAATTGTGATGGAAGCTGCTGCCAAGCATTTGACACCTGTTACTCTTGAATTGGGAGGC
AAAAGCCCATGTTACATCGACAAAGATTGCGATCTTGATATTGTGTGCTAGGATAACGTGGGGCAAAT
ACATGAATTGCGGGCAAACCTTGATTGCGCCTGATTACATCTTGTTGTGAAGCGTCATTACAAAATCAAAT
CGTTTGAAGATTAAAGGAAACAGTAAAAGAGTTTTACGGCGAGAACATCAAGGAATCCCCTGATTATGAG
AGAATTATCAATCTAAGACATTTCAAGAGAATTTTGTCTCTGCTTGAAGGTCAAAGATAGCTTTTCGGCG
GAGAAACAGATGAAGCCACCAGATACATCGACCAACAGTATTGACGGATGTTGATCCAAAAACCAAAGT
TATGCAGGAGGAAATCTTTGGTCCAATATTACCAATTGTTCTGTTAAAAACGTGGATGAAGCAATCAAT
TTCATCAATGAAAGGGAAAAACCTTTGGCCTTATACGTCTTTTACACAATCACAAGCTCATCAAGAGGA
TGATTGACGAAACCTCATCAGGTGGTGTACTGGTAACGATGTAATCATGCACTTCACACTCAATAGTTT

FIGURE 7 CONT.

TCCTTTTCGGTGGTGTCTCGGCTCCTCTGGAATGGGGGCATATCATGGTAAGCATTCTTTTGATACTTTTTCT
 CACCAAAGACCTTGTTTGTGAAATCTCTGAAAAGAGAAGGTGCAAACAACTGAGATATCCACCAAATT
 CACAATCTAAGGTAGATTGGGGCAAGTTTTTCTCTACTGAAAAGATTCAATAAGGAGAAGTTAGGATTGTT
 GTTGCTAACATTTCTCGGAATTGTTGCTGCTGTGCTAGTCAAAAAGTACCAAGCTGTCTTGCGACGTAAA
 GCCTTATTGATTTTCTAGTTGTCCATAGACTCAGATGGTCTAGTAAACAAAGATAA

ALD2 Protein (SEQ ID NO: 24)

MELEVRRVRQ AFLSGRSRPL RFRLQQLEAL RRMVQEREKD ILTAIAADLC KSEFNVYSQE
 VITVLGEIDF MLENLPEWVT AKPVKKNVLT MLDEAYIQPQ PLGVVLIIGA WNYPFVLTIQ
 PLIGAIAAGN AVIIKPSELS ENTAKILAKL LPQYLDQDLY IIVINGVEET TELLKQRFDH
 IFYTGNTAVG KIVMEAAAKH LTPVTLELGG KSPCYIDKDC DLDIVCRRIT WGKYMNCGQT
 CIAPDYILCE ASLQNQIVWK IKETVKEFYG ENIKESPDYE RIINLRHFKR ILSLLEGQKI
 AFGGETDEAT RYIAPTVLTD VDPKTKVMQE EIFGPILPIV PVKNVDEAIN FINEREKPLA
 LYVFSHNHKL IKRMIDETSS GGVGTGNDVIM HFTLNSFPFG GVGSSGMGAY HGKHSFDTFS
 HQRPCLLKSL KREGANKLRY PPNSQSKVDW GKFFLLKRFN KEKLGLLLLT FLGIVAALV
 KKYQAVLRRK ALLIFLVVHR LRWSSKQR

ALD3 Nucleotide (SEQ ID NO: 25)

ATGGCCGCTACTAATAGCAACGGTATCTTTAAGTTACCAGAGATCAAATTTACTAAGTTGTTTCATAAACG
 GTGAATTTGTCTGATTCTGTTTCTGGGAGGACCTTTGAAACAAGAGATCCTAGAAATGGTGATGTAATCGC
 TAATATCGCCGAAGGTGATAAGGAAGATGTTGACCTAGCTGTGAAGGCCGCTAGAGAGGCCCTTTGACCAC
 GGTAAGTGGCCTAGAATGTCTAGGTTACGAAAGAGGCAGGATAATGATGAAATTCGCCGATCTCATTGAAG
 CTAATATCGAGGAATTGGCTGCATTAGACACATTAGATGCCGGAATTTGCTGACGATGGGAAAGGCAGT
 CGACATCCCAGCCGCGAGTGCACATGATTAGATACTATGCGGGTGCAGCAGACAAAATACATGGTGAGACT
 CTCAAATATCAAGTGAATTTCAAGGATACACATTGAAGGAACCAATCGGCGTGGTTGGTCATATCGTTC
 CTTGGAACCTTTCTACAGCTATGTTCTGTTATGAAAGTAGGTCTGCGTTAGCGGCTGGATGTACAATGAT
 TGTTAAACCAGCGGAACAACTCCACTCTCCGCTCTATACTACGCTCATCTAGCAAAGGAATCAGGCATT
 CCTGATGGTGTAGTCAATGTCTGTTACTGGGTACGGACCAACAGCAGGTGCCGCTTTATCCTCCACATGG
 ATGTGCGACAAAATATCTTTTACCGGGTCTACAGAAATAGGAAGAGTAGTTATGGAGGCAGCCGCAAAATC
 AAATTTGAAGCATGTATCACTTGAATTAGGGGGCAAGTCACCATTGATCATATTTGATGATGCAAATCTT
 GACATGGCTGTAAACTTGGCTTCTATGGCCATTTTCTATAACAAAGGTGAAGTTTGTGCGCAGGTTCTA
 GAATATATGTGCAAGAGGGGATCTACGATGAATTTGTGAAAAAGGCTGTGGAGAAGGCTAAGTCTTGGGT
 TGTGCGCAGCCATTCGATCCTAATGTGCAAAATGGTCCACAGGTTGATAAAGCACAATTTGAAAAAGTT
 TTGAGTTACATTGAACATGGCAAAAAGAGAGGGAGCACTTTTACTGGCTGGCGGAAAAGCATGTGGACAAA
 AGGGGTATTGCATCGAACCAACCATTTTTTACTGACGTCAAGGAGGATATGAAAATCGCTCAAGATGAAAT
 CTTGCGACAGTAATGTCTCTTATGAAATTCAAAACAATTGAAGAGGCCATTGAAAAGCCAATACAAT
 CGTTATGGTCTTGTGCGGGTATTGTAACAAATGATTTGAACGTTGCTAACTCTGTATCACGTAGCATTA
 GAGCCGTTACGGTCTGGATTAACTGTTACTACGCCTTTGACGCTGAACTCCATTCGGCGGTTACAAAAT
 GTCCGGCTTTGGTAAAGATCAAGGCCTGCATGCACTAGAAAAATACTTGCAGGTTAAGTCTGTCTGTGACA
 CCAATCTACAATAGTCCTTGGCTTTAA

ALD3 Protein (SEQ ID NO: 26)

MAATNSNGIF KLPEIKFTKL FINGEFVDSV SGRTFETRDP RNGDVIANIA EGDKEDVDLA
 VKAAREAFDH GKWPRMSGYE RGRIMMKFAD LIEANIEELA ALDTLDAGKL LTMGKAVDIP
 AAVHMIRYYA GAADKIHGET LKLSSEFQGY TLKEPIGVVG HIVPWNFPTA MFVMKVGPAL
 AAGCTMIVKP AEQTPLSALY YAHLLAKESGI PDGVNVVVTG YGPTAGAALS SHMDVDKISF
 TGSTEIGRVV MEAAAKSNLK HVSLELGGKS PLIIFDDANL DMAVNLA SMA IFYNKGEVCC
 AGSRIYVQEG IYDEFVKKAV EKAKSWVVD PFDPNVQNGP QVDKAQFEKV LSYIEHGKRE
 GATLLAGGKA CGQKGYCIEP TIFTDVKEDM KIAQDEIFGP VMSLMKFkti EEAIEKANTT
 RYGLAAGIVT NDLNVANSVS RSIRAGTVWI NCYYAFDAET PFGGYKMSGF GKDQGLHALE
 KYLQVKSVVT PIYNPWL

ALD4 Nucleotide (SEQ ID NO: 27)

FIGURE 7 CONT.

ATGTCTATACAATCCAAAAGTGCAGTTGCAAAAGGAGATGGATCATTCACTATTACACACGTTACCGTCCG
 CTGAACCAAAGGCAGATGAACTCCTGGTTAAAATCAAAGCAGCCGGTCTTTGTGCACACTGATTACGATTC
 ATTGTCTTGGGGTAAACCTATCGTAATGGGGCATGAGGGTGCAGGCGTGGTTGAGAAAGTTGGATCTGAT
 ATTAAGGATTTGAAAAAGGGTGATCAAGTCTTACTAAACTGGGCTACACCTTGCATGCATTGTTTTTCAGT
 GTCAAGAGGGGAATCAACATATTTGCGAGAATAATAGCCCAGTCGTAGCTGGAGGCAATGGTCACACACC
 TGGTCATGCCATTTGGAAGGGAGTCAATGGGAAGGTAAGCCAATAGAAAGATCATTCAATTTGGGTACA
 CTGTCAGAATATGCTCTAGTTAAGGAATCTGCCGTCGTAAAGATTGAAGAGGAAAACCTTGAACTTTAGTG
 CAGCATCAATTATCTCTTGTGGAGTTATGACTGGCTACGGCTCTGTGGTCAATTCTGCTAAACTCGCAGC
 CGGCTCATCTGCTGTTATCTTGGGTGCGGAGGCGTAGGGTTAAACGTAATCAATGCATGTGAAATCTCC
 GGTGCGGGTAGAATTATCGCTGTTGATATAAAACCCAAACAAGTTAGAACTTGCTAAACAGTTTGGTGCCA
 CGGATGTCATATTAGCTGATAAGACTGACGTTGGATTAGCTAATGTTGCGGAACAAGTGAAAGAGGTTTT
 AGGTGGTAGAGGGGCTGATTATGCGTTTGAATGTACAGCCATTCCAGCTCTGGGTGCTGCACCTTTAGCA
 ATGGTGCGTAATGCCGGCACCGCCGTGCAAGTATCCGGCATCGAAGAGGATATCACTATAGACATGAGGC
 TATTGCAATGGGACAAAATCTACATTAACCCACTCTACGGAATAATGCAGACCTCAAATTGATTTTCCAAA
 ATTGATGCAACTTTACAAAAGGGCGACTTGAAGTTGGATGAAATGATCACAAAGGAATACAACTAGAC
 CTTTCAGCAAGCCCTAGACGACATGCTGGCTGGTAAAAATGCTAAGGGAGTCGTAGTGTTCGACTAA

ALD4 Protein (SEQ ID NO: 28)

MSIQSKSAVA KDGDSFTITH VTVAEPKADE LLVKIKAAGL CHTDYDSLWS GKPIVMGHEG
 AGVVEKVGSD IKDLKKGDQV LLNWTAPCMH CFQCQEGNQH ICENNSPVVA GGNGHTPGHA
 HLEGSQWEGK PIERSFNLGT LSEYALVKES AVVKIEEENL NFSAASIISC GVMTGYGSV
 NSAKLAAGSS AVILGCGGVG LNVINACEIS GAGRIIAVDI NPNKLELAKQ FGATDVILAD
 KTDVGLANVA EQVKEVLGGR GADYAFECTA IPALGAAPLA MVRNAGTAVQ VSGIEEDITI
 DMRLFWDKI YINPLYGKCR PQIDFPKLMQ LYKKGDLKLD EMITKEYKLD LQQALDDMLA
 GKNAGKVVF D

ALD5 Nucleotide (SEQ ID NO: 29)

ATGGCATCTAATGGTTGCAATGGTAACGGCAATGGCAACGGCAACGGAAAGGCTGCCCCCTGCTGGTGTCTG
 TAGTGCCAGAGATCAAATTCATAAACTTTTCATAAACGGTGAATTTGTGCGACGCTGCTTCGGTAAAAC
 ATTTGATACAAGAGATCCTAGAACTGGTGACGTTCTCGCCACGTCGCTGAAGCAGACAAAAGCAGATGTT
 GATCTCGCTGTCAAATCAGCAAGAGATGCTTTTGAACATGGAAAATGGCCACGAATGTCAGGGTATGAGA
 GGGGCAGAATCATGTCCAAATTGGCGGATCTAGTCGAACAGCATAACAGAAGAGCTAGCAGCATTTGGATGG
 TGCCGATGCCGGGAAGTTGTTATTACTTGGGAAGATTATCGACATCCCAGCGGTACACAAATGTTGAGG
 TACTACGCTGGAGCCGCTGACAAAATTCATGGTGATGTCTTGAGAGTCAGTGGTAGATACCAAGGATACA
 CCTTAAAGGAACCTATCGGCGTAGTTGGGGTTATTATCCCTTGAATTTTCCAACCTATGATGTTTTTCTCT
 TAAAGTCTCACCAGCTTTGGCTGCCGGATGTACTGTGGTTGTAAAACCAGCAGAGCAAACCCCACTGTCT
 GCGTTATACTATGCTCACTTAGCTAAAATGGCCGGAGTGCCAGATGGTGTCTAATGTGGTTCCAGGAT
 TCGGGCCTACTGCGGGTGCTGCTCTGGCTTACACATGGATGTGGATTCTGTTGCCCTTACAGGTAGCAC
 TGAAGTTGGTAGACTTATAATGGAAGTGCCGCAAGATCAAACCTGAAAACCGTTAGTTTAGAATTAGGT
 GGCAATCACCATAATCATATTCGACGATGCAGACGTGGACATGGCTGTGAATCTTTCCAGATTGGCAG
 TATTTTTCAACAAGGGCGAAGTTTGCCTAGCTGGCTCTAGAGTTTACGTTCAAGAGGGAATCTACGATGA
 ATTTGTTAAAAAGGCAGTAGAAGCTGCCAGATCATGGAAAGTGGGCGATCCATTGACGTAACATCTAAC
 ATGGGACCACAAGTAGATAAGGATCAATTTGAAAAGAGTTTGTAAATACATCGAACATGGGAAGTCTGAAG
 GTGCAACTTTGTTAACAGGCGGTAAGCCAGCCGCTGATAAGGGCTACTATATTGAACCTACAATATTTGT
 TGATGTGACAGAGGATATGAAAATCGCCCAAGAGGAGATTTTGGCCAGTCATGTCTCTAATGAAGTTC
 AAAACGGTTGACGAAGTTATTGAAAAGGCCAATTGTACGCGTTACGGAATCGCAGCAGGTATAGTTACCA
 AGTCTCTAGATGTGGCCAATAGAGTATCTCGTTCTGTAAAGAGCTGGTACTGTTTGGGTCAATTGTTATTT
 TGCATTGACCCAGACGCGCCTTTTGGTGGTTACAAAATGTCAGGTTTTTGGAAAGAGATCAGGGTTTAGCA
 GCTATGGATAAGTATTTGCAAGTTAAAAGCGTAATTACAGCACTGCCTGATTCCCCTTGGTACTAA

ALD5 Protein (SEQ ID NO: 30)

MASNGCNGNG NGNGNGKAAP AGVVVPEIKF TKLFINGEFV DAASGKTFTD RDPRTGDVLA

FIGURE 7 CONT.

HVAEADKADV DLAVKSARDA FEHGKWPRMS GYERGRIMSK LADLVEQHT E LAALDGADA
 GKLLLLGKII DIPAAQTMLR YYAGAADKIH GDVLRVSGRY QGYTLKEPIG VVGVIIPWNF
 PTMMFFLKVS PALAAGCTVV VKPAEQTPLS ALYYAHLAKM AGVPDGVINV VPGFGPTAGA
 ALASHMDVDS VAFTGSTEVG RLIMESAARS NLKTVSLELG GKSPLIIFDD ADVDMAVNLS
 RLAVFFNKGE VCVAGSRVYV QEGYDEFVK KAVEAARSWK VGDPFDVTSN MGPQVDKQF
 ERVLKYIEHG KSEGATLLTG GKPAADKGYI IEPTIFVDVT EDMKIAQEEI FGPVMSLMKF
 KTVDEVIEKA NCTRYGLAAG IVTKSLDVAN RVRSRVAGT VVWNCYFAFD PDAPFGGYKM
 SGFGRDQGLA AMDKYLQVKS VITALPDSPW Y

ALD6 Nucleotide (SEQ ID NO: 31)

ATGGGCTTCACAAAGGAACATCAGTTCCTTTCCGAATTAGGGTTAGGTCCTAGAAACCCAGGTTGCTACG
 TTGCTGGAAAATGGAGAGGTAGTGGCCCTGTTGTAAGTTCATCCAACCCTGCTAATAATCAAGTGATTGC
 TGAAGTAGTTGAGGCCTCTATGGAGGACTACGAGGATGGTATGAAAGCATGTTTAGATGCGTCTAAGATT
 TGGATGCAAGTCCCAGCCCCAAAAGAGGTGAAATTGTGCGACAAATTGGTGAAGCATTAAGATCAAAGT
 TACAACATCTCGGTAGATTGGTATCTCTGGAATGGGCAAAATACTACCTGAAGGTATCGGCGAAGTACA
 GGAAATAGTTGGACATGTGCGATTACGCAGTCGGGTTGTCCAGACAATTGAATGGTAGCATTATTCCTTCT
 GAAAGACCAACACATGATGATGGAGGTCTGGAACCCACTGGGTATTGTGCGAGTGATCACAGCTTTTA
 ACTTCCCATGTGCCGTCTTGGATGGAACGCCTGTATCGCTTTGGTTTTCGGGCAATTGCGTGATGGAA
 AGGAGCACCAACTACACCATGATAACTATCGCCATGACAGAACTAATTGCAGGTGTACTAGAAAAGAAT
 AACTTGCCAGGCGCTATCTTTACCTCATTTTGTGGAGGTGCTGAAATTGGTCAAGCAATATCTCACGATA
 CCAGGATTCATTGGTGTCTTTTACTGGGTATCAAAAGTCGGATTGATGGTGCAACAAACCGTTTCAGA
 AAGATTTGGCAAGTGTTTACTGGAACCTATCAGGCAATAATGCGATTATTGTTATGGATGACGCTGACATT
 CAACTTGCAGTTAGATCCGTTCTGTTTGTGCTGCCGTTGGCACTGCTGGTCAAAGATGTACTACATGCAGAA
 GATTGCTTGTACATGAAAGCATCTACCAACCGGTCTTAGATCAATTGGTTGGTGTTTATAAGCAAGTGCA
 AATAGGGGACCCACTTGAGAAGGGCACACTTTTGGGACCACTGCATACATCCACCTCAAAGAGAATTTT
 GTTAAAGGTGTTCAAGCAATCAAAGTCAAGGCGGTAAATCCTCGTTGGGGGTTCTGTAATCGAATCAG
 CCGGTAAATTTTGTTCAGCCTACAATAGTAGAAATATCAAGTGATGTCCAAATCGTTAAGGAGGAACCTCT
 TGGTCCAGTACTCTACGTTATGAAATTTAGACTCTAAAGGAAGCAATTGAAATCAATAACTCTGTGCCT
 CAGGGACTATCTTCTCTATCTTCACTCGTAAGCCTGAAATTATCTTCAAATGGTTGGGTCCACACGGTT
 CTGATTGTGGAATAGTCAATGTAAACATCCCTACTAATGGAGCTGAGATCGGTGGAGCGTTCCGAGGCGA
 GAAAGCCACTGGGGGTGGAAGAGAAGCTGGTAGTGATTATGGAACAGTACATGAGGCGTTCTACATGT
 ACAATCAATTATGGGTCTGAGTTACCATTAGCACAAAGGCATCAATTTTGGATAA

ALD6 Protein (SEQ ID NO: 32)

MGFTKEHQFL SELGLGPRNP GCVVAGKWRG SGPVVSSSNP ANNQVIAEVV EASMEDYEDG
 MKACLDASKI WMQVPAPKRG EIVRQIGEL RSKLQHLGRL VSLEMGKILP EGIGEVQEIV
 DMCDYAVGLS RQLNGSIIPS ERPNHMMMEV WNPLGIVGVI TAFNFPCAFL GWNACIALVC
 GNCVVWKGAP TTPLITIAMT ELIAGVLEKN NLPGAIFTSF CGGAEIGQAI SHDTRIPVLS
 FTGSSKVGLM VQQTVSRFG KCLLELSGNN AIIVMDDADI QLAVRSVLFA AVGTAGQRCCT
 TCRRLLVHES IYQTVLDQLV GYVQVQIGD PLEKGTLLGP LHTSTSKENF VKGVQAIKSQ
 GGKILVGGSV IESAGNFVQP TIVEISSDVQ IVKEELFGPV LYVMKFQTLK EAIEINNSVP
 QGLSSSIFTR KPEIIFKWLK PHGSDCGIVN VNIPTNGAEI GGAFGGEKAT GGGREAGSDS
 WKQYMRRSTC TINYGSELPL AQGINFG

ALD7 Nucleotide (SEQ ID NO: 33)

ATGGGCTCTACAGGAGATTGCGGTAATGGTAAAGCAGCCGAGGAGGTGGCGGTTTAGTCTGTGCCAGAAA
 TCAAGTTCACAAAATTGTTTCAATTAATGGAGAATTTGTTGATGCTGCCTCTGGAAAAACCTTTAAACTAG
 AGATCCTAGAACTGGTGATGTTCTAGCTCATATTGCAGAAGCCGATAAGGCTGACGTTGACCTTGACGTC
 AAGCAGCAAGGGAAGCATTGCAACATGGTAAGTGGCCACGTATGAGTGGTTACGAACGAAGTAGAGTAA
 TGAACAAGCTGGCTGACCTAGTTGAACAACATGAGTGAATTGGCAGCATTGGATGGCGCAGACGCTGG
 CAAACTTCTAACTTTAGGGAAGATCATAGACATGCGCAGCAGCAGCAAAATGATGAGATACTATGCTGGG
 GCTGCCGATAAGATTACGCGGCAAAAGTCTTAGAGTCGCGAGGGAATATCAAGGTTATACACTTAGAGAGC
 CAATAGGTGTTGTGCGGTGTTATCATTCCTTGGAACTTCCCAACGATGATGTTTTCTGAAAGTATCACC
 TGCTTTAGCTGCCGGCTGTACAATTGTGGTGAAACCAGCGGAGCAAACACCATTTGTGAGCCCTGTACTAT

FIGURE 7 CONT.

GCTCATTTGGCCAACTAGCTGGCGTTCCAGATGGAGTTATCAACGTCGTTCTTGGCTTTGGTCCAACGG
 CTGGTGCTGCTTTATCTTCACACATGGATGTTGATTCGGTGGCCTTCACAGGGTCTGCTGAAATCGGTAG
 AGCCATAATGGAATCTGCGGCTCGTAGCAATCTCAAAAACGTGTCATTGGAGTTAGGAGGAAAATCTCCA
 ATGATTGTTTTTGTATGATGCCGATGTGGATATGGCTGTATCCTTGAGCTCTTTAGCAGTATTTTTCAATA
 AGGGAGAAATATGTGTGGCCGGTTCCAGAGTATACGTTCAAGAGGGAATCTACGACGAATTTGTTAAAAA
 GGCGGTGAGGCAGCTAAAACTGGAAGGTTGGGACCCATTTGATGCTGCTACAAACATGGGTCCCTCAA
 GTGGACAAAAGTCCAATTTGAAAGAGTTTTAAAGTACATTGAAATTGGTAAAAATGAAGGTGCTACTCTAT
 TGACCGGTGGAAAACCTACTGGGGATAAGGGTTACTACATCGAGCCTACAATTTTTGTTGACGTAAAGGA
 GGAAATGACCATCGCCCAAGAGGAAATCTTTGGCCAGTTATGTCACCTCATGAAATTCAAAACTGTGGAG
 GAAGCAATCGAAAAGGCGAATTGCACCAAATACGGCTTGGCTGCGGGCATCGTCACTAAAAATCTTAACA
 TTGCGAATATGGTATCAAGATCAGTAAGAGCAGGAAGTGTGGGTCAATTGTTATTTGCTTTTGACCC
 AGATGCTCCATTGCGGGGTTACAAAATGTCCGGTTTTGGCAGAGATCAGGGTATGGTAGCAATGGACAAA
 TACTTGCAGGTCAAGACAGTAATAACAGCCGTGCCTGATTCTCCTTGGTACTAA

ALD7 Protein (SEQ ID NO: 34)

MGSTGDCGNG KAAAGGGGLV VPEIKFTKLF INGEFVDAAS GKTfKTRDPR TGDVLAHIAE
 ADKADVDLAV KAAREAFEHG KWPRMSGYER SRVMNKLADL VEQHADELAA LDGADAGKLL
 TLGKIIDMPA AAQMMRYAG AADKIHGESL RVAGKYQGYT LREPIGVVGV IIPWNFPMTM
 FFLKVSPALA AGCTIVVKPA EQTPLSALYY AHLAKLAGVP DGVINVVPGF GPTAGAALSS
 HMDVDSVAFT GSAEIGRAIM ESAARSNLKN VSLELGKSP MIVFDDADVD MAVSLSSLAV
 FFNKGEICVA GSRVYVQEGI YDEFVKKAVE AAKNWKVGP FDAATNMGPQ VDKVQFERVL
 KYIEIGKNEG ATLLTGKPT GDKGYIEPT IFVDVKEEMT IAQEEIFGPV MSLMKFKTVE
 EAIEKANCTK YGLAAGIVTK NLNIANMVSR SVRAGTVWVN CYFAFDPDAP FGGYKMSGFG
 RDQGMVAMDK YLQVKTVITA VPDSPWY

ALD8 Nucleotide (SEQ ID NO: 35)

ATGGCCGCATCTAAGGTCGAAATAGCACCTTTGGAAGTTACACCACTAGATGCAATTCAGCAGTTTGTA
 GCACAGCCAGAGCCACTTTTCGCATCCCACAAAACCAAAATCTACAATGGAGGCTAGTGCAATTGAGAAA
 ACTATATTGGGCTCTAGACGACTTTAAGGCATCACTTATGGCTGCATTGCAACAGGATCTGAGAAAAGGT
 GGATATGAAAGTGATTTTACAGAGGTTGATTGGGTCAAAAACGATTGTTTGCACATGATTAAACAATCTTG
 AAACATTTGCCAAAACCTGAAAAATTGAAAGACTTGCCAGTGACGTACTCAATGATGAATTTTCAAGAGTCAA
 AAAGGAACCTTTGGGTACTGTACTCATTATAGGCCCATACAATTTTCTTATACAATTGGTACTCGCGCCT
 TTAGTAGGTGCTATTGGTGCTGGGTGCACAGCGGTTATCAAACCTTCAGAATTAACACCAGCATGTGCAA
 TGGCAATGAAAGAGATGATCGAATCAAGATTAGATAGAGATGCGTTCGCCGTGGTTAACGGAGGTGTTCC
 AGAAACGAACGCCTTGATGGAGGAGAAATGGGATAAGATTATGTTTACTGGCTCTGCTCAGGTTGGCTCT
 ATTATAGCTAGAAAAGCTGCTGAAACCTCACACCAGTTTGTGTTGGAGCTGGGTGGTAGAAACCTGCCT
 TCGTTACTAAAAAGGCTAATCTGGCTCTAGCGGCAAGACGTTTAAATGTGGGGAAAAGTCTTAAACGCTGG
 CCAAGTCTGCATGTCTCATAACTATGTCTTAGTCGACAAGGACGTGGCAGATACATTCATCGAATTTCTG
 AAAATCGCCTACAAGGACATGTTCCCTAATGGCGCTAAGGCGTCCCCAGATTTGTCTCGTATAGTTAATG
 CTAGACATTTTAAACAGGATCAAAAAGATGCTCGACGAACTAAAGGTAAGATCGTTATGGGAGGGGAGAT
 GGACGAATCAGAAGCTTTACATTGAACCAACAGCCGTTTTGGTAGATTCCCTTGACGACCCAATGATGCAG
 GAAGAGTCTTTTGGCCCAATCTTCTCTATCTACCCAGTGGATACACTAGATCAAGCACTGAGCATCGCTA
 ATAACGTTACAGAACACCTTTAGCTCTTATGGCATTGTTGGTGATAAGTCAGAACTAATAGAATTTTGGGA
 TGAAATGACAAGTGGTGGGGCATGCATCAATGATAGTTATTTTCATGGTGCCGTGCATACAGTTCCATTT
 GGCGGTGTAGGAGATTCTGGATGGGGAGCCTATCGTGGCAAAGCCAGTTTTGATAATTTACCCATTTTA
 GAACTGTATCTGAAACCCCTACCTGGATGGACAGATTTCTAAGAGTCAGGTACATGCCATACGATTGGTC
 AGAGTTGAGATTATTACAAAGATGGACTAATAAGAAACCAATTTTGATCGACAAGGTACTGTTGCTAAG
 GGTTCTGAATACTGGATGTGGTACTTCTCGGGTTAGGTACTAAAGGTGGCGTGAAGGGAGCACTTATGA
 GATGGTTAGTTGTAGTAGCTGGGTACTACTTGTCCGCTTACATGAAGGCTAGAAGAGCTTAA

ALD8 Protein (SEQ ID NO: 36)

MAASKVEIAP FEVTPLDAIP AVCSTARATF ASHKTKNLQW RLVQLRKLYW ALDDFKASLM
 AALQQDLRKG GYESDFTEVD WVKNDCLHMI NNLETFakte KLKDLPVtYS MMNFRVKKEP

FIGURE 7 CONT.

LGTVLIIGPY NFPIQLVLAP LVGAIGAGCT AVIKPSELTP ACAMAMKEMI ESRLDRDAFA
 VVNGGVPETN ALMEEKWDKI MFTGSAQVGS IIARKAAETL TPVCLELGGR NPAFVTKKAN
 LALAARRLMW GKVLNAGQVC MSHNYVLVDK DVADTFIEFL KIAYKDMFPN GAKASPDLSR
 IVNARHFNRI KKMLDETKGK IVMGEMDES ELYIEPTAVL VDSLDDPMMQ EESFGPIFSI
 YPVDTLQAL SIANNVHRTPL LALMAFGDKS ETNRILDEMT SGGACINDSY FHGAVHTVPF
 GGVGDSGWA YRGKASFDNF THFRTVSETP TWMDRFLRVR YMPYDWSLR LLQRWTNKKP
 NFDRQGTVAK GSEYWMWYFL GLGTKGGVKG ALMRWLVVVA GYYLSAYMKA RRA

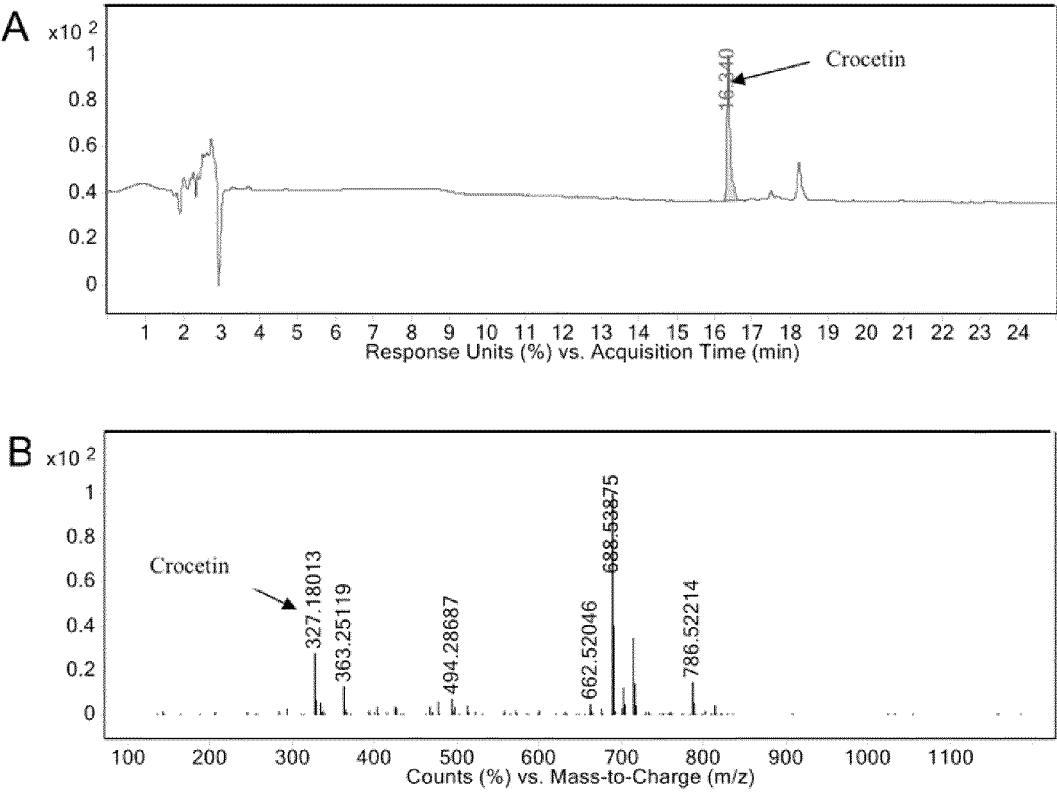
ALD9 Nucleotide (SEQ ID NO: 37)

ATGGCTTTTGATGGTGAAAAAGCAAAAGAGATGGTAAAGGAATTGAGAGAATCCTTCAATAAGGGCACTA
 CAAGGTCATACGAGTGAGAAATGAAACAACCTAAAGCGATGGAAAAGATGACTGAGGAAAAGGAAAAAGA
 TATCATGGACGCATTAGAATCTGATTTGTCTAAACCTCAACTAGAGTCCTTTTACACGAAATTTCTATG
 GCTAAGTCAGTTTGCCAAATTCGCCGCTAAAAATCTTAAACGTTGGATGAAGCCAGAAAAGGTCCTGCTC
 AGTTAACTACTTTCCCATCAGTTGGAAATATAGTTGCAGAACCTTTCGGTGTCTGTTTTAATCATTTCTGC
 TTGGAACTTTCCATTTTGTCTGTCCCTAGAACAGTGATTGGTGTCTATCGCGGCAGGCAATACTGTGGTT
 CTGAAGCCATCCGAAATTGCTCCAGCTACATCTTCATTGTTTGCCAGAATACTGTTGGAATACGTCGATA
 CATCATGTGTAAAGAGTGGTTGAGGGTGCCGTCCCTGAACTACCGCTTTGTTGGAACAAAAGTGGGATAA
 AATCTTTTACACAGGGAATGGTAAAGTGGGCAGAGTCGTTATGGCCGCTGCTGCGAAACATCTTACACCT
 GTGGTACTCGAATTAGGGGGCAAATGTCCAGTTGTGGTTCGACTCAAATATAGACCTCAAAGTCGCCACGA
 AGAGAATCGTCGTTGGCAAATGGGGGTGTAATAACGGTCAAGCATGCATTGCTCCAGATTACATTATCAC
 AACAAAGTCTTTTCGACCAAACTTGTTCGAGAGCTTGAAAATAACCTAGAAAAGATTCTACGGTGAGGAC
 CCTCTGGAAACAGAGGATCTCAGCAGAATAGTGAATGAGAATCATGTGGCTAGACTAGCACGTCTTTTGG
 ATGATGACATGGTTTCTGGTAAAATCATATACGGAGGAAAAAGAGATGAAAAGAGACTGAAAATCGCTCC
 AACCTTGCTACTTGATGTACCAGATGACTCTTTAATCATGAAAGAGGAAATCTTCGGTCCACTTTTACCT
 ATTATCACTGTTGACAAAATTGAAGATAGTTTTGCCGTAATTAACCTCTAAGACTAAACCATTAGCAGCAT
 ATTTGTTTACGAAAAACAAAACTTGAACGAATGTTTCGTTGAACTGTATCCAGTGGGGGAATGCTCAT
 TAACGACACAGTTTTACATGTAGCCAATCCTTACTTGCCATTTGGAGGTGTTGGCGAAAGTGGCACCAGGA
 TCTTACCACGGTAAGTTTAGTTTTAATGCCTTTTCTATAAAAAGGCAGTTTTGTCTAGAGGTTTTGGAG
 GAGAAGTAGGTGCAAGATATCCTCCATATACAGATAAAAAGAGGAAGATTATTAGAGCGTTACTAGCTGG
 CAACATCATCGCTTTGTTTCTCGCATTTTTTCGGTTTTTCAAAGTCATAA

ALD9 Protein (SEQ ID NO: 38)

MAFDGEKAKE MVKELRESFN KGTRSYEWR MKQLKAMEKM TEEKEKDIMD ALESDSLKPQ
 LESFLHEISM AKSVCQFAAK NLKRWMKPEK VPAQLTTFPS VGNIVAEPFG VVLIISAWNF
 PFLLSLEPVI GAIAAGNTVV LKPSEIAPAT SSLFARILLE YVDTSCVRVV EGAVPETTAL
 LEQKWDKIFY TGNGKVGVRV MAAAAKHLTP VVLELGKCP VVVDNIDLK VATKRIVVGK
 WGCNNQACI APDYIITTKS FAPKLVESLK ITLERFYGED PLETEDLSRI VNENHVARLA
 RLLDDDMVSG KIIYGGKRDE KRLKIAPTL LDVPDDSLIM KEEIFGPLL IITVDKIEDS
 FAVINSKTKP LAAYLFTKNK NLERMFVETV SSGMMLINDT VLHVANPYLP FGGVGESGTG
 SYHGKFSFNA FSHKKAVLSR GFGGEVGARY PPYTDKKRKI IRALLAGNII ALVLAFFGFS
 KS

FIGURE 8



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FIGURE 9

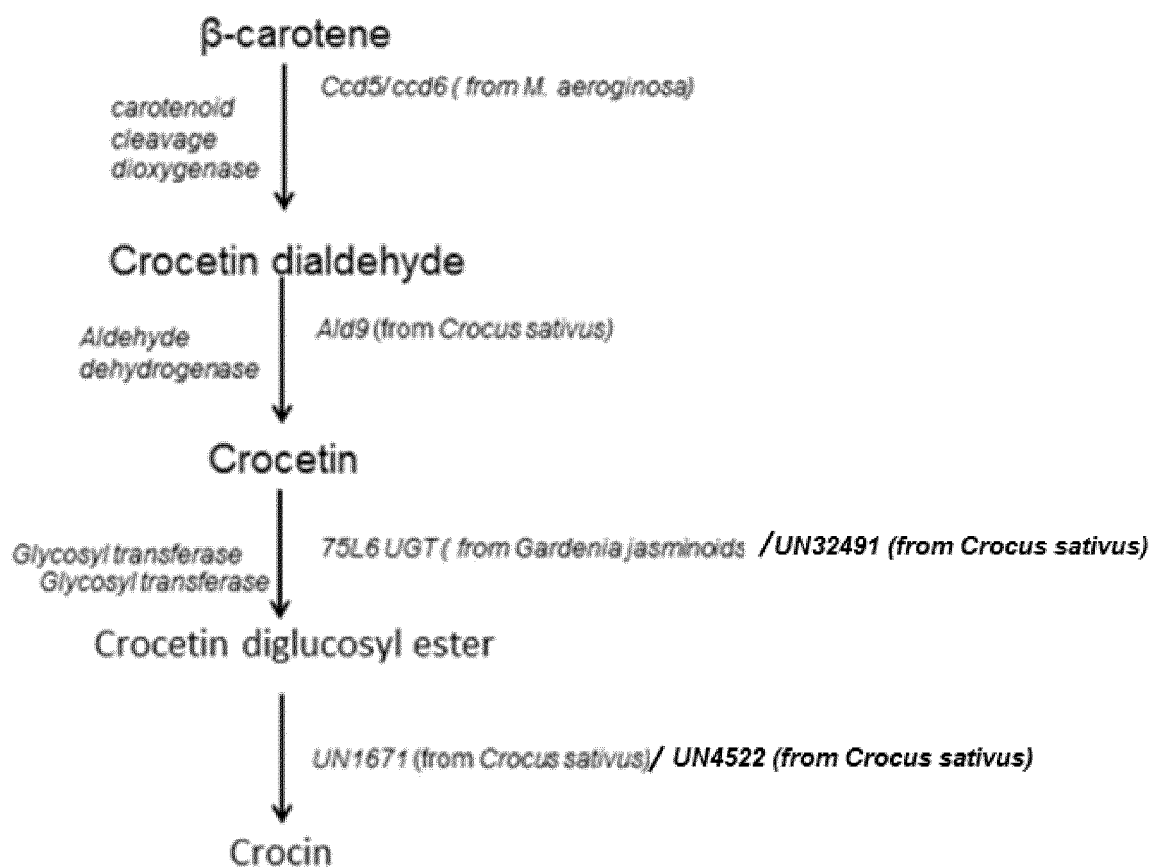
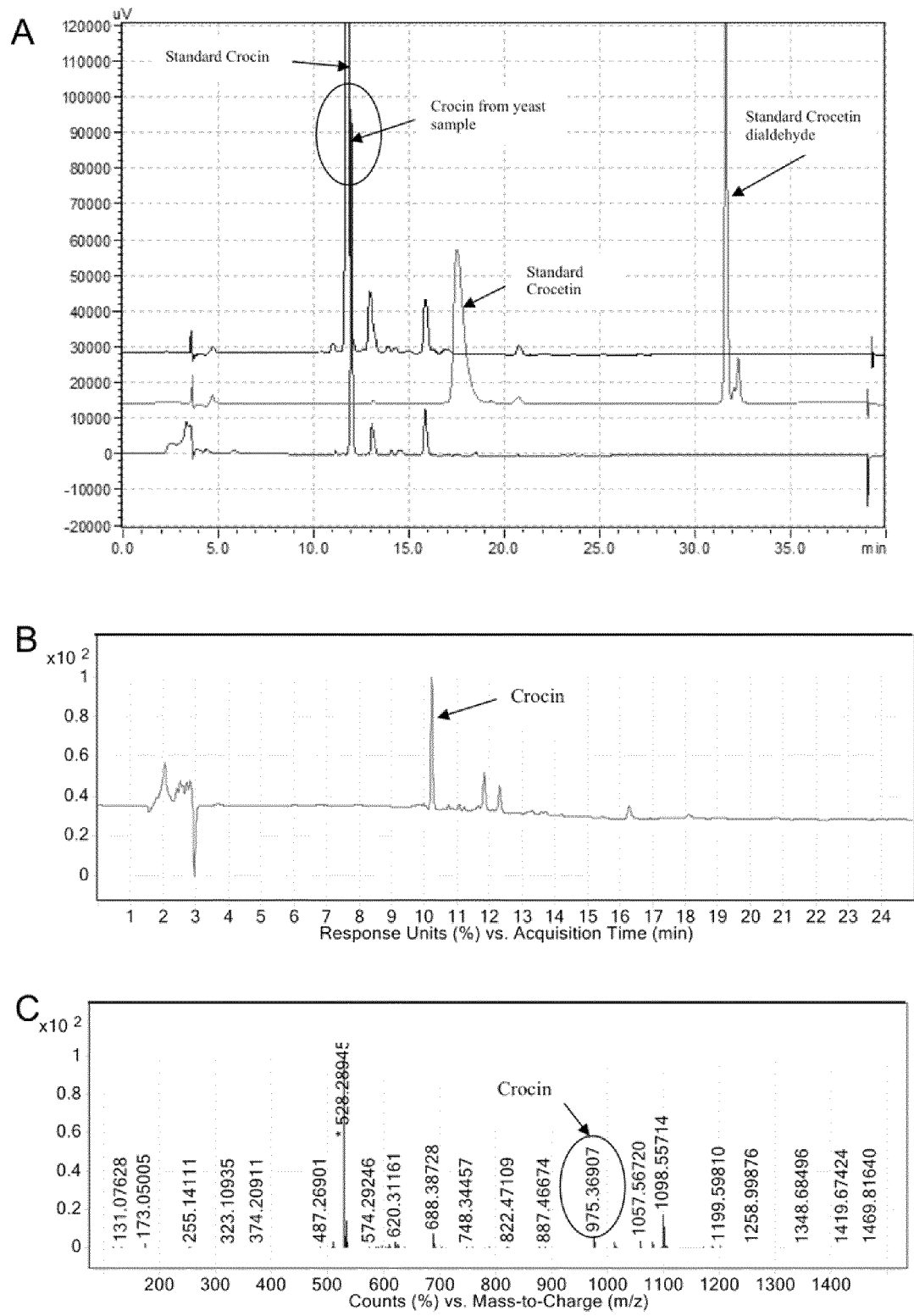


FIGURE 10



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FIGURE 11

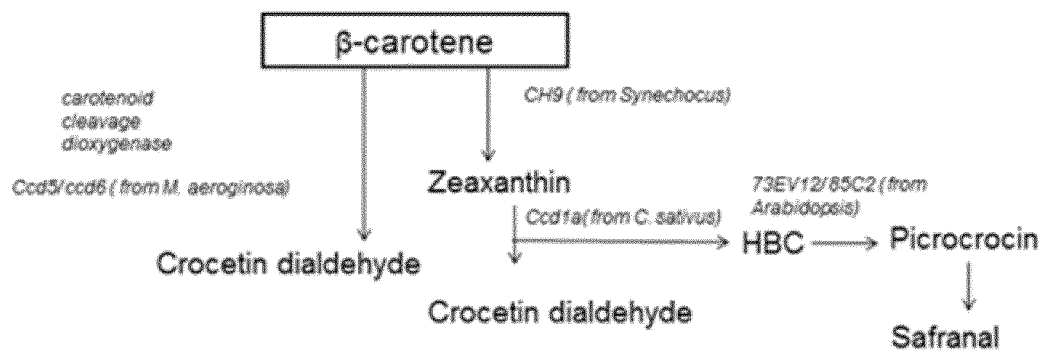


FIGURE 12**CH5 Nucleotide (SEQ ID NO: 39)**

ATGTCCTTCTCTAGTTCAAGTACTGATTTTACTAGTCTAGCTGCCTAAATCCTTATCCGGGTTTTTCACCTT
 CTCTGAGATTTAAGAGATTCTCTGTCTGTTACGTCGTTGAGGAAAGGAGACAAAACCTACCAATCGAAAA
 CGATGAAAGACCTGAATCAACATCCTCAACTAATGCAATTGACGCAGAATACCTGGCACTAAGACTAGCC
 GAAAAGTTAGAAAGAAAGAAATCTGAACGTTCTACTTACTTTGATAGCTGCTATGTTGTCCTCTTTTGGCA
 TTACCTCTATGGCCGTTATGGCTGTTTATTATAGATTTCAGTTGGCAAATGGAAGGTGGTGAAATTTCTAT
 GTTGGAATGTTTGGCACATTTCGCATTAAGTGTGGGTGCTGCTGTTGGTATGGAATTTTGGGCCAGATGG
 GCTCATAGAGCCTTGTGGCACGCTTCTCTATGGAACATGCACGAATCTCATCATAAGCCAAGAGAGGGTC
 CATTGCAACTTAATGATGTATTTGCCATCGTTAACGCCGGGCTGCAATAGGTCTATTGTCTATGGTTT
 TTTTAATAAAGGTTTGGTCCCAGGATTGTGCTTCGGGGCTGGCTTAGGGATCACAGTATTCGGAATCGCT
 TACATGTTTGTGCATGATGGTTTGGTTTACAAAAAGATTTCCAGTCGGACCTATCGCAGACGTGCCATACC
 TTCGTAAGGTTGCAGCTGCTCATCAGTTACATCACACCGACAAGTTTAATGGCGTACCATACGGATTATT
 CCTGGGTCCAAAAGAGTTGGAAGAGGTAGGTGGCAATGAAGAGCTTGATAAAGAGATTTCTAGAAGGATT
 AAATCATACAAAAAAGCATCTGGATCAGGCTCATCATCATCTTCATAA

CH5 Protein (SEQ ID NO: 40)

MSFSSSSTDF RLRLPKSLSG FSPSLRFKRF SVCYVVEERR QNSPIENDER PESTSSTNAI
 DAEYLALRLA EKLERKKSER STYLIAAMLS SFGITSMAMV AVYYRFSWQM EGGEISMLEM
 FGTFALSVGA AVGMEFWARW AHRALWHASL WNMHESHKHP REGPFELNDV FAIVNAGPAI
 GLLSYGFFNK GLVPGLCFGA GLGITVFGIA YMFVHDGLVH KRFPVGPIAD VPYLRKVAAA
 HQLHHTDKFN GVPYGLFLGP KELEEVGGNE ELDKEISRRI KSYKKASGSG SSSSS

CH6 Nucleotide (SEQ ID NO: 41)

ATGCTAGCTTCTATGGCAGCTGCTACCTCTATAACCTCATCTTCTAGAGCCTTCAGATTCCATAGAGGCT
 TATTCCTTAATACAAAGCCTAATATCAGAAACCCACCATGCTTATTGTTTTCCCACTGCTAATGCGTAA
 CAGAAATGGAGCAGGGGCTTTGACAATTTGTTTCGTCGCTGAGAGAACAAGAGGAAGAGAAATTCACAA
 ATCGAAGAGGATGAGAAGAATATGGACGAAGTATTTGAACAGATGAATAGTGCTAGTGTAAGGGTTGCAG
 AGAAACTTGCACGTAAAAAATCTGAAAGATTTACTTATTTAATTGCCGCTTTAATGAGTTCAATGGGTAT
 TACTTCCATGGCTATACTTTTCACTTACTACAGATTTTCTGGCAAATGGAGGGTGGCGATATCCCTGTT
 ACAGAAATGTTGGGCACCTTTTGCATTGTCTGTAGGTGCTGCAGTCGGTATGGAATTTTGGGCAAGGTGGG
 CTCATAGAGCCCTGTGGCACGCCTCATTGTGGCACATGCATGAATCACATCAAAACCTAGAGAAGGACC
 ATTTGAATTGAACGATGTTTTTCGCAATAATCAACGCCGTTCTGCTATAGCCCTATTGAATTTCCGGCTTT
 TTCCATAAAGGTTTGATTCCAGGGTTATGTTTGGTGCAGGTCTGGGTATCACAGTGTGTTGAATGGCTT
 ACATGTTTCGTGCATGACGTTTTAGTGCATAGAAGATTCCAGTAGGGCCAATTGCTAACGTGCCCTTACTT
 TAGAAAAGTTGCCGCAGCACACCAAATCCACCATACTGATAAATTTCAAGGAGTTCCATATGGTCTATTT
 CTAGGCCCTAAGGAACCTGGAGGAAGTTGGCGGGAATGAGGAATTAGAAAAGGAAATCGAACGTAGAATTA
 AGAGAATGAATGCCCTTTAA

CH6 Protein (SEQ ID NO: 42)

MLASMAAATS ITSSSRAFRF HRGLFLNTPK NIRNPPCLLF SPLLMRNRNG AGALTICFVA
 ERTRGREIPQ IEDEKNDME VFEQMNSASV RVAEKLARKK SERFTYLIAA LMSSMGITSM
 AILSVYYRFS WQMEGGDIPV TEMLGTFALS VGAAGMEFW ARWAHRALWH ASLWHMHESH
 HKPREGPFEL NDVFAIINAV PAIALLNFGF FHKGLIPGLC FGAGLGITVF GCANMFVHDG
 LVHRRFPVGP IANVPYFRKV AAAHQIHHTD KFQGVYPYGLF LGPKELEEVG GNEELEKEIE
 RRIKRMNAL

CH7 Nucleotide (SEQ ID NO: 43)

ATGGCCGCTGGTATCTCTGCCAGTGCTTCATCCAGAACAATAAGACTTAGACATAACCCTTTCCTTTCCC
 CTAAATCTGCTTCTACAGCACCTCCTGTCTGTTCTTCTCTCCATTGACTAGGAATTTCCGGTGCAATTCT
 ATTATCTAGACGTAAGCCAAGATTGGCAGTTTGTGTTTGGTGGTGGAGAATGAAAAGTTAACTCTACTATT
 GAATCTGAATCTGAGGTGATCGAAGATAGAATCCAAGTCGAGATCAATGAGGAAAAGTCTCTAGCTGCAT
 CATGGCTGGCCGAAAAGTTAGCTAGAAAAAATCAGAAAGATTTACTTACTTTGGTAGCAGCTGTAATGAG
 TTCTCTTGGTATTACTTCCATGGCTATCCTAGCAGTATATTACAGATTCTCCTGGCAGATGGAAGGTGGT
 GAAGTGCCATTTCAGTGAAATGTTGGCCACCTTTACATTGTCAATTTGGTGCTGCAGTTGGGATGGAATACT
 GGGCCAGATGGGCTCACAGAGCCTTATGGCACGCTTCACTTTGGCATATGCATGAATCACACCACCGTCC

FIGURE 12 CONT.

AAGAGAGGGACCTTTTGAATGAATGATGTCTTTGCTATTACAAACGCCGTTCCAGCTATTGGATTACTT
 TCATACGGCTTTTTTTCATAAAGGGATTGTGCCAGGCCTATGCTTTGGAGCTGGATTAGGAATCACCGTAT
 TTGGTATGGCATAACATGTTTGTACATGACGGCTTAGTCCATAAAAGGTTTCTGTCTGGGCCAATAGCAAA
 CGTTCCATACTTTAGAAGAGTGGCAGCCGCTCATCACTGCATCACTCCGACAAATTCGATGGTGTTCCTCA
 TATGGTCTGTTCTAGGTCCAAAGGAATTGGAGGAAGTTGGCGGATTGGAGGAGTTGGAAAAGGAAGTTA
 ATAGAAGGATCAAAATATCTAAAGGCCTATTGTAA

CH7 Protein (SEQ ID NO: 44)

MAAGISASAS SRTIRLRHNP FLSPKSASTA PPVLFFSPLT RNFGAILLSR RKPRLAVCFV
 LENEKLNSTI ESESEVIEDR IQVEINEEKS LAASWLAEKL ARKKSERFTY LVAAVMSSLG
 ITSMAILAVY YRFSWQMEGG EVPFSEMLAT FTLSFGAAVG MEYWARWAHR ALWHASLWHM
 HESHHRPREG PFEMNDVFAI TNAVPAIGLL SYGFFHKGIV PGLCFGAGLG ITVFGCANMF
 VHDGLVHKRF PVGPIANVPY FRRVAAAHQL HHSKDFDGP YGLFLGPKEL EEVGGLEELE
 KEVNRRIKIS KGLL

CH8 Nucleotide (SEQ ID NO: 45)

ATGGCTGCTGGACTTTCAACCGCTGTTACATTTAAACCTCTGCACAGATCCTTTTCTCATCTTCCACTG
 ACTTCAGATTAAAGATTACCAAAGTCCTTATCTGGCTTTTCTCCATCCTTGAGATTTAAAGATTTTCTGT
 ATGCTATGTTGTGGAAGAGAGGCGTCAAAACAGTCCAATCGAGAATGATGAACGTCCAGAATCAACTAGT
 TCTACAAACGCCATTGATGCCGAATATTTGGCACTAAGACTGGCTGAGAACTTGAAAGAAAGAAATCAG
 AAAGGTCTACTTACTTGATCGCTGCAATGCTATCTTCATTTGGGATTACCTCTATGGCAGTTATGGCCGT
 GTACTACAGATTCTCATGGCAAATGGAAGGCGGAGAAATATCAATGTTGGAGATGTTTGGTACATTCTGCT
 TTGTTCAGTCGGTGCCGAGTTGGTATGGAGTTCTGGGCAAGATGGGCTCATAGAGCTTTGTGGCAGCAA
 GTCTTTGGAATATGCATGAATCTCATCATAAGCCTAGAGAAGGACCTTTTCGAACTTAACGATGTATTTGC
 TATCGTTAATGCTGGTCCAGCCATAGTTTGTAAAGTTACGGATTCTTTAATAAAGGGTTAGTCCCTGGC
 CTATGTTTTGGTGCCGTATCTCCATCTTTCATTTGGTCATACTAA

CH8 Protein (SEQ ID NO: 46)

MAAGLSTAVT FKPLHRFSFS SSTDFRLRLP KSLSGFSPSL RFKRFSVCYV VEERRQNSPI
 ENDERPESTS STNAIDA EYL ALRLAEKLER KKSERSTYLI AAMLSSFGIT SMAVMVYYR
 FSWQMEGGEI SMLEMFGTFA LSVGAAVGME FWARWAHRAL WHASLWNMHE SHHKPREGPF
 ELNDVFAIVN AGPAIGLLSY GFFNKGLVPG LCFGAVSPSF IWSY

CH9 Nucleotide (SEQ ID NO: 47)

ATGACTGCTGCAGCCGCTTCATCTTTAGTTATGTCTAGAGAATACCTAAGGCCACCAGGTGGCATGAATC
 CTAACGTATGGATGGTTATCATCGCAGTTGGTCTGATCGCTACTAGTGTTGGTGGGTACTGGTTCTGGGG
 TTGGTACGATTGGATTTGTTTTCTAGAGAACGTCTTGGCTTTGCATTTGGCAGGTACAGTTATACATGAC
 GCATCTCACCGTCTGCACACTCAAACAGAGCAGTTAATAACAATCTTAGGTTCATGCCTCTGCATTGATGC
 TGGGCTTCGCATTCCCTGTGTTTACAAGGGTTCATCTTCAACATCACGCTCACGTAAATGATCCAGAAAA
 TGATCCTGACCATTTTGTGAGTACCGGAGGTCCATTATGGATGATTGCTGCCAGATTTTTCTACCATGAA
 ATTTTCTTCTTCAAGAGAAGATTGTGGAAGAACTACGAACCTCTAGAATGGTTTCTATCCAGAGCTTTTC
 TAGGCGTAATCGTCTATTTGGGCATTTCAGTACGGTTTTATCGGCTATATCATGAACTTTTGGTTTGTACC
 AGCCTTGGTGGTTGGAATAGCTTTGGGCCTGTTTTTTGACTATCTGCCACATCGTCCATTTGAGGAAAGA
 GACAGATGGAAGAATGCTAGAGTCTATCCTTCCAAGTTGTTAAATTTGTTAATCTTGGGTCAAATATATC
 ATTTAGTCCACCATTTATGGCCATCAATTCCTTGGTACAAATACCAACCTGCCTACTACTACATTAAACC
 ATTACTTGATCAGAAAGGATCACCACAATCCTTGGGATTGTTACAAGGGAAGGATTTCTGTCTTTCTCTT
 TACGATATATTTGTGGGAATAAGACTTCACCATAAACCAAAATCTTAA

CH9 Protein (SEQ ID NO: 48)

MTAAAASSLV MSREYL RPPG GMNPNVWMI IAVGLIATSV GGYWFWGWYD WICFLENVLA
 LHLAGTVIHD ASHRAAHSNR AVNTILGHAS ALMLGFAFPV FTRVHLQHA HVNDPENDPD
 HFVSTGGPLW MIAARFFYHE IFFFKRRLWK NYELLEWFLS RAFLGVIVYL GIQYGFYI
 MNFWFVPALV VGIALGLFFD YLPHRPFEER DRWKNA RVYP SKLLNLLILG QNYHLVHHLW
 PSIPWYKYQP AYYYIKPLLD QKGSPQSLGL LQKDFLSFL YDIFVGIRLH HKPKS

FIGURE 12 CONT.**CH10 Nucleotide (SEQ ID NO: 49)**

ATGACCCAATGCCTATCTAGAAGTGATAAGAATAAAGCTACTAAGAAATTAAAATCACTTAGAGATTGGC
 AGAATGAAATCCAAGAGTACCTTGATCCTCCAAAACCACTTAATGTCACTTTAGGATTATTTTTTGGTGG
 TTAATTCTTAGCAATTGTTTCTGTCTGGCAATGGTACCAAGGAAATTGGCCACTGCCAATTCTGGTTGCA
 TTAGCATTTCTAGCCTTGTCATATGGAAGGCACAGTGATACATGACGCATGTCAATGCCGCTCATCCTA
 ATAAATGGATAAATCAGTTCATGGGCCACGGTTCTGCAATACTTTTGGGTTTCTCTTTTCCAGTATTAC
 AAGAGTCCACTTGGAACACCATAAATATGTCAATGATCCTAAGAACGACCCAGATCACATCGTTTCAACA
 TTTGGTCCAATTTGGTTAATCGCTCCTAGATTTTTCTACCATGAGTACTTTTTTTTCGAGAGAAAGTTAT
 GGCCTAAATTCGAACCTTATGCAATGGGGCATAGAAAGAGGTATCTTCATTTGTATTGTTATCGCTGGTAT
 CAAATATACTTTATGAATGTTATCTACAACCTTATGGTTTGGCCCTGCTTTGATGGTTGGGGTAACACTA
 GGAATCTTTTTTGGTATTTGCCACATAGACCATTCCAATCTAGAAACAGATGGAAAAACGCTAGAGTAT
 ATCCTTCAAACTGATGAACCTACTTATCATGGGTCAAACTATCATCTTGTGCATCATCTGTGGCCATC
 AATCCCATGGTTTGAATACAAACCTGCTTACGAAGCCACTAAGCCATTATTGGATCAGAAAGGGTCCCCA
 CAAAGGATGGGAATATTCGAAACTAAAAAGGATTCTTAAACTTTCTATACGACGTGTTGTTGGGCATTA
 GATCCCACAAAGAGAGAAGGTCTAAGATGAGGCCATTGGCCAGAATCTTGCTAAGAATAATTGGCGTAG
 AAAGTACATTAAGCTGATTTCATAAGACCAGAATTAGAACAGAAAGTAAATAA

CH10 Protein (SEQ ID NO: 50)

MTQCLSRSDK NKATKKLKSL RDWQNEIQEY LDPPKPLNVT LGLFFGGYFL AIVSVWQWYQ
 GNWPLPILVA LAFLALHMEG TVIHDACHNA AHPNKWINQF MGHGSAILLG FSPVVFTRVH
 LEHHKYVNDP KNDPDHIVST FGPIWLIAPR FFYHEYFFFE RKLWRKFELM QWGIERGIFI
 CIVIAGIKYN FMNVIYNLWF GPALMVGVTL GIFFDYLPFR PFQSRNRWKN ARVYPSKLMN
 LLMGQNYHL VHHLWPSIPW FEYKPAYEAT KPLLDQKGSP QRMGIFETKK DSLNFLYDVL
 LGIRSHKERR SKMRPLARIL PKNNWRRKYI KLIHKTRIRT ESK

CH11 Nucleotide (SEQ ID NO: 51)

ATGCAATCCGCCGAAATGTTGTTGACCGTTCCAAAGGAATATTTGAAAGCACCAGGTGGATTCAATCCAA
 ACGTCACAATGTTTTTCTCCGCTTTATCTCTGATCACACTATCAACTTGCGGTTATTGGCTTTGGTCTTG
 GCCAGACTGGATTTGTTTTAGTGCTAATGTACTTGCCCTTACACCTGTCTGGTACCGTCATTCATGATGCT
 TCACATAATTCAGCCCATTCAAACAGATTATTTAACGCAATCCTGGGGCATGGGTCTGCCTTAATGTTAG
 GCTTCGCTTTTCCAGTCTTTACTAGAGTTCACCTGCAACATCATGCTCATGTTAACGATCCTGAAAATGA
 TCCTGACCATTTTGTATCTACTGGAGGACCATTGTGGATGATAGCAGCCAGGTTTTTTTTACCATGAAATA
 TTTTTCTTTAAACGTCAACTATGGAGAAAGTATGAACTGCTTGAGTGGTTTCTATCTAGATTGTTTCGTGG
 CAACAATCGTTATATTTGCTTGTCAATACGGTTTTCATCTCTTACGTTATGAATTTCTGGTTCGTGCCTGC
 ATTAGTAGTGGGAATCGCTTTGGGCTTGTTTTTTCGATTACCTACCACACAGACCTTTTTCAGGAACGTAAC
 AGATGGAAGAATGCAAGAGTATACCCTTCCCCACTATTGAACCTGCTTATTTTGGGTCAAAATTACCACT
 TGGTTACCATTTGTGGCCTAGTATCCCTTGGTACAAATACCAACCAGCTTACTACGCAACAAAACCACT
 ATTAGATGCTAAAGACTGTGAGCAGTCCCTTGGTTTGTGCAAGGTAAAAATTTCTGGAGTTTTCTATAT
 GATGTTTTCTTGGCATTAGATTTTCATTCACACTCATCAAAGTCTAGTTCTTAA

CH11 Protein (SEQ ID NO: 52)

MQSAEMLLTV PKEYLKAPGG FNPNTMFFS ALSLITLSTC GYWLWSWPDW ICFSANVLAL
 HLSGTVIHDA SHNSAHSNRL FNAILGHGSA LMLGFAFPVF TRVHLQHHAH VNDPENDPDH
 FVSTGGPLWM IAARFFYHEI FFFKRQLWRK YELLEWFLSR LFVATIVIFA CQYGFISYVM
 NFWFVPALVV GIALGLFFDY LPHRPFQERN RWKNARVYPS PLLNLLILGQ NYHLVHHLWP
 SIPWYKYQPA YYATKPLLDA KDCEQSLGLL QGKNFWSFLY DVFLGIRFHS HSSKSSS

FIGURE 13

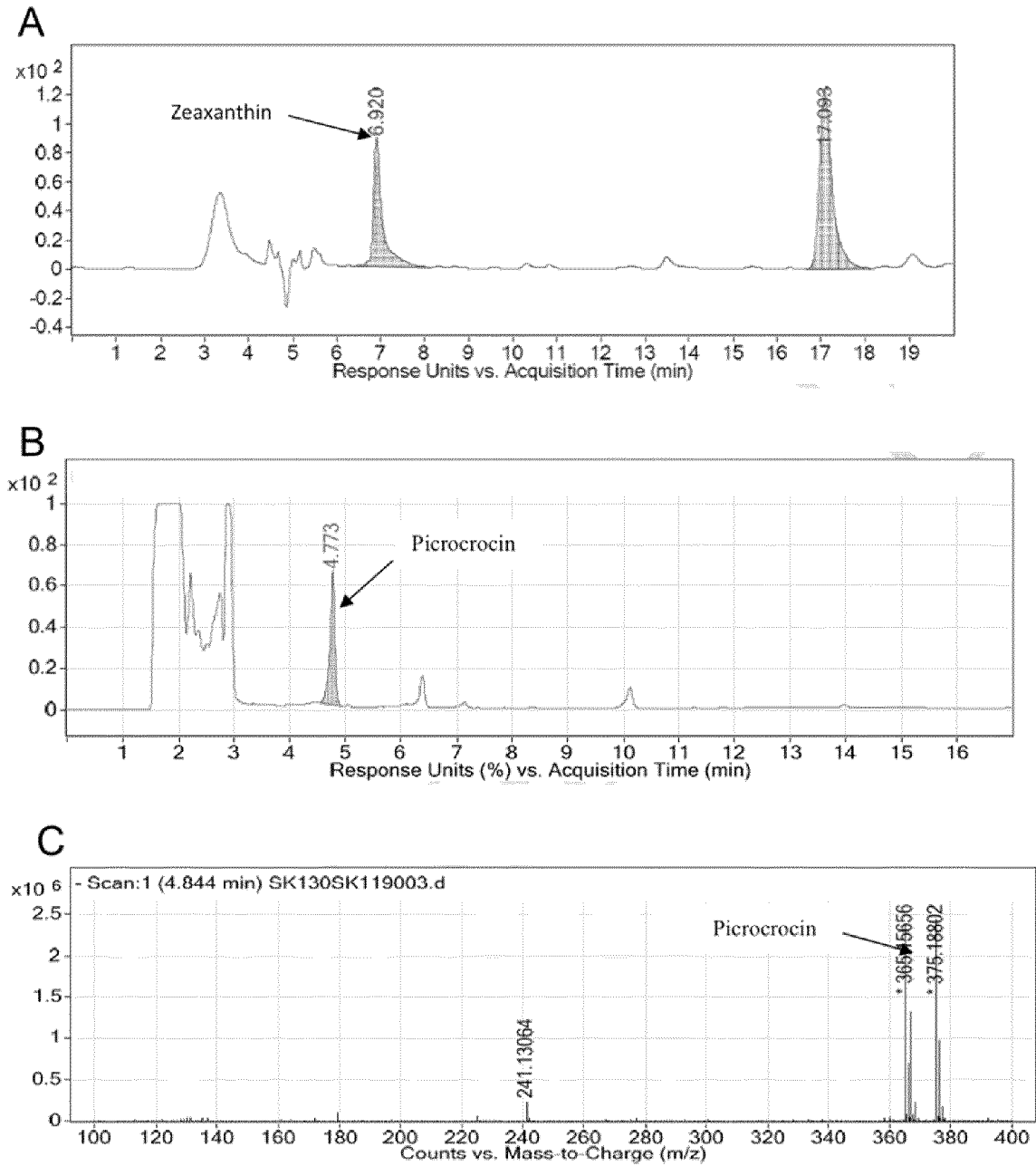
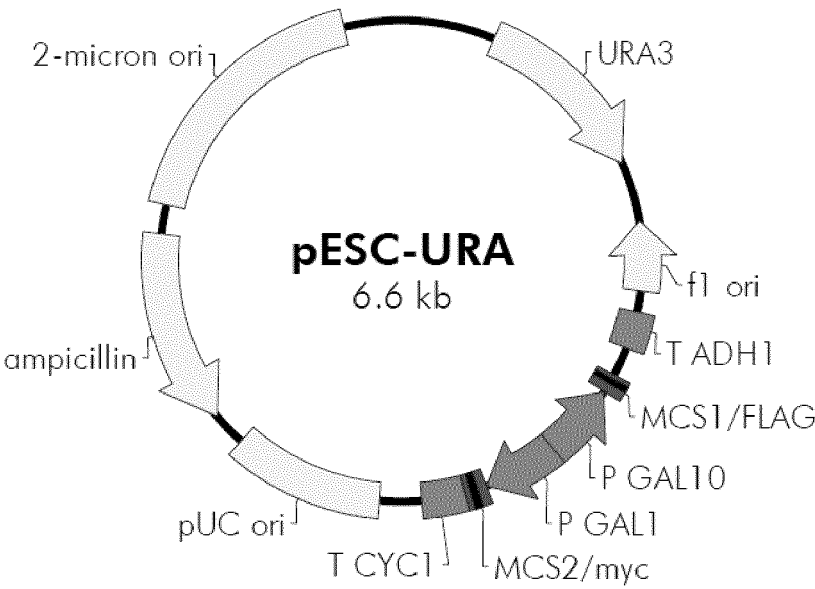


FIGURE 14

A



B

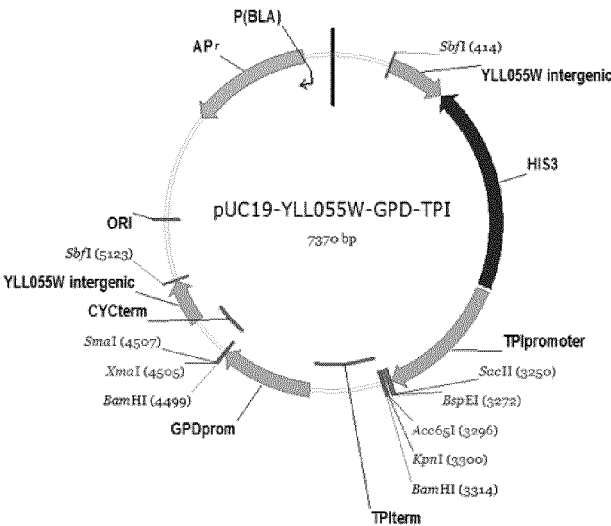


FIGURE 14, continued

C

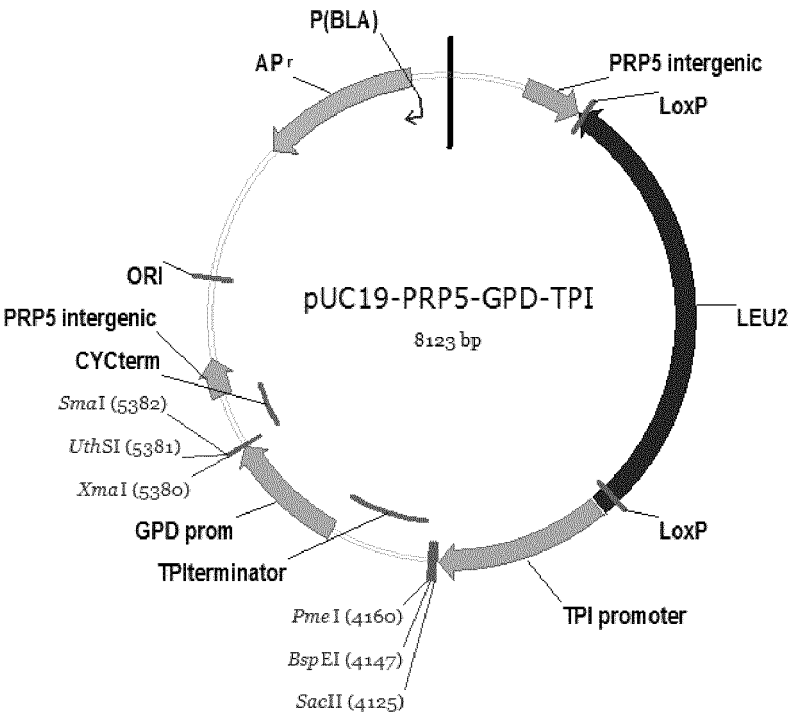


FIGURE 15**UN 32491 Nucleotide (SEQ ID NO: 53)**

ATGGGGTCAGAAGATAGGTCCTTGTCCATCTTATTCTTTCTTTTATGGCACAAAGGTCACATGTTACCTA
TGCTAGATATGGCTAAGTTATTTGCTCTGTATGGTGTCAAATCAACAGTAGTGACCACTCCAGCTAATGT
ACCAATAGTCAACTCAGTAATTGATCAGCCTGATGTTTCTACTTTGCACCCAATCCAATTACGACTGATA
CCATTTCCATCTGACACGGGCTTGCCTGAAGGTTGTGAAAACGTATCATCAATTCCTCCAAGAGACATGC
CAACTGTTTCATGTCACTTTCTTCAGCGCTACAGCAAACTTAGAGAACCTTTTGGTAAGGTGCTAGAGGA
TCTAAGACCAGATTGTATTGTTACTGACATGTTTTTCCCTTGGACCTACGATGTGGCCGCAGAATTAGGT
ATCCCAAGGATTGTTTTCCATGGGACAAATTTCTTTTCTCTCTGCGTAACAGATTCTCTTGAAAGATATA
AACCAGTTGAAAACCTTGCGAAGTGATGCCGAGTCTGTAGTGATCCCAGGACTCCCACACAGAATCGAGGT
ATTGCGTTCTCAAATACCAGAATACGAAAAATCAAAGCAGATTTTGTAGAGAAGTTAGGGAATCAGAA
TCTAAGTCTTACGGAGCGGTGGTTAATTTCTTTCTTTGAATTGGAACCTGACTACGCTAGACATTACAGAG
AGGTTGTCGGCAGACGTGCTTGGCATATCGGGCCACTTGCTCTGGTCAATAACTCTACTACAGACAAAAG
CTCAAGAGGATACAAGACAGCGATCGATAGAAACGATTGTTTGAAATGGCTCGATTCTAAAAGACTAAGA
TCCGTTGTATATGTGTGCTTTGGCTCAATGTCTGACTTTTCCGATGCCCAATTACGTGAAATGGCAAGTG
GTCTAGAGGCATCCAATCATCCTTTTCAATTTGGGTGGTTAGAAAACTTGGAAGGAATGGTTACCAGAAGG
ATTTGAGGAAAGAGTCCAGGAGAGAGGTTTGATTATCAGAGGCTGGGCTCCACAAATCTTAATACTCAAC
CATAGAGCAGTGGGAGGCTTCATGACCCATTGTGGGTGGAATAGTAGTTTGGAAAGCAGTTTCTGCCGGAC
TGCTCTTGTTCATATGTCCTCTATTTGCAGAACAAATTTTACAATGAAAGATTCATGGTTGATGTTTTGAG
AATTGGTGTATCAGTGGGTGCGAAGAGACACGGTATGAAAGCCGAAGAGAGAGAAGTCGTAGAAGCCAAA
ATGGTTAAGGAAGCTGTTGATGGCTTGATGGACGACGGTGAAGAGGCTGAGGGTAGAAGGCGTAGAGCTA
GAGAACTGGGCGAAAAAGCTAGAAAGGCCGTCGAAAAAGGTGGTTCCTACGAGGACATGAGAAATCT
TTTGCAAGAGCTTAAGGGTGATAGCAAGTTAACTGTCCGATGCTAA

UN1671 Nucleotide (SEQ ID NO: 54)

ATGGAAGCTGGTGGTGATAAACTCCACATAGTAGTATTTCCATGGCTAGCCTTCGGCCACATGCTTCCTT
TCCTAGAGCTCTCAAAATCTCTCGCAAAGAGAGGCCATCTCATATCCTTCGTATCCACCCCAAAGAACAT
CCAGAGATTCCCAAATCTCCCTCCACAAATATCTCCTCTCATAAATTTTCATCCCTTTATCACTCCCCAAA
GTGGAAGGCATGCCCCGGCGACGTCGAGGCCACCACCGACCTCCCGCCGGCAAACCTCCAGTACCTCAAAA
AAGCCCTCGACGGCCTCGAGCAGCCTTTCCGGAGCTTCTCCGAGAAGCTTCCCCCAAACCCGATTGGAT
AATCCAAGACCTTCTTCAGCACTGGATACCACCAATAGCGGCCGAGCTCCACGTGCCGTGCGATGTACTTC
GGCACGGTGCCGGCCGCAGCGTTGACTTTCTTCGGCCACCCGTCGCAGTTGTGCGAGCCGCGGTAAAGGGC
TCGAGGGCTGGCTGGCTTCTCCGCCGTGGGTCCCTTTCCCTTCCAAGGTGGCGTACCGCCTCCACGAGTT
GATTGTGATGGCGAAAGACGCGGCGGGTCCCTCCACTCGGGCATGACCGACGCCCGCCGCATGGAGGCG
GCCATCGTGGGTTGCTGCGCCGTCGCGATACGCACCTGCCGGGAGCTGGAGTCGGAGTGGCTGCCGATTC
TCGAAGAGATTTACGGGAAGCCCGTGATTCCGGTAGGCCTACTGCTGCCTACTGCCGACGAAAGCACCGA
TGGCAATAGTATTATCGATTGGCTCGGCACGCGAAGCCAGGAATCTGTGGTGTACATCGCGTTGGGGAGC
GAGGTGTCCATCGGTGTGGAGCTGATACACGAGCTGGCGCTCGGCCTCGAGCTCGCGGGGTGCCTTTCC
TTTGGGCTCTCAGGAGGCCGTACGGGTTGTGAGCGATACCGAGATCCTGCCCGGGGGCTTCGAGGAGCG
GACGAGGGGGTACGGGAAGGTGGTGATGGGGTGGGTCCCACAAATGAGGGTGTGGCCGATAGGTCCGTG
GGAGGATTCTGTACGCACTGCGGTTGGAGTTGGTGGTGGAGAGCTTGCAATTTTGGACACCCGCTTGTTT
TGTTGCCGATATTCCGGGACCAGGGGCTCAACGCGAGGCTGTTGGAGGAGAAAGGGATCGGGGTGAGGT
GGAGAGGAAGGGGGACGGGTCTTTTACGAGGAATGAGGTGGCGAAGGCGATCAATCTGATCATGGTGAA
GGGGATGGATCGGGTAGTTCTGTATAGGAAGAAAGCGAAGGAGATGAAGAAGATTTTTCGAGACAAAGAAT
GCCAGGAGAAGTATGTGGATGAGTTTGTTCAGTTCTTGCTCAGTAATGGAACAGCAAAAGGGTAG

UN1671 Protein (SEQ ID NO: 55)

MEAGGDKLHIVVFPWLAFGHMLPFLELSKSLAKRHLISFVSTPKNIQRFNLPQISPL
INFIPLSLPKVEGMPGDVEATTDLPANLQYLKKALDGLAQPFPSFLREASPKPDWIIQD

FIGURE 15 CONT.

LLQHWIPPIAAELHVPSMYFGTVPAAALTFFGHPSQLSSRGKGLEGLASPPWVPFPSKV
AYRLHELIVMAKDAAGPLHSGMTDARRMEAAIVGCCAVAIRTCERESEWLPILEEIIYGK
PVIPVGLLLPTADESTDGNSIIDWLGTRSQESVVYIALGSEVSIHVLIHELALGLELAG
LPFLWALRRPYGLSSDTEILPGGFEEERTRGYGKVVMGWVPQMRVLADRSVGGFVTHCGWS
SVVESLHFGHPLVLLPIFGDQGLNARLLEEKIGIGVEVERKGDGSFTRNEVAKAINLIMVE
GDGSGSSYRKAKEMKKIFADKECQEKYVDEFVQFLLSNGTAKG

UN4522 Nucleotide (SEQ ID NO: 56)

ATGGAAGCTGGTGGTGATAAACTCCACATAGTAGTATTTCCATGGCTAGCCTTCGGCCACATGCTTCCTT
TCCTAGAGCTCTCAAAATCTCTCGCAAAGAGAGGCCATCTCATATCCTTCGTATCCACCCCAAAGAACAT
CCAGAGATTCCCAAATCTCCCTCCACAAATATCTCCTCTCATAAATTTTCATCCCTTTATCACTCCCCAAA
GTGGAAGGCATGCCCGGTGACGTCGAGGCCACCACCGACCTCCCGCCGGCAAACCTCCAGTACCTCAAAA
AAGCCCTCGACGGCCTCGAGCAGCCTTTCCGGAGCTTCTCCGAGAAGCTTCCCCCAAACCCGATTGGAT
AATCCAAGACCTTCTGCAGCACTGGATACCACCAATAGCGGCCGAGCTCCACGTGCCGTGCGATGTACTTC
GGCACGGTGCCGGCCGCAGCGTTGACTTTCTTCGGCCACCCGTCGGAGTTCTCGAAGCGTAAGAAAGGGA
TCGAGGACTGGCTGGTTTCTCCGCCGTGGGTCCCTTTCCCTTCCAAGGTGGCGTACCGCCTCCACGAGAT
GATTGTGATGGCGAAAGACACGGCGGGTCCCTCCACTCGGGCGTGACCGACGTCCGCCGCATGGAGGCG
GCCATCGTGGGTTGCTGCGCCGTCGCGATACGCACCTGCCGGGAGCTGGAGTCGGAGTGGCTGCCGATTC
TCGAAGAGATTTACGGGAAGCCCGTGATTCCGGTAGGCCTACTGCTGCCTACTGCCGACGAAAGCACCGA
TGGCAATAGTATTATCGATTGGCTCGGCACGCGAAGCCAGGAATCTGTGGTGTACATCGCGTTGGGGAGC
GAGGTGTCCATCGGTGTGGAGCTGATACAGAGCTGGCGCTCGGCCTCGAGCTCGCGGGGTTGCCTTTCC
TTTGGGCTCTCAGGAGGCCGTACGGGTTGTGAGCGATACCGAGATCCTGCCCGGGGGCTTCGAGGAGCG
GACGAGGGGGTACGGGAAGGTGGTGATGGGGTGGGTCCACAAATGAGGGTGTGGCCGATGGGTCCGTG
GGAGGATTCGTGACGCACTGCGGTTGGAGTTCGGTGGTGGAGAGCTTGCATTTTGGACACCCGCTTGTTT
TGTTGCCGATATTCCGGGGACCAGGGGCTCAACGCGAGGCTGTTGGAGGAGAAAGGGATCGGGGTGGAAGT
GGAGAGGAAGGGGGACGCGTCTTTTACGCGGAATGAGGTGGCGAAGGCTGTCAATCTGGTCATGGTGGAA
GGGGATGGATCAGGGAGTTCGTATAGGAAGAAAGCCAAGGAGATGAAGAAGATTTTTGGTGACAAAGAGT
GCCAGGAGAAGTATGTGGATGAGTTTATTTCAGTTCTTGCTCAGTAATGGAACAGCAAAGGGTAG

UN4522 Protein (SEQ ID NO: 57)

MEAGGDKLHIVFVFWLAFGHMLPFLELSKSLAKRHLISFVSTPKNIQRFNLPQISPL
INFIPLSLPKVEGMPGDVEATTDLPPANLQYLKKALDGLAQPFPSFLREASPKPDWIIQD
LLQHWIPPIAAELHVPSMYFGTVPAAALTFFGHPSEFSKRKKGIEDWLVSPPWVPFPSKV
AYRLHEMIVMAKDTAGPLHSGVTDVRRMEAAIVGCCAVAIRTCERESEWLPILEEIIYGK
PVIPVGLLLPTADESTDGNSIIDWLGTRSQESVVYIALGSEVSIHVLIHELALGLELAG
LPFLWALRRPYGLSSDTEILPGGFEEERTRGYGKVVMGWVPQMRVLADGSVGGFVTHCGWS
SVVESLHFGHPLVLLPIFGDQGLNARLLEEKIGIGVEVERKGDASFTRNEVAKAVNLVMVE
GDGSGSSYRKAKEMKKIFGDKECQEKYVDEFIQFLLSNGTAKG

UGT75L6 Nucleotide (SEQ ID NO: 58)

ATGGTTCAACAAAGACACGTTTTGTTGATTACCTATCCAGCTCAAGGTCATATTAACCCAGCTTTACAAT
TCGCCCCAAAGATTATTGAGAATGGGTATCCAAGTTACCTTGGCTACTTCTGTTTATGCCTTGTCAGAAT
GAAGAAGTCATCTGGTTCTACTCCAAAGGGTTTGACTTTTGGTACTTTCTCTGATGGTTACGATGATGGT
TTTAGACCTAAGGGTGTGATCACACCGAATATATGTCATCTTTGGCTAAGCAAGGTTCCAACACTTTGA
GAAACGTTATTAACACCTCTGCTGATCAAGGTTGTCCAGTTACTTGTGTTGGTTTACACTTTGTTGTTGCC
ATGGGCTGCTACTGTTGCTAGAGAATGTCATATTCATCTGCCTTGTTGTGGATTCAACCAGTTGCTGTT

FIGURE 15 CONT.

ATGGACATCTATTACTACTACTTCAGAGGTTACGAAGATGACGTCAAGAACAATTCTAATGATCCAACCT
GGTCCATTCAATTTCCAGGTTTGCCATCTATGAAGGCTAAAGATTTGCCTTCCTTTATCTTGCCATCCTC
CGATAATATCTACTCTTTTGCTTTGCCAACCTTCAAGAAGCAATTGGAAACTTTGGACGAAGAAGAAAGA
CCAAAGGTTTTGGTTAATACCTTCGATGCTTTTGGAAACCACAAGCCTTGAAAGCTATTGAATCTTACAAC
TGATTGCCATCGGTCCATTGACTCCATCTGCTTTTTTGGATGGTAAAGATCCATCCGAAACATCCTTTTC
TGGTGACTTGTTTCAAAAAGTCCAAGGACTACAAAAGAATGGTTGAACTCTAGACCAGCAGGTTCTGTTGTT
TACGTTTCTTTTGGTTCCTTGTTGACCTTGCCAAAGCAACAAATGGAAGAAATTGCTAGAGGTTTGTGTA
AGTCTGGTAGACCATTTTTGTGGGTTATCAGAGCTAAAGAAAACGGTGAAGAAGAAAAAGAAGAAGATAG
ATTGATCTGCATGGAAGAATTGGAAGAACAAGGTATGATAGTTCATGGTGCTCCCAAATTGAAGTTTTG
ACTCATCCATCTTTGGGTTGCTTCGTTACTCATTGTGGTTGGAATAGTACTTTGGAACCTTGGTTTGTG
GTGTTCCAGTTGTTGCATTTCCACATTGGACCGATCAAGGTACTAATGCCAAATTGATTGAAGATGTTTG
GGAAACCGGTGTTAGAGTTGTTCCAAATGAAGATGGTACTGTGCAATCTGACGAAATCAAGAGATGTATC
GAAACCGTTATGGATGATGGTGAAAAAGGTGTGCAATTGAAGAGAAATGCCAAGAAGTGGAAGAATTGG
CTAGAGAAGCTATGCAAGAAGATGGTCTTCTGACAAGAATTTGAAGGCTTTCGTTGAAGATGCTGGTAA
AGGTTATCAAGCCGAATCTAACTGA

UGT75L6 Protein (SEQ ID NO: 59)

MVQQRHVLLITYPAQGHINPALQFAQRLLRMGIQVTLATSVYALSRMKKSSGSTPKGLTFATFSDGYDDG
FRPKGVDHTEYMSSLAKQGSNTLRNVINTSADQGCPVTCVYTLTLLPWAATVARECHIPSALLWIQPVAV
MDIYYYYFRGYEDDVKNNSNDPTWSIQFPLPSMKAKDLPSFILPSSDNIYSFALPTFKKQLETLDDEER
PKVLVNTFDALPQALKAIESYNLIAIGPLTPSAFLDGKDPSETSFSGDLFQKSKDYKEWLNSRPAGSVV
YVSFGSLLTLPKQMQMEEIARGLLKSGRPFLWVIRAKENGEKEEDRLICMEELEEQGMIVPWCSQIEVL
THPSLGCFTVTHCGWNSTLETLCVGPVVAFFPHWTDQGTNAKLIEDVWETGVRVVPNEDGTVESDEIKRCI
ETVMDDGEKGVLEKRNKKWELAREAMQEDGSSDKNLKAFVEDAGKGYQAESN

UGT73EV12 Nucleotide (SEQ ID NO: 60)

ATGGCTAGAGTCGATAGAGCCACAAACCTTCACTTCGTCTTGTTTCCGCTACTGACTCCAGGTCATATGA
TACCCATGGTCGACATAGCCCGGTTACTAGCCGAACGCGGTTCAACGGTAACCATAATCACCACACCACT
GAACGCGAACCGTTTCAAACCGGTCAATTGCTCGGGCCATCAAAGACCGCCTCAAGATCCAAGTTCTTGAA
CTCAAACCTCCCTCAACCGAAGGTTTACCCGAAGGATGCGAGAATTTTGACATGATCGAATCGGCTCAGT
TTTTTCATAAAATGTTTCGAGGCAACATATAAGTTAGCCGAACCCGCGGTTAACGCGGTCCAGAGACTAAC
TCCACCACCAAGTTGCATCATTGCTGATAATCTTTTACCTTGACAAATGATTTAGCCCAAAAAGTTTAAA
ATTCCAAGAATTGTTTTTTCATGGGCCCCGATGCTTCACAATCTTATGCATACATATTGCAATGAATAGTA
ACGTGTTATATGACATCGGGTCCGATTTCGGAGCGTATCTTGCTACCGGGTTTACCGGACCGTATTGAGCT
AACCAGAGGACAAGCTTTGAGTTGGGGGAGGAAAGACACAAAGGAAGCCGCGAGTTTTTGAACCGCGTG
CAACGAGACGAAGATTTGCAAAATGGGATCGTGTTAATAGTTTTACGCGTTGGAACCTTACTATGTTG
AAGAGCTTGCAAAGGTGAAAGGTAAGAAAGTTTGGTGTATTGGGCCGTTTTCGTTATGTAACAAAAGTTT
CGAAGATATAGCCGAGAGAGGAAACAAGGGAGCGATTGATGAACATGAATGTTTGAATGGTTAGATTG
ATGGAGTCACGGTCAGTGATATTCTGTGTGTTTGGGGAGTCTGGTTCGTGTTGGGACCGAGCAAAACATTG
ACCTCGGGTTAGGGTTGGAGGCATCGAAGAAACCGTTTTTGTGGTGCCTACGACATACAACCGAAGAATT
CGAAAGATGGTTGTGCGAGCAAGGGTATGAAGAAAGGGTGAAAGATAGAGGGCTAATAATCCGTGGGTGG
GCCCCACAAGTTTTTTATTTTGTGCGACCGAGCCATTGGTGGGTTTTTAAACACATTGTGGGTGGAACCTCGA
CTCTTGAAGGGATTACAGCTGGAGTCCCTATGGTTACATGGCCTCAGTTTACGGACCAAGTTTATAAACGA
AAGATTTATTGTAGATGTTTTGAAGATCGGAGTGAAAGGCGGTATGGAGGTTCCGTTGTCGTTGGAGAT
CAAGATAAGTTTGGTGTGTTGGTGAACAAAGAAGAGATCACGCGATCGATCGAAGATCTAATGGACGAAG

FIGURE 15 CONT.

GTGAGGAAGGTGAAACAAGAAGAAGGAGAAGTAGAGAACTACGCGATATGGCAAAAAGCGCGATGGAGGA
TGGAGGTTCATCGCATCGCGATATGACATCAATGATTTCAGGATATTGTTCGAGTTGTGCAAAAATCGTTAA

UGT73EV12 Protein (SEQ ID NO: 61)

MARVD RATNLHFVLFPLLTPGHMIPMVDIARLLAERGSTVTIITTPLNANRFKPVIARAIKDRLKIQVLE
LKL PSTEGLPEGCENFDMIESAQFFHKMF EATYKLAEP AVNAVQRLTPPPSCIIADNLLPWTNDLAQKFK
IPRIVFHGPGCFTILCIHIAMNSNVLYDIGSDSERILLPGLPDRIELTKGQALSWGRKDTKEAASFWN RV
QRDEDFANGIVVNSFH ALEPY YVEELAKVKGKKVWCIGPVSLCNKSFEDIAERGNKGAIDEHECLKW LDS
MESRSVIFVCLGSLVRVGTEQNIDLGLGLEASKKPFLWCLRHTTEEFERWLSEQGYEERVKDRGLIIRGW
APQVFILSHRAIGGFLTHCGWNSTLEGITAGVPMVTWPQFTDQFINERFIVDVLKIGVKGGM E V P V V V G D
QDKFGVLVNKEEITRSIEDLMDEGEGETRRRRRSREL R D M A K S A M E D G G S S H R D M T S M I Q D I V E L C K N R

UN 32491 Protein (SEQ ID NO: 62)

MGSEDRSLSILFFPFMAQGHMLPMLDMAKLFALYGVKSTVVTTTPANVPIVNSVIDQPDVSTLHPIQLRLI
PFPSDTGLPEGCENVSSIIPRDMPTVHVTFFSATAKLREPFGKVLEDLRPDCIVTDMFFPWTYDVAAELG
IPRIVFHGTNFFSLCVTDSLERYKPVENLRSDAESVVI PGLPHRIEVLRSQIPEYEKSKAD F V R E V R E S E
SKSYGAVVNSFFELEPDYARHYREVVGRRAWHIGPLALVNNSTTDKSSRGYKTAIDRNDCLKWLD SKRLR
SVVYVCFGSM S D F S D A Q L R E M A S G L E A S N H P F I W V R K S G K E W L P E G F E E R V Q E R G L I I R G W A P Q I L I L N
HRAVGGFMTHCGWNSSLEAVSAGLPLVTWPLFAEQFYNERFMVDVLRIGVSVGAKRHGMKAEEREVVEAK
MVKEAVDGLMDDGEEAEGRRRRARELGEKARKAVEKGGSSYEDMRNLLQELKGDSKLT V G C

FIGURE 16**Yeast constitutive promoters:**

GPD (TDH3) Promoter

5-...gtttcgaataaacacacataaacacaaa...-3 SEQ ID NO: 63

CYC Promoter

5-...acaaacacaaatacacacactaaattaata...-3 SEQ ID NO: 64

ADH1 promoter

5-...tttcaagctataccaagcatacaatcaact...-3 SEQ ID NO: 65

mid-length ADH1 promoter

5-...ccaagcatacaatcaactatctcatataca...-3 SEQ ID NO: 66

PGK1

5-...ttatctactttttacaacaaatataaaaca...-3 SEQ ID NO: 67

Ste5 Promoter

5-...gatacaggatacagcggaacaaacttttaa...-3 SEQ ID NO: 68

Yeast CLB1 promoter

5-...accatcaaaggaagctttaatcttctcata...-3 SEQ ID NO: 69