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CYP51A1 -----MDWDY-YTLLKTSVAIIIVFVAKLITSSKSKKKTSV-----VPLPPVLQAWPPFFIGSLIRF
CYP51A2 -----MELDSENKLLKTGLVIVATLVIAKLIFSFFTS- SKK-----KRLPPTLKAWPPLVGSLIK
CYP710A1 -----MVFSVSIFASLAPYLISAFLLFLLVEQLSYLFKKRN-----IPGPFVVPPIIGNAVALVRD
CYP710A2 -----MVFSVSIFASLAPYLVSALLLFFLIEQLSYLVKKRN-----LPGPLFVPPPIIGNAISLVRD
CYP710A3 -----MVSSVSLFASLTPYLVSALLLFLLEQLFYRLKKRN-----LPGPLFVFPPIGNVVALIRD
CYP710A4 -----MVSSVSLFASLTPYLVSALLLFLLEQLFYRVKKRN-----LPGPLFVFPPIGNVVALIRD
CYP702A1 -----MVEVYELLT-VMVSLIVVKLFHWIYQSNPKPKNEK-----LPPGSMGFPIIGETFEFMKP
CYP702A2 -----MVEFHELLT-VMVSLFLVKIFHWYQWRNPKTNGK-----LPPGSMGFPIIGETFEFFKP
CYP702A8 -----MVDVYKLWT-VIVSLIVVKLFHLYQWSNPKCNGK-----LPPGSMGYPIIGETIEFMKP
CYP702A5 -----MVEVYEFWA-VIVSLIVVKLCHWIYQWKNPKGNGK-----LPPGSMGYPIIGETFEFMKL
CYP702A6 -----MVDLYEFWA-VIVSLIVVKLCHSIYQWRNPKSNGE-----LPPGSMGYPIIGETFEFMKP
CYP702A3 -----MSEIYVLAISVVFSLIVVKLCHWVYQWSNPKCKGK-----LPPGSMGFPIIGETFEFMTP
CYP708A2 -----MSFVWSAAV-WVIAVAAVVSKWLYRWSNPKCNGK-----LPPGSMGLPIIGETCDFEP
CYP708A3 -----MSSIWNVAM-LMVALVVVRIHSHWLYRWSNPKCPGK-----LPPGSMGFPIIGETLDFFKP
CYP708A4 -----MNLFWNTGF-CVIVLVVARVGHWWYQWSNPKSNGK-----LPPGSMGFPIIGETLDFFKP
CYP708A1 -----MNNLISLDIMKEMGWALSFVIALVVKISLWLYRWANPNCSGK-----LPPGSMGFPIIGETVEFFKP
CYP87A2 -----MWALLIWWVSLLLISITHWVYSWRNPKCRGK-----LPPGSMGFPLLGESIQFFKP
CYP90A1 -----MAFTAFLLLSSIAAGFLLLRTRYR--RMG-----LPPGSLGLPIIGETFQLIGA
CYP90B1 -----MFETEHTLLPLLLLPSLLSLLFLLLKRRNRKTRFN-----LPPGSGWPFPIGETIGNYK
CYP90C1 MQPPASAGLFRSPENLPWPYNYMDYLVAGFLVLTAGILLRPWLRLRNSKTKDGEEDNEEKKKG-----IPNGSLGWPIIGETNGFIAC
CYP90D1 MDTSSSLFFS-----FFFFIIVIFNKINGLRSSPASKKKLNDHHVTSQSHGPK-----FPHGSLGWPIIGETIEFVSS
CYP724A1 -----MLVLSIFLSLGLFLLSILILYISISKNETNDHHS-----SLTGSWGWPIIGETISFFKP
CYP720A1 -----MAESAGESYRLLSVSSSTTFLAFIIFLLAGIARRRRAPHR-----LPPGSRGWPIIGDTFAMNA
CYP85A1 -----MGAMMVMGLLLIIIVSLCSALLRWVQMRYSKNG-----LPPGTMGWPIIGETTEFLKQ
CYP85A2 -----MMMILGLLVIIIVCLCTALLRWVQMRYSKNG-----LPPGTMGWPIIGETTEFLKQ
CYP707A1 -----MDISALFLTFLAGSLFLYFLRCLISQ-----RRFGSSKLP-----LPPGTMGWPIIGETFQLY--
CYP707A3 -----MDFSGLFLTLSAAALFLCLRFIAGV-----RRSSSTKLP-----LPPGTMGWPIIGETFQLY--
CYP707A2 -----MQISSSSSSNFFSSLYADEPALITLTIWVVVVVLLFKWWLHWKEQRLR-----LPPGSMGLPYIGETLRLY--
CYP707A4 -----MAEIWFLVVPILILCLLLVRVIVSK-----KKKNSRGK-----LPPGSMGWPIIGETLQLY--
CYP88A3 -----MAETTSWIPVWFLMVLGCFGLNWLVRKVNWVLYESSLGENRHY-----LPPGDLGWPIIGNMLSFLRA
CYP88A4 -----MTETG-LILMWFPLIILGLFVLKWWLKRNVWVYVSKLGEKKHY-----LPPGDLGWPIIGNMWSFLRA
CYP716A1 -----MYMAIMIILFSSILLSLLLLRKHLSHFSYPNLP-----PGNTGLPIIGESFSA
CYP716A2 -----MYLTIIFLFISSIIIFPLLFFLGKHLNFRYPNLP-----PGKIGFPIIGETLSFSA
CYP718 -----MVLEPNFVLSWVFLCIAATISSTLFFFRKKHHRFITKKIQKKK-----LLPGEMGLPIIGETMDFYKA
CYP71A12 -----MEMILMVSCLTTLITL-FLLKQFLKRT-ANKV-----NLPSPWRPLPIG-----NLHQ
CYP71A13 -----MEMILSISCLTTLITL-LLLRRFLKRT-ATKV-----NLPSPWRPLPIG-----NLHQ
CYP71A18 -----MEMTLMVSLCLTTLTL-LLLKKFLKRT-AKV-----NLPSPWRIPVIG-----NLHQ
CYP71A14 -----MEMIIISLCLATILAL-LLLKQFLNRTYAKV-----NLPSPWRVPVIG-----NLHQ
CYP71A15 -----MEIIISLCLATILAF-LLLKPLLNRV-AKD-----NLPSPWRVPVIG-----NLHQ
CYP71A28 -----MILISLCFTTFLAF-LFLNPLLKRTTTTKP-----NPPSPWRPLPIG-----YLHQ
CYP71A19 -----MEIILVTCLTTLAL-LLLKSILKRTTTNLL-----NLPSPWRPLPIG-----NLHQ
CYP71A20 -----MILITLCLTTLA-LLLKSILKRTATKNF-----NLPSPWRPLPIG-----NLHQ
CYP71A16 -----MEMMILISLCLTTLTLLFFKSLKRPNS-----NLPSPWRPLPIG-----NLHQ
CYP71A27 -----MEMILISLCLTTLAF-LFLKPLLKRTTTTKP-----KLPSPWRPLPIG-----NLHQ
CYP71A21 -----MESMTMIILQSLIIFITILFFK--KQKRGKKS-----NTPRSPRPLPIG-----NLHQ
CYP71A22 -----MESMIRIILLSLIIFITILFFI--KQKKGKKS-----NTPASPRPLPIG-----NLHQ
CYP71A24 -----MMMMIILLCSIIITILFFK--KQSRGKKS-----NAPPSPRPLPIR-----NLHQ
CYP71A26 -----MMIMFFLLCSIIIFVVTIIFR--KQKRGKKS-----NTPSPRPLPIG-----NLHQ
CYP71A25 -----MMMMIILLWSIIFMTILFLK--KQLSGKKG-----KTPSPRPLPIG-----NLHQ
CYP71A23 -----MILFLCLLILFIITILFFK--KHKTVNKI-----INFPSPRPLPIG-----NLHQ
    
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CYP71B26 -----MDSIWILSLLFFIIFLLLAAFKRKNHGKH-----RRIPSPPGFPIIG---NLHQ
CYP71B33 -----MVNILILSLLFLVILLLLTAFKRAKRRQH-----RPISPPPGFPIIG---NLHQ
CYP71B34 -----MTNIWLLSLIFVICILVAVFNHKNRRNYQ-----RTPSPPGCPIIG---NLHQ
CYP71B35 -----MAHIWLLPLIFLVCILLAVFNHKKHPKYR-----QFP-CPPGFPIIG---NLHQ
CYP71B36 -----MATILFLSLLFLSCILLA AFTHKKRQQHQ-----RKPPSPPGFPIIG---NLHQ
CYP71B37 -----MATIWFPLLFLSCLLLAALRLKRRQHQ-----RKPPSPPGFPIIG---NLHQ
CYP71B9 -----MATIWFLSLLFLCCILLA AFKHKRRTNQ-----QOPPSPPGFPIIG---NLHQ
CYP71B10 -----MTVLWFVSLILLISILLVAVKHSKRR-WV-----ROPPSPGLPIIG---NLHQ
CYP71B11 -----MSLWYIIVAFVFFSTIIVR-NTRKTKK-----NLPPGPPRLPIIG---NLHQ
CYP71B12 -----MSLWYIIVAFVFFSSMIIVR-IIRKTKK-----NLPPGPPRLPIIG---NLHQ
CYP71B14 -----MIWWFIVGASFFF AFILIAK-DTRTTKK-----NLPPGPPRLPIIG---NLHQ
CYP71B13 -----MSLWYIIVVVFVFFASIFI AK-NTRKTKK-----NLPPGPPRLPIIG---NLHQ
CYP71B6 -----MSLFSFPISTELL PLLLLIPLLIFFLLRSPK-----NLPPGPPRLPIIG---NIHQ
CYP71B28 -----MSVFLCFLCLLPLILIFL---KNLKPSKW-----KLPPGPKKLPPIIG---NLHQ
CYP71B29 -----MAIILCFLILLPLILIFL---KKLKHSKW-----KLPPGPKLPPIIG---NLHQ
CYP71B15 -----MSVFLCFLVLLPLILIFL---NVLKPSKY-----KLPPGPKLPPIIG---NLHQ
CYP71B23 -----MSIFLCFLLLLLLLLVTI-IFTRKSQSSKL-----KLPPGPKLPPIIG---NLHY
CYP71B7 -----MSILLCFLCLLPVFLVLSILSKRLKPSKW-----KLPPGPKLPPIIG---NLHN
CYP71B16 -----MAISLLCLFLITLVSLI--FVVKIKHSKW-----DLPPSPPTFPVIG---NLHQ
CYP71B17 -----MAISLLCLFLITFVSLT--IVGCKIKRSIW-----NLPPSPKLPVIG---NLHQ
CYP71B18 -----MAISLLSFLIAFASLI--FLGKKIKRSKW-----NFPPSPKFPVIG---NLHQ
CYP71B19 -----MAISFLCVFLITFVSLI--FFAKKIKRSKW-----NLPPSPKFPVIG---NLHQ
CYP71B20 -----MAISFLCFLITLASLI--FFAKKIKHLKW-----NLPPSPKFPVIG---NLHQ
CYP71B2 -----MTILLCFFLVSLLTIVSSIFLKQNKTSKF-----NLPPSPSLPIIG---NLHH
CYP71B27 -----MAILFCFFLVSLVTLVSSIFFKQIKNTKF-----NLPPSPSLPIIG---NLHH
CYP71B21 -----MSIFLCFLLLLLPLFLV FY---KRLLP SKG-----KLPPGPI SLPIIG---NLHQ
CYP71B22 -----MSISLYFLLLLPLFLIFF---KKLSPSKG-----KLPPGPI GLPIIG---NLHQ
CYP71B38 -----MSIFLCFLLLLLPLSLIF---KKLLPSKG-----KLPPGPI GLPIIG---NLHQ
CYP71B5 -----MSIFLCFLLLLLPLSLIF---KKLLPSKG-----KLPPGPKGLPIIG---NLHQ
CYP71B31 -----MSMFLGLLFLFPLFFILF---KNLLPPRK-----KLPPGPTGLPIIG---NLHQ
CYP71B8 -----MIKSILLCFFFLPLLLLTF---KLLPSKW-----KLPPGPTGLPIIG---NLHQ
CYP71B32 -----MSIFLLCILFLFPLFQIIF---KKLLPSKS-----KLPPGPTGLPIIG---NLHQ
CYP71B24 -----MSILLYFIAL---LSLIIKKIKDSNR-----NLPPSPLKLPVIG---NLHQ
CYP71B3 -----MSILLYFFFLPVI---LSLIFMKKFKDSKR-----NLPPSPLKLPVIG---NLHQ
CYP71B25 -----MAILQSFLLLLLSLPFLFTLIYTKMKESKR-----NLPPGPAKLPVIG---NLHQ
CYP71B4 -----MVSLLSFFLLLLVPIFFLLIFTKKIKESKQ-----NLPPGPAKLPVIG---NLHQ
CYP83A1 -----MEDIIGVVALAAVLLFFLYQPKTKRY-----KLPPGSPLPVIG---NLHQ
CYP83B1 -----MDLLLLIAGLVAAAFFFLRSTTKKSL-----RLPPGPKGLPIIG---NLHQ
CYP84A1 -----MESSISQTL SKLSDPTTSLVIVVSLFIFISFITRRRR--P-----PYPPGPRGWPIIG---NMLM
CYP84A4 -----MLTLMTLIVLVPLLLFLPHLLLRQMLLK-----PYPPGPKGLPVIG---NILM
CYP705A1 -----MDAIVVDSQNCFI ILLCSFS-LISYVFFKPKVNF-----DLPPSPPSLPPIIG---HLHL
CYP705A24 -----MTVMVSFDLLNCFIF-TLIFLISTLFLVLFYKKNPDGF-----DVPPSPPSLPPIIG---HLHL
CYP705A15 -----MAAMNIVDFQNCFFF-VLL-SLFSLLCYSLFFRKPKPR-----LHY-----DLPPSPPTLPPIIG---HLHL
CYP705A4 -----MIDFQNCFI ILL-CLFSRLCYSHFFKKPKDPR---LHF-----DLPPSPPSLPPIIG---HLHL
CYP705A16 -----MAAMINVEFQNCFI ILL-CLFSLLCYSLFRKPSRQ-NSYDC-----DLPPSPPSLPPIIG---HLHL
CYP705A19 -----MTTTEFQSCFI ILL-CLFSLVCYSLFFRKPSRR-DAHGC-----DLPPSPPSLPVIG---HLHL
CYP705A20 -----MLTVDSQHCFI ILL-CFFSLLCYSLFKKLDKDS---HVGR-----DLQSPPSLPPIIG---HLHL
CYP705A21 -----MAAIIGDCFI ILL-CLFSLLFYLI FRKPKNSRLVAYG-----DLPPSPPSLPPIIG---HVHL
CYP705A23 -----MAAMLTVDFQNCFI ILL-CILLLL CYPLFFKPKVQSQ---DGF-----GLPPSPLSPLPIIG---HLHL
CYP705A28 -----MAAMITVDFQNSFA ILL-CLFSLLCYSLFRKAKGSR---AGR-----DLPPSPPSFPVIG---HLHL
    
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CYP705A30 -----MAAMITFDQNSFIF--ILF-FLFSLLCYSLFFRKPGRS---AGR-----DLPPSPPSFPVIG---HLHL
CYP705A32 -----MAAMITVDFQNSFIF--ILF-CLFSLICYSLFFRKPGRS---AGR-----DLPPSPPSFPVIGSPQSNHL
CYP705A2  -----MAVLIIF--ILL-CLLSFLCYSLFFMKPKDSR---DGR-----DLPPSPPSLPIIG---HLHL
CYP705A5  -----MITVDFENCFIF---LLL-CLFSRLSYDLFFRKTKDSR---AGC-----ALPPSPPSLPIIG---HLHL
CYP705A8  -----MGEIMNVDFVNCLIL--ILL-CLLSILCYSLFFFKKPKDGF-----NLPSPPSLPIIG---HLHH
CYP705A9  -----MNVDFQNCIL--ILL-CLLSFLCYSLFFFKKPKDGF-----NLPSPPSLPIIG---HLHH
CYP705A18 -----MATLISVDFQHCIFY--IILLCLFSLLCYSLFFRKPGRS---GC-----DLPPSPPSLPIIG---HLHH
CYP705A6  -----MAAILSVDFQNCIFIVL-CLFSLFCYSLFFKKPKHPR---GC-----DLPPSPPSLPIIG---HLHL
CYP705A33 -----MAAFISVDFQNCIFIVL-CFFSLLCYSLFFKKPKDSR---GC-----DLPPSPPSLPIIG---HLHL
CYP705A3  -----MIAIIVEFQNFIF--ILL-CLFSLCHSLFFKKPKDSR---SF-----VLPSSPPSLPIIG---HLHL
CYP705A22 -----MEAVISVDFQNCIFIVL-FLLTFLCFFFFFKPKDSRV---NF-----DLPPSPPSLPIIG---HVHL
CYP705A12 -----MAELIIVDFQNSIF--ILL-CLFSFLCYALFFFKKPKGFD-----LPPSPPSLPIIG---HLHH
CYP705A13 -----MATIIVDFQKIHFPQILL-SIFTVICIFVFFKKPKGRS---GC-----DLPPSPPSLPIIG---HLHL
CYP705A25 -----MAAISVDFQLCFIF--ILLAI FSLFCFAFFFKPKDPQ---LQGC-----GLPPSPPSLPIIG---HLHF
CYP705A27 -----MAAITVDFQLCFIF--ILLGIFSLFCLSAFFFKPKDPQ---LQGC-----GLPPSPPSLPIIG---HLHL
CYP712A1  -----MDLKLNTKLIILITS---LAFPFMLYALFKWFLKEQGSAL---AT-----KLPQSPPALPFIG---HLHL
CYP712A2  -----MFTLNLDMNYTS---CSYLFFTLVITIFLLHRLFSSSS---RR-----CLPPGPRGLPVLG---HMHL
CYP93D1  -----MVDLQYFSVI---ILVCLGITVLIQAITNRLRDRLP-----LPPSPALPIIG---HIHL
CYP81D6  -----MHVSIQHIYKFLDLNMETYFLLLSLAFFL-FISVKLLFGKRHSKFN-----PPSPARPLPIIG---HLHL
CYP81D7  -----METHFLILSLAFLF-FISLKLLFGKRHSKFN-----PPSPARPLPFIG---HLHL
CYP81D11  -----MSSTKTIMETIYLILSLFFFFIFLSLKLLFGPRPRKLN-----PPSPSRPPIIG---HLHL
CYP81D2  -----MEALMLIFTFCFIV---LSLIFLIGRIKRLN-----PPSPA WALPVIIG---HLRL
CYP81D3  -----MEGQTLIFTFLFIS---LSLTFIIGRIKRRPNL-----PPSPSWALPVIIG---HLRL
CYP81D8  -----METKTLIFSILFVW---LSLIYLIGLKRKPNL-----PPSPA WSLPVIIG---HLRL
CYP81D4  -----MDLNQILILSFLSF---TLAIFLLTRSKRKNL-----PPSPA ISLPVIIG---HLHL
CYP81D5  -----MDLTQILLLSFLFLT---ISIKLLLT KSNRKNL-----PPSPAYPLPVIIG---H-HL
CYP81D1  -----MEETNIRVVLYSIFSLIFLIISFKFLKPKKQNL-----PPSPPGWLPPIIG---HLRL
CYP81F3  -----MFYVVIVLPLALFL---LAYKLFFTSKTKRFNL-----PPSPYSPLPIIG---HHNL
CYP81F4  -----MFNYVILPLALFL---LAYKFFFTSKKQRYL-----PPSPSYSLPIIG---HHLL
CYP81F2  -----MDYVLIVLPLALFL---IAYKFLFSSKTQGFNL-----PPGP-TPFPVIIG---HLHL
CYP81F1  -----MLYFILLPLLFLV---ISYKFLYS-KTQRFNL-----PPGP-PSRPFVIG---HLHL
CYP81H1  -----MDCILLILTTLVAI---FIVKIVLLVTKPNKNL-----PPSPNICFPPIIG---HLHL
CYP81G1  -----MRLVSRIMCSRMGEMIDLFLALMAGFIAYAVVFRSKQKK-NL-----PPNP-VGFPIIG---HLHL
CYP81K1  -----MEDLWFIFFSFLTATLIFFITKKFLWSLNSKL-----PPSP-TPLPIIG---HLHL
CYP81K2  -----MENLWVIFL---LTATLTFIT-KFLWSQNPKL-----PPSP-TPLPIIG---HLHL
CYP82C3  -----MDTSLFSLF-VSILVVFVIALFKKSKPKYVK-----APAPSGAWPIIG---HLHL
CYP82C2  -----MDTSLFSLF-VPILVVFVIALFKKSKPKYVK-----APAPSGAWPIIG---HLHL
CYP82C4  -----MDTSLFSLF-VPILVVFVIALFKKSKPKYVK-----APAPSGAWPIIG---HLHL
CYP82F1  -----MDLIMLFL-SALFIFPVLILIKSRLRPNKST-----APMVPGAWPLLIG---HLHL
CYP82G1  -----MTFLFSTLQLSFLSALVIFGYIFLRKQLSRCEVDSST-----IPEPLGALPLFG---HLHL
CYP76C2  -----MDIIFEQALFPLFCFVLSFFIIFFTTTRPRSSRK-VV-----PSPPGPPRLPIIG---NIHL
CYP76C4  -----MDIISGQALFLLFCFISSCFLISTTARSRRSSGR-AA-----TLPPGPPRLPIIG---NIHQ
CYP76C1  -----MDIISGQALLLFCFILSCFLIFTTTRSGRISRG-AT-----ALPPGPPRLPIIG---NIHL
CYP76C5  -----MDIISGQPMFLFCFILSCFLFFTAARSRRSPTQVLS-----KSPPGPPRLPIIG---NIHL
CYP76C6  -----MDIISGQPLFLFCFILSCLLFFTTARSRRSPCQ-LS-----KSPPGPPRLPIIG---NIHL
CYP76C3  -----MDLSLIQGMSLPLYFLLTLFFFFFATAKTRRSSSTG-----TLPPGPPILPLVG---NIFQ
CYP76C7  -----MDIVAIVLSLLFIFLFFFFYTTGKSCPGGAK-----NPPGPSKLSLLR---NILQ
CYP76G1  -----MINQLTKNELIGLFTSIAVLIYVTCIFYTKRCRTR-----LPPGPNPVPVIIG---NIFQ
CYP75B1  -----MATLFLTILLATVLLILRIFSHRRNRSHNN-----RLPPGPNPPIIG---NLPH
CYP706A1  -----METASS--NFSLSQLNIEEPYSSVMLGVAALLAVVCYFWIQGKSKSKNGP-----PLPPGPWPLPIIG---NLPF
    
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CYP706A2 -----MGTASSKSNINLSQVLNTEEPYSSVMLAVAALLLAVVCYLWIQGKSKSKKEP-----PLPPGPWPLPIVG---NLPF
CYP706A3 -----MTDISSLFRNRSRKDQLDYG---LTVIVISTLCWCLWLYAKCKRRS-P-----PLPPGPWGLPIIG---NLPF
CYP706A7 -----MTDIFFFTIQRNDHDFV---LATIVISSVFWYIWVYVSKRFL-P-----PLPPGPRGLPIVG---NLPF
CYP706A5 -----MSMLSNLFPDNAIS-LTPYA---YAVLILATFISILWYIFK-RSPQ-P-----PLPPGPRGLPIVG---NLPF
CYP706A6 -----MSPISNLFAGNTIN-LTP---YAILILIAIFISILWYLFK-RSPQ-P-----HLPPGPRGLPIVG---NLPF
CYP706A4 -----MSPISNLFDPNTIN-LTP---YAIVILTTVFSILWYIFK-RSPQ-P-----SLPPGPRGLPIVG---NLPF
CYP79B2 -----MNTFTSNSSDLTTT-ATETSSFSTLYLLSTLQAFVAITLVMLLKKLMTDP-NKPKP-----YLPPGPTGWPIIG---MIPT
CYP79B3 -----MDTLASNSSDLTTKSSLGSSFTNMYLLTTLQALAALCFLMILNKIKSSSRNKKLH-----PLPPGPTGFPIVG---MIPA
CYP79A2 -----MLAFIIGLLLLALTMKRKEKKKTMLISPTRNL-----SLPPGPKSWPLIG---NLPE
CYP79C1 -----MDYYLNNVIFSVVVTFSITLNIIVFLIKSVVARFLGRRK-----KLPPGPRGFPIIG---NLVG
CYP79C2 -----MTIITNPSSFTLVL---ISITLVLALARRFSRFMKPKG-----QLPPGPRGWPIVG---NMLQ
CYP79F1 -----MMSFTTSLPYPFHILLVFIILSMASITLLGRILSRPTKTKDRSC-----QLPPGPPGWPIIG---NLPE
CYP79F2 -----MMMISFNTCFQILLGFIVFIASITLLGRIFSRPSKTKDRCR-----QLPPGRGPWPIIG---NLPE
CYP703A2 -----MILVLAFLAVLILNVLLWRWLKASAKAQR-----LPPGPPRLPIIG---NLQ
CYP98A8 -----MIIYLISLLPIIVATLMLYQRWWS-----NIPPGPKPKFLLG---NLHQ
CYP98A9 -----MDLLISLTTIIIAAYMQLRRRGS-----NIPPGPPTRFLVG---NLHQ
CYP98A3 -----MSWFLIAVATIAAVVSYKLIQRLRY-----KFPFGPSPKPIVG---NLVD
CYP78A10 -----MTIDMYLSFASRSGSSPFPSLELCLSIIFLISLVFVFLTPGGFAWALYKARF---HTRPESKTGPAIPGPSGLPIFGL---LAF
CYP78A5 -----MSPEAYVLFN---SFNLVTFEAFASVSLIIATVAFLLSPGGAWAGPGS-----SKSRVSIIPGSGS---LSV
CYP78A6 -----MATKLESS-LIFALLSKCSVLQTNLAFSLLAVTIIWLAISLFLWTPGGPAWGKYLFGF---LISGSYKTGNVIGPKGFPIVG---SMSL
CYP78A9 -----MATKLDTSLLLALLSKCSLLTQTNLALSLLVASLALSLLFFWSHPGGPAWGKYFLHR---RRQ---TTVIPGPRGLPIVG---SMSL
CYP78A8 -----MRTEIESL-WVFALASKFNIYMQHFASLLVAIAITWFTIIVFWSTPGGPAWGKYFFTRRFISLDYNRKYKNLIPGPRGFPIVG---SMSL
CYP78A7 -----MELMNLASKETSYWMIALPAGFGSQLHDVSTLGYLFLAVVFLSIVTALAGGGGVAVWKNRNLG-----RVAIPGPRGPIVG---SLFT
CYP77A4 -----MFPLISFSPT---SLDFT---FFAIISGFVFIITRWNSNK-----KRLNPPGPPGWPIVG---NLQF
CYP77A6 -----MSILSFPH---FFNISPSLYFYLIISSVLLILTRRSKAS-----KIVKLPPGPPGWPIVG---NLQF
CYP77A7 -----MSFLSFSPISLDLLSSNVFLTILAIISGLLKTITYRKH-N-S-----NHLNPPGPPGWPIVG---NLQF
CYP77A9 -----MLDIS---NYVFFFFTLVITLLSCLVYILTRHSHN-P-----KCANLPPGPKGWPIVG---NLQF
CYP77B1 -----MDLTDVIFLFLALYFINLWRRYFSAGSSQ-----CSLNIPPGPKGWPIVG---NLQV
CYP89A4 -----MEIWLLILGSLFLSLLNLLFRRRDS-----SSLPLPPDPNFFPFLG---TLQWL
CYP89A5 -----MEIWLLILGSLFLSLLNLLFFRLRDS-----SSLPLPPDPNFFPFLG---TIQWL
CYP89A6 -----MEIWLLILGSLFLSLLNLLFRRRDSF-----SSLPLPPDPNFFPFLG---TLQWL
CYP89A7 -----MEIWLLILGSLFLSLLNLLFFRLRDS-----SSLPLPPDPNFFPFLG---TLQWL
CYP89A2 -----MEIWLLILASLSGSLLLHLLRRRNS-----SPPLPPDPNFFPFLG---TLQWL
CYP89A3 -----MATWFHIFCVSFTVNFLLYLFFRRNTN-----NLPPLPPDPNFFPMPG---PFQWL
CYP89A9 -----MEITTIIFLISSLTFSIFLKLIFFFSTHK-----LPPGPPRFPPIG---NIWL
CYP704A1 -----MAIIVVTTIFILLSFALYLTIRIFTGKSR-----NDKRYTPVHAT---IFDL
CYP704A2 -----MEILTSIATVATTIFIVLCFTIYLMIRIFTGKSR-----NDKRYAPVHAT---VFDL
CYP704B1 -----MSLCLVIACMVTSWIFLHRWGQRNK-----SGPKTWPLVGA---AIEQ
CYP86A2 -----MDVSNMMLL---VAVVAAYWLVFQRISRWLK-----GPRVWPLVGS---LPGL
CYP86A4 -----MEISNAMLL---VAIVTGYWLVFKRISRWLK-----GPRVWPLVGS---LPGL
CYP86A8 -----MEISTALMI---LSAITAYFLWLTFFISRCLK-----GPRVWPLVGS---LPGL
CYP86A7 -----MDGSTAAII---LTLIVTYIIVFVSLRRSYK-----GPRVWPLVGS---LPAL
CYP86A1 -----MEALNSILTGYAVALSVYALWYFLSRRLT-----GPKVLPFVGS---LPYL
CYP86B1 -----MNFN-SSYNLTFNDVFFSSSSSDPLVSRRLFLLRDVQILELLIAIFVFAIHALRQKKY-----QGLPVWPLVGM---LPSL
CYP86B2 -----MNLSSSYNLTATAVSSSCFGSDELLVSRRLFSLRDVQILELFAFFVFATIHSRLRQKKH-----QGMPVWPLVGM---LPSL
CYP86C3 -----MPLTERVYNHLCLSDVSLALLGLFVFCVREKVTCK-----LGPVIWVFGI---TPEF
CYP86C4 -----MSLTERLYNHLSLFDLLLGLLGLFVFCCLREKLTNK-----RGPMLWVFGI---TPEF
CYP86C2 -----MSLIDRISGHLCLQDVSIALLGLFLFGCLQAKLTNK-----GEPVQWVFGI---TPEF
CYP86C1 -----MNVLISAVVWVYTHLRLSDVALVGLFLLSYLREKLVSK-----GPPVWVPLGI---IPML
CYP94B1 -----MEMLNAILILFLPIIGFVLIFSFTKTLKAKTASP-----SNPTSYQLTGS---ILSF
    
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CYP94B3 -----MAFLLSFLILAFLLIT--IIFFLSSSSTKKVQENT-----YGFPPSYPLTGS---ILSF
CYP94B2 -----MEASTFILLLVLLVLLLVLSAGKHVIYSCRN-----STPKTYPVLC---LISF
CYP94C1 -----MLLIISFTIVSFFFIIIFSLFHLLFLQKLR-----YCNCEICHAYL---TSSW
CYP94D1 -----MALLIFIFLLCFPIISIFFIFFT-----KKSSE-----FGFKSYPLVGS---FPGL
CYP94D2 -----MEHFILISLLCFPIVIFFFIFFP-----KNSSE-----FGFKSYPLVGS---LPGL
CYP96A1 -----MALITLLEVSISLLFFSFLYGYFLISKKPHR-----SFLTNPVFLGM---LPGL
CYP96A9 -----MALVSLLEISIAFFCF-LIFRIFLISKKPHR-----SFLTNPVLLGM---LPGL
CYP96A10 -----MVFISLFEISIAFFCF-LLFRHFLINKKTHR-----LCPITNPVFFGM---IPGL
CYP96A5 -----MAYVGLVEVFIALLVF-FFFHFLIHKKSHQ-----ITPRNPVFLGM---LPGV
CYP96A11 -----MASSISFLEASVAIFCF--LILHYLFKTTTYN-----GRFPRNPVFLGM---LPCL
CYP96A2 -----MASISLLQVSVAILCF--LILHYFLFKKPH-----GRYPRNPVFLRM---LPAM
CYP96A12 -----MASVLLDVAIAIICL-FFFYMYFKKPH-----GQVFRNPVITGM---LPGF
CYP96A13 -----MASISLFEASIAIFCF--IILHFFLG-----NVPVLLGM---LPGL
CYP96A7 -----MASIGLYEAFIGFLCF--LISFYFLVKKPFRYL-----LIKKTHQSYPNWNPVLLGM---LPGI
CYP96A8 -----MASIGLYEAFIGFLCF--LISFYFLVKKPFSYL-----LIKKTLQSYPNWNPVLLGM---LPGV
CYP96A3 -----MAIVIGLLEIFTAFVFF-IFFQCLLLHKKTP-----KPLLTNPVALLGM---LPGL
CYP96A4 -----MAMIIGLLEIFIAFIFF-FVYQCFSLHKKTP-----KHMVMNPVLLGM---LPGV
CYP96A15 -----MAMLGFYVTFIFFLVC--LFTYFFLQKQPQG-----QPIKKNWVFLRM---LPGM
CYP97A3 -----MAFPLSYTPTITVKPVYSRRSNFVVFSSSSNGRDPLEENSVPNGVKSLEKQEEKRAEL SAR-----IASGAFTVRKSSFSTVK---NGLS
CYP97C1 -----MESSLFSPPSSSSYSSLFTAQPTRLLSPKPKFTFSIRSSIEKPKPLETN--SSKSQS-----WVSPDWLTTLRTLSSCK---NDES
CYP97B3 -----MAFPAAATYPHTFQGGALHLGRTDHCLFGFYPTISSVNSRRASVSIKQSTE-----PKTNGNILDNASNLLTNF---LSGG
CYP709B2 -----MELLSTINLLAIALVLLVVPKIYGACRILVWRPWML-----SRRFKKQGISGP---KYRI
CYP709B3 -----MELISTINLLTIVLLL FVVSKIWKACWILLRPLML-----SKRFFKQGISGP---KYKI
CYP709B1 -----MGLVIFLALIVLILIIIGLRIFKAFMILVWHPFVL-----TRRLKNQGISGP---NYRI
CYP735A1 -----MLLTILKSLLVIFVTTILRVLYDTISCYWLTPRRI-----KKIMEQQGVTGP---KPRP
CYP735A2 -----MMVTLVLKYVLVIVMTLILRVLYDSICCYFLTPRRI-----KKFMERQGITGP---KPRL
CYP72A11 -----MEISVASVTVSVAVVVVSWWWVRTLQWVWFKPKML-----ESYLRRQGLAGT---PYTP
CYP72A13 -----MEISVASVTVSVAVVVVSWWWVRTLQRVWLKPKML-----ESYLRRQGLAGT---PYTP
CYP72A15 -----MEISVASVTISVVLAVVSWWIWRTLQWVWFKPKML-----EHLRQGLAGT---PYTP
CYP72A10 -----MEISVACVTVSVVVVSWWWVRTLQWVWFKPKML-----ESYLRRQGLAGT---PYTP
CYP72A14 -----MEISVSSVTFSLAVVVVSWWWVRTLKWVWFTPKML-----ERSLRRQGLSGT---SYTP
CYP72A9 -----MEIVIA---SLALVVLWCIWRILEWVWLKPKML-----ESYLRRQGLVGT---RYTP
CYP72A7 -----MSFSVA-ALPVLVAVVWLWTRIVKWWIKPKML-----ESSLKRQGLTGT---PYTP
CYP72A8 -----MSDTKISAVAVAAAVVVTTVTVWIWKG LNVAWLRPKKN-----EAYLKRQGLSGT---PFTF
CYP72C1 -----MLEIITVRKVFLIGFLILILNWWRAVNWVLRPKRL-----EKYLKKQGFSGN---SYRI
CYP734A1 -----MEEESSWFIPKVLVLSVLISLVIVKGMSSLWWRPKI-----EEHFSKQGITGP---PYHF
CYP721A1 -----MAVFFILVLVFFFLVFRFIYSNIWVPWRI-----QSHFKKQSVTGP---SYRI
CYP715A1 -----MEFFEMSRVWYIFFKVFWVICLMFLKFLRCWIWPVRA-----QKKLRGNGFVGP---APSF
CYP714A1 -----MENFMVEMAKTISWVWIGVLGLGIRVYGKVM AEQWRM-----RRKLTMQGVKGP---PPSL
CYP714A2 -----MESLVVHTVNAIWCIVIVGIFSVGYHYVGRVVEQWRM-----RRSLKLGQVKG---PPSI
CYP74A -----MASISTPFPISLHPKTVRSKPLKFRVLTRPIKASGSETPDLTVATRTGSK-----DLPIRNIPGNYG LPIVGP---IKDRW
CYP74B2 -----MLLRTMAATSPPPPSTSLTSQQPPSPPS-----QLPLRTMPGSGYGNVPLVGP---LSDRL
CYP73A5 -----MDLLLLLEKSLIAVFVAVILATVISKLRGKLLK-----LPPGPIPIPIFG-----NW
CYP722A1 -----MEHLCLCLVLC AAMLTLGKFLIMFQDRKKSTAG-----VPPGSDGFPVLCGETLQFMLS
CYP701A3 -----MAFFSMISILLGFVISSFIFFFKKLLSFSRKNMS-----EVSTLPSVPPVPGFPVIGNL
CYP711A1 -----MKTQHQQWVEVLDPFLTQHEALIAFLTFAAVVIVIYLYRPSWSVCN-----VPGPTAMPV LG-----HLLPL
consensus 1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....
    
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CYP51A1 MKG----PIVLLREEYPKLG-----SVFTVKLLHKNITFLIGPEVSSHFFNAYESELSQKEIYKFN-----
CYP51A2 LKGG----PIIMLREEYPKLG-----SVFTVNLVHKKITFLIGPEVSAHFFKASESDLSSQEVYQFN-----
CYP710A1 PTS----FWDKQSSTANIS-----GLSANYLIGKFIVYIRDTEL SHQIFSNVRPDAFH LIGHPPFG-----
CYP710A2 PTS----FWFKQSDTAGTSP-----GLAANYLIGKFIIYIRDTEL SHQIFSNVRLEAFHPLGHPPFG-----
CYP710A3 PTS----FWDKQSAMADTSV-----GLSVNYLIGKFIIYIKDAEL SNKVFSNIRPDAFQLVGHPPFG-----
CYP710A4 PTS----FWDKQSAMADTSV-----GLSVNYLIGKFIIYIKDAEL SNKVLSNIRPDAFQLTGHPPFG-----
CYP702A1 HDA--FQFPTFIKERIIR-----YGPVIFRTSLFGAKVIISTDIELNMEIAKTNH---APGLTKSI-----
CYP702A2 HDA--LQFSTFIKDRVLR-----HGPVVFRTSLFGDKAIIISMDMELNLEMAKANS---VPGVTKSV-----
CYP702A8 HDA--LQFSTFIKRVLIIFFFFLCMF---NMDRFFRTSLFGGKVIISMDNELNLEMAKTNR---TPGITKSI-----
CYP702A5 HDA--IQLPTFVKEKLLR-----HGPVVFRTSLFGGKVIISTDIGLNMEIAKTNH---IPGMFKSL-----
CYP702A6 HDA--IQLPTFVKEKVLRLR-----HGPVVFRTSLFGGKVIISTDIGLNMEIAKTNH---IPGMFKSL-----
CYP702A3 FDIS-LVVSPYLKKRISR-----YGSKVVFRTSLFGAKVIVSIDPDVNMETAKASS---QLRATESV-----
CYP708A2 HGL--YEISPFVKKRMLKYG-----PLFRTNIFGSKNTVVLTEPDIIFEFVFRQENKSFVFSYPEAF-----
CYP708A3 CGV--EGIPTFVKKRMIRYGG-----PLFRTNIFGSKTVVSTDPDVIHQIFRQENTSFELGYPDIF-----
CYP708A4 YGF--YEISPYLKKKMLRYG-----PLFRTNILGVKTVVSTDKDVNMEILRQENKSFILSYPDGL-----
CYP708A1 YSF--NEIHPFVKKRMFKHGG-----SLFRTNILGSKTIVSTDPDVNMEILKQENRCFIMSYPEAL-----
CYP87A2 NKT--SDIPPFIKERVKKYGG-----PIFKTNLVGRPVIVSTADLSYFVFNQEGRCFQSWYPTDF-----
CYP90A1 YKT--ENPEPFIDERVARYG-----SVFMTHLFGPEPTIFSADPETNRFV LQNEGKLFECSPASI-----
CYP90B1 YTA--TTLGDFMQQHVSKYGG-----KIYRSNLFGIPTIVSADAGLNRFILQNEGRLFECSYPSI-----
CYP90C1 GYS--SRPVTFMDKRKSLYGG-----KVFKSNLIIGTPIIISTDAEYVNVVQLQNHGNTFVPAYPKSI-----
CYP90D1 AYS--DRPESFMDKRRLMYGG-----RVFKSHIFGTATIVSTDAEYVNRVAVLQSDSTAFVPPFYPKTV-----
CYP724A1 HRS--DSIGTFLQQRVSRYGG-----KVFKSNICGGKAVVSCDQELNMFILQNEGKLFTSDYPKAM-----
CYP720A1 VAG--SHPSSFVEKQIKKYGG-----RIFSCSLFGKWAVVSADPDFNRFIMQNEGKLFQSSYPKSF-----
CYP85A1 G-----PNFMRNQLRYG-----SFFKSHLLGCPTLISMDSEVNYRYILKNESKGLVPGYQSM-----
CYP85A2 G-----PDFMKNQLRYG-----SFFKSHLLGCPTIVSMDAELNRYILMNESKGLVAGYQSM-----
CYP707A1 --S--QDPNVFFQSKQKRYG-----SVFKTHVLGCPVMISSPEAAKFFVLVTKSHL FKPTFPASK-----
CYP707A3 --S--QDPNVFFAAKQRRYGG-----SVFKTHVLGCPVMISSPEAAKFFVLVTKSHL FKPTFPASK-----
CYP707A2 --T--ENPNSFFATRQNKYGG-----DIFKTHILGCPVMISSPEAAKFFVLVTKSHL FKPTFPASK-----
CYP707A4 --S--QPNVFFFTSKQKRYG-----EIFKTRILGYPCVMLASPEAAKFFVLVTHAHMFKPTYPRSK-----
CYP88A3 FKT--SDPDSFTRTLIKRYGPK-----GIYKAHMFGNPSIIVTTSDDTCRRVLT-DDDAFKPGWPTST-----
CYP88A4 FKT--SDPESFIQSYITRYGRT-----GIYKAHMFYGPCVLTVPETCRRVLT-DDDAFHIGWPKST-----
CYP716A1 GRQ--GHPEKFITDRVRRFSSSS-----SCVFKTHLFGSPTAVVTGASGNKFLFTNENKLVVSWWPPDSV-----
CYP716A2 GRQ--GHPEKFVTDVRVHFSSG-----IFKTHLFGSPFAVVTGASGNKFLFTNENKLVVSWWPPDSV-----
CYP718 QK-----SNRVFEDFVNPRIIKH-----GNIFKTRIMGSPTIIVNGAEANRLILSNEFSLVVSSWPPSSS-----
CYP71A12 LSLH---PHRSLHLSLSRYGPP-----LMLLHFGRVP----ILVVSSGEEAAQEV LK-THDLK FANRPR----SKAVHGLMNG
CYP71A13 LSLH---PHRSLRSLSLRYGPP-----LMLLHFGRVP----ILVVSSGEEAAQEV LK-THDHK FANRPR----SKAVHGLMNG
CYP71A18 LSLH---PHRSLHLSLSRYGPP-----LMLLHFGRVP----ILVVSSGEEAAHEILK-THDLK FANRPK----SKAVHGLMNG
CYP71A14 LSLH---PHRSLRSLSHRYGPP-----LMLLHFGRVP----VLVVSSSDVAHDLMK-THDLK VANRPQ----LKVVEKIFNG
CYP71A15 LSLH---PHRSLRSLSHRYGPP-----LMLLHFGRVP----ILVVSSSDVAHDLMK-THDLK VANRPR----LKVIETILNG
CYP71A28 LSLH---PHRSFRSLSLRLWS-----AHAPSLRSCPYPRFSKYISSSDVAHDVMK-THDLK FANRPK----TKAVDIIING
CYP71A19 LSLN---THRSLRSLSLRYGPP-----LMLLHFGRTP----VLIVSSADVAHDILK-TYDVICANRPK----TKVIDKILRG
CYP71A20 LSLH---THRSLRSLSLRYGPP-----LMLLHFGRTP----VLIVSSADVAHDVMK-THDLVCANRPK----TKVVDKILSG
CYP71A16 LSLH---PHRALSSL SARHGP-----LMLLRFGRVP----VLIVSSADVAHDVMK-THDLK FANRPI----TKSAHKISNG
CYP71A27 LGPN---PHRYLHLSLSRYGPP-----LMLLHFGRVP----VLVVSCPVDVNDIMK-THDLK FANRPK----SKAINIFMEG
CYP71A21 LGHH---PHRSLCSLSHRYGPP-----LMLLHLGRVP----VLVVSSADVARDILK-THDRVFASRPR----SKLFEKLFYD
CYP71A22 LGRH---PHRSLCSLSNRYGPP-----LMLLRFGLVP----VLVVSSADVARDILK-TYDRVFASRPR----SKIFEKIFYE
CYP71A24 LGRH---PHRSLCSLSHRYGPP-----LMLLHFGSVP----VLVVSSADA AKDV LK-THDRVFASRPR----SKIFDKIFYN
CYP71A26 LGRH---PHRSLCSLSHRYGPP-----LMLLHFGRVP----VLVVSSAELARDV LK-THDRVFASRPR----SKIFEKLLYD
CYP71A25 LGRH---THRSLCDLSRRYGP-----LMLLHLGRVP----VLIVSSADMAQEV LK-THDQAFANRPR----SKLSQKLLYN
CYP71A23 LSQH---PHRSLCYLSHRYGPP-----LMLLHFGSVP----VIVASTAEAAARDV LK-THDRVFASRPR----SKIFEKLLYK
    
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CYP71B26 LGEL---QHQLWKLKSKYGP-----VMLLKLGVKVP---TLILSSSETAKQALR-DYDLHCCSRPS----LAGGRELSYN
CYP71B33 LGEL---PHQLWKLKSKYGP-----VMLLNLGVKVP---TVILSSSETAKQALR-DYDLHCCSRPS----LAGGRELSYN
CYP71B34 LGEL---PHQLWKLKSKYGP-----VMLLKLGRVVP---TVIVSSSETAKQALK-IHDLHCCSRPG----FAGARELSYN
CYP71B35 IGEL---PHQLWKLKSKYGP-----VMHMLLGRVVP---TVVVS SSDTARQVLR-VHDLHCCTRPS----LSGPRESYN
CYP71B36 LGEL---PHQLWRLKSKYGH-----VMLLKFGSIP---TVVVS SSETAKQVLR-IHDLHCCSRPS----LAGPRALSYN
CYP71B37 LGEL---PHQLWLSLKSKYGP-----VMLLKFGSIP---TVVVS SSETAKQALK-IHDLNCCSRPS----LAGPRALSYN
CYP71B9 LGEL---PHQLWLSLKSKYGP-----VMLLKLGSVP---TVVVS SSETAKQVLR-INDLHCCSRPS----LAGAKELSYN
CYP71B10 LGEL---PHQLWLSLKSKYGP-----VMLLKLGRVVP---TVIVS TPETAKQVLR-DYDLHCCSRPS----LEGTRKLSYN
CYP71B11 LGSK---PHSSMFKLSEKYG-----LMAIRFGSVS---TVVASTPETVKEVLR-TFDAECCSRPY----MTYPARLTYN
CYP71B12 LGSK---PHRSMFKLSEYGP-----LMSLKFGSVS---TVVASTPETVKEVLR-TFDVECCSRPN----MTYPARVTYN
CYP71B14 LGSK---PQRSLFKLSEKYG-----LMSLKFGNVS---AVVASTPETVKDVLK-TFDAECCSRPY----MTYPARVTYN
CYP71B13 LGSK---PHRSMFKLSEKYG-----LVYLLKGVKVP---SVVASTPETVKDVLK-TFDKCCSRPF----LTYPARISYN
CYP71B6 LGSL---PHRSLRDLKSKYGP-----VITVYLGSVR---TVVVSHPETAEEVLR-LHDSECCTRPK----LSITKFFDYD
CYP71B28 RREL---HPRNSRNLSEKYG-----IVFLRYGFVP---VVVVS SKEAAEEVLR-THDLECCSRPE----TVGTRALSYN
CYP71B29 LQEL---PPR---NLNHKYG-----VILLRFGFVP---LVVVS SKEAAEEVLR-IHDLLECCSRPE----TAGTRKISYN
CYP71B15 RRTL---HPRNRRNLAEMYGP-----VALLYQGFVP---VVAISSKEAAEEVLR-INDLECCSRPE----AAGMRATFYN
CYP71B23 LNGL---PHKCLLNLWKIHGP-----VMQLQLGYVP---LVVVS SNQAEEVLR-THDLDCSRPE----TIASKTISYN
CYP71B7 LTGL---PHTCFRNLKSKYGP-----VMLLHFGFVP---VVVVS SKEGAEVLR-TQDLECCSRPE----TVATRMISYN
CYP71B16 VGEL---PHRSFQRLAERTGH-----VMLLHFGFVP---VTVVS SREAAEEVLR-THDLKCCTRPK----LVGSRLLSRG
CYP71B17 VGEL---PHRSFRRLAERTGH-----VMLLHLGFVP---VTVVS SREAAEEVLR-THDLDCSRPN----LVGSRLLSRG
CYP71B18 LGEL---PHRSLQRLAECTGD-----VMLIHLGFVP---VTVVS SKEAAEEVLR-THDLNCCSRPN----LVGTRLLSRG
CYP71B19 IGEL---PHRSLQHLAERYGP-----VMLLHFGFVP---ITVVS SREAAEEVLR-THDLDCSRPK----LVGTRLLSRD
CYP71B20 IGEL---PHRSLQHLAERYGP-----VMLLHFGFVP---VTVVS SREAAEEVLR-THDLDCSRPK----LVGTRLLSRN
CYP71B2 LAGL---PHRCFHKLKSKYGP-----LVFLRLGSVP---VVVVS SAEAAEVLR-TNDLECCSRPK----TVGSGKLSYG
CYP71B27 LTGL---PHRCYHKLKSKYGP-----VILLHLGFVP---VVVVS SAEAAEVLR-THDLECCSRPK----TVGTRKLSYG
CYP71B21 LGKS---LHRSFYKLSQEYGP-----VMFLRFGVVP---VVVVS TKEAAEEVLR-THDLETCTRPK----LSATGLFTYN
CYP71B22 LGKS---LHRSFHKLKSKYGP-----VMFLHFGVVP---VVVVS TREAAEEVLR-THDLETCTRPK----LTATKLFSTYN
CYP71B38 LGKL---LYKSFHKLSQEYGP-----VLLRLGVVP---VIVVS SKEGAEVLR-THDLETCTRPK----TAATGLFTYN
CYP71B5 FGRF---LHKSLHKLSQEYGP-----VMLLHFGVVP---VIIVVS SKEGAEVLR-THDLETCSRPK----TVGSGLFTYN
CYP71B31 LGRL---LHSSLHKLKSKYGP-----VMLVRWGVVP---MAVVS SNEAAKEVLR-THDLETCSRPK----LVANGLFTHG
CYP71B8 LGRL---LHSSFHKLKSKYGP-----VMLLRFGVVP---MVISS SKEAAQVLR-SRDLETCSRPK----LVANGLFTRN
CYP71B32 LGRS---LHSVFKLSLXYGP-----VMLLRFGVVP---VVVVS SKEAAKEVLR-THDLDTCTRPK----LVANGLFSRN
CYP71B24 LRGL---FHKCLHDLKSKHGP-----VLLRLGFLD---MVISS STEAAEEVLR-VHDLLECCTRPK----TNVTSKLWRD
CYP71B3 LRGL---FHRCLHDLKSKHGP-----VLLRLGFID---MVISS SQETTEVLR-VHDLLECCTRPK----TNASSKFSRD
CYP71B25 LQGM---VHRCLHELKSKHGP-----VMHLQLGFVP---LVLISS SAEAAEALK-THDIECCTRPN----TNAARVFSRN
CYP71B4 LQGL---LHKCLHDLKSKHGP-----VMHLRLGFAP---MVISS SAEAAEALK-THDLECCSRPI----TMSRVFSRN
CYP83A1 LQKLN--PQRFFAGWAKYGP-----ILSYRIGSRT---MVISS SAEAAKELLK-TQDVFADRPP----HRGHEFISYG
CYP83B1 MEKFN--PQHFLFRLSKLYGP-----IFTMKIGGRR---LAVISS AELAKELLK-TQDLNFTARPL----LKGQQTMSYQ
CYP84A1 MDQL---THRGLANLAKKYG-----LCHLRMGFLH---MYAVS SPEVARQVLR-VQDSVFSNRPA----TIAISYLYTD
CYP84A4 MNQF---NHRGLAKLSRIYGG-----LLHLRLGFSH---IFVVS SPDIARQVLR-VQDHVFSNRPT----TIAIRYLYTG
CYP705A1 LLS--TLIHKSLQKLSKYG-----LLHLRIFNIP---FILVSSD-SLAYEIFR-DHLDVNVSSRGV----GAIDESLAYG
CYP705A24 LLF--ASIHKCFQKISSYGP-----FLHLRIFHVP---IVLVSSA-STAYDIFK-TNDINVSYRGD----VAIDECIVFG
CYP705A15 LLS--VLVHRSLQTLSTKYGS-----ILYLRVFSFP---VALVSSA-SIAYEIFR-EHDVNISSRGF----PTDDSLFAG
CYP705A4 LLS--VLLHRSLQKLSKYG-----ILYLRVFRFP---VLISSA-SIAYEIFR-AHDLNISYRGF----TPTDDSLFAG
CYP705A16 ILS--SLVHKSFKKISSYGP-----LLHLRIFNVP---IVLVSSA-SVAYDIFR-VHLDVNVSSRGP----PPFEESLLFG
CYP705A19 ILS--SLVHKSFKKISSNYGP-----LLHLRIFNVP---IVLVSSA-SVAYDIFR-VHLDNVSSRGS----PPFEESLLFG
CYP705A20 LLS--SLAHKSLQKLSKYG-----LLHLRIFNFP---VVLVSSA-SVAYEIFK-AHDLNISSRDN----PPINESLLVG
CYP705A21 LLS--SLAHKSLQKLSKYG-----LLYLRVFNFP---VVLVSSA-SVAYEIFK-AHDLNISSRDN----PSIDDSLLIG
CYP705A23 LFS--NLTHKSLQKLSKYG-----LLYLRIFNVP---IIFVSSA-SVAYEIFR-GHDVNISSFRGN----PPIEESLLVG
CYP705A28 LLS--VLVHKSFKKISSYGP-----LLHLRIFHVP---IVLTSSA-SVAYEIFR-AQDINVVSSRGH----PPVEESLWFG
    
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CYP705A30 LLS--ALVHKSFQNISSKYGP-----LLHLRVFHIP---IVLASSA-SVAYEIFK-AQDVNVSSRGH----APVGESLWFG
CYP705A32 LLS--ALVHKSFQKISYKYGP-----LLHLRVFHVP---IVLASSA-SVAYEIFK-AQDVNVSSRGH----APAGESLLFG
CYP705A2  ILLS-TLTHKSFQRLSSKYGP-----LLHLRIFHVP---IVLASSA-SVAYEIFR-DQDVNVSFRRHS----PPIEESLFLG
CYP705A5  ILF--VPIHQSFQNISSKYGP-----LLHLRFFNFP---IVLVSSA-STAYEIFK-AQDVNVSSRPP----PPIEESLILG
CYP705A8  LLS--LFMHRSLQKLSSKYGP-----LLYLHVFVNP---ILLVSSP-SIAYEIFR-AQDVNVSTRDF----PTNEGSLFLG
CYP705A9  LLS--LFMHRSLQKLSSKYGP-----LLYLHVFVNP---ILLVSSP-SIAYEIFR-TQDVNVSSRDF----PTNEGSLFLG
CYP705A18 LLS--SLTHKSLQKLSSKYGP-----FLHLRIFVSP---IILVSSA-SVAYEIFK-AHDVNVSSRGA----AAIDESLFLG
CYP705A6  LFS--PLTHKSLQKLSSKYGH-----LLHLRIFVNP---IILVSSA-SVAYEIFR-AHDVNVSSRGV----AAIDESLFLG
CYP705A33 LLS--SLSHKSLQKISSKYGP-----LLHLRIFVNP---IILVSSA-SVADEVFR-IHDMNISSRGA----AAIDESLVFG
CYP705A3  LLS--VLTHKSLQKLSSKYGP-----LLLIRIFVYP---IILVSSS-SMAYEIFK-AHDVNVSSRGI----IALDESLMFG
CYP705A22 LLS--TLTHKSLQKLSSRYGP-----LLYLIRIFVNP---IILVSSA-SVAYEIFR-TQDVNISSRGV----TAVDESLVFG
CYP705A12 LLS--SLPHKSFQKLSFKYGP-----LLHLRIFNFP---MLVSSA-SMAYEVFR-TNDVNVSYRFV----PVNKDSLFG
CYP705A13 LLF--DLPHKAFQKLSKYGP-----LLCLRIFVNP---IVLVSSA-SVAYEIFK-THDVNISSHGH----PIDECLFFG
CYP705A25 LLS--VPCYKSFQKLSSKYGP-----FLHLRAFNP---IVLVSSG-SMANEVLVLR-IODLNFASTRDSGQ--TPIMEKSLFLG
CYP705A27 LLS--VPCHKSFQKLSSKYGP-----LLHLRAFNP---IVIVSSG-SMANEVLVLR-TQDLNFATRQR-E-VSIMEKSLFLG
CYP712A1  IGK---VLPVSFQSLAHKYGP-----LMEIRLGASK---CWWVSSS-SVAREIFK-EQELNFSRRPE----FGSAEYFKYR
CYP712A2  LRS---SLPRSLQALAHTYGP-----LMTIRIGSLR---VLVWSDS-DTAKLILK-THDPDFASKFV----FGPRQFNVYK
CYP93D1   LGP---IAHQALHKLIRYGP-----LMYLFIGSIP---NLIVSSA-EMANEILK-SNELNFLNRPT----MQNVDYLTYG
CYP81D6   LKLP---LHRTFLSFSQSLGG-----APIFCRLGNRL---TWWVSSY-SIAEECFE-KNDIVFANRPE----LILGKHIEYN
CYP81D7   LKQP---LHRTFLSFSQSLGD-----APIFSLRLGNHL---TWWVSSY-SIAEECFE-KNDIVLANRPK----FILGKHIEYN
CYP81D11  LKLP---LHRRFLSLSESLNN-----AKIFSLSLGSRL---VFVSSH-AVAEECFE-KNDVLANRPE----FLVGKHIGYN
CYP81D2   LKPP---LHRVFLSVSQSLGD-----APIISLRLGNRL---LFVSSH-SIAEECFE-KNDVILANRQT----TISTKHISYG
CYP81D3   LKPP---LHRVFLSVSESLGD-----APIISLRLGNRL---VFVSSH-SIAEECFE-KNDVLANRPN-----LASKHISYG
CYP81D8   LKPP---IHRTFLSLSQSLNN-----APIFSLRLGNRL---VFVSSH-SIAEECFE-KNDVLANRPN-----FILAKHVAYD
CYP81D4   LKPP---LHRTFLSLSKSIGN-----APVFHRLGNRL---VYVSSR-SIAEECFE-KNDVLANRPK----FTISKHLGYN
CYP81D5   LKQP---VHRTFHSISKSLGN-----APIFHLRLGNRL---VYVSSH-SIAEECFE-KNDVLANRPN-----IIMAKHVGYN
CYP81D1   LKPP---IHRTLRSFSETLDHNDG-----GGVMSLRLGSRL---VYVSSH-KVAEECFE-KNDVLANRPN-----VIIGKHVGYN
CYP81F3   LKPP---VHRLFHRLSKTHGP-----IFSLQFGSRR---AVWISS-SLATQCFE-GQNDIILSNRPC----FLTAKYVAYN
CYP81F4   IKPP---VHRLFHRLSNIHGP-----IFYLRLGSRR---AVWISS-SLARECFE-GQNDIVVSNRPN----FLTAKYIAYN
CYP81F2   VKPP---VHRLFRRFAEKYGD-----IFSLRYGSRQ---VWVSSL-PLVRESFTGQNDVILTNRPH----FLTAKYVAYD
CYP81F1   MKPP---IHRLQRYSNQYGP-----IFSLRFGSRR---VWVITSP-SLAQESFTGQNDIVLSSRPL----QLTAKYVVYN
CYP81H1   LKKPL---LHRTLSHLSLGLP-----VFSLRLGSRL---AVIISP-TAAEECFE-KNDIVLANRPN----FIMGKYVAYD
CYP81G1   LKEP---VHRLRDLRNLGID-----VFILRLGSRR---AVVVTSA-SAAEEFLSQQNDVVFANRPL----ATLTEYMGYN
CYP81K1   IKKYP---LPQALRHLSSNYGP-----VLFLKFGCRN---VLTLSPP-DSIEECFE-NHDVTLANRPN----TITSDHFSYG
CYP81K2   INKYP---LPQALHHLSSNYGP-----VLFLKFGCRE---VLTLSPP-DSIEECFE-NHDIALANRPN----TITSDHFSYG
CYP82C3   LGGKEQLLYRTLGMADHYGP-----AMSLRLGSSE---TFVGSF-EVAKDCFE-VNDKALAS-LM-----TAAAKHMGY-
CYP82C2   LSGKEQLLYRTLGMADHYGP-----AMSLRLGSSE---TFVGSF-EVAKDCFE-VNDKALASRPI----TAAAKHMGYD
CYP82C4   LGGKEQLLYRTLGMADHYGP-----AMSLQLGSNE---AFVSSF-EVAKDCFE-VNDKALASRPM----TAAAKHMGYN
CYP82F1   FDTVN-PTHVTFGAMADVYGP-----VFMAKLSGIK---VMIINSK-EVAKETIY-VHDKLLER-PE----LTASKLLGYN
CYP82G1   LRGKK-LLCKKLAAMSQKHGP-----IFSLKLGFYR---LVWASDP-KTVKDCFE-TNDLATATRPN----IAFGRYVGN
CYP76C2   VG---RNPHHSFADLSKTYGP-----IMSLKFGSLN---TWWVTSPEAAREVLR-TYDQILSSRTP---TNSIRSIHNDK
CYP76C4   VG---KNPHSSFADLAKIYGP-----IMSLKFGCLN---SVWITSPEAAREVLR-THDQILSGRKS---NDSIRCFGHEE
CYP76C1   VG---KHPHRSFAELSKTYGP-----VMSLKLGSLN---TWWIASPEAAREVLR-THDQILSARSP---TNAVRSINHQD
CYP76C5   VG---KNPHHSFTDLSKTYGP-----VMSLKLGYLN---SVVITSRDAAREVLR-AHDQILSGRYI---TQATKSNHHHE
CYP76C6   VG---KNPHHSFTDLSKTYGP-----VMSLKLGSLN---SVVIASRDAAREVLR-THDQILSGRYI---SEATKSNHHHE
CYP76C3   LG---FNPHRSLAASFSTYGP-----IMSLKLGRLT---AVWISSPEAAREALR-THDHVMSARTF---NDALRAFDHKK
CYP76C7   TV---EKPHRSLADLSRIYGS-----VMSFKLGCLT---TWWISSPETAKEVLR-THDHVLSYRVS---SDPVRAAGHHE
CYP76G1   LAG--LPPHDSLTKLSRRHGP-----IMTLRIGSML---TWWISSSEVAREIFK-KHDAALAGRKI---YEAMKGGKSSD
CYP75B1   MG---TKPHRTL SAMVTYGP-----ILHLRLGFVD---VVAASKSVAEQFLK-IHDANFASRPP----NSGAKHMAYNY
CYP706A1  LNSD--VLHTQFQALTKHGP-----LMKIHLSGSKL---AIVVSSPDMAREVLR-THDITFANHDLN----EVGKINTYG
    
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CYP706A2 LNSD--VLHTQFQALTLKYGP-----LMKIHLLGSKL----AIVVSSPDMAREVLK-THDITFANHDLP----EVGKINTYG
CYP706A3 LQP---ELHTYFQGLAKKHGP-----IFKLLWLGAKL----TIVVTSSEVAQELLK-TNDIIFANHDVP----AVGPVNTYG
CYP706A7 LHP---ELHTYFHSLAQKHGP-----VFKLWLGAKL----TIVVTSSEATRDILR-TNDVIFANDDVP----VAGSLSTYG
CYP706A5 LDP---DLHTYFTKLAQSHGP-----IFKLNLLGSKL----TVVVNSPSLASEILK-DQDINFSNHDVP----LTARAVTYG
CYP706A6 LDP---DLHTYFTKLAESYGP-----IFKLNLLGSKL----TVVVNTPSLAREILK-DQDINFSNHDVP----LTARAVTYG
CYP706A4 LDP---DLHTYFANLAQSHGP-----IFKLNLLGSKL----TIVVNSPSLAREILK-DQDINFSNRDVP----LTGRAATYG
CYP79B2 MLK-SRPVFRWLHLSIMKQLNT-----EIACVKLGNTH---VITVTCPKIAREILK-QQDALFASRPL----TYAQKILSNG
CYP79B3 MLK-NRPVFRWLHLSLMKELNT-----EIACVRLGNTH---VIPVTCPKIAREIFK-QQDALFASRPL----TYAQKILSNG
CYP79A2 ILGRNKPVFRWIHLSLMKELNT-----DIACIRLANTH---VIPVTSPRIAREILK-KQDSVFATRPL----TMGTEYCSRG
CYP79C1 MLK-NRPTSKWIVRVVMDMKT-----DIACFRFGRVH---VIVITSDVIAREVVR-EKDAVFADRPD----SYSAEYISGG
CYP79C2 MII-NRPAHLWIHRVMEELQT-----DIACYRFARFH---VITVTSSKIAREVLR-EKDEVLADRSE----SYASHLISHG
CYP79F1 LFM-TRPRSKYFRLAMKELKT-----DIACFNFAGIR---AITINSDEIAREAFR-ERDADLADRPO----LFIMETIGDN
CYP79F2 LIM-TRPRSKYFHLAMKELKT-----DIACFNFAGTH---TITINSDEIAREAFR-ERDADLADRPO----LSIVESIGDN
CYP703A2 LGP----LPHRDLASLCKDYG-----PLVYLRLLGNVD---AITTNDPDTIREILL-RODDVFSSRPK----TLAAVHLAYG
CYP98A8 MKPL---WTHSFSEWSETYGP-----IISVWIGSGLT---VVVSSDLARQVLR-DKDHQLSNRHR-----IARMTQT
CYP98A9 LKPL---WTQSFSEWSQTYGP-----IISVWLGSQLA---VVVSSDLAKQVLR-DKDYQLCNRHR-----TARMTQN
CYP98A3 IKPV---RFRCYYEWAQSYGP-----IISVWIGSILN---VVVSSAELAKEVLK-EHDQKLADRHRN-----RSTEAFSRN
CYP78A10 VNNA--LTHRILANIADTCKAKA-----LMAFSVGSTR---FVITSEPETAKELLN---SSAFADRPVK----ESAYELLF
CYP78A5 FSGS--NPHRVLAALAKRFKASP-----LMAFSVGFSTR---FVISSEPETAKEILS---SSAFADRPVK----ESAYELLF
CYP78A6 MSST--LAHRRIAAAEKFGAKR-----LMAFSLGETR---VIVTCNPDVAKEILN---SPVFADRPVK----ESAYSLMF
CYP78A9 MSNT--LAHRCIAATAEKFRAER-----LMAFSLGETR---VIVTCNPDVAKEILN---SPVFADRPVK----ESAYSLMF
CYP78A8 RSSH--VAHQRIASVAEMSNAKR-----LMAFSLGDTK---VVVTCHPAVAKEILN---SSVFADRPVD----ETAYGLMF
CYP78A7 LSRG--LAHRTLAAMAWSRANTE-----LMAFSLGSTP---VIVASEPNIAREILM---SPHFADRPVK----QSAKSLMF
CYP77A4 ARS-GKPFPEYAEDLKITYGP-----IFTLRMGTRT---MIIISDALTVEHALI-QRGALFASRAE---NPTRTIFSCN
CYP77A6 ARS-GKQFYEYVDDVRKKGYP-----IYTLRMGSRT---MIIISDSALVHDVLI-QRGPMFATRPTE---NPTRTIFSSN
CYP77A7 TRS-GKQFFEYVEDLVKIYGP-----ILTLRLGTRT---MIIISDASLAHEHALI-ERGAQFATRPVE---TPTRKIFSSS
CYP77A9 ARS-GKQFFEYVDEMNIYGP-----IFTLRMGTRT---MIIISDANLAHQALI-ERGAQFATRPAE---TPTRKIFSSS
CYP77B1 IFQ-RRHFVFLMRDLRKKYGP-----IFTMQMGQRT---MIIITDEKLTHEALV-QRGPTFASRPPD---SPIRLMFSVG
CYP89A4 RQG-LGGLNNYLRSVHHRLGP-----IITLRITSRP---AIFVADRSLAHQALV-LNGAVFADRPPA---APISKIISSN
CYP89A5 RQG-LGGLNNYLRSVHHRLGP-----IITLRITSRP---SIFVADRSLAHQALV-LNGAVFADRPPA---APISKIISSN
CYP89A6 RKG-LGGLDNYLRSVHHHLGP-----IITLRITSRP---AIFVDRSLAHQALV-LNGAVFADRPPA---ESISKIISSN
CYP89A7 RQG-LGGFNYYVRSVHHRLGP-----IITLRITSRP---AIFVADGSLAHQALV-LNGAVFADRPPA---APISKILSNN
CYP89A2 REG-LGGLESYLRSVHHRLGP-----IVTLRITSRP---AIFVADRSLTHEALV-LNGAVYADRPPP---AVISKIVD--
CYP89A3 RQG-FDDFYSYLRSIHHLGP-----IISLRIFSVP---AIFVSDRSLAHKALV-LNGAVFSDRPPA---LPTGKIITSN
CYP89A9 KKNFSDFDQGLRDLASRHGP-----IITLHVGSKP---SIWVTDRLSLAHQALV-QNGAVFSDRPSLA---LPTTKVITSN
CYP704A1 FFHSH-KLYDYETEIARTKP-----TFRFLSPGQSEIFTADPRNVEHILKTRFHNYSGK---VGTVNLDALL
CYP704A2 LFHSD-ELYDYETEIAREKP-----TYRFLSPGQSEILTADPRNVEHILKTRFDNYSKGH---SSRENADLL
CYP704B1 LTNFD-RMHDWLVEYLNSR-----TVVVPMPFTTYTYIADPINVEYVLKTNFSNYPKGE---TYHSYMEVLL
CYP86A2 IEQRD-RMHDWITENLRACGG-----TYQTCICAVPFLAKKQGLVTVTCDPKNIEHMLKTRFDNYPKGP---TWQAVFHDFL
CYP86A4 IEQRD-RMHEWITENLRACGG-----TYQTCIFAVPFLAKKQGLVTVTCDPKNIEHMLKTRFDNYPKGP---TWQSVFHDLL
CYP86A8 IENCE-RMHDWISDNLRACSG-----TYQTCICAIPFLAKKQGLVTVTCDPRNIEHILKNRFDNYPKGP---TWQAVFHDLL
CYP86A7 ITNAH-RMHDFIADNLRMCGG-----TYQTCIFPIFLAKKQGHVTVTCDPKNIEHILKTRFDNYPKGP---SWQSVFHDLL
CYP86A1 IANRS-RIHDIADNLRATGG-----TYQCTMVIPIFVAKKAQGFYTVTCHPKNVEHILKTRFDNYPKGP---MWRAAFHDLL
CYP86B1 AFGLRGNIEYEWLSDVLCQNG-----TFQ---FRGPWFSSLNS---TITCDPRNVEHLLKNRFSVFPKGS---YFRDNLRDLL
CYP86B2 ISAVRSNIYEWLSDVLISQNG-----TFR---FRGPWFSTLNC---VVTCDPRNVEHLLKTRFSIYPKGS---YFRETMQDLL
CYP86C3 FFHRN-DVYGWATRCLKKCRG-----TFL---YNGIWLGGSYG---AVTCVPANVEYMLKTNFKNFPKGA---FFKERFNDLL
CYP86C4 FFHIN-DVYGWVTRSLKKCRG-----TFL---YRGVWLDGSYG---AVTCVPANVEYMLKTNFKNFPKGT---FFKSRFNDLL
CYP86C2 FLHVH-DMFGWVTRCLTKSRG-----TFP---YQGIWFGSGYG---AMTSVPANIEYMLKTNFKNFPKGE---FYKERFRDLL
CYP86C1 ALNKH-DLFTWCTRCVVRSGG-----TFH---YRGIWFGGAYG---IMTADPANVEHILKTNFKNFPKGA---FYRERFRDLL
CYP94B1 NKNRH-RLQWYTDLLRLSP-----SQTITVDLLFGRRITITANPNEVEHILKTNFYNFPKGG---PFTDLLGDLL
    
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CYP94B3  NKNRH-RL LQWYTEL LRLSP-----SQITILVPLLGNRRITITNPLNVEYILKTNFFNF PKGK--PFTDLLGDLL
CYP94B2  YTNRN-RL LDWYTELLTESP-----SRTVVIRRLAARRTVVTANPSNVEYILKTNFDNYP KGK--PFTEILGDFL
CYP94C1  KKDFI-NLSDWYTHL LRRSP-----TSTIKVHVLN---SVITANPSNVEHILKTNFHNYP KGK--QFSVILGDLL
CYP94D1  VNNRH-RFLDWTVETLSRCP-----TQTAI FRRPGKQQLIMTANPSNVEYMLKTKFESFP KGQ--QFTSVLEDLFL
CYP94D2  VNNRH-RFLDWTVETLSRCP-----TQTAI FRRPGKLQFVMTANPANVEYMLKTKFESFP KGE--RFISILEDLFL
CYP96A1  LVEIP-RVYDFVTELEASN-----LTYPFKGPFCFGLDMLITVDPANIHHIMSSNFANYP KGT--EFK-KIFDVL
CYP96A9  LTVLP-RVYDFITEVLEDGN-----LNYLFIGPFLGGIDMLFTVDPANIHHIMSSNFANYP KGT--EFK-KLFDVL
CYP96A10 LVEIH-RVYDFITEILEVTN-----LTYPCTGPCFANL DMLVTVDPANIHHIMSSNFANYP KGP--EFK-KLFDIL
CYP96A5  LVMLH-RINDYVAEILEVSN-----LTFAFKGPWFSGMNLITADPSNIQHV FSSNFSNYDKGP--EFK-EMDFDL
CYP96A11 LVVLH-RIYDYIVEILEISD-----LTF SFKGPWFAGMDTLLTVDPANIHHMMNSNF SNYIKGS--DFK-EVFDVF
CYP96A2  LKALH-RIYDYSVKILETSD-----LTFPFKGP RFTGMDMLLTVDPANIHHIMSSNF SNYIKGP--EFQ-DVFDVL
CYP96A12 LMVLH-RIYDFGVEALEMSH-----LTF LFKGPWFAEMDMLFTVDPANIHYILSSNF SNYTKGA--DFK-EVFDVF
CYP96A13 LLEFH-RIYDFSVEVLENSD-----LTFPFKGPWFTGMDMLFTVDPNIHHIMSSNF SNYTKGP--DFK-QVFDVF
CYP96A7  LLRLQ-RIYDYSVEFLENSN-----MTFQFKGPWFVGM DILATADPTNIHYIMSSNF SNYIKGP--IFH-EIFEAF
CYP96A8  LLRLQ-RIYDCSVEVLENSN-----MTFQFKGPWFVGM DVLATVDPANIHHIMSSNF SNYIKGP--IFH-EIFEAF
CYP96A3  LLQVP-RIYDWITEVLEATD-----MTFCFKGPCLSGMD ILLTVDPVNIHYILSSNF ANYP KGGM--EFK-KIFEVV
CYP96A4  LFQIP-RIYDFVTEALEAEN-----MTGCFIGP WLSGTDILLTVDPVNIQYILSSNF VNYPKGK--KFN-KIFEFL
CYP96A15 LHQIP-RIYDWTVEVLEATN-----LTFYFKGPWLSGTD MLFTADPRNIHHILSSNF GNYP KGP--EFK-KIFDVL
CYP97A3  KIGIPSNVLD FMDWTGSDQDYPKVPEAKGSIQAVRNEAFFIPLYELFLTYGGIFR LTFGPKSFLIVSDPSIAKHILKDN AKAYSKG---ILAEILD FVM
CYP97C1  GIPIANAKLDDVADLLGG-----ALFLPLYKWMNEYGPIYRLAAGPRNFVIVSDPAIAKHVLRN-YPKYAKG---LVAEKFSEFLF
CYP97B3  SLGSMPTAEGSVSDLFGK-----PLFLSLYDWFLEHGGIYKLAFGPKAFVVISDPIIARHVLRENAFSYDKG---VLAEILEPIM
CYP709B2 LYGNLREIRKMKNEAKLMVLDP-----NSNDIVPRVLP HLLQWKSQYGETFLYWQGTDPRLCISDHFLAKQILSNKFVFFSKSK--TKPEILK-LS
CYP709B3 LYGNLSEIKMKKKEADLCVLDP-----NSNDIFPRVFPQYHQWMSQYGD TFLFWTGTKPTIYISNHFLAKQVLSKFGFTIIPV--KRPEVFI-LF
CYP709B1 FYGNLSEIKMKKRESHLSILD P-----SSNDIFPRILPHYQKWSQYGETFLYWNGTEPRICISDPELAKTMLS NKLGFVVKSK--ARPEAVK-LV
CYP735A1 LTGNILEISARLTAEAKSKPIPSG-----RNPHEFVHRVAPHYH EWSRVYKTFFLYWFSGKPVVATSDPRLIREALTTGGSFDRIG---HNPLSK-LL
CYP735A2 LTGNIIDISKMLSASNDCCS-----IHHNIVPRLLPHYVSWSKQYK RFIWNGTEPRCLCTETELIKELLMKHNGVSGRSW---LQQQGTK-NF
CYP72A11 LVGDLKKNFSMRAEARSKPIN-----LTDDITPRIVPYPLQMLKTHGR TFFTWFGAIPITITIMDPEQITEVLNKVYDFQKAH----TFPLGR-LI
CYP72A13 LVGDLKRNFSMLAEARSKPIN-----LTDDITPRIVPYPLQMLKTHGR TFFTWF GPIPTITIMDPEQIKEVFNKVYDFQKAH----TFPLGR-LI
CYP72A15 LVGDLKKNFTMLSEARSKPLK-----LTDDISPRVVPYPLQMFKTYGR TYFTWFGPIPTITIMDPEQIKEVFNKVYDFQKPH----TFPLAT-II
CYP72A10 LIGDLKRNVNMLTEATSKPIK-----LTEDITPRVLPHPFQMLKTHGR TFFTWLGPKPTITIMDPELIKEVFNKVYDYPKAQ----TFLLGR-LI
CYP72A14 LIGDFKKMISMFI EATSKPIK-----PTDDITPRVMPHPLQMLKTHGR TNLWFGPIPTITIMDPEQIKEVFNKVYDFQKAH----TFPLSK-IL
CYP72A9  LVGDVRRSFSMLKEARSKPMK-----PTDDLISLVMPYSFHMLNTY GKTFFTWSGPIPAITIMNPQLIKEVYNKFYDFEKTTH----TFPLTS-LL
CYP72A7  LVGDIKRNVDMMMEARSKPIN-----VTDDITPRLLPLALKMLNSH GKTFFIWIGLPTIVITNPEQIKEVFNKVNDFEKAS----TFPLIR-LL
CYP72A8  LVGDIKREASMVEQEKS RPIN-----LTDDYTHRVMPLIQQTVKDHG KTSYMMWMPGPIASVIVTKPEHIKDV LNRVYDFPKPP----VHPIVE-LF
CYP72C1  LMGDMRESNQMDQVAHSLPLP-----LDADFLPRMMPFLHHTV LKHGKCCFTWYGPYPNVIVMDPETLREIMSKHELFPKPK----IGSHNH-VF
CYP734A1 FIGNVKELVGMMLKASSHPMP-----FSHNILPRVLSFYHHWRKIY GATFLVWFGPTFRLTVADPDLIREIFSKSEFYEKNE----AHPLVK-QL
CYP721A1 FSGNSEVSR LTAEAKSKPIPSG-----RNPHEFVHRVAPHYH EWSRVYKTFFLYWFSGKPVVATSDPRLIREALTTGGSFDRIG---HNPLSK-LL
CYP715A1 PFGNLNDMKKLKMASVVVDNSKSS-----TIINHDIHSIALPHFARWQQEY GKVFWYWLGI EFPVYVADPEFLSVMSKGVLGKSWGKGP---NVFKKDREPM
CYP714A1 FRGNVPEMQKIQSQIMSNSKHYSGD---NIIAHDYTSSLFPYLDHWRKQYGR VYTYSTGVKQHL YMNHPFLVKELNQANTLNLGKVS---YVTKRLK-SI
CYP714A2 FNGNVSEMQR IQ---SEAKHCSGD---NII SHDYSSSLFPHFHDHWRKQYGR IYTYSTGLKQHL YINHPFMVKELSQTNTLNLGRIT--HITKRLN-PI
CYP74A  DYFYDQGAEEFFKSRIRKYNS-----TVYRVNMPP---GAFIAENPQVVALLDGKSFPV LFDVDKVEK-----
CYP74B2 DF---QGPDKFFRTRA EKYKS-----TVFRTNIPPTFPFFGNVNPNI VAVLDVKSFSLFDMDLVDK-----
CYP73A5  LQVGDDL NHRNLVDYAKKFGD-----LFLLRMGORN---LVVSSPDLTK EVLH-TQGEFGSRTN-----VVDIFTGK
CYP722A1 VNSG-KGFYEFVRSRRIRYGS-----CFRTSLFGETHVFLSTTESARLV LNNDSGMFTKRYIKSIG-----
CYP701A3 LQLKEKPKHKTFRWSEIYGP-----IYSIKMGSSS---LIVLNSTETAK EAMVTRFSSISTRKLSN----ALTVLTC D
CYP711A1 MAKYG---PDVFSVLAKQYGP-----IFRFQMG RQPLIIIAEAE LCREVG IKKFKDLPNRSIPSPISAS-----
consensus 101.....110.....120.....130.....140.....150.....160.....170.....180.....190.....
    
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CYP51A1 -----VPTFGPGVVFVDYVPRMEQFRFFSSALKGQQLRGYVDQMTKETEDYFSKWGE-----SGEVDLKAELERITLTASRCLLGREVRDQ-----
CYP51A2 -----VPTFGPGVVFVDYSVRQEQRFFTEALRVNKLKGYVDMMVTEAEDYFSKWGE-----SGEVDIKVELERITLTASRCLLGREVRDQ-----
CYP710A1 -----KKLFGDHNLIYFMFGEDHKSRRQLAPNFTPALSTYSALQQLVILRHLRQWEGSTSGGSRPVSLRQLVRELNLETSQTVFVGPYLDKE-----
CYP710A2 -----KQLFGDHS LIYLFGE DHKTVRRHLAPNFTPALSTYSALQQLVILRHLRQWEEFSFGGTPKPVSMRDLVRELNLETSQTVFVGPYLDKE-----
CYP710A3 -----KKLFGDHS LIYFMFGENHKSRRQVAPNFTPALSTYSALQQLVILRHLRQWEEFSFGGSRPVSMRQLIRELNLETSQTVFVGPYLDKE-----
CYP710A4 -----KKLFGDHS LIYFMFGEDHKSRRQVAPNFTPALSTYSALQQLVILRHLRQWEEFSFGGSRPVSMRQLIRELNLETSQTVFVGPYLDKE-----
CYP702A1 -----AQLFGE--NNLFFQSKESHKVRNLTFFQL---LGSQGLKLSVMQDIDLLTRTHMEEGARRGCLDVKEISSKILIECLAKKVTGMEPE-----
CYP702A2 -----IRL FGE--NNLFLQSKESHKVRNLTFFQL---LGPQGLKSRMIEDVDLLARTYMEEGARNGYLDVKETSSKILIGCLAKKVMGEMEPE-----
CYP702A8 -----ARL FGEDNNLFLQSTESHKVRNLTVMQ---LGSQSLKLRIMENIDLLTRTHMEEGARDGSLDVKETT SKILIECLAKKVMGEMEPE-----
CYP702A5 -----ERL FGA--TNL FVN--KDT HKHARSLTNQF---LGSQALKLRMIQDIDFLARTHMKEGARKGCLDVKETASKIVIECLSKKVMGEMEPE-----
CYP702A6 -----ARL FGA--NNL FVN--KDT HKHARSLTNQF---LGSQALKLRMLQDIDFLVTRTHLKEGARKGSLDIKETT SKIIIECLAKKVMGEMEPD-----
CYP702A3 -----TRIFGE--NNPFLQSK EIHKYVRNLT SRF---VGPEGLKTRLIHDIDNLLRNDVENGARNGSFDVREATIKMVGELIAKKIMGETESE-----
CYP708A2 -----VKPFGEKENVFLKHG--NIHKHVQKISLQH---LGSEALKKMMIGEIDRVTYEHLRSKANQGSFNAEAVESVIMAHLPKIIISNLKPE-----
CYP708A3 -----VKVFGKDNLFLKEV--FIHKYLQKITMQI---LGSEGLKQTM LGNMDKATRDHIRSIASQGSFNVRKEVENIVVAYMTPKLIISNLKPE-----
CYP708A4 -----MKPLGKDSLFLKIG--NIHKHIKQITLHL---LSSEGLKRRKILKDMDRVTRHLSKAKTGRLDVKDAVSKIIIAHLPKMMSNLKQP-----
CYP708A1 -----VRIFGKDNLFFKQGGDFHRYMRHIALQL---LGPECLKQRFIQIDDIATSEHLKSVSFGQWVDVKDTSGRILEEQMILMIISNIKPE-----
CYP87A2 -----THIFGKKNVGS LHG--FMYKYLKNMVLTL---FGHDGLKK--MLPQVEMTANKRLELWSNQDSVELKDATASMI FDLTAKKLISHDPDK-----
CYP90A1 -----CNLLGKHSLLLMKG--SLHHRMHS L TMSF---ANSSI I KDHLMLDIDRLVRFNLD SWS--SRVLLMEEAKKITFELTVKQLMSFDPGE-----
CYP90B1 -----GGILGKWSMLVLVG--DMHRDMRSISLNF---LSHARLRTILLKDRVRLTLFVLD SWQQNSIFSAQDEAKKFTFNLMAKHIMSMDPGEE-----
CYP90C1 -----TELLGENSILSING--PHQKRLHTLIGAF---LRSPHLKDRITRDIEASVVLTLASWAQLPLVHVQDEIKKMTFEILVKVLMSTSPGE-----
CYP90D1 -----RELMGKSSILLING--SLHRRFHGLVGSF---LKSPLLKAQIVRDMHKFLSESMDLWSEDPVLLQDVSKTVAFKVLAKALISVEKGE-----
CYP724A1 -----HDILGKYSLLLATG--EIHRKLNKVIISF---INLTKSKPDFLHCAENLSISILKSWKNCREVEFHKEVKIFTL SVMVNQLLSIKPEDP-----
CYP720A1 -----RDLVGKDG VITVHG--DQRRRLHSIASSM---MRHDQLKTHFLEVIPVVM LQTL SNFKDGEVLLQD ICRKVAIHLMVNQLLGVSSSE-----
CYP85A1 -----LDILGTCNMAAVHG--SSHRLMRGSLLSL---ISPTMMRDHILPKVDHFMRSYLDQWNELEVIDIQDKTKHMAFLSSLTQIAEGLNRKP-----
CYP85A2 -----LDILGTCNIAAVHG--PSHRLMRGSLLSL---ISPTMMRDHILPKIDDFMRNYLCGWDDLETVDIQEKT KHMAFLSSLQIAGETLKKP-----
CYP707A1 -----ERMLGKQAIFFHQG--DYHAKLRKLV LRA---FMP--ESIRNMVPIESIAQDSLRSWEG--TMINTYQEMKTYTFNVALLSIFG--KDEVL-----
CYP707A3 -----ERMLGKQAIFFHQG--DYHAKLRKLV LRA---FMP--DAIRNMVPHIESIAQESLNSWDG--TQLNTYQEMKTYTFNVALLSIFG--KDEVY-----
CYP707A2 -----ERMIGPEALFFHQG--PYHSTLKRVLQSS---FMP--SALRPTVSHIELLVLQTLSSWTSQKSINTLEYMKRYAFDVAIMSAFQDKKEPT-----
CYP707A4 -----EKLIGPSALFFHQG--DYHSHIRKLVQSS---FYP--ETIRKLIPIEIHIALSSLQSWANMPIVSTYQEMKKFAFDVGILAIFFG--HLESS-----
CYP88A3 -----MELIGRKS FVGISF--EEHKRLRRLTAAP---VNGHEALSTYIPYIEENVITVLDKWTMKGFEFLTHLRKLTFRIMYIFLS--SESEN-----
CYP88A4 -----MKLIGRKS FVGISF--EEHKRLRRLTAP---VNGPEALSVYQFIEETVNTDLEKWSKMGIEFLSHLRKLTFKVIMYIFLS--SESEH-----
CYP716A1 -----NKIFPSSMTSSK--EEARKLRMLLSQF---MKPEALRRYVGVMEIAQRHFETEWANQDQIVFPLTKKFTFSIACRSFLS--MEDPA-----
CYP716A2 -----NKIFPSSMTSSK--EEAIKTRMLLMP S---MKPEALRRYVGVMEIAQKH FETEWANQDQIVFPLTKKFTFSIACRFLS--MDDLE-----
CYP718 -----VQLMGMN CIMAKQG--EKHRVLRGIVANS---LSYIGLES LIPKLCDTVKFHHETEWRGKEEISLYRS AKVLTFTVVFECLYG--IKVEI-----
CYP71A12 GRDVVFGPYGEYWRQMKSV CILNLLTNKMVASFE--KIREEEELNEMIKKLEKASSS-----SSENLSELFVTLPSDVTSRVALGRKHSED-----
CYP71A13 GRDVVFAPYGEYWRQMKSV CILNLLTNKMVASFE--KVREDEEVNAMIEKLEKASSS-----SSENLSELFITLPSDVTSRVALGRKHSED-----
CYP71A18 GRDVVFGPYGEYWRQMKSV CILNLLTNKMVASFE--KVREEEVNAMMEKLEKASSS-----SAENLSELFVTLPSDVTSRVALGRKYSWED-----
CYP71A14 GREMVFSPPYGEYWRQIKSVCIVNLLNKKVQSFE--KVREEEISEMMERVEKASSDS-----SPLNLSLELLTLPSDVTSRVALGRKYSKE-----
CYP71A15 GREVVFSPPYGDYWRQIKTV CVVHLLNKKMVQSFA--KVREEEERSVMMEKVEKASSDS-----SPLNLSKLLITLPSDVASRVSFGRKHSNE-----
CYP71A28 GRDVAFSSYGEYWRQMKSLCTVHLLGRQMVSFE--KVREEEITSVIWKLKQSSSS-----LPVNLSDLLNMSNDVICRIAVGRKYSRE-----
CYP71A19 GRDVAFAPYGEYWRQMKSI C IQNLLSNKMVRSYK--KIREDEIKLMIEKVENASSCSP-----PSPVNLSQLFMTLTNDIICRAALGRKYSK-----
CYP71A20 GRDVAFAPYGEYWRQMKSI C IQNLLNKNMVSRYE--KIREDEIKRMIEKLEKASSS-----PSPVNLSQLFMTLTNDIICRVALGRKYSK-----
CYP71A16 GRDLVFAPYGEYWRNVKSLCTIHL LSNKMVSSE--KRREEEITLLMETLEASLSS-----SSVNL SKLITNMVSDIMGKVVLGKYSGE-----
CYP71A27 GRDIIFFGPGEDWKSMSLGVHLLNKNMVSFE--NLREEEIKVMTEKLEASLSS-----SSVNL SKLITNMVSDIMGKVVLGKYSNE-----
CYP71A21 GRDVAFAPYGEYWRQIKSVCV LRLLSNKMVTSFR--NVRQEEISLMMEKIQKSSSLQ-----VNVSELLGSLTNDVISRVALGRKYS-----
CYP71A22 ARDVALAPYGEYWRQMKSV CVLHLLTNKMVRSFR--NVRQEEISLMMEKIQKSSSLQ-----VNLSELLGSLTNDVISRVALGRKYS-----
CYP71A24 GRDVALAPYGEYWRQMKSV CVLHLSNKMVRSFR--DVRQEEISLMIEKIRISSSLR-----INLSEILVNL TNNVICRVALGRKYG-----
CYP71A26 KHDVASAPYGEYWRQMKSV CVLHLSNKMVRSFR--EVREEEISLMMEKIRKSISLP-----VNL SKILVSLTNDVICKVALGRKYG-----
CYP71A25 NRDVASAPYGEYWRQMKSV CVIHL LSNKMVRSFR--DVRREEEITLMMAKIRKSSSLP-----FNVSKVLECLTNDVICRVALGRKYG-----
CYP71A23 SRNMAAPYGEYWRQMKSV SVLHLLSNKMVRSFQ--DVRQEEITLMMETIRKSSSKP-----VNL SKILSSLTNDVICRVALGRKYG-----
    
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CYP71B26  NLDMSSSPYNEYWKELRKLCSQELFSANKIQSIQ--PIKDEEVKKVIDSIAESSSLK-----NPVNL SKTFLALTT SVVCKAAFVVSFEGS-----
CYP71B33  NRDISFSPYNDYWKELRKLCTQELFSAKNIHSTQ--HIKDEEVKKLIVSIAESASLK-----TPINLNKKCLALTVSIVCRIAFVVSFEGT-----
CYP71B34  YLDIAFSPYDDYWKELRKLAVQELFSSKQVHSIQ--PIKDEEVKKLIDSISESAAQK-----TPINLNKTLALTVSVVCRITAFVSNFEGT-----
CYP71B35  YLDIAFSPYDDYWKELRKLAVQELFSTKQVHSIQ--PIKDEEVKKMIDSIAESASQK-----NPVNLNNKCLELTVSVVCRITAFVVSFEGT-----
CYP71B36  YLDIAFSPFDDYWKELRRICVQELFSVKRVQSFQ--PIKDEEVKKLIDSVSESASQK-----TPVNLSEKFTSLTVRVCTKATFVGNFQGT-----
CYP71B37  YLDIVFSPFDDYWKELRRMVCVQELFSPKQVHLIQ--PIREDEVKKLMNSFSESAAQK-----TPVNLSEKLASLTVGVICKAAFVVSFQGT-----
CYP71B9    YLDIAFSPFDDYWKELRRICVQELFSAKRVSISIQ--PIKEEVVKRLIVSATESASQK-----SPVNLSEKFLDLTVSVICKAAFSLDFHTS-----
CYP71B10  YLDIAFSRFDDYWKELRKLCEVELFCNKRINSIQ--PIKEAEMEKLIDSIAESASQK-----TLVNLSDTFLSLNWNVICKAVFVGNFQGT-----
CYP71B11  LKDIGFCPYTKYWRVVRKMTVVELYTAKRVQSFQ--HTRKEEVASLVDFITQAASLE-----KPVNLNTKLMKLSGSVICRVVFGINLKGS-----
CYP71B12  LKDLCFSPYSKYWRVVRKMTVVELYTAKRVQSFQ--HTRKEEVAALVDFIKQAASLE-----KPVNLNKKLMKLSGSVICRVAFGINLQGS-----
CYP71B14  FNDLAFSPYSKYWRVVRKMTVIELYTAKRVKSFQ--NVRQEEVASFVDFIKQHASLE-----KTVNMKQKLVKLSGSVICKVGFISLEWS-----
CYP71B13  LKDLAFAPYSKYWKAVRKMVTVELYTAKRVKSF--NIREEEVASFVEFIKHSASLE-----EIVNLNQTQVVKLSGSVICRVGFGINLEGS-----
CYP71B6    FLGLGFTKWDYRDKLVLELFSVKRANSFR--NIREEEVSRVNSFSDSASSG-----SSVDLTANLAKFVASFTCRMAFGLSFOGS-----
CYP71B28  FKDIGFAPYGEDWRTMRKLSVVELFSSKKLQSF--YIREEEENDLCVKKLSDLASRR-----SLVNLKTLFTLVGSIVCRIGFGINLREC-E-----
CYP71B29  FKDIGFAPYGEWVKAMRKL SVVELFTA KKHQYFR--SIREEEENDLLVKKLTELALTR-----SPVNLKTLFTLVGSIVCRIGFGINLHEC-E-----
CYP71B15  FKDIGMAPFGDEWLMRKL SVVELF SVKKLQSF--YIIEEENNL CVKKLSEFATRQ-----SPVNLERAIFTLVGNIVCRIGYGINLYEC-D-----
CYP71B23  FKDIGFAPYGEWRALRKLAVIELFSLKFFNSFR--YIREEENDLLVKKLSEASEKQ-----SPVNLKALFTLVASIVCRILAFQONLHES-E-----
CYP71B7    FKDIGFAPYGEWVKALRKLVMLELNTKFFQSF--YIREEEENDLLIKKLTESALVK-----SPVNLKTLFTLVASIVCRILAFVNIHKC-E-----
CYP71B16  FKDISFTPYGEWRERRKFLVLELFCFKKQYFG--YIVEEECNLLVKKLTESAVGR-----PPVDSLKSLFWLAASILFRVAFQSFHDN-K-----
CYP71B17  FKDLNFTPYGEWVKERRRFLVLELFCSKKLQSF--YIKEVECNFLVKKLSESAVDQ-----SPVDLSKTLFWLAASILFRVAFQSFHES-E-----
CYP71B18  FKDVGFPTYGEWVKERRRFLVREFFSLKVKQSF--YIREEECNFLVKKLSESAVDQ-----SPVDLSKTLFWLTASVMFRVAFQSFHES-E-----
CYP71B19  FKDIGFTPYGNEWKARRKFALRELFCLKVKQSF--HIREEECNFLVKKLSESAVDR-----SPVDLSKSLFWLTASILFRVALQONFHES-D-----
CYP71B20  FKDVCFPTYGNEWKARRKFALRELFCLKVKQSF--HIREEECNFLVKKLSESAVNR-----SPVDLSKSLFWLTASIFFRVALQONFHES-N-----
CYP71B2   FKDITFAPYGEYWRVVRKLA VIELFSSKVKQSF--YIREEEVDFVKKVSESA LKQ-----SPVDLSKTFFSLTASII CRVALQONFNESGF-----
CYP71B27  FKDISFTPYGEYWRMRKLAVTELFSLKKVQSYR--YIRGEIEEFMVKKLSESAKQ-----SPVDL---TFFSLTASII FRVALGRNFHESGS-----
CYP71B21  FKDIGFAQYGEDWREMRKLAMLELFSSKKLKAF--YIREEESELLVKKVTESAQTQ-----TLVDLRKALFSYTASIVCRILAFQONFHE-CD-----
CYP71B22  YKDIGFAQYGDWREMRKLAMLELFSSKKLKAF--YIREEESEVLVVKLKS SAETR-----TMVDLRKALFSYTASIVCRILAFQONFHE-CD-----
CYP71B38  FKDIGFAPFGDDWREMRKITTLELF SVKKLKSF--YIREEESELLVKKIKSVDETQ-----NSSVDLRKVLFSFTASII CRILAFQONFHQ-CD-----
CYP71B5    FKDIGFAPYGENWREMRKIAVSELF SQKKLKSF--YIREDESQLLVKRVKSALETP-----TSSVNLRKVIFTFAASII CRLSFGQNF---CD-----
CYP71B31  YKDIGFTQYGEWREMKKLVLELFSPPKHKFSFR--YIREEEGDLLVKKLISNQAQTQ-----TLVDLRKSLFSYTASII FRVAFQONFRE-CD-----
CYP71B8    KDIAFAQYGEDWREMKKLVLELFSPPKHKFFR--YIREEEGDLLVKKLISNQAQTQ-----TLVDLRKAFSFTAGIIFRVAFQONFRE-CD-----
CYP71B32  FKDIGFTQYGEDWREMKKLVLELFSPPKHKFSFR--YIREEEGDLLVKKLISNQAQTQ-----TLIDLKASFSFTAGIIFRVAFQONFHQ-CD-----
CYP71B24  GQDIGLAPYGESLRELRLKLSFLKFFSTTKVRSFR--YIREEEENDLMVKKLKEAALKK-----SSVDLSQTLFGLVGSII FRSAFQORFDEG-N-----
CYP71B3    GKDIAFAPYGEVSRELRLKLSLINFSTQKVRFSFR--YIREEEENDLMVKKLKEAALKK-----NTVDLSQTLFYLVGSII FRATFQORLDQN-K-----
CYP71B25  NKNIGLGAYSDEWRELRLKVAVREYFSVKKVQSF--YVREEENHLMVKKLRDLALKQ-----SPVDLSKTLFCLAASVFRPVFQSFSDN-K-----
CYP71B4    GKDIGFGVYGDWRELRLKLSVREFFSVKVKQSF--YIREEEENDLMIKKLELASKQ-----SPVDLSKILFGLTASII FRTAFFQSFSDN-K-----
CYP83A1   RRD MALNH YTPYYREIRKMG MNHLFSPTRVATFK--HVREEEARRMMDKINKAADKS-----EVDISELMLTFTNSVVCRAFGKKYFNE-----
CYP83B1   GRELGFGQYTAYYREMRKMC MVNLFSPNRVASFR--PVREEECQRMMDKIYKAADQS-----GTVDLSELLSFTNCVVCRAFGKRYNEY-----
CYP84A1   RADMAFAHYGPFWRQMRKVCVMKVF SRKRAESWA--SVR--DEVDMVRSVSCNVGKP-----INVGEQIFALTRNITYRAAFGSACEKGQ-----
CYP84A4   GSDL AFCNYGPFWRMRKLYVMMLFSRKR AESWV--SVD--EEVHKS VRLVASNVGKP-----LNICKLAFSLSRDITFRAAFGSSSSTSDE-----
CYP705A1  SSGFIQAPYGDYWKFMKKL IATKLLGPQLVRSQ--DFRSEELERFYKRLFDKAMK-----KESVMIHKEASRFVNNSLYKMCGRSFSVENN-----
CYP705A24 SFGYFRAPCEDYWKFMKKL IMARALGPQALERT--GVRAAELERFHRKLLDKAMK-----KQSLKIGEEARILVNNTLGKMSLGSFSFIENN-----
CYP705A15 SFSFTSAPYGDYWKFMKKL LVTNLLGPQALERSR--GFRADLDLFYENLDDKAMK-----KESVDICV EALKSNNSICKMIMGRSCSEENG-----
CYP705A4  SFSFISAPYGDYWKFMKKL VLTNVFGPQAHEQSR--GVRADVLERFYGNLFDKAIK-----KQSV EICAEALKSNNSICKMIMGRSCSEENG-----
CYP705A16 SSSFISAPYGDYWKFMKKL MVTKLLGPHALERSR--KIRADELYRLYTNLDDKAMK-----KESVEIGKETMKLTNNTICKMIMGRSCSEENG-----
CYP705A19 STGFISAPYGDYKFMKHLVTKLLGPQALERSR--LIRTNELERFYINLDDKATK-----KESVEIGKEAMKLSNNSICKMIMGRSCLEEK-----
CYP705A20 SSVFVGAPYGDYWKFMKKL LVTKLLGPQALERSR--SIRADELERFYRSLDDKAMK-----KESVEIGKEATKLSINSICRMSMGRSFSEESG-----
CYP705A21 SSVFGSAPYGDYKFMKKL LVTKLLGPQALERSR--GIRADELERFHSSLDDKAVK-----KEIVEIGKEATKLSNNSLWRMSIGRSFSEKNG-----
CYP705A23 SFGFFTAPYGDYWKFMKVMVTKLLGPQALQRSR--GIRADALERFYNNLDDKAMK-----KESVEIGKETMKLIYDSICKMIMGRNFSEENG-----
CYP705A28 FSSFFFAPYGDYKFMKKL IATKLLGPQALDRSR--KIRADELDRFYNNLDDKAMK-----KESVEIGEAAKLNNNIICKMIMGRSCSEKNG-----
    
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CYP705A30 SSSFFFAPYGDYFKFMRKLIATKLLGPQALERSR--KIRADELDRFYKTL LDKAMK-----KESVEIGEAAKLNNNIICKMIMGRSCSEENG-----
 CYP705A32 SSSFFFAPYGDYFKFMRKLIATKLLGPQALERSR--KIRADELDRFYRNL LDKAMK-----KESVDIVEEAAKLNNNIICKMIMGRSCSEDNG-----
 CYP705A2 SYSFISAPYGDYWKFMKRLMVTIKLGPQALERSR--RFREDELDRFYKTL LDKAMK-----KESVEIVEEAAKLNNTTICKMIMGRSCSEETG-----
 CYP705A5 SSSFINTPYGDYSKFMKKFMVQKLLGPQALQRSR--NIRADELERFYKTL LDKAMK-----KQTV EIRNEAMKLTNNTICKMIMGRSCSEENG-----
 CYP705A8 SFSFITAPYGEYWKFMKLLIVTKLLGPQALERSQ--RIRANEVERFYSNLLDKAMK-----KESVEIADEAMKLVNNIICKMIMGRSCSEENG-----
 CYP705A9 SFGFGTAPS-----SGLKHSR--GHKKSQRSYLLRL LDKAVK-----KESVEIAEEAMKLVNNTVQCMIMGRSCSEENG-----
 CYP705A18 SSSFIYAPYGDYWKFMKKIFATKLLRPQVLENSR--GVRAEELKRFYRRL LDKARK-----NENIEISKESAMLMNNILCRMMSGRSFSEENG-----
 CYP705A6 SSGIITAPYGDYWKFMKLLIATKLLRPQSLESSR--GIRGEELTRFYNSLLDKARM-----TESVEISTEAMKLVNNTLCRMSMGRSFSEENG-----
 CYP705A33 SSGVVYAPYGDYLFVKKIIATKLLRPQVLENSR--GLRAEELQRLYNRIL LDKAKM-----NENVEIGKEATMLMNNIFCRMMSGRSFSEENG-----
 CYP705A3 ASGILNAPYGDYWKFMKLLMATKLLRPQVLENSR--GVRVEELHRFYRSIL LDKATK-----NESVEIGKEAMKLMNNTLCKLIMGRSFSEENG-----
 CYP705A22 SSSFVTAPYGDYWKFMKLLTVMKLLGPQAQEQSR--DIRADDIKRFCRNLL LDKARK-----KESVEIGKEAMNLMNNILCKMSMGRSFSEENG-----
 CYP705A12 SSGFVTAPYGDYWKFMKLLISTKLLRPHAL ELSK--GNRAEELRRFCLD LQ GKARK-----KESVEIGKVALKLTNNIICRMSMGRSCSEKNG-----
 CYP705A13 SSSFVMAPYGDYWKFMKLLMVTKLFPGQALEQSR--GARADELERFHANLL SKEMK-----SETVEIAKEAIKLTNNSICKMIMGRGCLEENG-----
 CYP705A25 SFGFVSVPYGDYWRFMKLLLVKLLGSHSLEQTR--LLRKGELQTFRAML FDKAAK-----NETVDVGKEMMKLTNNSICRMTMGRSCSEENG-----
 CYP705A27 SFGFVSAPYGDYWRFMKLLLVTNLFGSHSLEQTR--LIREKELKTFRTML FDKAAK-----KGTVDVGKEMMKLTNNSICRMTMGRRCSEENS-----
 CYP712A1 GSRFVLAQYGDYWRFMKLLCMTKLLAVPQLEKFA--DIREEEKLKLVD SVAKCCRE-----GLPCDLSSQFIKYTNNVICRMASTRCSGTDN-----
 CYP712A2 GSEFFNAPYGSYWRFMKLLCMTKLFAGYQLDRFV--DIREEETLALLSTL VERSRN-----GEACDLGLEFTALITTKILSKMVMGKRCRQNSN-----
 CYP93D1 SADFFSAPYGLHWKFMKRICMVELFSSRALDSFV--SVRSEELKLLIRV LKKA EA-----EESVNLGEQLKELTSNIITRMMFRKMQS DSDGG-----
 CYP81D6 STTMTSAPYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81D7 FTTMTSAPYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81D11 STTMVGAAYGDSWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81D2 NSTVVSASYSEHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81D3 CTTVVTASYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81D8 YTTMIAASYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81D4 ATYLLSASYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81D5 FTMNIAASYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81D1 NANMIAAPYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81F3 YTTVGTAPYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81F4 YTTIATTSYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81F2 YTTIGTAA YGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81F1 YTTVGTAPYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81H1 YTSMTAPYGDHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81G1 NTLVSTAPYGEHWRNLRRIATLEIFSAHNLGFL--SVRKDEIRQLLRL S KNSRH-----G-FAKVEMRHLLFELTINNVMFRMVAGKRFYGE-----
 CYP81K1 YKNFGFAPYGDWRTLRLSTLEVFSSASLQKNS--SIRNEEVSNLCLII FRLSR-----D-SRIVDLKYQFTLLTAHIMLRLVSGKRGVKKSS-----
 CYP81K2 YKNFGFAPYGDWRTLRLSTLEVFSSASLQKNS--SIRTEEVSNLCSLFRFSGG--N-SCKVDLRYQFTLLTAHIMLRLVSGNRGVNES-----
 CYP82C3 -----VFWLEMRKIAMI ELLSNRRLQMLN--NVRVSEISMVQDLYSLWVKKGGG--E-PVMVDLKS WLEDMIANMIMRMVAGKRYFGGGGA---E
 CYP82C2 CAVFGFAPYSAFWREMRKIATLELLSNRRLQMLK--HVRVSEISMVQDLYSLWVKKGGG--E-PVMVDLKS WLEDMSLNMMVIRMVAGKRYFGGG--S---L
 CYP82C4 FAVFGFAPYSAFWREMRKIATLELLSNRRLQMLK--HVRVSEITMGVKDLYSLWFKNGGT--K-PVMVDLKS WLEDMLNMMVIRMVAGKRYFGGGGS---V
 CYP82F1 DSFLTFSPLYGLYWRIRKIAVSELFSTSGVDMHM--VSRAREADLAFRAL YVRWEKRGKPKG--GVLVDMKQEFIDLTANISLMMVSGKRYFGEN-----
 CYP82G1 NASLTLAPYGDYWRERLRIKIVTVHLFSNHSIEMLG--HIRSSEVNTLIKHL YK---GNGGT---SIVKIDMLFEFLT FNII LRKMVGRKRIFG-----
 CYP76C2 VSVVWLPPSSSRWRLRLKLSATQLFSPQRIEATK--TLRENKVKELV S FMESSER-----EEAVDISRATFITALNII SNILFSVDLGNYS-----
 CYP76C4 VSVIWLPPSSARWRLRLKLSATQLFSPQRIEATK--ALRMKKVQELV S FMESSER-----KEAVDISRASYTTVLNII SNILFSVDLGSYS-----
 CYP76C1 ASLVLPPSSARWRLRLKLSATQLFSPQRIEATK--ALRMKKVQELV S FMESSER-----EESVDISRVAFITLNIISNILFSVDLGSYNA-----
 CYP76C5 FSVGWIHSSPRFRKVEEMTFTQLFSPQRIEATK--ALRMKKVQELV S FMESSER-----GEAVDISRASVFTALNII SNILFSVDLGSYS-----
 CYP76C6 FSVGWIHSSSRFRMLRLKLSATQLFSPQCIQATK--ALRMKKVQELV S FSESCER-----EEAVDISHVSFVTALNII SNILFSVNLGSYS-----
 CYP76C3 HSIWVIPP SARWRRLKKTITIKYLLSPQNLDAIQ--SLRMKVEELV S L VNEFRER-----GEAIDLARASVFTS FNII SNALFSVDLATYDS-----
 CYP76C7 LSLWLIPPLARWR--FLRKITRNQLFSTQRLEATS--AIRTRK VQELMNFVNKCCER-----REAVNISRASFITSLNII SNALFSTNLANFDD-----
 CYP76G1 GSLITAQYG--AYWRMLRLKCTTQFFVTRRLDAMS--DVRSCVDQMLRFVEEGGQNG--TKTIDVGRYFFLMAFNLI GNLMFSRDLLDPDS-----
 CYP75B1 QDLVFAPYGHWRLLRKISSVHLFSAKALEDFK--HVRQEEVGTLTRELVRVGTK-----PVNLGQLVNM CVVNALGREMIGRRLFGADA-----
 CYP706A1 GEDILWSPYGTHTWRRLRLKLCVMKFTTPTLEASY--STRREETRQTIVHMS EMAREG-----SPVNLGEQIFLSIFNVVTRMMVAGATVEG-----

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CYP706A2 GEDILWSPYGTWRRRLRKLKLVCMKMFSTPSLEASY--STRRETRQTVIVHMSEMAREG-----SPVNLGEQIFLSIFNVVTRMMWGATVEG-----
CYP706A3 GTEIIWSPYGPQWRMLRKLKLVNRILRNAMLDSS--TDLRRRETRQTVRYLADQARVG-----SPVNLGEQIFLMMLNVVQMLWGTTVKE-----
CYP706A7 GVDIIVSPYGPPEWMLRKLKICINKMLSNATLDSNSFSALRRQETRRTVRYLADRARAG-----LAVNVGEQIFVVTILNVVQMLWGTVADD-----
CYP706A5 GLDLVWLPGAEWRMLRKLKCAAKLFSRKTLDSEFY--ELRRKEIRERTRCLYQKGLEK-----SPVNVGEQFLFTMMNLMNMLWGGSVKA-----
CYP706A6 GLDLVWLPGAEWRMLRKLKCVLKLKLSHRTLNSFY--ELRRKEIRERTRYLYQKQEE-----SPVNVGEQVFLFTMMNLTMMNMLWGGSVKA-----
CYP706A4 GDIIVWTPYGAWRQLRKLKICVLKLLSRKTLDSFY--ELRRKEVRERTRYLYEQGRKQ-----SPVNVGDQLFLFTMMNLTMMNMLWGGSVKA-----
CYP79B2 YKTCVITPFGEQFKKMRKVMTEIVCPARHRWLHQ--KRSEENDHLTAWLYN-MVKNSG-----SVDFRFMTRHYCGNAIKKLMFGTRTFFSKNT--APD
CYP79B3 YKTCVITPFGEQFKKMRKVMTEIVCPARHRWLHD--NRAEETDHLTAWLYN-MVKNSE-----PVDLRFVTRHYCGNAIKRLMFGTRTFSEKT--EAD
CYP79A2 YLTVAVEPQGEQWKKMRVAVSHVTSKKSFMMLQ--KRTEADNLVRYINNRSVKNRGNF--VVIDLRLAVRQYSGNVARKMMFGIRHFGKGS--EDG
CYP79C1 YNGVVFDEYGERQMKMKVMSSELMSTKALNLLK--VRNLESDNLLAYVHNLYNKDESKTKHGAVNVRDIVCTHTHNVKMRLLFGRRHFKET---TMD
CYP79C2 YKNISFSSYGENWKLKVKVMTTKLMSPTTL SKTLG--YRNIHADNIVTYVYNLCQLGSRKP----INVRDITILTYCHAVMMRMMFGQRHFDEV---VEN
CYP79F1 YKSMGISPYGEQFMKMKRVITTEIMSVKTLKMLEA--ARTIEADNLIAYVHSMYQRSE-----TVDVRELSRVYGYAVTMRMLFGRRHVTKENVFSDD
CYP79F2 YKTMGTSSYGEHFMKMKKVITTEIMSVKTLNMLEA--ARTIEADNLIAYIHSMYQRSE-----TVDVRELSRVYGYAVTMRMLFGRRHVTKENVFSDD
CYP703A2 CGDVALAPMGPHWKRMRRICMEHLLTTKRLESFTT--QRAEADRYLRDVFVFRKSETGKP-----INLKEVLGAFSMNNVTRMLLCKQFFGPGS-----
CYP98A8 GTDLWSDYSPHYVKLKRLCTLELFSLKSIENFR--SLREMEARSMVVSILKDLMSNSGDDQERKPIVVRKYLAAVLNTISRMLIGKEFG-----
CYP98A9 GSDLIWSDYGAHYVKMRKLTLELFSLKSIIECFR--SMREMEVSSMVKSIFNDFMSD-----DQKPVVLRNYLDSVALNIVSRLVIGKTFE-----
CYP98A3 GQDLIADYGPYVYKVRKVTLELFTPKRLESLR--PIREDEVTAMVESVFRDCNLP---ENRAKGLQLRKYLGAFAFNNITRLAFGKRFMNAEG-----
CYP78A10 DRAMGFAPYGDYWRRLRRISSTHLFSPKRIFFSSG--ESRRKIGQNMVGEIKN--AMECYG----EVHIKKILHFGSLNNVMSSVFGKTYNFNEGI----
CYP78A5 HRAMGFAPYGEYWRNLRRISSTHLFSPRIASF--GVRVIGMKMVKKIKSLVTSDACG-----EVEVKKIVHFGSLNNVMTTVFGESYDFDE-----
CYP78A6 NRAIGFAPHGYYWRTLRRIASNHLFSTKQIRRAE--TQRRVISSQMVFELEKQ--SSNE-----PCFVRELLKTASLNNMMSVFGKEYELEK-----
CYP78A9 NRAIGFAPYGVYWRTLRRKIASNHLFSPKQIKRSE--TQRSVIANQIVKCLTKQ--SNTKG----LCFARDLIKASLNNMMSVFGKEYELEK-----
CYP78A8 NRAMGFAPNGTYWRTLRRIGSNHLFNPQKIQSE--DQRRVIATQMVNAFAR---NPKS-----ACAVRDLLKTASLNNMGLVFGREYELES-----
CYP78A7 SRAIGFAPNGTYWRMLRRIASSTHLFAPRRILAHE--AGRQLDCAEMVKAVSVE--QNGAG----SVVLRKHLQLAALNMMGVSFGRRYDPLA-----
CYP77A4 KFTVNAAKYGPVWRSLLRRNMVQNMLSSIRLKEFG--KLRRQSAMDKLIERIKSEARDND-----GLIWWLKNARFAAFACILLEMCFGIEMDEET----
CYP77A6 TFTVNASAYGPVWRSLLRRNMVQNMLSSIRLKEFG--SLRRQSAMDKLIERIKSEARDND-----GLVWVLRNARFAAFACILLEMCFGIEMDEES-----
CYP77A7 EITVHSAMYGPVWRSLLRRNMVQNMLSSNRLKEFG--SVRRQSAMDKLIERIKSEARDND-----GLVWVLRNARFAAFACILLDICFVEMEEES-----
CYP77A9 DITVHSAMYGPVWRSLLRRNMVQNMLCSNRLKEFG--SIRKSAIDKLVKIKSEAKEND-----GLVWVLRNARFAAFACILLDICFVEMEEES-----
CYP77B1 KCAINSAEYGLWRTLRRNFVTELVTAAPRVKQCS--WIRSWAMQNHMKRIKTENVEK-----GFVEVMSQCRLTICSLICLFCGAKISEEK-----
CYP89A4 QHNISSSLYGATWRLRRNLTSEILHPSRVRSYS--HARRWVLEILFDRFGKSRGEE-----PIVVVDHLHYAMFALLVLMCFGDKLDEKQ-----
CYP89A5 QHNISSCLYGATWRLRRNLTSEILHPSRVRSYS--HARRWVLEILFDRFGKSRGEE-----PIVVVDHLHYAMFALLVLMCFGDKLDEKQ-----
CYP89A6 QHNISSCLYGATWRLRRNLTSEILHPSRVRSYS--HARRWVLEILFDRFGKSRGEE-----PIVVVDHLHYAMFALLVLMCFGDKLDEKQ-----
CYP89A7 QHTITSCLYGVTWRLRRNIT-EILHPSRMKSYS--HARRWVLEILFDRFRKSGGEE-----PIVVVDHLHYAMFALLVLMCFGDKLDEKQ-----
CYP89A2 EHNISSGSYGATWRLRRNITSEILHPSRVRSYS--HARRWVLEILFERFRNHGGEE-----PIVLIHHLHYAMFALLVLMCFGDKLDEKQ-----
CYP89A3 QHTISSGSYGATWRLRRNLTSEILHPSRVKSYS--NARRSVLENLCSRIRNHGEEAK-----PIVVVDHLRYAMFALLVLMCFGDKLDEEQ-----
CYP89A9 QHDIHSSVYGLWRTLRRNLTSEILQPSRVKAHA--PSRKKWSLEILVDLFETEQRKQ-----HISDALDHLRHAMFYLLALMCFGEKLRKEE-----
CYP704A1 GHGIFAVD-GEKWQQRKLVSEFESTRVLNRFYSVFRSASKLVGFIAEFALSG-----KSFDFQDMLMKCTLDSIFKVGFG--VELGCLDGF---
CYP704A2 GHGIFAVD-GEKWRQQRKLVSEFESTRVLNRFYSCSVFRNASKLVGFVSEFALSG-----KAFDAQDLMRCTLDSIFKVGFG--VELKCLDGF---
CYP704B1 GDGIFNSD-GELWRKQRKTASFEFASKNLRDFSTVVFKEYSLKLFITLISQASFKE-----QQVDMQELLMRMTLDSICKVGF--VEIGTLAPE---
CYP86A2 GQGIFNSD-GDTWLFQRKTAALEFTTRTLRQAMGRWVNRGIKLRFPCILETAQNN-----YEPVDLQDLILRLTFDNICGLAFG--KDTRTCAPG---
CYP86A4 GQGIFNSD-GDTWLFQRKTAALEFTTRTLRQAMGRWVNRGIKLRFPCILATAQDN-----AEPVDLQDLILRLTFDNICGLAFG--KDTRTCAPG---
CYP86A8 GQGIFNSD-GDTWLFQRKTAALEFTTRTLRQAMARWVNRGIAKLRFLPILENARLG-----SEPIDLQDILLRLTFDNICGLTFG--KDPRTCAPG---
CYP86A7 GDGIFNSD-GDTWRFQRKTAALEFTTRTLRQAMARWVNRGIAKLRFLPILESARSR-----AEPIDLQDVLLRLTFDNICGLTFG--KDPRTLSPE---
CYP86A1 GQGIFNSD-GDTWLMQRKTAALEFTTRTLRQAMARWVNTIKNRLWILDRVQN-----NKPVDLQDLFLRLTFDNICGLTFG--KDPRTLSLD---
CYP86B1 GDGIFNAD-DETWQRQRKTASIEFHSAKFRQLTTSQSLFELVHKRLLPVLETSSVKS-----SSPIDLQDVLLRLTFDNVCMIAFG--VDPGCLGPD---
CYP86B2 GDGIFNTD-DGTWQRQRKAASVEFHSAKFRQLTSQSLHELHVNRLPVLETSGK-----IDLQDILLRLTFDNVCMIAFG--VDPGCLSPK---
CYP86C3 EDGIFNAD-AESWKEQRRIIITEMHSTRFVEHSFQTTQDLVRKLLKVMESFARS-----QEAFDLQDVLLRLTFDNICIAAGL--DDPGTLDSDD---
CYP86C4 EEGIFNAD-DDSWKEQRRIIITEMHSTGFVEHSFQTTQHLVRKLLKVMESFAKS-----QEAFDLQDVFLRLTFDIIICLAGL--ADPETLAVD---
CYP86C2 EDGIFNAD-DESWKEQRRIIITEMHSTRFVDHSFQTTTRDLIERKLLKVMESFSKS-----QEAFDLQEIILLRLTFDNICIAAGL--DDPGTLDDD---
CYP86C1 EDGIFNAD-DELWKEERRVAKTEMHSSRFLEHTFTTMRDLVDQKLVPLMENLSTS-----KRVFDLQDILLRFTFDNICISAFG--VYPGSLETG---
CYP94B1 GGGIFNSD-GELWSSQRKLAASHEFTMRSLREFTFEILREEVQNRLIPVLSAVDC-----GETVDFQEVLRKFAFDVVKVSLG--WDPDCLDLT---
    
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CYP94B3  GGGIFNVD-GHSWSSQRKSLASHEFSTRSLRSFAFEVLKDEVENRLVPVLSTAADV-----GTTVDLQDVLKRFADFVVCVSLG-WDPDCLDLT---
CYP94B2  GNGIFNVD-GNLWLKQRRRLATHDFTPKSLREY-VTVLRNEVEKELLAFLNAAAED-----SQPFDLQELLRRFTFNIVCIVFLG-IDRCTLNPS---
CYP94C1  GRGIFNSD-GDTWRFQRKSLASLELGSVSVRVFAHEIVKTEIETRLLPILTSFSDNP-----GSVLDLQDVFRRFSFDTISKLSFG-FDPDCLRLP---
CYP94D1  GHGIFNSD-GDMWVKQRKTASYEFSTKSLRDFVMSNVTVEINTRLPVPLVEAATT-----GKLIDLQDILERFAFDNICKLAFN-VDCACLGHG---
CYP94D2  GRGIFNSD-GEMWVKQRKTASYEFSTKSLRDFVMSNVTVEINTRLPVPLAEAATN-----GKLIDLQDILERFAFDNICKLAFN-VDSACLGDG---
CYP96A1  GDGIFNAD-SELWKDLRKSQAQSMTHQDFQRFTLRTIMSKLEKGLVPLLDHYVAEK-----KQVVDLQDVFQRFDFDTSFVLATG-VDPGCLSTE---
CYP96A9  GDGIFNAD-SDLWKDLRKSQSMNHQDFQRFLSATSLSKLEKGLVPLLDHVAKK-----KLVVDLQDVFQRFDFDTSFVLATG-YDPGCLSVE---
CYP96A10 GDGIFNAD-SELWKDLRKSQAQSMNMNPEFQKFSLATSLSKLEKGLVPLLDHVAKK-----KLVVDLQDVFQRFDFDTSFVLATG-YDPGCLSVE---
CYP96A5  GNGIFTAD-SKLWEDMRKSALVVLHQGFQSFSLRTITCKIKNGLVPVLDHFVAAE-----NTVFDLQDVFQRFADFVTLTLVTG-CDSSSLSIE---
CYP96A11 GDGIITTD-SELWKNLRKSYQEMLHHQAFQSFSLSTRSKLKDGLVPLLNHFVAAE-----GTTVDLQDVLGRFTFDLILILITG-SDPRSLSIE---
CYP96A2  GDSFITTD-SELWKNMRKSYQAMLHSQEFQRFMSMTMTSKLKYGLVPLLNHFVAAE-----GTTDLQSVFGRFTFDLIFILVTG-SDPRSLSIE---
CYP96A12 GEMIFSSD-SELWKNQRKAAQFMLNHQGFQKLSLSTRSKLKDGLVPLFNQCCEE-----EKVVDLQDVFQRFDFDTSFVLATG-FDPKLSIE---
CYP96A13 GDGILTDDSELWKNLKKASLVMLNHQGFQSLSMSTT-EVLKDGVLPLFNHFVAAE-----GTVVDLQDVFQRFDFDTSFVLATG-SADPRSLSIE---
CYP96A7  GDGIINTD-AELWRDWRNASQLIFNHQRYQNFASSTTKTKVNDGLVPLFNHFVAAE-----EIVVDLEDVFQRFMYDITFFIFITG-TDPRSLSIE---
CYP96A8  GDGIINTD-AELWRDWRNASQLIFNHQRYQNFASSTTKTKVNDGLVPLFNHFVAAE-----EIVVDLEDVFQRFMYDITFFIFITG-TDPRSLSIE---
CYP96A3  GDSIFNVD-SGLWEDMRNSSHAIQNFQDFQMFVSTSVKLRQGLVPILENAADK-----NILVDLQDLQRFQFLFDTSLILMTG-YDPKCLSVE---
CYP96A4  GDGIFNVD-SGLWEDMRNSSHAIQNFQDFQSFVSTSVSKLSQGLVPIILDNAVEK-----HILVDLQDLQRFQFLFDTSSITLMAG-YDPKLSVE---
CYP96A15 GEGILTVD-FELWEEMRKSNAHLFHNQDFIELSVSSNKSKLEKGLVPLFNHFVAAE-----NIIELQDVFQRFDFDTSFVLATG-YDPMSLSIE---
CYP7A3   GKLIPAD-GEIWRRRRAIVPALHQKYVAAMIS-LFGEASDRLCQKLD-----AAALK-GEVEMESLFSRLTLDIIGKAVFN-YDFDSLNTD---
CYP97C1  GSGFAIAE-GPLWTARRRAVPSLHRRYL SVIVERVFCCKAERLVEKLD-----PYAED-GSAVNMEAKFSQMTLDVIGLSLFN-YNFDSLTTD---
CYP97B3  GKGLIPAD-LDTWKLRRRAITPAFHKLYLEAMVK-VFSDCSKMLKSEKLI REKETSSGED-TIELDLEAEFSSALDIIGLSVFN-YDFGSVTKE---
CYP709B2 G-NGLIFVNGLDWVRHRRILNPAFMSDK--LKLMTQLMVDCTFRMFLEWKKQRNGVE---TE--QFVLISREFKRLTADIIATAAFG-----SSYAE---
CYP709B3 G-KGLSFIQGGDDWIRHRRILNPAFMSDR--LKAMTQPMGDCTLRIFEEWRKQRRNGE---VL--IKIEISKEFHKL TADIIATTAFFG-----SSYAE---
CYP709B1 GSKGLVFIEGADWVRHRRILNPAFSDIR--LKIMYTMVMDCTLKMLEEWKREKSTKEETEHPK--IKKEMNEEFQRLTADIIATSFAFG-----SSYVE---
CYP735A1 IGRGLLMANGDWHHQRHLAQAFTGER--LKYARHMVECTSKLVERLRKEVGEGA-----NEVEIGEEMHKL TADIIISRTKFG-----SSFKE---
CYP735A2 IGRGLLMANGEAWHHQRHMAAQAFTDR--LKYAKHMVECTKMAERLRKEVGE-----EVEIGEEMRRL TADIIISRTKFG-----SSCDK---
CYP72A11 AT-GVLSYDGDKWAKHRRRIINPAFHLEK--IKNMVPAFHQSCSEIVCKWDKLVSDKESSE--CEVDVWPGLVSMTADVISRTAFG-----SSCVE---
CYP72A13 AA-GLVSYDGDKWTKHRRRIINPAFHLEK--IKNMVPAFHQSCSEIVGEWDKLVTDKQSS--CEVDIWPWLVSMTADVISRTAFG-----SSYKE---
CYP72A15 AK-GLANYDGDKWAKHRRRIINPAFHIEK--IKNMVPAFHQSCREVVGEWDQLVSDKGSS--CEVDVWPGLVSMTADVISRTAFG-----SSYKE---
CYP72A10 AT-GIINYDGDKWAKHRRRIINPAFHIEK--IKNMVPAFHQSCSDVVGESDKLVSDKGSS--SCEVDVWPWLVSMTGDVISRTAFG-----SSYKE---
CYP72A14 GT-GLVSYDGDKWAQHRRRIINPAFHLEK--IKNMVVFHESCSDELVGEWDKLVSDKGSS--CEVDVWPGLTSMADVISRTAFG-----SSYRE---
CYP72A9  TD-GLANADGDKWVKHRKIINPAFHFEK--IKNMVPTFYKSCIEVMEWEKLVSDKGSS--CELDVWPWIVNMTGDVISRTAFG-----SSYKE---
CYP72A7  AG-GLASYKGDKWASHRRRIINPAFHLEK--IKNMIPAFYHCCSEVVQWEKLFDTKESP--LEVVDVWPWLVNMTADVISHTAFG-----SSYKE---
CYP72A8  AT-GVALYEGEKWSKHRKIINPSFHLEK--LKIMIPAFYESCSEMISKWEKLVTEQGSS--NEIDVWPYLGDLTSDVISRTAFG-----SSYEE---
CYP72C1  LS-GLLNHEGPKWSKHSILNPAFRIDN--LKSILPAFNSSCKEMLEEWERLASAKGTM--ELDSWTHCHDLTRNMLARASFG-----DSYKD---
CYP734A1 EGDGLLSLKGEKWAHHRKIISPTFHMEN--LKLVPVVLKSVTDMVMDKWSDKLSENVE--EVDVYEFQILTEDVISRTAFG-----SSYED---
CYP721A1 YAQGLPLRGDQWAFHRRRIAKQAFTMEK--LKRWPQMVSTTMMLEKWKEDMRNGEEI--ELEVHKEMHNSAEMLSRTAFG-----NSVEE---
CYP715A1 FGTGLVMVEGDDWTRHRRHIITPAFAPLN--LKVMTNMVSVSNMLDRWGIQINSNPE--FDMESEIIGTAGEIIAKTSFG-----VTGEN---
CYP714A1 LGRGVITSNGPHWAHQRRRIIAPEFFLD--KVKGMVGLVVESAMPMLSKWEEMMKREGEMV--CDIIVDEDLRAASADVISRACFG-----SSFSK---
CYP714A2 LGNGIITSNGPHWAHQRRRIIAYEFTHDKIKVKGMVGLMVESAMPMLNKWEEMVKRGGEMG--CDIRVDEDLKDVSAVIAKACFG-----SSFSK---
CYP74A   -KDLFTGTYPSTELTGGYRILSYLDPSEPKHEKLNLLFLLKSSRNRIIFPEFQATYSELFDSLEKEAFPLRESGFRFRQRNRLLFLGSSFL-----
CYP74B2  -RDVLIIGDFRPSLGFYGGVVRGVYLDTTPEPKHAQIKGFAMETLKRSSKWWLQELRSNLNIFWGTIESEISKNGAASYIFPLQRCIFSFCLCASLAG-----
CYP73A5  GQDMVFTVYGEHWKMRRIIMTVPFNTKVVQQRN--EGWFEAASVVEDVKKNPDSAT--KGIVLRKRLQLMMYNNMFRIMFDRRFESEDD-----
CYP722A1 ----ELVGRSLLCAPQHKKILRSRLINLFS----KRSTALMVRHFHDLDVVDALGGWEHRGTVLLTDLQLITFKAMCKMLVLSLEKEEELG-----
CYP701A3 KSMVATSDYDDFHKLVKRCLLNGLLGANAQKRKR--HYRDALEIENVSSKLAHARDHP----QEPVNFRAIFEHFELFGVALKQAFGKDVESIYVKELG---
CYP711A1 ----PLHKKGLFFTRDKRWSKMRNTILSLYQPSHLTSLIPTMHSFITTSATHNLDKSP-----RDIVFSNLFLKLTDTIIGQAAFGVDFGLSGKKP---
consensus 201.....210.....220.....230.....240.....250.....260.....270.....280.....290.....
    
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CYP51A1 -----LFD DVAPL FHDLDKGMQPISVIFPKLPIPAHNCRDRARGKIAKIFSNIIATRKRSGDKSEN-----DMLQCFIDS KYKD---
CYP51A2 -----LFDVVSALFHDLDNGMLPISVLPFYPYLPPIAHRRRDRAREKLSEIFAKIIGSRKRSG-KTEN-----DMLQCFIES KYKD---
CYP710A1 -----AKNRFRTDYNLFNLGSMALPIDLPGFAFGARRAVKRLGETLGCAGKSKARMAAG-EEPA-----CLIDFWMQATVAE---
CYP710A2 -----ARNTFCTDYNLFNLGSMALPINLPGFAFNKARRAVMNL EKTLSVCAGKSKKR MATG-EEPT-----CLIDFWMHAFVTEIES
CYP710A3 -----VKNTIRDDYNVFNPGTMALPIDLPGFTTFGEARRAVSRLVNTMSLCVRKSKEKMAAG-ENPT-----CLVDFWTHSIVAE---
CYP710A4 -----VKKTICDDYSLLTLGTM AIPIDLPGFTFGEARQAVSRLVNTMSV CVGKSKAKMAAG-ENPT-----CLVDFWTHSIIIE---
CYP702A1 -----AAKELALCWRCFSPSGWFRFPLNLPGTGVYKMMK-ARKRMLHLLKETILK KRASGE-----ELGEFFKIIF---EG
CYP702A2 -----AAKELALCWRYFQSGWFRFFLNLPGTGVYKMMK-ARKRMMKLLRKT VLT KRASGE-----ELGEFFNIIFGEMEG
CYP702A8 -----AAKKLALCWRYFPSGWFR L PFNLPGIGVYNNMK-ARKRMKTLLKEEVLK KREAGE-----EFGFESKIIFGEKEG
CYP702A5 -----AAKELTLCWTFPPRDWFRFAWNFPGTGVYRIVK-ARNRMMKV IKETVVKKRASGK-----KLGFEFFETIFGD TES
CYP702A6 -----AAKELTLCWTFPPREWF GFAWNIPGTGVYRMVKVARNRMMKVLK ETV LK KRASGE-----ELGDFFKTIFGDTER
CYP702A3 -----AVKELGLCWSA FRTSWFQFSYNI PGTTVYRLVK-ARRKAAKLLKALILK KSKASKE-----GLGDFLDIIFDEMEK
CYP708A2 -----TQATLVDNIMALGSEWFQSP LKLTLLISYKVF IARRYALQVIKDV FTRRKASRE-----MCGDFLDTMVEEGEK
CYP708A3 -----TQSKLIDNLNAFNLDWFKSFLRLSTWKAVTKALKSREEAIQVMKDV LMMRKETRE-----KQEDFLNTLLEELEK
CYP708A4 -----TQAKLMGIFKAFTFDWFR TSYLISAGKGLYNTLWACREGMREIKDIY TMRKTSEE-----KYDDFLNTAIEESEK
CYP708A1 -----TKSKLIESFRDFS FDLVRS PFDPSFWNALYNGLMVRSARSNMV MMLKRMFKERREEATSDD-----SKYDFMETMIYEVEK
CYP87A2 -----SSENLRANFVAFIQGLISFPFDIPGT-AYHKCLQGRAKAMKMLRNMLQ ERRENPRK-----NPSDFFDYVIEEIQK
CYP90A1 -----WSESLRKEYLLVIEGFFSLPLPLFSTTYRKAIQARRKVAEALT VVVMKR---REEEEEGA-----ERKKDMLAALLAADDG
CYP90B1 -----ETEQLKEYVTFMKGVSAPLNLPGTAYHKALQSRATILKFIERKMEERKLDI KEEDQEEE-----EVKTEDEAEMSKSDHV
CYP90C1 -----DMNILKLEFEFEEKLICIPIKFPGTRLYKSLKAKERLIKVMKVV EERQVAMTTTSP-----ANDVVDVLLRDGGDS
CYP90D1 -----DLEELKREFENFISGLMSL PINFPGTQLHRS LQAKKNMVQVERIIEGKIRKTKNKEEDDV-----IAKDVVDVLLKDSSEH
CYP724A1 -----ARLYVLQDFLSYMKGFISLPIPLPGTYTNAIKARKRLSARVMGMIKEREREEEDMNNAIR-----EEDFLDSIISNEDLN-
CYP720A1 -----EVDMSQLFSDFDV DGLSVPIDLPGFTYNKAMKARKEIRKINKTIEKRLQNKAA SDTAGN-----GVLGRLLFEESLPNES
CYP85A1 -----FVEEFKTAFFKLVVGTLSVPIDLPGTNYRCGIQARNNIDRLREL MQERRDSGETFTDMLG-----YLMKKEGNRYPLTDEE
CYP85A2 -----EVEEYRTEFFKLVVGTLSVPIDLPGTNYRSGVQARNNIDRLL TELMQERKESGETFTDMLG-----YLMKKEGNRYLLTDKE
CYP707A1 -----YREDLKRCYYILEKGYNSMPVNLPGTLFHKSMKARKELSQLARILSERRQNG-----SSHNDLIGSFMGDKE-
CYP707A3 -----YREDLKRCYYILEKGYNSMPINLPGTLFHKSMKARKELAQILANILSKRRQNP-----SSHTDLLGSFMEDKA-
CYP707A2 -----TIDVIKLLYQRLERGYNSMPLDLPGTLFHKSMKARIELSEELRKVIEKRRENG-----REEGLLGVLLGAKDQ
CYP707A4 -----YKEILKHNYNIVDKGYNSFPMSLPGTSYHKALMARKQLKTIVSEIICERREKR-----ALQTDFLGHLLNFKNE
CYP88A3 -----VMDALEREY TALNYGVRAMAVNIPGFAYHRALKARKTLVA AFQSIVTERRNQRKQNIL-----SNKKDMLDNLLNVKDE
CYP88A4 -----VMSLEREYTNLYGVRAMGINLPGFAYHRALKARKLLVA AFQSIVTNRNQRKQNIS-----SNRKDMLDNLDIVKDE
CYP716A1 -----RVRQLEE QFNVAVGIFSIPI DLPGTRFNRAIKASRLLSKEVSAI VRRRKEELKAGKA-----LEEHDILSHMLMN---
CYP716A2 -----RVRKLEEPFTTVM TGVSIPIDLPGTRFNRAIKASRLLSKEVSTIIRQRKEELKAGKV-----SVEQDILSHMLMN---
CYP718 -----G---MLEVFERVLEGVFALPVEFPCSKFARAKKARLEIETFLVGVK VREKRREMEKEGA-----EKPNTTIFSR LVEELI
CYP71A12 -ETARDLKKRVRQIMELLGEPPIGDYVP---ALAWIDRINGFNARIKEVSQGFSDLMDKV VQEHLE-----AGNH--KEDFVDILLSIESEKSI
CYP71A13 -ETARDLKKRVRQIMELLGEPPIGEYVP---ILAWIDRINGFNANKI KEVSRGFS DLMDKV VQEHLE-----ASND--KADFVDILLSIEKD KNS
CYP71A18 -ETAGLKKRVRQIMELLREFPIGDYVP---ALAWIDRINGFNSKIVE SRAVSDLM EKV VQEHLE-----AGEH--KADFVNILLSIEKEKN
CYP71A14 -ESMSDFKIQMRKITELVGGFPVGEYIP---CLAWIDKLRGVDEKAEVSKAFGLDMEKVLQEHLD-----ATDKP-TLDFVDVLLSLERHERN
CYP71A15 -ASMSDFKNQVRKITELVGGFPVSEYIP---CLAWIDQIRGLYNRAEEVSKIFGDLMDKVVQEHLD-----ATNKP-TKDFVDILLSFERQSKD
CYP71A28 -ENTSDFENQLRKVMEL LGAFPVGDYIP---GLAWIDKVRGLDRKMEEVSKTFVEFLERVVQEHVD-----EGENKETFD FVDILL-IQLEKTN
CYP71A19 -EDGIDVENIVRAFSALVGEFPPIGEYIP---SLSWIDKIRGQDHKMEEVDKRFDEFLE R VVKEHED-----ANKDTRS-DLVDTLTIQSD---
CYP71A20 -KDGIDVENIVRTFAALLGFEFPVGEYIP---SLSWIDIRGLDHKMEVVDKRFDEFLE R VVKEHEE-----ADKETRS-DLVDKLT TIQSDKTG
CYP71A16 -EGTIDVKTITKSF LDVAVGLSPVGEYIP---SLAWIGKITGSDGKLEKITKQFGDFIEKVLQEHED-----TTADKETPDFVMDLTIQRDETA
CYP71A27 -EGGIDIKNLVMTSSEFFGKFFFGDFIP---SLAWIDWISGIDDKM D INNKLDCFLDSMVQEHVD-----ADHKEPS-DFIDMLLLIQKD KTK
CYP71A21 --GETDSKELMKRLMMLMG FSVGYTPV---WLGWIDWISGLDGQLNKTGN DLDEFLEKVVQDHVD-----GDG--QRTDFVDVLLRIQREKSI
CYP71A22 --DETDFKELMKRLTKLLGEFCVGYTPV---WLA WIDWISGLDGQLKKTGN DLDEFLEKVVQDHED-----GDA--QRTDFVDVLLRIQREKSV
CYP71A24 --GKTDFKDLMKRLTRLLGEFSVGSYVS---WLA WIDWIRGLDGQLIKISNDLDEFLE R VVQDHVD-----GDG--HKND FVDVLLTIEREKSV
CYP71A26 --GETDFKELMERLNKLLGTF SVGSYVP---WLA WIDWIRGLDCQLEKTANDVDKFFERVVQDHVD-----GNR--DMTDFVDVLLAIQRDKTV
CYP71A25 --GETDFKLLTDRLSELLGTFSIGSFVP---WLA WVDWIRGWDAQLDKMGKLDLDFFEKVVQDHED-----GDRR-DGTDLIDALLRVKREKSP
CYP71A23 --VGTDFKELIDRLMRQLGTF TIGSYVP---WLA WTDWVSGLEARLEK TANDFDKLLERIVQDHED-----GDG--DKTDFVDVLLAAQRDKSF
    
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CYP71B26 VLNSDRFNKLVDRDTFEMLGFSFSASDFIP--YVGWIIDKFNGLQGRKKSFRLDAFYEQIFDLHKE-----EKEVGSED-LVDVLRLEKEEIV
CYP71B33 VLSNDSFNKLIREFEMLGFSFSASDFIP--YIGWIIDRFTGLQGRREKSVXDLDAFYEQIIDLHKE-----EKEVGSED-FVDLRLKLEKEETV
CYP71B34 VLNSERFNNIVREALMLGFSFSASDFIP--YVGRIIDLLTGLQGRRERSMRDLDAFYEQMFDLHKQ-----KKEEGSED-FVDLRLLEKEEAV
CYP71B35 VLNSDRFNKIVREALMLGFSFAADFIP--YVGWIIDVLTGLQGRRERSKRDLNAFFEQMFIDLHKE-----GKKEGNED-FVDLRLLEKEEAV
CYP71B36 VLNSDRFEKLIHDTYFLGFSFSASDYFP--NGGWIIDWLTGLHGQRERSVRALDAFYEQMFDLHKQ-----GNKEGVED-FVDLRLLEKEEETV
CYP71B37 VLNSDNFDKLIHDAFLFLGFSFSASDYFP--NVGWIIDWLTGLQGRERSVRGLDAFYEQMFDLHKQ-----GNKEGVED-FVDLRLKLEKEETV
CYP71B9 VLNNDGFDKLIHDAFLFLGFSFSANFFP--NGGWIIDWLTGLQRRERSVKDLVDFYQMFIDLHKQ-----ENKQGVED-FVDLRLKLEKEETV
CYP71B10 VLNNDKFDQLVHEALEMLGFSFSASDFP--YVGWIVDWFTGLHARRERSVRDLDAFYEQMIDLHLQ-----KNRESEDDFVDLRLLEKEEAV
CYP71B11 KLEN-LYEEVIQGTMEVVGSAADYFP--IIGRIIDRITGLHSHKCEKIFKAMDAFFDQSIKHHLE-----D--ESIKDDIIDLRLKMERGEIE
CYP71B12 KLEN-TYEEVIQGTVELVGSFAADYFP--VVGRIIDRITGLHSHKCEKLFKAMDAFFDQSIKHHLE-----D--EIKDDIIDLRLKMERGETT
CYP71B14 KLAN-TYEEVIQGTMEVVGSAADYFP--IIGRIIDRITGLHSHKCEKVFKEMSFFDQSIKHHLE-----D--TNIKDDIIGLRLKMEKGETG
CYP71B13 KLEN-TYEEVIHGTMEVLGSAADYFP--VIGGIIDRITGLHSHKCEKVFQGTDSFFDHCIIKHHLE-----D--GGSKDDIVDLRLKVERGEIG
CYP71B6 GMDNETFLELFTANRVIGKFAADYFP--GFGWILDRISGLDSSRRKSFQDLTFYQKAIVDHRE-----KKTEDREDLIDVRLKLSQSETK
CYP71B28 FVDEDSIDDLVHKSEDVIRNSIFSDFP--GLMGRILIEWIFSERKRLNRLYSEVDTFYQNILDDHLK-----PGR---ESSDIIDVMDIMMKKQEK
CYP71B29 FIDENSISDLVDKSEILEMTSMFSDFP--GGIGRFIDWISGQNKRFDNVFSDLDTFFQNILDYHLK-----PGRKVADSSDIIDVVMINMIKKQEK
CYP71B15 FFEADRVDLVLKAEAVIRETVFSDFP--GRIGRFIDCISGQNRRLKNNFSVVDTFYQNVLNEHLK-----PGR---ESSTIVDLMDIMMKKQEN
CYP71B23 FIDEDSMEDLASRSEKIQAFAFNFFP--G--GWILDKITGQSKSLNEIFADLDGFFNQVLDDHLK-----PGRKVLETPDVVDVMDIMMNKQSQ
CYP71B7 FVDEDNVADLVNKFEMLVAGVAFTDFP--GV--GWLVDRIISGQNKTLNNVFFELDTFFQNVLDHHLK-----PGRQVSNPDVVDVMDLMKKQEK
CYP71B16 FIDEDKIDELIFETETAQASFTCSDFPFIAGLGLWADWISGKRWLNNVFFKLDALFQRVIDDHSD-----PGRW--KDHKDIVDVMIDVMHKQGK
CYP71B17 FTDTDKIDELVFETETAQASFTCSDFPFIAGLGLWVWISGQHKRLNDVFLKLDALFQHVIDDHNS-----PGRS--KDHKDIVDVMIDVMHKQGK
CYP71B18 FIDKDKVDELVFEAETAQASFTCSDFPFIAGLGLWVDCISGQHKRLKDVFFKLDALFQXXXXXXXXX-----XXXX-XXXXXXXXXXMDVMQKQRK
CYP71B19 FIDKEKIEELVFEAETALASFTCSDFPFAVLGWLVDWFSGQHKRLNDVFKLDALFQHVIDDHLN-----PGRS--KEHEDIIDSMIDVTHKQGE
CYP71B20 FIDKEKIEELVFEAETALASFTCSDFPFAVLGWLVDWFSGQHKRLNDVFKLDALFQHVIDDHLN-----PGRS--KEHEDIIDSMIDATHKEGK
CYP71B2 VIDQDRIEELVTEAEALGFTTFSDFFP--GGLGRFVDWLFRHKKINKVFKELDAFYQHVIDDHLK-----PEGR--KNQ--DIVTLIDMIDKQED
CYP71B27 IIDQEGIEELVTAATTAIGSFTFSDFP--SGLGRFLDCLFRTQTNINKVSEKLDALFYQHVIDDHLK-----PSTL--DSSGDIVALMDMIKKKGH
CYP71B21 FVDMDKVEELVLESETNLGSAFIDFFPAG--LGWAIDRISGQHSRLHKAFAFLSNFFQHVIDDHLK-----PWQS--EDHSDIVGVMIDMINKESK
CYP71B22 FVDMDKVEDLVLESETNLGSAFTDFFPAG--LGWVIDRISGQHSRLHKAFAFLSNFFQHVIDDHLK-----PGQS--QDHSDIIGVMIDMINKESK
CYP71B38 FVDMKVEELVLESEANLGTFAFADFFPAG--GWLIDRISGQHSRVNKAFAFLSNFFQHVIDDHLK-----TGQP--QDHSDIVSVMIDMINKPTK
CYP71B5 FVDMETVEELVLESETNLGSLAFADFLPA--GWIIDRISGQHSVMKAFSKLTNFFELVIDDHLK-----SGKI--EDHSDIISVMIDMINKPTE
CYP71B31 YINMDKLEELVQETETNVCSLAFTDFPFG--LGWLVDRIISGQHSRMNIAFSKLTFFFDVIDELLK-----TKQL--DDHSDLVTAMIDVINRPRK
CYP71B8 FIDMDRLEELVQESETNVFSFAFTDFFPTG--LGWLVDRIISGQHSRIEKAFAFLSNFFQHVIDEELK-----IGQS--QDHSNLVSSMIDMINRSTE
CYP71B32 FMDMDRLEELVLEAETNGCILALTDLPTG--LGWLVDRIISGRHSRMNKAFAFLSNFFQHVIDEQLK-----IGQL--QDHSNLVSAMIDMIIRPSK
CYP71B24 HVNAEKIEDLMFEVQ--KLGALSNSDLFP--GGLGWVDFVSGHNKLLHKVFVEVDLTLNHIIDDHLKN-----SIEEITHDRPDIIDSLIDMIRKQEQ
CYP71B3 HVNKEKIEELMFEVQ--KVGSLSSSDIFP--AGVGFMDFVSGRHKTLHKVFVEVDLTLNHIIDGHLKN-----PEDKTNQDRPDIIDSLIETIYKQEQ
CYP71B25 HFSEEKIEELVFEAQ--KSLTFKFSDFLPFPLGLWFIGFVSGQHKGLHKVFIEDNFLNHMIDDHOK-----QNQPQDRSDIVGSLIDMIHNQEQ
CYP71B4 HVDQESIKELMFESL--SNMTRFSDFFPTAGLWFIGFVSGQHKRLYNVFNQVDTFYQHVIDDHS-----KKATQDRPDMVDATIDMIDNEQQ
CYP83A1 GEEMKRFIKILYGTQSVLKGIFSDFFP--YCGFLDDLGLTAYMKECFERQDTYIQEVNETLD-----PKRVKPETESMIDLMGIYKQPF
CYP83B1 GTEMKRFIDILYETQALLGTLFFSDLFP--YFGFLDNLTLGLSARLKAFAKELDTYLQELLDETLD-----PNRPKQETESFIDLMIQIYKQPF
CYP84A1 ----DEFIRILQEFKSLFGAFNVADFP--YFGWIDPQ--GINKRLVKARNLDGFIIDIDEHMKKKEN---QNAVDDGDVVDTDMVDLDAFYSEEAK
CYP84A4 -SRLDEFLEIIQEFKSLFGAFNVADYVPS--WLSWIDPQ--GINGRVEKARKSLDGFIESVIDDHLHKKKR---E---HDNVDEETDMVDLDAFYEEVVK
CYP705A1 -----EVERIMELTADLGALSQKFFVSKMFRKLEKLGISLFKTEIMVVSRRFSELVERILIEYE-----EKMDGHQ--GTQFMDALAAAYRDENT
CYP705A24 -----DGTKVSEYSIKLADLSQMFCVAQIFHKPLEKLGISLKKQIMDVSHKFELELLENIVVKYE-----EKMDNHQ--STEFMDALAAAYQDENA
CYP705A15 -----EAERVALATQLDGLTKKILLANMLRAGFKKLVSLFRKEMMDVSSRFDELLERILVEHE-----DKLDMHH--QGTDLVDALAAACRDNA
CYP705A4 -----RFRALATLDVLTCKLFFANMLRAWFKKLVVSLFKKETTIVSYRFDELLERILVEHE-----KKLDVHH--QRTDLMDALAAAYRDENA
CYP705A16 -----EAKIVRGLIAESFTLSKFFLAATLRLLEKLGISLFQKEIMGVSRRGFDELLERILREHE-----EKPD--EH--HDTDMMDALAAAYNDEKA
CYP705A19 -----EAERVRLIIESFYLTKKFFLAFTLRGLLEKLGISLFKKEIMGVSRRFDDLLERYLREHE-----EKPDNEH--QDTDMIDALAAAYRDEKA
CYP705A20 -----EAERVRLVTELDGLTKKVLVFNILRWPLEKLRISLFKKEIMVVSNSFDELLERILVERE-----KKPN--EH--QGTYLMDVLEAYEDEKA
CYP705A21 -----EAERVRLVTELDGLTKKVLVFNILRWPLEKLRISLFKKEIMCVSDFSDEVLERVLVEHE-----QKLD--DH--QDRDMMVLEAYGDENA
CYP705A23 -----EAERVRLVTESTALTKKIFMANVLHKPLKLGISLFKKEIMDVSNSFDELLERFLVEHE-----EKLN--ED--QDMMDMVLAAACRDNA
CYP705A28 -----EAERVRLVIESLALSPKIFLGMIFHKPLKLGISLQKDIKSVSPKFDELLERFLVEHE-----EKMEEDHYKANDMMDLLEAYGDENA
    
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CYP705A30 -----EAEKFRHLVIESMALTQIFFGMIFHKPLKKGISL FQKDILSLSRKFDELLLEKILFEHE-----EKKA EHN-QANDMDFLEAYGDENA
CYP705A32 -----EAERVRGLVIESTALTKQIFLGMIFDKPLKKGISL FQKDIKSVS-RFDELLEKILVEHE-----ERMGKHY-KANDMDFLEAYGDENA
CYP705A2  -----EAERIRGLVTESMALTKKIFLATIFHKPLKKGISL FKKEIMSVSRKFDELLLEKILVEHE-----EKME EHH-QGTDMMDFLEAYRDENA
CYP705A5  -----EAETVRGLVTESIFLTKKHFLGAMFHKPLKKGISL FAKELMNVSNRFDELLLEKILVEHE-----EKLQ EHH-QTSDMLDFLEAYGDENA
CYP705A8  -----EAERIRGLVTKSDALLKKFLLAAILRKPLKKGITL FKKVFMDISLKFDEVLEKILVENE-----ERLE ENQ-QGTDIMDFLEVYGDKTS
CYP705A9  -----EAERVRGLVTKTDALTKKFLIAGILRKPLQKIGISL FKKELMDASCKFNEVLEKILVEYK-----EKVE EHH-QGTDMMDFLEVYGDEKA
CYP705A18 -----EAERVRGLVGESYALVKKIFFAATLRRLLLEKLRIPL FRKEIMGVSDFDELLERIVEHE-----DKLEKEH-QVMDMDFLAAYRDENA
CYP705A6  -----EAEKIRGLVGESYALTKKMFASLLRKPLKLRISL FKEIMGVSDFDELLERILVEHE-----EKLHEEH-QGTDMMDFLAASGDENA
CYP705A33 -----EAERVRGLVAESYALAKKIFFASVLRLLKLRIP LFKKDIMDVSNRFNELLEKILVEHN-----EKLDEEH-KDTMDMDFLAAYADENA
CYP705A3  -----ESNRVRGLVDETYALSEKIFLAAILRRPLAKLRISL FKKEIMGVSDFDELLERILQERK-----ENLEEKNNEGMDMDFLEAYGDENA
CYP705A22 -----ETEKLRLGLVTESIGLMKKMFLAVLLRRQLQKLGISL FKKDIMGVSDFVLEKVLVEHR-----EKPEKDQ--GTVMDFLAAYGDENA
CYP705A12 -----VAERARELVNKSFAFSVKKLFFS-----NMFRKDIMGVSDFDEFLERILVEHE-----ENLEGDQ--DRDMDFLEAYRNEEA
CYP705A13 -----EAERVRGLVTETFLFKKFLTQVLRRLFEILRISPFKKE TLDVSRKFDELLERIVEHE-----EKTDYDH--GMDLDFLAAYRDGKA
CYP705A25 -----EAEQVRGLVTKSLSLTKKFLIASIVGQFSKLVGISL FGKEIMVSQRYDELLEKIIKEHE-----ENPNNGE--DRDMDFLEVCADDNA
CYP705A27 -----EAEKVEDLVIKSFSVLVKKVLIANTVGRLLKKGISL FKEIMEVSQRYDELLEKIIKEHE-----EDPNKKE--DRDMDFLEVCADDKA
CYP712A1  -----EAEI ERELVKKSL ELAGKISVGDVLG-PLKVMDFSGNGKLVAVMEKYDLLVERIMKERE-----AKAKKKGTRKDILDLLETYRDPTA
CYP712A2  -----IPKEIRKIVSDIMACATRFGMELFG-PLRDLDFGNGKLRSSIWRYDELVEKILKEYEN-----DKSNEEEEKDKDIVDILDTYNDPKA
CYP93D1   ----EKSEEVIKMMVELNELAG-FFNVSETFWFLKRLDLQGLKRLKNARDKYDVIIRIMEEHES-----SKKNATG--ERNMLDLDIYEDKNA
CYP81D6   TEQDE-VAQVRHLMDEIVTSAGAGNAADYLPIMRWFTN--FEKRVKNLAIRIDKFLQSLVDEKR-----ADKEK--GTTMIDHLLSLQES
CYP81D7   TEQDE-VARRVTQLIDEIVYRAGVGNAAADYIPILRWITD--FEKGVKELASRVDFLQSLVDERR-----VHKQK--GNTMMDHLLSLQET
CYP81D11  TENDN-EAKHVRQLIAEVVSSGGAGNAADYFPILRYVTN--YEKHVKKLAGRVDFLQSLVNEKR-----VEKVK--GNTMIDHLLSLQET
CYP81D2   KEDDP-EAKRVRTLIAEAMSSSGPGNAADYIPILTWITY--SETRIKKLAGRLDFLQGLVDEKR-----EGKEKK--ENTMVDHLLCLQET
CYP81D3   AEDDP-EAKRVRELIAEGMG-CGAGNTADYLPILTWITG--SEKRIKKIASRLDFLQGLVDERR-----EGKEKR--QNTMVDHLLC-QET
CYP81D8   VEDDP-EAKRVRLIADVVACAGNAV DYLPVLRVSD--YETRVKKLAGRLDFLQGLVDEKR-----EAEK--GNTMIDHLLTLQES
CYP81D4   -EDND-DAKLVKNLVSEAVTSAGAGNPIDYLSILRWVSS--YEKRIKNLGNRFDTFLQGLVDEKR-----AEKEK--GETMIDHLLALQDI
CYP81D5   TEDND-EAKLVRELIAEIMA-AGSGNLADYLP SINWVTN--FENQTKILGNRLDRVLRQGLVDEKR-----AEKEK--GQTLIDHLLSFQET
CYP81D1   TTDEE-EAKRVRLVADVGANTSSGNAV DYVPILRLFSS--YENRVKKLGEETDKFLQGLIDDKR-----GQKET--GTTMIDHLLVLQKS
CYP81F3   VHNEE-EANVFKKLVADINDCSGARHPGDYLPFMKMF GGS-FEKKVKALAEAMDEILQRLLEECK-----RDKDG--NTMVNHLLSLQQN
CYP81F4   VSDKE-EAELFKKLFITTFITNSGARHPGEYLPFMKIF GGS-FEKEVKA AAKVIDEMLQRLLECK-----SDKDG--NTMVNHLLSLQQD
CYP81F2   VHNKE-EANL FKKLVTDINDNSGASHPGDYLPILKVF GHG-YEKKVKALGEAMDAFLQRLLECR-----INGES--NTMVSHLLSLQLD
CYP81F1   VNNKE-EAELFKKLVYDIAMYSGANHSADYLPILKFGNK-FEKEVKAIGKSMDDILQRLLECR-----RDKEG--NTMVNHLLSLQQQ
CYP81H1   DGGKAGISLEFRELVAEILEL SAADNPADFLPALRWF DYKGLVKRAKIRGERMDSLQGLFDEHR-----ANKDRLEFKNTMIAHLLDSQEK
CYP81G1   REEDE-ETKEVRKLIREVDFDFAGVNYVDLPTLKLFDLDGYRKRKAKKLASKLDFKMQKLVDEHR-----KNRGKAELEKTMITRLLSLQES
CYP81K1   DPES--KRFLDDFKLRFSSMS-MNVCDYFPVLRWIGYKGLEKRVIDMQMRDEYLQRLIDDIR-----MKNIDS--SGSVVEKFLKLQES
CYP81K2   DSESE--TKFLDEFKSRFFSSLSMNVCDYFPVLRWIGYKGLENRVIEIQMRDEYLQRLIDDIR-----MKKFDS--TGSVVEKFLKLQES
CYP82C3   SSEHTEARQWRKGIAKFFHLVGI FTVSDAFPLGLWLDLQGHKEMKQTRRELDVILERWIENHRQQ-----RKVSGTKHNDSDFVDMVSLAEQKLS
CYP82C2   SPEDAEARQCRKGVANFFHLVGI FTVSDAFPLGLWDFDQGHKEMKQTRRELDVILERWIENHRQQ-----RKVSGTKHNDSDFVDMVSLAEQKFS
CYP82C4   SSEDTEAMQCKKAIKFFHLIGI FTVSDAFPTLSFFDLQGHKEMKQTRGSELDVILERWIENHRQQ-----RKFSGTKENDSDFIDVMMVSLAEQKLS
CYP82F1   PNCEVKEARRCGKLIREFLDYFALFLLSDVAPV LGFLDWK-TKRGMKRTAKGLDKVAEGWIEEHKKNK-----RSDHGRSEND--YLDILIKILGQDKIP
CYP82G1   --EVNSDEWRYKEALKHCEYLAVIPMIGDVIPWLGWLDFA-KNSQMKRLFELDSVNTKWLHEHLKK-----RS-RNEKDQERTIMDLLDILPED---
CYP76C2   NKSGV-FQDTVIGVMEAVGNPDAANFFPFLGFLDLQGNRKT LKACSERL FKVFRGFIDAKLAEKSLRDT-----NSKDVRERDFVDFDLTEGDEA
CYP76C4   KKSNE-FQDTVIGAMEAAGKPDAAANYFPFMGFLDLQGNRKAMRGLTERLFRVFRGFMDAKIAEKSLGN-----YSKDVSNRDFLDSLILNEGDEA
CYP76C1   KASINGVQDTVISVMDAAGT PDAANYFPFLRFLDLQGNVTKFKVCTERLVRVFRGFIDAKIAEKSSQN-----NPKDVSKNDFVNDLDYK-GDES
CYP76C5   KNSSA-FQEMVIGYMESIGNPDVSNFFPFMRLLDLQGN SKKMEYS GKLLQVREFYDARILENSSRI-----DEKDVSKDFLDALIDLQGGDES
CYP76C6   KNSSA-FQEMVIGYQESIGNPDLANFFPFMRFLDLQGN SKKMPRESSGRLQVREFYDARIVEKSSRS-----VEKDVSSKDFLDVLDLQGGDET
CYP76C3   NSSSYEFHNTVVHLTDIAGIPNVGDYFQYMRFLDLQGRKKA VLCIEKLF RVFQEFIDARLAKRFSRTEK-----EPKEASSIDMLDSLIDL TQQNEA
CYP76C7   SKTFHDFQNVVIRMMEISGKPNLADFFPFLGFLDLQGARKEARLLMHKLF RVFQGFIDTKRSS-----TSRNNNDMLDSLIDLIAHKKES
CYP76G1   KRGSE-FFYHTGKVMFAGKPNVADFFPLRFLDPQGI RRKTQFHVEKAFEIAGEFIRERTEVREREK-----SDEKTKDYLDVLEFRGGDGV
CYP75B1   DHKADEF RSMVTEMMALAGVFNIGDFVPSLDWLDLQGVAGKMK----RLHKRFDAFLSSILKEHEMNG-----QDQKHTDMLSTLISLKGTDLD
CYP706A1  -DERTSLGNELKTLISDISDIEGIQNYSDFFPLSRFDFQGLVKQMKGHVKKLDLLFDRVMESHVKM-----VGKKSE--EEEDFLQYLLRVKDD
    
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CYP706A2 -DERTSLGNELKTLISDISDIEGIQNYSDFFPLFSRFDLQGLVQKMGHVKKLLDLLFDRVMESHVKM-----VGKKSE--EEDFLQYLLLRVKDD
CYP706A3 -EEREVVGAEFLEVIEMNDLLLLVFNISDFFPVLSRFDLQGLAKRMRRPAQRMDQMFDRIIINQRLG-----MDRDSDDGRAVDLFDVLLKVKDE
CYP706A7 -EEREKVGAEFLELITEIIDVVGKPNVSDFFPVLSRFDLQGLAKRVRRAQRMDRMFDRISQRMG-----MDK-GSKGNGGDFLMVLLNAKDE
CYP706A5 -EDMESVGTTEFKGVISEITRLLGVPNVSDFFPMLARFDLQGLVKKMHLYARDLDAILDRAIEQMQRLL-----RSRDGDDGECKDFLOHLMKLRDQ
CYP706A6 -EEMESVGTTEFKGVISEITRLLGEPNVSDFFPRLARFDLQGLVKKMHVCARELDAILDRAIEQMQLL-----RTRDGDGGECKDFLOHLMKLRDQ
CYP706A4 -EEMESVGTTEFKGVISEITRLLSEPNVSDFFPWLARFDLQGLVKKMGVCARELDVLDRAIEQMQLL-----RGRDDD--EVKDFLQYLLMKLRDQ
CYP79B2 GGPTEVDVEHMEAMFEALGFTFAFCISDYLP-MLTGLDLNGHEKIMRESSAIMDKYHDPIDERIKMWR-----EGKRTQIEDFDIFISIKDE
CYP79B3 GGPTLEDIEHMDAMFEGLGFTFAFCISDYLP-MLTGLDLNGHEKIMRESSAIMDKYHDPIDERIKMWR-----EGKRTQIEDFDIFISIKDE
CYP79A2 SGPGLLEEIEHVESLFTVLTHLYAFALSDYVP-WLRFLDLEGHEKVVSNAMRNVSKYNDPFVDERLMQWR-----NGMKMEPODFLDMFIIAKDT
CYP79C1 GSLGLMEKEHFDAIFAALDCFFSFYVADYYP-FLRGWNLQGEAEELREAVDVIARYNKMIIDEKIELWRGQNKDYNRAETKNDVPMIKDWLDLFTLKDE
CYP79C2 GGLGPKKEHEMDAIYLALDCFFSFNLTNYIP-FLRGWNVDKAETEVEAVHIINICNDPIIQERIHLLWR-----KGGGKQMEEDWLDLITLKDD
CYP79F1 GRLGNAEKHHLVIFNTLNCLPGFSPADYVVERWLRGWNVDGQEKRVTENCNIVRSYNNPIIDERVQLWR-----EEGKAAVEDWLDTFITLKDD
CYP79F2 GRLGNAEKHHLVIFNTLNCLPGFSPDYVDRWLGGWNIDGEEERAKTVNVLVRSYNNPIIDERVEIWR-----EKGKAAVEDWLDTFITLKDD
CYP703A2 LVSPKEAQEFLHITHKLFWLLGVIYLDGYLP-FWRWVDPGSGCEKEMRDVEKRVDEFHTKIIDEHRRAKLE-----DEDKNGMDVFDVLLSLPGE
CYP98A8 ---SEEGKEFKAIVEKEHLLSGSGTILDHVWMLKWVSSWFFSDKEFLAHKDRRTKWFRGAIMVEEDIEI-----EDHRGFVRKLLVLEKQKE-
CYP98A9 ---PKDGREFRSIVERETRLPGATKMLDYTVWLKRLSSWFTSDKAFMKHMARKRNWFKRAVMDEVYGG-----RDQKCFVQSLLELKEKDE-
CYP98A3 -VVDEQGLEFKAIVSNGLKLGASLSIAEHIPWLRWM---FPADEKAFAEHGARRDRLTRAIMEEHTLARQ-----KSSGAKQHFDALITLKDQYD-
CYP78A5 -VYSKESNELVSEGYELLGIFNWSDFHPGMR-WLDFLQGVRRRCRSLVGRVNVFVGGIINDHKSKRSLRDN---PEESTYDDDFVDVLLGMHGNSKL
CYP78A5 --VNGKGCFLERLVSEGYELLGIFNWSDFHFWR-FLWDFQGVRRRCRSLVSEVNTFVGGIIEKHMKKGNLNLN---GEE-----NDFVDVLLGLQKDEKL
CYP78A6 -NH----VELREMVVEEGYDLLGTLNWTDHLPWLS-EFDPQRLRSRCSNLVPKVNRVFSRIISEHRNQTGDLP-----RDFVDVLLSLHGSDKL
CYP78A9 -EHEEV-SELRELVEEGYDLLGTLNWTDHLPWLS-EFDPQRLRSRCSNLVPKVNRVFNRIISDHREQTRDSP-----SDFVDVLLSLDGPDKL
CYP78A8 -NNNLESECLKGLVEEGYDLLGTLNWTDHLPWLA-GLDFQQIRFRCSQLVPKVNLNLLSRIIHEQRAATG-----NFLDMLLSLQGSEKL
CYP78A7 --QKEDLDELTSMVREGFELLGAFNWSDYLPWLGYFYDSIRLNQRCSDLVPRIRTLVKKIIDEHRVSNSEKRR----DIG-----DFVDVLLSLDGDDEKL
CYP77A4 IEKMDIEILKTVLMTVDPR--IDDYLPILAPFFSKERKRALVRRREQVDYVGVIERRRRAIQNPGS-----DKTASS--FSYLDLFDLTKIE-GR
CYP77A6 ILNMDQVMKVLITL NPR--LDDYLPILAPFFSKERARALEVRREQVDYVGVIERRRRAIQKPGT-----DKTASS--FSYLDLFDLTKIE-GR
CYP77A7 IEKMDQMLTAILNAVDPK--LHDYLPILTPFNYNERNRALKLRRELVDVFGVIEKRRKAIR-----TATVSS----FSYLDLFDLRLIEGS
CYP77A9 IEKMDQMMTEILTAVDPR--IHDYLPILTPFYFKERKNSLELRRKLVQFVGVFIEKRRLAIRNLGS-----DKTASS----FAYLDLFDLRLVD-GR
CYP77B1 IKNIENVLKDVMLITSPT--LPDFLPVFTPLFRRQVREARELRKTQLECLVPLIRNRRKFVDAKEN-----PNEEMVSPIGAAYVDSLFRNLNI-ER
CYP89A4 IKQVEYVQRRQLLGFSRFNILNLWPKFTKLILRKRWEFFQMRREQHDVLLPLIRARRKIVEERKNRSS-----EEEEENKVVQSYVDLLELELPDE-
CYP89A5 IKQVEYVQRRQLLGFSRFNILNLWPKFTKLILRKRWEFFQMRREQHDVLLPLIRARRKIVEERKNRSS-----EEEEENKVVQSYVDLLELELPDE-
CYP89A6 IKQVEYVQRRQLLGFSRFNILNLWPKFTKLIRKRWEFFQMRREQQDVLLPLIRARRKIVDERKKRSS-----EEEEENKVVQSYVDLLELELPDE-
CYP89A7 IKQVEYVQRRQLLGFARSILNLCPKFTKLILRKRWEFFQMRREQQDVLLPLIRARRKIVEERKNRSS-----EEEEENKVVQSYVDLLELELPDE-
CYP89A2 IKEVEFIQRLQLLSLTKFNIFNIWPKFTKLILRKRWEFFLQIRRQQRDVLLPLIRARRKIVEERKR-----SEQEDKKDYVQSYVDLLELELPDE-
CYP89A3 IKQVEFVQRRELITLPRFNILNVFSPFTKLFLRKRWEFFLFRREHKNVLLPLIRARRKIVEERKR-----SGKEYIQSYVDLLELELPDE-
CYP89A9 IREIEEAQYQMLISYTKFVNLNIFPSVTKFLLRKWKFELELRKSQESVILRYVNARS-----KETTGDVLCYVDLLELELPDE-
CYP704A1 --SKEGEEFMKAFDEGNATSSRFVDPF---WKLKCFLNIGSESRLLKKSIAIIDKFVYSLITTKRKELSKEQN---TS-----VREDILSKFLLESE
CYP704A2 --SKEGQEFMEAFDEGNVATSSRFVDPF---WKLKWFNIGSESRLKKSIAIIDKFVYSLITTKRKELAKEQN---TV-----VREDILSRFLVESE
CYP704B1 --LPEN-HFAKAFDTANIIVTLRFIDPL---WKMKKFLNIGSEALLGKSIVVNDFTYSVIRRRKAELLEAQ-----VKHDLITLRFIEISD
CYP86A2 --LPENG-FASAFDRATEASLQRFILPE-FLWRLKWKWLGLEVLSRSLGEIDGYLDAVINTRKQELLSQRE-----SG-V-QR-HDDLITLRFMCKKDD
CYP86A4 --LPENG-FASAFDRATEASLQRFIIPK-FMWKLKKWLGLEVLSRSLGEIDGYLAAVINTRKQELMSQRE-----SGTH-QR-HDDLITLRFMCKKKT
CYP86A8 --LPVNT-FAVAFDRATEASLQRFILPE-ILWKFKRWLRGLEVLSRSLVQVDNYLSEIITTRKEEMMTQHNN-----NG---KH-HDDLITLRFIKKK-
CYP86A7 --FPENG-FAVAFDGATEATLQRFIMPE-FIWKIRKWLRLGLEDDMSRSISHVDNYLSEIINTRKLELLGQQQ-----DE---SR-HDDLITLRFMCKK-
CYP86A1 --LPDNP-FSVAFDTATEATLKRLLTYG-FLWRIQKAMGIGSEDKLKSLEVVEYMNDAIDARKN-----SP-SDDLITLRFMCKKRD
CYP86B1 --QPVIP-FAKAFEDATEAAVVRVMPK-CVWKFMYRLDIGTEKLLKESIKGVDDFAEEVIRTRKKELSLEGE-----TTK-----RSDLITLRFMGLRD
CYP86B2 --LPEIP-FAKAFEDATEATVVRVMPK-FVWKLMSRLNLGTEKLLKESINGVDDFAEEVIRTRKKEMSLETE-----IAK-----RPDLITLRFMGLRD
CYP86C3 --LPLVP-FAQAFEEATESTMFRFMIPP-FIWKPLKFFDIGYEKGLRKAVDVLEHFVDMVVDRIKCKLKEEGT-----LGN-----RSDVLSRIIEIES
CYP86C4 --LPQVP-FAKAFEEATESTLFRFMIPP-FIWKPMRFLDTGYEKGLRIAVGVVHGFVDMIVDRICELKEEET-----LDN-----RSDVLSRIIQIES
CYP86C2 --LPHVP-FAKAFEEATESTLFRFMIPP-FVWPKPMKFFDIGYEKGLREAVETVHNFIDKMVVERIAMLKDQGT-----LAN-----SKSDVLSRIIQIES
CYP86C1 --LPEIP-FAKAFEDATEYTLARFLIPP-FVWPKPMRFLGIGYERKLNNAVRIVHAFVANKTIRRRRNKMRKLGNN-----LND-----YADLITLRFMQRREY
CYP94B1 --RPVPE-LVKAFDVAEEISARRATEPVYAVWVKRFLNVGSEKRLREAIKTVHLSVSEITIRAKKSLDIGGD-----VSD-----KQDLITLRFLAAGH
    
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CYP94B3  --RPVNP-LVEAFDTAAEISARRATEPIYAVWTKRVLNVGSEKLRREAIRTVHVLVSEIVRAKKKSLEIGTG-----AEA-----KQDLSRFLAAGH
CYP94B2  --SPVSE-FDRAFQTASAVSAGRGSAPLSFVWKFRLVGFSEKELRKAVGEVHNCVDEIIRDKKR-----KPA-----NQDFLSRLIVAGE
CYP94C1  --FPISE-FAVAFDTASLLSAKRALAPFLLWTKRLLRIGSEKLLQESINVINRLAGDLIKQRRLTG-----LMG-----KNDLSRFMAVVA
CYP94D1  --GAVGVNFMRAFETAATIISQRFRSVASCARWIKKKLNIGSERVLRRESIATVHKFADEIVRNRIDQGRS-----SDH-----KEDLSRFISKEE
CYP94D2  --GAAGVNFMAFETAATIISQRFQSVISYSWKIKKKLNIGSERVLRRESIMIVHKFADEIVRNRIEQGV-----SDH-----KEDLSRFISKEE
CYP96A1  --MPQIE-FARALDEAEEAIFFRHVKPE-IVWKMQRFIGFGDELKMKKAHSTFDRVCSKCIASKRDEI-TNGV----INI--DSSSKDLIMCYMNVDT
CYP96A9  --MPEIE-FARALDAAEEAIFFRHVKPE-VVWKMQRFIGVGAELKLRKRAHAFDRVCSKCIASKRDEI-SQGI-----D--SSSKDLMSSINVD-
CYP96A10 --MPEVE-FARALDAAEEAIFFRHVKPE-IFWRLQGLLGLGDEKMKTKARSTLDRVCSKYIAIKRDEV-SRGT-----NNV--DSHSKDLTSMYMLD-
CYP96A5  --MPKNE-YAKAMDDAEVVVYRHVKPV-VLWKLQNWIGLGEEKMKMEANAADFDRSCAKYISAKREEI-ISHH-----SNIGGEAHAEDLSVYMLD-
CYP96A11 --MHEDE-LAKALDDVGEIGIFFRHVKPK-FLWKLQNWIMFGHEKMKMEANATFDRVCAKYISDKRGEIIRSQR-----FSDISYGEPEDLSSFMKLD-
CYP96A2  --MPEDE-FAKALDDVGEIGILYRHFKPR-FLWKLQNWIGFGQEKLLTEANATFDRVCAKYISAKREEIKRSQ-----GTSNGGSQDLTTSFIKLD-
CYP96A12 --MPEVE-YAKALDDLGEIGIFYRHFKPK-FFWKLQNRFGLGQEKRMTEADATFDRVSAKYILAKREEIRSQGI-----DHHANG-ESEDLTSHIKLD-
CYP96A13 --MPEVE-FAKALDHVGEIGIMHRHVRPR-LLWKLQKCVGFGQEKKFSKADATLNQACAKYLEKREETRSGGF-----DYHSNGSESEDITSHIKID-
CYP96A7  --MPEIE-FAKALDDVGDVIVYRHITPR-FVWKLQKWIGIGTEKKMKSANATLDRVCEKLIIAAKREELRSQGI-----IDNANG-DSEDLTSHIMLD-
CYP96A8  --MPEVE-FSKALDDVGDVIVYRHITPR-FVWKLQKWIGIGTEKKMLKAHATFDRVCEKLIIAAKREELRSQGI-----TYNSNG-EREDLTTSFIKLD-
CYP96A3  --MPKVE-FGDAVDGVS DGVFYRHVKPV-FLWRLQYLIGVGEKRLKRG LAVFDQLLEKIITAKREEINSHGT-----HHP-SRGEAIDVITYMTMD-
CYP96A4  --MPKVE-FADAMDGADAMFYRHVKPA-FLWSIQSWIGVIEKMKRRGLDVFQMLGKIIIAAKREEIKNHGI-----HD--SKGEAMDVITYMTID-
CYP96A15 --MLEVE-FGEAADIGEEAIYRHFKPV-ILWRLQNWIGIGLERKMRALATVNRMAFKIISRRKEEISR-----AK-TEPYSKDALTYMNVDT
CYP97A3  --TGVIEAVYTVLREADRVSPIVWDIPIWKDISPRQKVATSLKLNLDLTIATCKRMEVEE-ELQFH-----E-EYMNERDPSLHFLLAGS-
CYP97C1  --SPVIEAVYTLKEAELRSTDLLPYWKIDALCKIVPRQVKAEKAVTLIRETVEDLIAKKEIVEREGERIND-----E-EYVNDADPSLHFLLAGS-
CYP97B3  --SPVIKAVYGTLEAEHRSTFYFPYWNFPARWIVPRQRKFSQDLKIINDCLDGLIQNAKETRQETDVEKLQ-----ERDYTNLKDASLHFLLAGS-
CYP709B2 --GIEVFKSQLELQKCCAAALTDLYFPG-----IQYLP TPSNLQIWKLDKMNSSIKRIIDARLT-----SES-----K---DYGN--DLGIMLTAAS
CYP709B3 --GIELCRSQTELEKYYISL TNVFI PG-----TQYLP TPTNLKWLWELHKKVKN SIKRIIDSRLK-----SKC-----K---TYGYGDLLGVMLTAAK
CYP709B1 --GIEVFRSQMELKRCYTTSLNQVSI PG-----TQYLP TPSNIRVWKLERKMDNSIKRIISSRLQ-----SKS-----DYGD--DLGILLKAYN
CYP735A1 --GKELFNHLTVLQRRCAQATRHLCFPG-----SRFLPSKYNREIKSLKTEVERLLIEIISRRDCAEMGRS-----S---THGD--DLGILLNEMD
CYP735A2 --GKELFSLTLVLRCAQATRHLCFPG-----SRFLPSKYNREIKSLKTEVERLLIEIISRRDCAEMGRS-----S---SYGD--DLGILLNQMD
CYP72A11 --GQRIFELQAELAQLIIQTVRKAIFIPG-----YSYLP TKGNNRMKAKAREIQVILRGIVNKRLRAREAG-----EAPNDLLGILLESN-
CYP72A13 --GQRIFELQAELAQLIIQAFRKAIFIPG-----YRYFPTKGNRRMKAAREIKFIRGIVNKRLRAREAG-----EAPSDDL GILLESN-
CYP72A15 --GQRIFELQAELAQLIIQAFRKAIFIPG-----YSYLP TKSNNRMKAAAREIQVILRGIVNKRLRAREAG-----EAPSDDL GILLESN-
CYP72A10 --GQRIFELQAELVHLILQAFWKVYIPG-----YRYLP TKSNNRMKAAAREIQVILKGI VNKRLRAREAG-----AAPNDLL GILLESN-
CYP72A14 --GHRIFELQAELAQLVMQAFQKFFIPG-----YIYLP TKGNNRMKTAAREIQDILRGIIINKRERARESG-----EAPSEDLL GILLESN-
CYP72A9  --GQRIFILQAELAHLLI LALGKNYIPA-----YRHFP TKNRRMKTIVKEIQVILRGII SHREKARDAG-----EAPSDLL GILLKSN-
CYP72A7  --GQRIFQLQGELAELIAQAFKKSYPG-----SRFYPTKSNRRMKAIDREVDVILRGIVSKREKAREAG-----EPANDLL GILLESN-
CYP72A8  --GKRIFELQEEQRRVLKALELAFIPG-----MRFLP TKNL RMRQINKEVKSRLREIIMKRQRGMDTG-----EAPKNDLL GILLESN-
CYP72C1  --GIKIFEIQEQIDLGLLAIRAVYIPG-----SKFLP TKNRRLRETERDMRAMFKAM IETKEEEIKRGRG-----TDKNSD LFSMLASNT
CYP734A1 --GRAVFRLQAQMMLLCAEAFQKVFI PG-----YRFFP TGRNLSWKLDKEIRKSLKLIERRRQNAIDGEG-----EEC-KEPAAKDLGLMIQAK-
CYP721A1 --GKGFELQERMMLFYLVRSVYIPG-----FRFFP SKYNREIWRIEKQIRVSLIKL IENNKTAVEKS-----GTLLQAFMSPYTNQN-
CYP715A1 --GTQVLKNLRVAVQFALFNSNRYVGV PF-----SNILSYKQTVKAKGLGHEIDGLLLS FINKRKISLAEG-----DDQGHDLGLMLLKADQ
CYP714A1 --GKEIFSKLRCLQKAITHNNILFSLNG-----FTDVVFGTKKHGNGKIDELERHIESLIWETVKERERECV-----G-----DHKKDLMLILEGAR
CYP714A2 --GKAIFSMIRDLLTAITKRSVLRFRNG-----FTDMVFGSKKHGDVDIDALEMELESSI WETVKEREIECK-----D-----THKKDLMLILEGAM
CYP74A   -----RDESRRYK LKADAPGLITKWL FNLHPLL SIG-LPRVIEEPLIHTFSLPPALVKS DYQRLYEFLR-----IRG--ETLVEADKLG-
CYP74B2  -----VDASVSPDIAENGWKTINTWALQVIPTAKLGVVPQPLEEILLHTWPPYPSLLIAGNYKVLNFI D-----ENAGDCLRLGQEEFG-
CYP73A5  -----PLFLRLKALNGERSRLAQSFYENQDFIPILRPFLRGYLIKQDVKDRRIALFKKYVDERKQIAS-----SKPTGSEGLKCAIDHILEAEQK
CYP722A1 -----SMQRDVGFVCEAMLAFLPLNLPWTRFHKGIMARGVMEMLKQIRERRNEINSHNN-----HHEDFLQQLLAVDND
CYP701A3 --VTL SKDEIFKVLVHDMMEGAIDVDWRDFFPYLKWIPNKSFEARIQQKHKRR LAVMNALIQDRLK-----QNGSESDDCYLNFLMSEAK
CYP711A1 ---IKDVEVTDFINQHVYSTTQLKMDLSGSLSIILGLLIPI LQEPFRQVLRKIPGTM DWRVEKTNARLSGQLNEIVSKRAKEAETDSKDFLSLILKARES
consensus
301.....310.....320.....330.....340.....350.....360.....370.....380.....390.....

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CYP51A1 -----GRETTESEVTGLLIAAGLFAAQHTSSSITATWTGAYLI--QNKHWSAALDEQKKLIQKHG-----DKIDYD
CYP51A2 -----GRQTTESEVTGLLIAALFAAQHTSSSITSTWTGAYLM-RYKEYFSAALDEQKNLIAKHG-----DKIDHD
CYP710A1 -----NPQPPHSGDEEIGGLLDFDLFAAQDASTSSLLWAVTLLD-SEPEVLNRVREEVAKIWSPESEN-----ALITVD
CYP710A2 G-----NPPPLHSEDEAIGGLLDFDLFAAQDASTSSLLWAVTFLE-SHPKVLSKVREEVAKIWSPOSG-----HLITAD
CYP710A3 -----SPPPPHSDKDEEISCVLVDFLFAAQDASTSSLLWAVVLE-SEPEVLRVREDVARFWSPESK-----ESITAD
CYP710A4 -----NPPPPHSDKDEEISCVLVDFMFAAQDASTSSLLWAVVLE-SEPEVLRVREDVARFWSSSEN-----ELITAD
CYP702A1 -----AETMSVDNAIEYIYTLFLLANETTPRILAATIKLIS-DNPKVMKELHREHEGIVRGKTEK-----ETSITWE
CYP702A2 E-----GETMSVENAVEYIYTFLLVANETTPRILAATVKFIS-DHPKVQKELQREHEEIVRGKAEK-----EGGLTWE
CYP702A8 E-----KETMSMKNVIEYIYTFVIANETTPRILAATVKFIS-ENPKVMQELQREHAMIFENKSE-----EAGLTWE
CYP702A5 -----VTMSIEIATEYIYTFLLVANETTPGVLAATIKLIS-DNPKVMQELRREHEGIVQDKIKKD-ETADLTWE
CYP702A6 G-----VKTISLESATEYIYTFLLANETTPAVLAATIKLIS-DHPKVQKELQREHEGIVRDKIEKN-EKADLTWE
CYP702A3 D-----GTALDIDKAVNLIFVFFILSQETTPGVQGVAVKLVADHPSVMEELQREHEAIVQNRADK-----DTGVTWE
CYP708A2 E-----DVIFNEESAINLIFAILLVAKESTSSVTSLAIKFLA-ENHKALAEKREHAAILQNRNGK-----GAGVSWEE
CYP708A3 D-----GSFFDQGSAINLIFLLAFALREGTSSCTALAVKFIS-KDPKVLAELKREHKAIVDNRKDK-----EAGVSWEE
CYP708A4 A-----GELLNENAIITLIFTLSCVTQDTTSCAICLAVKFL-ENPKVLAELKREHEVILESREDK-----EGGVTWE
CYP708A1 E-----GDTINEERSVELILSLLIASYETTSTMTALTVKFIA-ENPKVLMELKREHETILQNRADK-----ESGVTWE
CYP87A2 E-----GTILTEEIALDLMFVLLFASFETTSLALTIAIKFLS-DDPEVLKRLTEHETILRNREDA-----DSGLTWE
CYP90A1 -----FSDEEIVDFLVALLVAGYETTSTIMTLAVKFLT-ETPLALAQLKEHEKIRAMKSDS-----YSLEWSD
CYP90B1 RKQRTDDDLLGWVLKHSNLSLDFLILSLLFAGHETSSVAIALAIFFLQ-ACPKAVEELREHLEIARAKKELGE-----SELNWD
CYP90C1 -----EKQSQPSDFVSGKIVEMMIPGEETMPTMAIIVKFLS-DNPVALAKLVEENMEMKRRKLELG-----EELYWTD
CYP90D1 -----LTHN-----LIANNMIDMMIPGHDSVPVLITLAVKFLS-DSPAALNLLTEENMKLKSLKELTG-----EPLYWND
CYP724A1 -----YEEKVSIVLDILLGGFETSATTLISLVVYFLA-KSPNLLHKLKEHAAIRAKKGDGE-----LLNWE
CYP720A1 -----MADFIINLLFAGNETTSTKTMLFAVYFLT-HCPKAMTQLLEHDLRACG-----MLTWQD
CYP85A1 -----IRDQVVTILYSGYETVSTTSMALKYLH-DHPKALQELRAEHLAFRERKRQDE-----PLGLD
CYP85A2 -----IRDQVVTILYSGYETVSTTSMALKYLH-DHPKALEELREHLEIRERKRQDE-----PLTLD
CYP707A1 -----ELTDEQIADNIIGVIFAARDTTASVMSWILKYLA-ENPNVLEAVTEQMAIR-KDKEEG-----ESLTWGD
CYP707A3 -----GLTDEQIADNIIGVIFAARDTTASVLTWILKYLA-DNPTVLEAVTEQMAIR-KDKKEG-----ESLTWE
CYP707A2 K-----RNLSDSQIADNIIGVIFAARDTTASVLTWLLKYLA-DHPNLLQEVSRQFSIRQIKKEN-----RRISWE
CYP707A4 K-----GRVLTQEQIADNIIGVIFAARDTTASCLTWILKYLA-DDQKLLQAVKAEQKAIYEENSREK-----KPLTWQ
CYP88A3 D-----GKTLDDDEEIIDVLLMYLNAGHESSGHTIMWATVFLQ-EHPEVLQRAKAEQEMILKSRPEGQ-----KGLSLKE
CYP88A4 N-----GRVLDDEEIIDVLLMYLNAGHESSGHTIMWATILMQ-EHPMILQAKAEQERIVKKRAPGQ-----K-LTLKE
CYP716A1 -----IGETKDEDLADKIIALLIGGHDTTASIVCTFVVNYLA-EFPHYQRVLEEQ-KEILKEKKEK-----EGLRWE
CYP716A2 -----IGETKDEDLADKIIALLIGGHDTTASIVCTFVVNYLA-EFPHYQRVLEEQ-KEILNNDKVN-----EKLWE
CYP718 -----KGVITEEEVVDNMVLLVFAAHDTTSYAMSMTFKMLA-QHPTCRDTLLQEH-AQIKANKGEG-----EYLTWE
CYP71A12 GF-----QAQRDDIKFMILDMFIGGTTSTLLEWIMTELI-RNPVMKKLQDETRSTIRPHG-----SYIKEK
CYP71A13 GF-----QVQRNDIKFMILDMFIGGTTSTLLEWIMTELI-RSPKSMKKLQDETRSTIRPHG-----SYIKEK
CYP71A18 GF-----KVQRNDIKFMILDMFIGGTTSTLLEWIMTELI-RNPECMKKLQDETRSTIRPHG-----SYIKEK
CYP71A14 GV-----QIRRSDIKFLILDMLAGTETTYALLEWIMTELI-RHPECMKKLQDETRAKATKLI-----LYISEE
CYP71A15 GI-----EVRRSDIKFIILDIFLGGTTTTNSLLEWIMTELI-RHPECMKKLQDETRGDATNLT-----IYRSHE
CYP71A28 EF-----ELERSDIRLIILEFFLGGTTTTFTAIDWAMTLVV-RHPESMKKLQDETRQYSRNK-----LYVPEE
CYP71A19 -----KSALKLIIWDMFLAGTATLSLFLWAMTELM-RNPKVMKKLQDETRSS-SRQG-----LFVTEK
CYP71A20 QF-----ELEKSALKLIIWDMFLAGTATLSFLWAMTELM-RNPKVMKKLQDETRSS-SPQD-----LFVTEK
CYP71A16 QC-----QLDKSDLKVIIIFEMFLGTTTTSAVIEWAMTRLM-RNPECLKKLQDETRSV-SKMN-----SYVSGK
CYP71A27 RF-----KFDRSDLILILKDMFFSGTATTASQLWMTTELM-RHPECMKKLQDETRNSF-STHN-----LNVTEK
CYP71A21 GF-----EIDRLCIKAIIVLDVLAAGTDSYALMDWAMTELL-RHPECLRTLQEEVRTICKGN-----LSVSEE
CYP71A22 GF-----EIDRLSIKAIILDVVGGTDTSYALMEWAMTELL-HRPECLNRLQEEVRTICKGN-----SSVSED
CYP71A24 GF-----EIDRLSIKAIILDVFGDMDTTYTLLEWAMTELL-CHHECLDRLQEEVRMVCCKDK-----SGVSED
CYP71A26 GF-----EINRVSIAKIVMNVFVGGTDTSSTLMEWAMTELL-RHPKCLKRLQEEVRTICKDK-----SSVSEE
CYP71A25 GF-----EIERSVIAKAITLDVFGGSDTSFTLLEWAMTELL-RHPKSLNRLQEEVRTICKGK-----SRVSED
CYP71A23 GF-----DIDRLSIKAIIVLDAFVGGTDTSSTLVEWEMTELL-RHPTCLKKLQEEVRTICKGK-----SSVSED
    
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CYP71B26 VG-----NGKLTRNHKAILMNVLLGGIDTSAITMTWAMAELA-KNPRVMKKVQAEIRNQIKNKE-----RISFD-----
 CYP71B33 VG-----NNNFTRNNVKAILMDILLAGIETTSAGTMAWTMAELA-KNPLVMRKVQSEIRNKFENRE-----LISFE-----
 CYP71B34 LG-----NDKLTRNHKAILMDVLLAGMDTSAITMTWAMAELA-KNPRVMKKVQSEIRSQIKNKE-----RISFD-----
 CYP71B35 LG-----NDKLTRNHKAILLDVLLAGIDTSAITMTWAMTELA-RNPRVMKKVQSEIRTQMGNRS-----MISFE-----
 CYP71B36 IG-----YGKLTRNHKAILMNVLLGGIGTSAITMTWAMTELM-RNPRVMKKVQSEIRNQIGKKS-----MITLD-----
 CYP71B37 LG-----YGKLTRNHKAVLMNVLLGGIGTSAITMTWAMTELM-RNPRVMKKVQSEIRNQIGKKS-----MICLD-----
 CYP71B9 LG-----YGKLTRNHVKAILMNVLLGAINTSAMTMTWAMAELI-RNPRVMKKVQSEIRNQIMINKS-----VITLD-----
 CYP71B10 LG-----YGKLTRNHKAILMNVLLGGINTSAITMTWAMAELI-RNPRVMKKVQSEIRAQICKNNKT-----RIISLD-----
 CYP71B11 LG-----EFQLTRDNTKGILFNILNAGIDTSAQVMTWVMTYLI-SNPRVMKKAQAEVREVIKKNK-----DIIIE-----
 CYP71B12 LG-----EFQLTRDHTKGILANILNAGIDTSAQVMTWVMTYLI-SNPRVLKKAQAEVREVIKHKD-----DIIIE-----
 CYP71B14 LG-----EFQLTRNHTKGILLNVLIAQVDTSGHTVWVMTHLI-KNPRVMKKAQAEVREVIKKNK-----DIIIE-----
 CYP71B13 LG-----EFQFTRNHTKGILLDILLAGVDTSGHTITWVMTHLI-KNPRVMKKAQAEVREVIKKNK-----NITIE-----
 CYP71B6 LG-----SSRITDTHIRAIIMDLFVAGVDTSVITLDWTMAELS-RHPRVMKKVQAEIREHVGDKG-----IVTYD-----
 CYP71B28 EGD-----SFKLTTDHLKGMISDIFLAGVGTSSSTLIWAMTELI-RNPRVMKKVQDEIRTTLGDKKE-----RITIE-----
 CYP71B29 DGD-----SFKLTTDHLKGMISDIFLAGVSTASSTLIWAMTELV-RNRKVMKKVQDEIRTTLGDKKE-----RITIE-----
 CYP71B15 DGD-----ALKFTTDHLKGMISDIFVAGIGGVAGITLWGMTELI-RNPRVMKKVQDEIRTTLGDKKE-----RIKIE-----
 CYP71B23 DG-----SFKLTTDHIKGIISDIFLAGVNTSATTILWAMTELI-RNPRVMKKVQDEVRTVLGDKRD-----RITIE-----
 CYP71B7 DGE-----SFKLTTDHLKGIISDIFLAGVNTSAVTLWAMAELI-RNPRVMKKVQDEIRTTLGDKKQ-----RITIE-----
 CYP71B16 DD-----SLRLTIDHIKGLFNIIAGIDTGAITMIWAMTELA-RNPELMKNVQGEIRDSFGNNKE-----RITKE-----
 CYP71B17 DD-----SLRLTIDHIKGLLNIIAGIDTGAITMIWAMTELA-RNPEIMKKVQGEIRDRLGNNRE-----RITKE-----
 CYP71B18 DD-----SLKLTINNIKGILTNIIFLGGIDTGAITMIWAMTELA-RNPEVMKKVQGEIRDRLGRNKE-----RITIE-----
 CYP71B19 DS-----SLELTIDHIKGLANIFLAGIDTGAITMIWAMTELV-KNPKLIKVVQGEIREQLGSNKE-----RITIE-----
 CYP71B20 DS-----SLELTIDHIKGLANIFLAGIDTGAITMIWAMTELV-KNPKLIKVVQGEIREQLGSNKA-----RITIE-----
 CYP71B2 SD-----SFKLNMDNLKAVIMDVFLAGIDTSAVTMIWAMTELI-RNPRVMKKAQESIRTTLGLKKE-----RITIE-----
 CYP71B27 KD-----DFKLNVDNIKAVIMDVFLAGIDTGAITMIWAMTELV-KKPLVMKRAQENIRGVLGLKRD-----RITIE-----
 CYP71B21 VG-----SFKVTDHLKGVMSDVFLAGVNAGAITMIWAMTELT-RHPRVMKKLQGEIRELLGDNKE-----KITIE-----
 CYP71B22 VG-----SFQVTDHLKGVMSDVFLAGVNAGAITMIWAMTELA-RHPRVMKKLQGEIRELLGDNKE-----KITIE-----
 CYP71B38 AD-----SFKVTDHLKGVMSDIFLAGVNGGANTMIWAMTELS-RHPRVMKKLQGEIRAMLGPNKE-----RITIE-----
 CYP71B5 VG-----SYKVTDHLKGLMSDVFLAGVNAGSITMIWAMTELS-RHPRVMKKLQGEIRATLGPNGE-----KITIE-----
 CYP71B31 FG-----SLKITYDHLIAMMSDVFLAGVNAGVTMIWAMTELT-RHPRVMKKLQGEIRATLGPNGE-----RITIE-----
 CYP71B8 YG-----SFKITSDHLIAMMSDVFLAGVNAGTITMIWAMTELT-RHPRVMKKLREGEIRATLGPNGE-----RITIE-----
 CYP71B32 FS-----SFNITSNHLIAMMSDVFLAGVNAGTITMVIWAMTELT-RHPRVMKKLQGEIRATLGSNKE-----RITXE-----
 CYP71B24 GD-----SFKLTIDNLKGIIQDIYLAGVDTSAITMIWAMAELV-KNPRVMKKVQDEIRTCIGIKQNE-----KIEED-----
 CYP71B3 DE-----SFKLTIDHLKGIIQNIYLAGVDTSAITMIWAMAELV-KNPRVMKKAQEEIRTCIGIKQKE-----RIIEE-----
 CYP71B25 DK-----SFKLTIDHLKGITQDIFLAGIDTSAITMIWAMAELV-NNPRVMKKVQDEIRSCIGIKKE-----RIIEE-----
 CYP71B4 YA-----SFKLTVDHLKGVLSNIYHAGIDTSAITLIWAMAELV-RNPRVMKKAQDEIRTCIGIKQEG-----RIMEE-----
 CYP83A1 AS-----EFTVDNVKAVILDIVVAGDTTAAAVVWGMTYLM-KYPQVLKKAQAEVREYMKEGST-----FVTED-----
 CYP83B1 SI-----KFTHENVKAMILDIVVPGDTTAAAVVWAMTYLI-KYPEAMKKAQAEVRSVIGDKG-----YVSEE-----
 CYP84A1 LVSE-----TADLQNSIKLTRDNIAIIMDMVFGGTETVASAIEWALTELL-RSPEDLKRQQELAELVGLDR-----RVEES-----
 CYP84A4 VN-----NSVTKINLDNIKGIIMDMVFGGTETVALAIEWVLTTEILL-RSPENMKRVQDELTSVGLDRW-----RVEDT-----
 CYP705A1 EYK-----ITRSHIKSLLTVEFFIGAADASSIAIQWAMADII-NNREILEKLRREIDSVMGKT-----RLVQET-----
 CYP705A24 EYK-----ITRNHIKALL-AELFFGAGESSTTRWAMGEIF-NNPRIFEKLRTEIDSVMGTT-----RLIQES-----
 CYP705A15 EYK-----ISRNHIKSF-ADLLFASTDTFVQTTQWVAEII-NNPNVLERLRGEIDSVMGKA-----RLIQET-----
 CYP705A4 EYK-----ITRNHIKSII-ADLLFAGTENQVQTIQWAMAEEI-NNPNVLERLRGEIDSVMGKS-----RLIQET-----
 CYP705A16 EYK-----ITRNQIKAFI-VDMFIAGTDISALTTQGTMAEII-NNPNVLRVIREKIDSVMGKS-----RLIQET-----
 CYP705A19 EYK-----ITRNQIKAFI-VDFIFIAGTDISALTTQGTMAEII-NNPNVLRVIREKIDSVMGKS-----RLIQET-----
 CYP705A20 EHK-----ITRNHIKSLF-VELLLGGIDTSAQTIQWAMAEII-NNRNVLKRLREIDSVMGET-----RLIQEK-----
 CYP705A21 EHK-----ISRNHIKAFI-VELFFAGTDTSAQSIQWAMAEII-NNPNVLRVIREKIDSVMGKT-----RLIQET-----
 CYP705A23 ECK-----ITRNHIKSLF-VDLVAGTDTSRHATQWMAEII-NKPKVLEKVRREIYSVMGRT-----RLVQET-----
 CYP705A28 EYK-----ITRNHIKSLF-VELLVAGTDTSAQTIQWAMAEII-NNPTILERLRREIESVMGNT-----RLIQET-----

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CYP705A30 EYK-----ITRNHIKSLF-VDLVIAGTDTTSVQATQWTMGELI--NNPKILQRLREETESVVGNT-----RLIQEN-----
CYP705A32 EYK-----ITRNHIKSLF-VDLVIAGTDTSAQTIIEWTMAELI--NNPNILERLREETESVVGNT-----RLVQET-----
CYP705A2  EYK-----ITRNHIKSMF-VDLFIAGTDTSSSTTIQWIMAEI--NHPKILERLREETDFVVGKT-----RLIQET-----
CYP705A5  EYK-----ITRDQIKSLF-VDLFSAGTEASANTIQTWMAEII--KNPKICERLREETDSVVGKT-----RLVQET-----
CYP705A8  EYK-----ITRDHIKSLF-VDLFFAGTDTTATHTIEWTMAEIM--NNSLILERLREETDSVVGKT-----RLIQET-----
CYP705A9  EYK-----ITRDHIKSLF-VDLFFAGTDTWTHAIQWIMAEII--NNSYILERLREETDSVVGKT-----RLIQET-----
CYP705A18 EYK-----ITRNHIKSF--VDLFGGDTTSVQTTQWTMAEII--NNPNILQTLRKEETDSVVGKS-----RLIHET-----
CYP705A6  EYN-----ITRNHIKSF--VEIFIGATDTTSVQTTQWTMAEIL--NHPNVLERLRKDIQDSVVGKT-----RLIHET-----
CYP705A33 EYK-----ITRNHIKSF--VELFVGGDTTSVQTTQWTMAEII--NNSDVLERLREETDSVVGTS-----RMIQET-----
CYP705A3  EYK-----ITWKHIKAF--VEFFIGGDTTSVQTTQWAMAEMI--NNANVLERLREETIVSVVGET-----RLIQET-----
CYP705A22 EYK-----ITKNHIKAF--VDLFIGATDTTSVQTIQWTMAEIM--NNTHILERMREETDSVVGKS-----RLIQET-----
CYP705A12 EYK-----ITRKQIKSL--VEIFLGGTSSAQTIQWTMAELI--NNPGVLEKLRAEETDSVVGK-----RLIQES-----
CYP705A13 EYK-----ITRDHLKSLF--VELILGGTDTSAQTIIEWTMAKII--KKPNILERLREETDSVVGKT-----RLIQEK-----
CYP705A25 EFK-----ISRNQIKALF--VEIFLAGTDTSAQTIQWILAEI--NHPEILEKLRKEETESVVGVR-----RLIQET-----
CYP705A27 EVK-----ITRNQIKALI--VELFLGGTDTSAQTIQWIMAEI--NHPEILKILREETESVVGTT-----RFIQET-----
CYP712A1  EMK-----ITRNDMKSFL--LDVFMAGTDTSAAMQWAMGQLI--NHPQAFNKLREETINNVSVK-----RLVKES-----
CYP712A2  ELR-----LTMNQIKFFI--LELFMASLDTTSAALQWTMTLEI--NHPDIFAKIRDEIKSVVGT---N-----RLIKES-----
CYP93D1   EMK-----LTRENKAFI--MNIYGGGDTSAITVEWALAEI--NHPEIMKKAQETEIQVVGNK-----RVVES-----
CYP81D6   QPD-----YYTDVTLKGIIVMIIAGSETIAGTLEWAMLNVL--NHPEVLKARTEIDTKIG---FD-----RLMDEA-----
CYP81D7   QPD-----YYTDVTLKGIIVMIIAGTETIAGTLEWAMLNL--NHPEVLEKARTEIDTEVG---FD-----RLMDEA-----
CYP81D11  QPD-----YYTDVVIKGIILVMILAGTDTSAAGTLEWAMSNLL--NHPEVLRKAKTEIDDQIG---VD-----RLVEEQ-----
CYP81D2   QPE-----YYMDRIIKGTMSLSIAGGDTTAVTLEWALSSLL--NHPEVLNKARDEIDRMIG---VD-----RLLEES-----
CYP81D3   QPE-----YYTDNIIKGIIMLSLILAGTDTSAVTLEWTL SALL--NHPQILSKARDEIDNKV---LN-----RLVES-----
CYP81D8   QPD-----YFTDRIIKGNLALILAGTDTSAVTLEWALS NVL--NHPDVLNKARDEIDRKIG---LD-----RLMDES-----
CYP81D4   QPD-----YYTDVVIKGIILTLIIAGTDTSSVTLEWAMSNLL--NHPEILKARMEIDKVG---LD-----RLVES-----
CYP81D5   EPE-----YYTDVVIKGIILALVLAGTDTSSVTLEWAMSNLL--NHPEILEKARAEIDDKIG---SD-----RLVES-----
CYP81D1   DIE-----YYTDQIIKGIILIMVIAGTNTSAVTLEWALS NLL--NHPDVISKARDEIDNRV---LD-----RLTEEA-----
CYP81F3   EPE-----YYTDVTIKGLMLGMMIAGTDTSAVTLEWAMSSLL--NHPEALEKAKLEIDKIG---QE-----RLIDEP-----
CYP81F4   DPE-----YYTDIIKGLMLGIMVASSSETSALTIEWAMASLL--NHPKVLDKVKEIDEIIG---QD-----RLTEES-----
CYP81F2   QPK-----YYSDVVIKGLMSMLAGDTAAVTLEWAMANLL--KKPEVLKAKAEIDKIG---EE-----RLVDEP-----
CYP81F1   QPE-----YYTDVVIKGLMMSMMLAGTETSALTIEWAMANLL--RNPEVLEKARSEIDKIG---KD-----RLIDES-----
CYP81H1   EPH-----NYSDQTIKGLLMMVGGTDTSAVTLVEWAMSNLL--NHPQILETTRQNIIDTQMETSSSR-----RLKKE-----
CYP81G1   EPE-----CYTDDIIKGLVQVMLLAGTDTTAVTLEWAMANLL--NHPEVLRKKTTELNEVSK---EG-----RVFEES-----
CYP81K1   EPE-----FYADDVIKGIIVLMFNGGDTSPVAMEWAVSLLL--NHPDKLEKLREETKSNVK---HK-----GLIQDS-----
CYP81K2   EPE-----FYSDDVIKGIVVLMFNAGSDTSPVTMEWAMALL--NHPDKLDKVRREETKSNVK---HK-----GLIQDS-----
CYP82C3   HLQ-----YDANTCIKTTCLALILGGSETSPSTLTW AISLLL--NNKDMCLKVQDEIDIHVG---RD-----RNVEDS-----
CYP82C2   HLQ-----HDAITSIKSTLALILGGSETSPSTLTW AISLLL--NNKDMCLKVQDEIDIHVG---RD-----RNVEDS-----
CYP82C4   HLQ-----YDANTSIKSTCLALILGGSDTSASTLTW AISLLL--NNKEMCLKVQDEIDIHVG---RD-----RNVEDS-----
CYP82F1   GLS-----DHTTKIKALCLNLVLAGSETAIVVLVAVSLLL--NHPVLRKKAQEEIDSKIG---KE-----RVVEEL-----
CYP82G1   -----IVISGHALTLTGSDSTSITLTWAVSLLL--NHPAALAAQEEIDNSVG---KG-----RWTEES-----
CYP76C2   E-----LNTNDIVHLLLDLFGAGTDTNSSTVEWAMAELL--RNPETMVKAQAEIDCVIGQ---K-----GVVES-----
CYP76C4   E-----LDNNDIEHLLLDMFTAGTDTSSSTLEWAMAELL--RNPKTMVKAQAEIMDRVLGQ---N-----SVVQES-----
CYP76C1   E-----LSISDIEHLLLDMFTAGTDTSSSTLEWAMTELL--KNPKTMAKAQAEIDCVIGQ---N-----GIVES-----
CYP76C5   E-----INIDEIEHLLLDMFLAGTDTNSSTVEWAMTELL--GNPKTMTKVQDEINRVIRQ---N-----GDVQES-----
CYP76C6   E-----INIDEIEHLLLDMFVAGTDTNSSTVEWAMAELL--GNPKTMTKVQDEINHVIGQ---N-----GDFQES-----
CYP76C3   E-----LTMNDLKHLLLDVFAVAGTDTNSSTMWAMTELL--RSTKEMVKAQSEIRQVIGQ---N-----GFVQES-----
CYP76C7   E-----LDDNNIKHLLLDLFLAGVDTSSSAVEWAMAELL--RNPKMIVKQVEIRQVIGL---K-----GTVQDL-----
CYP76G1   DEEP-----SSFSSRDINVVFEMFTAGDTTSTLEWALAEI--HNPRTLTKLQTELRTYFKSS---N-----QKLOE-----
CYP75B1   GDG-----GSLDTEIKALLNMFTAGTDTASASTVDAIAELI--RHPDIMVKAQEEIDIVVGR---D-----RPVNES-----
CYP706A1  ---DE-----KAPLSMTHVKSLLMDMVLGGVDTSVNASEFAMAETV--SRPEVLNKIRLELDQVVGKD-----NIVES-----
    
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CYP706A2  --DE-----KAPLSMTHVKSLLMDMVLGGVDTSVNASEFAMAIEIV-SRPEVLNKRIRLELDQVVGKD-----NIVEES
CYP706A3  EAE-----KTKLTMNDVKAVLMDMVLGGDTSLHVFIEFAMAEL-L-HNPDIMKRAQQEVDKVVGKE-----KVVEES
CYP706A7  -----DENMSMNHVKALLMDMVLGGDTSLNTIEFAMAELI-NKLEIMKRAQQEELDKVVGKN-----NIVEEK
CYP706A5  EADS-----DVPITMNHVKAVLMDMVGGTESSTNTIEFVMAELI-SNPELMRRAQQEELDEVVGKD-----NIVEES
CYP706A6  EADS-----EVPITVNHVKAVLVDLVGGDTSTNTIEFAMAELI-RKPELMKRAQQEELDEVVGKD-----NIIEES
CYP706A4  EGDS-----EVPITINHVKALLTDMVGGDTSTNTIEFAMAELM-SNPELIKRAQQEELDEVVGKD-----NIVEES
CYP79B2   QGNP-----LLTADEIKPTIKELVMAAPDNPSNAVEWAMAEMV-NKPEILRKAMEEIDRVVGKE-----RLVOES
CYP79B3   AGQP-----LLTADEIKPTIKELVMAAPDNPSNAVEWAI AEMI-NKPEILHKAMEEIDRVVGKE-----RFVOES
CYP79A2   DGKP-----TLDSEIEKAQVTELMLATVDNPSNAAEWGAEMI-NEPSIMQKAVEEIDRVVGKD-----RLVIES
CYP79C1   NGKP-----LLTPQEITHLS-DLDVVGIDNAVNVIEWTLAEML-NQREILEKAVEEIDMVVGKE-----RLVOES
CYP79C2   QGMH-----LFTFDEIRAQCKEINLATIDNTMNNVEWTIAEML-NHPEILEKATNELDIIVGKD-----RLVOES
CYP79F1   NGKY-----LVTPDEIKAQCVEFCIAAIDNPANNMEWTLGEML-KNPEILRKALKELEDEVVGRD-----RLVOES
CYP79F2   NGNY-----LVTPEIEKAQCVEFCIAAIDNPANNMEWTLGEML-KNPEILRKALKLEDEVVGRD-----RLVOES
CYP703A2  NGKA-----HMEDVEIKALIQDMI A AATDTSAVTNEWAMA EAI-KOPRVMRKIQEELDNVVGSN-----RMVDES
CYP98A8   -----LSEETVGGGLVWNMLTAGADTTAVVIEWAMAEMI-KCPTVQEKAAQQEELDSVVGSE-----RLMTES
CYP98A9   -----LTEETVMGLVWNMLTAGADTTAITIEWAMAEMI-RCPTVKEKVDQELDSVVGSG-----RLMSDA
CYP98A3   -----LSEDTIIGLLWDMITAGMDTTAITAEWAMAEMI-KNPRVQKQVEEFDRVVGLD-----RILTEA
CYP78A10  SDS-----DMAIVLWEMIFRGDTVAILLLEWILARMV-LHPDIQAKAAQAEITDCIVGDSG-----RQVTDS
CYP78A5   SDS-----DMAIVLWEMIFRGDTVAILLVEWILARMV-LHQDIQDKLYREIASATSNNI-----RSLSDS
CYP78A6   SDP-----DIIAVLWEMIFRGDTVAVLIEWILARMV-LHPDMQSTVQNELDQVVGKS-----RALDES
CYP78A9   SDP-----DIIAVLWEMIFRGDTVAVLIEWILARMV-LHPDIQSTVHNELDQIVGRS-----RAVES
CYP78A8   SES-----DMVAVLWEMIFRGDTVAVLVEWVLARIV-MHPKVQLTVHDELDRVVGSR-----RTVDES
CYP78A7   QED-----DMAIVLWEMIFRGDTTALLTEWTMAELV-LNPNVQTKLRDEITLAVGDGAD-----GDVADA
CYP77A4   KTT-----PSNEELVTLCEFLNGGDTTGTAEI EWGIAQLI-ANPEIQSRLYDEIKSTVGD-----D-----RRVDEK
CYP77A6   ITT-----PSNEELVSLCSEFLNGGDTTGTAEI EWGIAQLI-VNPEIQSRLYDEIKSTVGD-----REVEEK
CYP77A7   ETT-----PSDEDLVTLCEFLNAGDTTGTAEI EWGIAELI-ANPEIQSRLYDEIKSTVGD-----D-----RAVDER
CYP77A9   ETS-----PSDEDLVTLCEFLNAGDTTGTAEI EWGIAELI-SNPKIQSRLYDEIKSTVGD-----D-----RTVEEK
CYP77B1   GGE-----LGDEEIVTLCEIVSAGTDTTSATTLEWALFHLV-TDQNIQEKLYEEVVGWVK-----N-----GVVEED
CYP89A4   -----KRKLNEDEIVSLCSEFLNGGDTTATALQWIMANLV-KNPEIQKRLYEEIKSVVG-----EEA-----KEVEEE
CYP89A5   -----KRKLNEDEIVSLCSEFLNGGDTTATALQWIMANLV-KNPDIQKRLYEEIKSVVG-----EEA-----NEVEEE
CYP89A6   -----KRKLNEDEIVSLCSEFLNAGDTTATALQWIMANLV-KNPEIQRRLYEEIKSIVG-----EEA-----KEVEEQ
CYP89A7   -----KRKLNEDEIVSLCSEFLIAGSDTTATVLQWIMANLV-KNQEIQRRLYEEITNVVG-----EEA-----KVVEEK
CYP89A2   -----NRKLNEEDIMNLCSEFLTAGTDTTATALQWIMANLV-KYPEIQERLHEEIKSVVG-----EEA-----KEVEEE
CYP89A3   -----KRKLNEDEIVSLCSEFLNAGDTTATTALQWIMANLV-RNQEIQKRLYEEIKSVIGE-----EEE-----KEIEEE
CYP89A9   KEGG-----K-----KRKLSDEIVSLCSEFLNAATDPTATSMQWIMAIMV-KYPEIQRKLYEEMKTVFAGEEEER-----EEIREE
CYP704A1  KD-----P-----ENMNDKYL RDIILNVMVAGKDTTAAASLWFLYMLC-KNPLVQEKIVQETRDVTFSSHEKTT-----DVNGFIESVT
CYP704A2  KD-----P-----ENMNDKYL RDIILNFMIAAGKDTTAAASLWFLYMLC-KNPLVQEKIVQETRDVTFSSHEKTT-----DVNGFVESIN
CYP704B1  DP-----D-----SKETEKSLRDIVLNFVIAGRDTTATTLTWA IYIM-MNENVAEKLYSELQELEKESAEAT-----NTSLHQYDTEDFNSFNEKVT
CYP86A2   -----QSYSETFLRHVALNFILAGRDTSSVALSWFFWLIT-THPTVEDKIVREICTSVLIETRGT-----DVSSWTAEPL
CYP86A4   -----ESYSDTFLQHVALNFILAGRDTSSVALSWFFWLIT-MHPTVEDKIVREICTSVLIETRGT-----DVASWTEEPL
CYP86A8   -----ESYSDETLQRVALNFILAGRDTSSVALSWFFWLIT-QHPAIEDKILREICTVLVETRGD-----DVALWTEDEPL
CYP86A7   -----ESYSDKYLKYVALNFILAGRDTSSVAMSWFFWLVS-LNPRVEEKIINEICTILIKTRDT-----NVSKWTDEPL
CYP86A1   VN-----G-----NVLPTDYLQRVALNFVLAGRDTSSVALSWFFWLVM-NNREVEETKIVNELMCKILVNETRGN-----DQEKWTEEPL
CYP86B1   EK-----G-----ESFSDKFLRDICVNFILAGRDTSSVALSWFFWLE-KNPEVEEKIMVEMCKILRQRDDHG-----NAEK-SDYEPVF
CYP86B2   EN-----G-----QKFSDKFLRDICVNFILAGRDTSSVALSWFFWLE-KNPEVEEKIMMGTCKILEQRVDHG-----DTKKNMEYEPVF
CYP86C3   HK-----TTDEK--DPSTIKFFRQFCTSFILAGRDTSSVALTWFFWVIQ-KHPEVENKIIREISEILRQRGDS-----PTSKNES--LF
CYP86C4   HK-----RENEI--DPSTIRFFRQFCTSFILAGRDTSSVALSWFCWVIQ-KHPEVENKIICEIREILRQRGDS-----PTSKNES--LF
CYP86C2   HK-----RGDEN--DRFTA KFFRQFCTSFILAGRDTSSVALTWFFWLIT-KHPEVETKILHEIREILNQREKNK-----YKL-----DETGEKESSRHF
CYP86C1   EK-----EEDTTRGNYSFKYFREFCTSFIIAGRDTTSSVALVWFFWLVIQ-KHPEVEKRLREIREIKR-----KLTQTQETEDQF
CYP94B1   -----GEEAVRDSVISFIMAGRDTTISAAMTWLFWLLS-QNDDVETKILDEL R-----NKGSLGL
    
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CYP94B3 -----NGEAVRDMVISFIMAGRDTTSAAMTWLFWLIT-ENDDVERKILEEVD-----PLVSLGL
CYP94B2 -----SDETVRDMVISIIMAGRDTTSAVATRLFWLIT-GHEETEHDLVSEIRSVK-----EEITGGF
CYP94C1 E-----DDDEYL RDIVVSFLLAGRDTVAAGLTGFFWLLT-RHPEVENRIREELDRVMG-----TGFD SVTA
CYP94D1 M-----NSPEILRDIVISFILAGRDTTSSALSWFFWLLS-MHPEVEDKILQELNSIRAR-----TGKRIGEVY
CYP94D2 M-----NSPEILRDIVISFILAGRDTTSSALSWFFWLLS-MHPEVKDKILQELNSIRER-----TGKRIGEVY
CYP96A1 ICH-----TTKYKLLNPSDDKFLRDMILSFMLAGRDTTSSALTWFFWLLS-KNPKAITKIRQETINTQLSPR-----T
CYP96A9 -----TTKYKLLNPSDDRFLRDTILSFMLAGRDTTGSALTWFFWLLC-MNQEAMTKIRQETINTLFPRNKTD----DGSV-----S
CYP96A10 -----TTKYKLLNPSDERFLRDTILTFMLAGRDTTGSALTWFFWLLI-KNPEVIAKIRQETINTALFORSKVD----DDASN-----N
CYP96A5 -----ISKYELLNPNDDNFLKDIISFMLAGRDAIATTLT WFFWLLS-KNPEAVTKIRQETINTNLPGS-----
CYP96A11 -----TTKYNLLNPSDDKFLRDTILAFILAGRDTTASALTWFFWLLS-ENAQVVS KIRQETI-INTNPSKNG-----
CYP96A2 -----TTKYKLLNPSDDKFLRDNILAFILAGRDTTATALS WFFWLLS-ENPHVVAKIHQETININTDL SRTG-----
CYP96A12 -----TTKYELLNPSDDKFLRDTILAFNLAGRDTTSSALSWFFWLLS-ENPQVVTKIRKETIDKN--ISKDG---R-----
CYP96A13 -----TTKYELLNPSDDKFLRDTILAFVLAGRDTTASALTWFFWLLL-ENPQVVTKIRQETINTSNNGQEKPS---C-----
CYP96A7 -----ATKYELLNPNDDKFLRDTFVSFMAAGRDTTSSALTWFFWLLT-ENPNVLSKILQETINTNL PRTGSDQ-----
CYP96A8 -----ATKYEVLPKPSHDKFLRDTFVGFMAAGRDTASTALT WFFWLLS-KNPNVLT KILQETINTNL PRTGSDQ-----
CYP96A3 -----TTKYKYLEPSDDRFIKDTILGLFIAARDTTSSALT WFFWLLS-KNPEAINKIRQEVNKKMPRFD P-----
CYP96A4 -----TTKYKHLKPSNDKFIRDITLGLVIAARDTTSSALT WFFWLLS-KNPEAMTKIRQETIN KKM PKFDP-----
CYP96A15 -----TSKYKLLKPNKDKFIRDVIFSLVLAGRDTTSSALT WFFWLLS-KHPQVMAKLRHEIN---TKFDN-----
CYP7A3 -----DDVSSQLRDDLMTMLIAGHETSAAVLTWTFYLLT-TEPSVVAKLQEEVDSVIGDRFPTI-----
CYP97C1 -----EEVSSVLRDDL SMLVAGHETTGSVLTWTL YLLS-KNSSALRKAQEEVDRVLEGRNPAF-----
CYP97B3 -----VDIDDRQLRDDLMTMLIAGHETTAAVLTWAVFLLS-QNPEKIRKAQAEITDAVLGQGPPTY-----
CYP709B2 -----SNESEKK--MSIDEIIEECKTFFFAGHETTANLLTWSTMLLS-LHQDWQEKLR EEFVNECCGDKIPD---AE-----
CYP709B3 -----SNEYERK--MRMDEIIEECKNFYYAGQGTTSILLTWTTMLLS-LHQGWQEKLR EEFVNECCGDKIPD---TD-----
CYP709B1 -----TEGKERK--MSIEEIIHECRTFFFGGHETT SNLLAWTTMLLS-LHQDWQEKLR EEFKCEGKEKTPD---SE-----
CYP735A1 -----IDKNNNNNNNNLQLEVTDECKTFFFAGHETTALLTWTTMLLA-DNPTWQEKVREEVICV LGQTGLPT---LD-----
CYP735A2 -----SNKNNLN---VQMIMDECKTFFF TGHETT SLLL TWTLMLLA-HNPTWQDNVRDEVRQVCGQDGVPS---VE-----
CYP72A11 -----LGQTKGNMSTEDLMEECKLFYFVQGETTSVLLVW TMVLLS-QHQDWQARAREEVKQVFGDK-EPD---AE-----
CYP72A13 -----LGQTKGNMSTEELMEECKLFYFAGQETT VLLVW TMVLLS-QHQDWQARAREEVKQVFGDK-EPD---AE-----
CYP72A15 -----LRQTEGNMSTEDLMEECKLFYFAGQETT SVLLVW TMVLLS-QHQDWQARAREEVKQVFGDK-EPD---AE-----
CYP72A10 -----LGQAKGNMSTEDMEECKLFYFAGQETT SVLLVW AMVLLS-HHQDWQARAREEVKQVFGDK-EPD---TE-----
CYP72A14 -----LGQTEGNMSTEDMEECKLFYLAGQETT SALLVW TMVLLS-QHQDWQARAREEVKQVFGDK-QPD---TE-----
CYP72A9 -----SEQSKGNLNMEEIMEECKLFYFAGQETT SVLLAW TMVLLS-QHQDWQARAREEVMQVFGHN-KPD---LQ-----
CYP72A7 -----SEESQGNM SVEDVMKECKLFYFAGQETT SVLLVW TMVLLS-HHQDWQARAREEVMQV LGENNKPD---ME-----
CYP72A8 -----SGD---HGMSIEDVVEECLRFH FAGQETTAVLLVW TMIMLS-HHQKWQDQAREETLKVIGKNNKPN---FD-----
CYP72C1 K-T-----IKEQGPDSGLSLDDLIDDCKAFYLAGQNTSSLFVW TLVALS-QHQDWQNKARDEETLSQAFGNN-EPD---FE-----
CYP734A1 -----NVTVQDIV EECKSFFFAGKQTT SNLLTWTTILLS-MHPEWQAKARDEVLRVCGSRDVPT---KD-----
CYP721A1 -----GQEEKLGIEEVTDECKTFFFAKETTANLMTFVLVLLA-MNQEWQNIAREEVICV LGQTGLPT---LD-----
CYP715A1 -----KGNFTAKELVDECKTFFFAGHETTALMTWTFMLLA-IHPEWQDTIREETREVICDS-KIE---YN-----
CYP714A1 SSC-----DGNLEDKTSYKSFVDNCKSIYFAGHETS AVAVSWCLMLLA-LNPSWQTRIRDEVFLHCKNG-IPD---AD-----
CYP714A2 RSC-----DGNLWDKS-AYRRFVDNCKSIYFAGH DSTAVSVSWCLMLLA-LNPSWQVKIRDETLS SCKNG-IPD---AE-----
CYP74A -----ISREEATHNLLFATS FNTWGGMKILFPNMVKRIGPGGHQVHNRLAEETRSV IKSNGGELT-----
CYP74B2 -----LTRDEAINQLL FVLGFNAYGGFSVFLPSLIGRITGDNSGLQERIRTEVRRVCGS-GSDLN-----
CYP73A5 GE-----INEDNVLYIVENINVAIETTLWSIEWGIAELV-NHPEIQSKLRNELD T VLGPG-----VQVTEIP-----
CYP722A1 TP-----QLTDAEIKDNILTMIIAGQDTTASALT W MVKYL G-ENQKVL DILIEEQSQITKKASNKP-----
CYP701A3 T-----LTKEQIAILVWETIIETADTTLVTT EAWIYELA-KHPSVQDRLCKEETQNVCGGEKFKEE-----
CYP711A1 DPFKN-----IFTSDYISAVTYEHL LAGSATTFTLSSVLYLVS-GHLDVEKRLLOEIDGFGNRDLIPT-----
consensus 401.....410.....420.....430.....440.....450.....460.....470.....480.....490.....
    
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CYP51A1 -----VLSEMDFLFRSAKEALRLHPPKILLRLTVHSDFTVTTREG---KQYEIPKGGHIVATSPAFANRLPHVYK--DPENFDPDFRFSKEREEDKAAG
CYP51A2 -----ILSEMDVLYRCIKKEALRLHPPPLIMLMRASHSDFSVTARDG---KTYDIPKGGHIVATSPAFANRLPHIFK--DPDTYDPERFSPGREEDKAAG
CYP710A1 -----QLAEMKYTRSVAREVIRYRPPATMPVHVAIDFPLTET-----YTIPKGTIVFSP--VFDSSFQGF--EPDRFDPDFRSETRQEDQVFK
CYP710A2 -----QLAEMKYTRAVAREVVYRPPATMPHAIATNDFPLTES-----YTIPKGTIVFSP--VFDASFQGF--EPNRFDPDRFSETRQEDQVFK
CYP710A3 -----QLAEMKYTRAVAREVLRYRPPASMPHVAVSDFRLTES-----YTIPKGTIVFSP--LFDASFQGF--EPDRFDPDFRSETRQEDQVFK
CYP710A4 -----QLAEMKYTRAVAREVLRYRPPASMPHVAVSDFRLTES-----YTIPKGTIVFSP--LFDASFQGF--EPDRFDPDFRSETRQEDQVFK
CYP702A1 -----YKS-MTFTQMVINESLRIITSTAPTFLRVLEHDFQVGS-----YKIPAGWIFMGYP--NNHFNPKTYD--DPLVFNPNRWEGKDLGAIVSR
CYP702A2 -----YKS-MHFTQMVINESLRIISTAPTFLRVLEHDFQVGD-----YTIPAGWTFMGYP--HIHFNSEKYE--DPYAFNPNRWEGKDLGAIVSK
CYP702A8 -----YKS-MTFTNMVINESLRIISTVPTVILRKPDPDHTKVGD-----YTIPAGWNFMGYP--SAHFDPTKYE--DPLEFNPNRWKGNLDLDAIVST
CYP702A5 -----YKS-MTFTQMVINESLRIITSTVPTVLRIIDHEIQFGD-----YTIPAGWIFMGYP--YVHFNPEKYD--DPLAFNPNRWKGNLDLSTIVSK
CYP702A6 -----YKS-MTFTQMVINESLRIITSTVPTVLRIIDHEIQFGE-----YTIPAGWIFMGYP--YVHFNAEKYD--DPLAFNPNRWKGNLDLSAIVSR
CYP702A3 -----YKS-MTFTHMVIKESLRFMTSTQPTVHRIPDQDVQIGD-----YTLPAGWLFVFGYP--QVHFDEEKYD--DPLTFNPNRWQKGDINSTVSR
CYP708A2 -----YRHQMTFTNMVINEFLRIMNMAPIMYRKAVNDVEIKG-----YTIPAGWIVAVIPPAVHFNDAIYE--NPLEFNPNRWEGKELRS--GSK
CYP708A3 -----YRHNMTFTNMVINEFLRLANTTPLLFRKAVQDVEIKG-----YTIPAGWIVAVAPSAVHFDPAIYE--NPFEFNPNRWEGKEMIW--GSK
CYP708A4 -----YRHKMTFTNMVINEFLRITNLAPMLFRKAVKDVEIKG-----YTIPAGWIVMIIPSVVHFDPPEIYE--NPFEFNPNRWEGKELRA--GSK
CYP708A1 -----YRSMNFTHMVINEFLRLGSLSPAMFRKAVNDVEIKG-----YTIPAGWIVLVVPSLLHYDPQIYE--QPCEFNPNRWEGKELLS--GSK
CYP87A2 -----YKS-MTYTFQFINETARLANIVPAIFRKALRDIKFKD-----YTIPAGWAVMVCPPAVHLNPEMYK--DPLVFNPNRSRWEKSKVTN--ASK
CYP90A1 -----YKS-MPFTQCVNETLRVANIIGVFRRAMTDVEIKG-----YKIPKGGWVVFSSFRVHLDPNHFK--DARTFNPNRWQSNVSTTGPS--
CYP90B1 -----YKK-MDFTQCVINETLRGNVVRFLHRKALKDVRKYG-----YDIPSGWIKVLPVISAHLDNSRYD--QPNLFPNPNRWQQRNGASSG--
CYP90C1 -----YMS--LSFTQNVINETLRMANIINGVWRKALKDVEIKG-----YLIPKGCWCVLASFISVHMDEDIYD--NPYQFDPNPNRWDRINGSASS--
CYP90D1 -----YLS--LPFTQKVITETLRMGNVIIIGVMRKAMKDVEIKG-----YVIPKGCWCFLAYLRSVHLDKLYYE--SPYKFNPNRWQERDMNTSS--
CYP724A1 -----YQK-MEFTQCVISEALRCGNIVKTVHRKATHDIKFNE-----YVIPKGGWVFPIFTAVHLDPSLHE--NPFEFNPNRWTDKAKMNNKT--
CYP720A1 -----YKT-MDFTQCVIDEETLRGGIAIWLREAKEDVSYQD-----YVIPKGCFFVVPFLSAVHLDSEYYK--ESLSFNPNRWLDPEAQQRN--
CYP85A1 -----VKS-MKFTRAVIYETSRLATIVNGVLRKTTDRLEING-----YLIPKGWRIYVYTREINYDANLYE--DPLIFNPNRWMMKKSLESQNS--
CYP85A2 -----IKS-MKFTRAVIFETSRLATIVNGVLRKTTDLELNG-----YLIPKGWRIYVYTREINYDTSLYE--DPMIFNPNRWMEKLSLESYS--
CYP707A1 -----TKK-MPLTSRVIQETLRVASILSFTFREAEDVEYEG-----YLIPKGGWVLPFRNIHHSADIFS--DPGKFDPSRFEV--APKPNT--
CYP707A3 -----TKK-MPLTYRVIQETLRAATILSFTFREAEDVEYEG-----YLIPKGGWVLPFRNIHHSADIFS--DPGKFDPSRFEV--APKPNT--
CYP707A2 -----TRK-MPLTTRVIQETLRAASVLSFTFREAQDVEYDG-----YLIPKGGWVLPFRRIHHSSEFFP--DPEKFDPSRFEV--APKPYT--
CYP707A4 -----TRN-MPLTHKVIIVESLRMASIISFTFREAQDVEYKG-----YLIPKGGWVMPFRNIHHSNPKYFS--NPEVFDPSRFEV--NPKPNT--
CYP88A3 -----TRK-MEFLSQVDETLRVITFSLTAFREAKTSDVMNG-----YLIPKGGWVLTWFRDVHIDPEVFP--DPRKFDPARWNGFVPAKAG--
CYP88A4 -----TRE-MVYLSQVIDETLRVITFSLTAFREAKSDVQMDG-----YIIPKGGWVLTWFRNVHLDPEIYP--DPKKFDPNRWEG--YTPKAGT--
CYP716A1 -----IEK-MRYSWNVACEVMRIVPPLSGTFREAIDHFSFKG-----FYIPKGGWKLWYSATATHMNPDYFP--EPEKFEPSRFEV--SGPKPYT--
CYP716A2 -----IEK-MRYSWNVACEVMRIVPPLAGTFREAIDHFSFKG-----FYIPKGGWKLWYSATATHKNPEYFP--EPEKFEPSRFEV--SGPKPYT--
CYP718 -----VKK-MKYSWQVRETMRSLSPPIFGSFRKAVADIDYGG-----YTIPKGGWKLWTTYGTHYNPEIFQ--DPMSEFDPTRFDK--P--IQAYT--
CYP71A12 -----DVENMKYLKAVIKEVFRVHPPLPLILPRLLEDVVKVKG-----YNIAAGTEVIIINAWAIQRDPAIWGPDAAEFKPERHLD----STLDY
CYP71A13 -----EVENMKYLKAVIKEVRLHPSLPMILPRLLEDVVKVKG-----YNIAAGTEVIIINAWAIQRDTAIWGPDAAEFFKPERHLD----SGLDY
CYP71A18 -----EVENMRYLKAVIKEVFRVHPPLPLILPRLLEDVVKVKG-----YDIAAGTEVIIINAWAIHRDPAIWGPDAAEFKPERHLD----STLDY
CYP71A14 -----DVEDMKYLKAWKEVRLHPPPLPLLVPRELSEDIKLG-----YDIAAGTQVIIINAWAIQRDTMTWGDAAEFKPERHLD----SLVDF
CYP71A15 -----EVEDMKYLKAVIKEGLRLHPPPLPLLVRLLTQDVKLG-----YDIAAGTQVITINAWAIQRDITWGDAAEFKPERHLD----SPLDF
CYP71A28 -----EVENMKYLKAVIKEVFRHPPGPLSIPRQLEDVFIN-----YDIAAGTQVIIINAWAIHRDTEKWPYAEFFKPERHLD----LPLNF
CYP71A19 -----EAEKMDYLQAVIKEALRLRPPAPLMVPRVSEDEVTLKG-----YNIPAGTQVIIINAWAIQRDTTTWGDAAEFKPERHLD----SILDF
CYP71A20 -----EAEKMYLQAVIKEALRLRPPAPLLVPRVLEDVVKLG-----YNIPAGTQVIINAWAIQRDTTTWGTDAEFAKPERHLD----TNLDF
CYP71A16 -----EVENMYLKAVIKEVRLHPPPLPLLVPRLEDVVKLG-----YDITAGTQVIINAWAIQRDTATWGSQAQEFKPERHFD----STWDF
CYP71A27 -----EVEKMYLHCVIKEGLRLHPSGPLLF--RLPSEDEVQKLG-----YDISAGTHVIIINAWALORNPATWGLDANEYRPERHXW----YFGEF
CYP71A21 -----DIQNMSYLKAVIKETTRLHPPPLPLAPHESTQDVILGD-----YHIPAGTQVMINAWAIGREAAWGPDAEFKPERHLD----SSVDF
CYP71A22 -----DIKDMNYLKAVIKETMRLHPPPLPLMPHESTQDVRLGD-----YHIPAGTQVMINAWAIGREAAWGPDAEFKPERHLN----SSVDF
CYP71A24 -----DLQDMKYLKAVIKETLRLHPPPLPLMPHESTHDKVLRD-----YHIPAGTHVMINAWAIGREAAWGPDAEFAKPERHLN----SYVDF
CYP71A26 -----EIQNMSYLKAVIKEALRLHPPPLPLMPHESTQDVRLGD-----HHIPAGTQVILINAWAIGREAAWGPDAEFAKPERHLD----SSVDY
CYP71A25 -----DIQGMKYLKAVIKEALRLHPPPLPMMPHESTEDVKLRD-----YHIPAGTQVMNINAWAIGREAAWGPDAEFAKPERHLD----TSVDF
CYP71A23 -----DIQGMKYLKAVIKEALRLHPPPLPLMPHQSTQDVRLRD-----NHIPAGTQVIVNLWAVGREAAWGPDAEFAKPERHLE----SPSDF
    
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CYP71B26 -----DTDKLEYLKMKVIKETWRLHPPTPLLLPRDVITEFEING-----YTIIPAKTRLHVNVAIGRDPDTWK-DPEMFLPERFND----SNIDA
CYP71B33 -----DIEQLHYLKTVIKETWRLHPPAPLLLPREVMSEFEING-----YTMQPKTQIHVNVVAIGRDPNTWK-DPEEFLPERFID----SNIDT
CYP71B34 -----DTDKLEYLKMKVIKETWRLHPTTPLLIPREAMSEFEING-----YTIPVKTRLHVNVAIGRDPDTWK-DPEVFLPERFTD----NNIDA
CYP71B35 -----DMDQLEYLKMKVIKETWRLHPTTPLLLPREAMSEFDING-----YTIPVKTRLHVNVAIGRDPDTWK-DPEVFLPERFMD----NNIDA
CYP71B36 -----DIDQLHYLKMVINETWRLHPPSPFLIPRQVMSEFELND-----YVIVPKTRLVNVVAIGRDPDTWK-DPEEFLPERFVN----SSIDA
CYP71B37 -----DIDQLHYLKMVINETWRLHPPAPLLVPREVMSEFEING-----YTIIPAKTRLVNVWGIWRDPDTWK-DPEEFLPERFVN----SNIDA
CYP71B9 -----DIDHLPYLKMKVIKETWRLHPPVPLLLPREVMSEFEING-----YKIQPKTRLVNVVAIGRDPDSWK-DADMFYPERFMD----NNIDA
CYP71B10 -----EINHLSYLNVMVIKETCRLHPVAPLLVPREVISEFKING-----YTIQPKTRLHVNVAIGRDPETWK-DPEEFLPERFMD----CDIDV
CYP71B11 -----DIERLEYLKMVKETFRVLPVPLLLIPREASKDVKIGG-----YDIPKKTWIHVNIWAIHRNPVWVK-DPEAFIPIPERFMD----NQIDY
CYP71B12 -----DIERLQYLKMKVIKETFRINPLVPLLLIPREASKDVKIGG-----YNIPKKTWIHVNIWAIHRNPVWVK-DPEAFIPIPERFMD----SQIDY
CYP71B14 -----DIERLEYLKMVIKETLRINPLVPLLLIPREASKYIKIGG-----YDIPKKTWIYVNIWAVQRNPVWVK-DPEVFIPIPERFMH----SEIDY
CYP71B13 -----DIEGLEYLKMVKETLRINPLVPLLLIPREASKDVKIGG-----YNIIPKKTWIHVNIWAIHRNPVWVK-DPEAFIPIPERFMD----NQIDY
CYP71B6 -----DLEALVYMKMKVIKETWRLHAPSILIPREAMTNFKIKG-----YDIYPGTRIHWNAWAIGRNPDVWK-DPDEFIPIPERFVD----SNVET
CYP71B28 -----DLNQLHYFKLVKKEIFRLHPAAPLLLPRETLSHVKIQQ-----YDIIPAKTQIMINAYAIARDPKLWT-NPDEFNPDRLFID----SSIDY
CYP71B29 -----DLTNLHYFKLVKKEIFRLHPAVPFLLPRETLSHVKIQQ-----YDIIPAKTQIMINAYAIARDPKLWT-NPDEFNPDRLFID----SSIDY
CYP71B15 -----DLNQLHYFKLVKKEIFRLHPTTPLLLPRQTMSHIKIQQ-----YDVPAKTQILVNVYAMGRDPKLWE-NADEFNPDRLFID----SSVDF
CYP71B23 -----DLNQLNYFKLVKKEIFRLHPAAPLLLPREAMAKIKIQQ-----YDIPEKTQIMVNVYAIWRDPDLWE-NPEEFKPERFVD----SSVDY
CYP71B7 -----DLSQVHYFKLVKKEIFRLHPAAPLLLPRETMSHVKIQQ-----YDIIPVKTQMMINYSIARDPKLWT-NPDEFNPDRLFID----SSIDY
CYP71B16 -----DLNKVPFLNMVIKETFRLHPVAPLLLPRETMTHIKVQG-----YDIIPKRRILVNVVAIGRDPDLWI-NPEEFNPERFIN----SPVDY
CYP71B17 -----DLDKVPFLNLVIKETFRLHPVAPLLLPRETMAHVKVVQG-----YDIIPKRRILVNAWAIWRDPKLWT-DPEEFKPERFID----SPVDY
CYP71B18 -----DINKVPYLNVLVIKETFRLHHPVPLLLPRETMAHIKVVQG-----YDIIPKRRILVNAWAIWRDPKLWT-NPEEFNPERFIN----SPVDY
CYP71B19 -----DIEKVPYLKMKVIKETFRLHPAAPLILPRETMAHIKVVQG-----YDIIPKRRILVNVSAIWRDPKLWT-NPKEFDPERFMD----SFVDY
CYP71B20 -----DIDKVPYLKMKVIKETFRLHPAAPLILPRETMAHIKVVQG-----YDIIPKRRILVNVSAIWRDPKLWT-NPEEFDPERFMD----SSVDY
CYP71B2 -----DLGKVEYLNHILKETFRLHAPLPFVVPRETMSHIKIQQ-----YDIIPKKTQIQVNVWTIGRDPKRWN-DPEEFNPERFAN----SSVDF
CYP71B27 -----DLCKDFCLKHIVKETLRHPPVFLVPRETMSHIKIQQ-----YDIIPKKTQIQVNVWTIGRDPKRWT-DPEEFNPERFAN----TCVDF
CYP71B21 -----DLEKVHYLKLVIQETFRLHPPAPLLLPRETMSDVKIQQ-----YNIPKNTMIEINTYAIWRDPNCWT-NPNEFIPIPERFVD----SPIDY
CYP71B22 -----DLEKVHYLKLVIETETRLHPPAPLLLPRETMSDLKIQQ-----YNIPKNTMIEINTYSIGRDPNCWE-NPNDFNPERFID----SPVEY
CYP71B38 -----DLEKVEYLKLVVETETRLHPPAPLLLPRLTMSDIKIQQ-----YNIPKNTMIQINTYAIWRDPKYWK-OPGEFIPIPERFLD----SPIDY
CYP71B5 -----DLEKVEYLKMWIEEAFRLHPPAPLLLPRLTMSDINIQQ-----YSIPKNTMIQINTYTIWRDPKNWT-KPDEFIPIPERFVD----NPIEY
CYP71B31 -----DLEKVEYLNLVIKESFRLHPPAPLLLPRETMSDIEIQQ-----YHIPKNAHVKINTYAIWRDPKRWT-NPEEFNPERFLN----TSINY
CYP71B8 -----DLEKVEYLKLVIKETFRLHPPGPFLLPRQVMSDIEIQQ-----YHIPKNAHIKISTYAIWRDPKWT-NPEEFNPERFAN----TSINY
CYP71B32 -----DLQKVEYLNVMVIKETFRLHPPSPLLLPRETMSDIEIQQ-----YHIPKNAHIRINTYTIWRDLKCS-NPE-----RFLN----TSINY
CYP71B24 -----DVDKLQYLKLVKKEIFRLHPAAPLLLPRETMSQIKIQQ-----YNIPSKTILLVNVWSIGRDPKHVK-NPEEFNPERFID----CPIDY
CYP71B3 -----DVDKLQYLKLVIKETLRHPPAPLLLPRETMADIKIQQ-----YDIIPRKTILLVNAWSIGRNPWE-NPEEFNPERFID----CPMDY
CYP71B25 -----DVGKLQYLKLVKKEIFRLHPAAPLLLPRETMADIKIQQ-----YDIIPRKTLLLVSAWSIGRDPKYWK-NPEEFNPERFID----CPVDY
CYP71B4 -----DLDKLQYLKLVKKEIFRLHPAAPLLLPRETMADIKIQQ-----YDIIPQKRALLVNAWSIGRDPESWK-NPEEFNPERFID----CPVDY
CYP83A1 -----DVKNLPYFRALVKETLRLEPVIPLIPRACIQDTKIAG-----YDIIPAGTTVNVNAWASRDEKEWGNPDEFRPERFL--E--KEVDF
CYP83B1 -----DIPNLPYLKAVIKESLRLLEPVIPLIHRETIADAKIGG-----YDIIPAKTIIQVNAWAVSRDTAAWGNPNEFIPIPERFMNEH--KGVDF
CYP84A1 -----DIEKLTYLKCTLKETLRMHPPPIPLLLHETAED-TSIDG-----FFIPKKSVMINAFAIWRDPDTSWT-DPDTFRPSRFLP--GVPDF
CYP84A4 -----HLEKLTFLKCILKETLRHPPFPLLLHETVKD-TEISG-----YFIPKGSVMVNTYALWRDPNSWS-DPESFNPRFLNP--IAPDL
CYP705A1 -----DLPNLPYLQAVWKEGLRLHPTPLVWRE-FQEGCEIGG-----FFVPKNTTLVNVSYAMMRDPDSWQ-DPDEFKPERFLAS--LSRE
CYP705A24 -----DLPKLPYLQAVWKEGLRLHPPVAVLPRE-FTQDCNIGG-----FYIHEGTSLVNVNAYAVMRDPDIWE-DPNEFKPERFLDAS--RLGQE
CYP705A15 -----DLPNLPYLQAVWKEGLRLHPPGFLFARF-SQEGCRIGG-----FYIPEKTTLMINAYAVMRDSDSWE-DPDEFKPERFLASS--RSEQE
CYP705A4 -----DLPKLPYLQAVWKEGLRLHPPGPFLLRF-TKEGCRIRG-----FYVPENTSVVNVYAVMRDPDAWE-DPLVFKPERFLASS--RAEQE
CYP705A16 -----DLPKLPYSQAVWKEGLRLHPTPLMVRE-FQEGCKVKG-----FYIPASTTLVNVGYAVMRDPNVWE-EPEEFKPERFLASS--RLREE
CYP705A19 -----DLPKLPYLQAVWKEGLRLHPTPLMVRE-FQEGCKVKG-----FYIPASTTLVNVGYAVMRDPNVWE-DPEEFKPERFLASS--RLMQE
CYP705A20 -----DLPKLPYLQSVWKEGLRLHPPPLPLMVRT-FQRSCMKG-----FYIAEKTTLVNVNAYAVMRDPDPTWE-DPDEFKPERFLR-----QE
CYP705A21 -----DLPKLPYLQAVWKEGLRLHPPPLPLFVRT-FQEGCKIGG-----FYIPEKTTLIGNAYVMMRDPDPSWE-DPEEFKPERFLSSS--RSTQE
CYP705A23 -----DLPSLPYLQATVKEGLRLHPPGFLFART-AREGFSVGG-----FYVPENTPLVNVNAYAVMRDPDGSWE-DPNEFKPERFLGS-----GK
CYP705A28 -----DLSNLPYLQSVWKEGLRLHPPASISVRM-SQERCELCG-----FYIPEKTLVNVNTYATMRDPNFWWE-DPEEFKPERFITSS--RSEQE
    
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CYP705A30 -----DLPNLPYLQAVVKEGLRLHPPGGSISVRM-FQERCELKG-----FYIPEKTLVNTYAIMRDPNFW-E-DPEEFKPERFLASS--RSEQE
CYP705A32 -----DLPNLPYLQAVVKEGLRLHPPGAVFLRT-FQERCELKG-----FYIPEKTLVNVYAIMRDPKLWE-DPEEFKPERFLASS--RSGQE
CYP705A2  -----DLPNLLYLQAIKEGLRLHPPGFLPRT-VQERCEIKG-----FHIPEKTLVNSYAIMRDPDFWE-DPDEFKPERFLSIS--RSGQE
CYP705A5  -----DLPNLPYLQAIKVEGLRLHPPG-PVVRT-FKETCEIKG-----FYIPEKTRLFVNVYAIMRDPDFWE-DPEEFKPERFLASS--RLGEE
CYP705A8  -----DLPNLLYLQATVKEGLRLHPTIPLVLR-FQDGTIGG-----FSIPKKTKLNVNGYAIMRDPDNWE-DPLEFKPERFLASS--RSSQK
CYP705A9  -----DLPNLPCLQATVKEGLRLHPPVPLVLR-FKEGCTIGG-----FYIPEKTLVNVYAMMRDPEYWE-DPQEFKPERFLASS--RSSQN
CYP705A18 -----DIPNLPYLQAVVKEGLRLHPPGPLLIRT-FQERCEMKG-----FYIPEKTLVINGAYVMRDPDSWE-DPEEFKPERFLSYS--RSGQE
CYP705A6  -----DLPNLPYLQAVVKEGLRLHPPGPLLVRT-FQERCKIKG-----FYIPEKTLVINAYVMRDPDSWE-DPDEFKPERFLRSS--SSGQE
CYP705A33 -----DIPNLPYLQAVVKEGLRLHPPFP LLTRK-FEERCEIKG-----FYIPEKTFLLINAYVMRDPDSWE-DPNEFKPERFLGSS--RLGQV
CYP705A3  -----DLPNLPYLQAVVKEGLRLHPPSPVLRK-FQEKCEVKG-----FYIPEKTLVNVYAIMRSDSWE-DPEFKPERFLTSS--RSGEE
CYP705A22 -----DLPNLPYLHAVIKKALRLHPPGPLPRE-FQQGCKIGG-----FYIPEKTLLLINAYVMRDPNVWE-DPEEFKPERFLASS--RSGQE
CYP705A12 -----DLPNLPYLQAVVKEGLRLHPSAPVLLRV-FGSECEVKE-----FVYPEKTLVNVLYAVNRDPDSWE-DPDMFKPERFLVSS--ISGDE
CYP705A13 -----DLPNLPYLQAVIKKGLRLHPPAPLLGRK-VTDGCTIGG-----CYVPKNTLLVNVAYVMRDPDSWE-DPDEFKPERFLASS--RGKEE
CYP705A25 -----DLPNLPYLQAVMKEGLRLHPHTPILVRN-ATEGCKIGG-----YYIQNTTMMVNAVAVLRDPDSWE-YPDEFKPERFMTSP--LKGKE
CYP705A27 -----DLNLPYLQAVMKEGQRLHPSPLMLVRN-ATKGCKIGG-----YYIQNTTMLINTYAMMIDPDSWE-NPDKFQPERFMVSP--SKGKD
CYP712A1  -----DVPNLPYLRAVLRRLRLHPSAPLIIRE-CAEDCQVNG-----CLVKSSTRVLVNVYAIMRDSLEWA-DADRFIPERFLE----SSEE
CYP712A2  -----DLQKLPYLQAAIKETLRLHPVGPLLRE-SNTDMKING-----YDVKSGTKIFINAYGIMRDPITTYK-DPDKFMPEFLVVE--QDTER
CYP93D1   -----DLCNLSYTAQAVKEMRLHPPGPIFVRE-SDEECVAG-----FRIPAKTRIVNVVAIGRDSNQWE-DPLEFRPERFEGSE--WKVMS
CYP81D6   -----DTKNLPYLQWIVLETLRLHPPAPTNPVHSTSEDCMLAG-----YDVPRGSMVNVNWSMHRDPSIWE-DPEMFKPERFKNEK-----
CYP81D7   -----DTKNLPYLQWIVLETLRLHPVAPPTNIPHMTSDDCILAG-----YDVPRGSMVNVNWSMHRDPSIWE-APMFKPERFKNEK-----
CYP81D11  -----DIVKLPYLQHVIVSETLRLYPVAPMLLPHLASEDCIVDG-----YDVPRGTIILVNAWAHRDPKLWE-EPEFKPERFEKKG-----
CYP81D2   -----DIPNLPYLQNVIVSETLRLYPAAPMLLPHVASKDCKVGG-----YDMPRGTMLLTNAWAHRDPQLWD-DPTSFKPERFEKEG-----
CYP81D3   -----DLSHLPYLQNVIVSESLRLYPASPLLVPHVASEDCKVGG-----YHMPRGTMLLTNAWAHRDPKIWD-DPTSFKPERFEKEG-----
CYP81D8   -----DISNLPYLQNVIVSETLRLYPAAPMLLPHVASEDCKVAG-----YDMPRGTIILLTNVAWAHRDPQLWD-DPMSFKPERFEKEG-----
CYP81D4   -----DIVNLSYLQSVIVLETLRMYPAVPLLLPHLSSSEDCKVGG-----YDIPSGTILLTNVAWAHRDPEVWE-EPEIFKPERFEKEG-----
CYP81D5   -----DIVNLHYLQNVIVSETLRLYSAPVLLLPHFSSDECKVAG-----YDMPRRTLLLTNVWAMHRDPGLWE-EPEFKPERFEKEG-----
CYP81D1   -----DLSELPYLKNIVLETLRLHPATPLLVPHMASEDCKIGS-----YDMPRGTILLVNAWAHRDPNTWD-DPDSFKPERFEKEE-----
CYP81F3   -----DIANLPYLQNVIVSETLRLYPAAPLLVPRSPTEIDKIVGG-----YDVPRGTMMVMNAWAHRDPELWN-EPEFKPERFNGGE--GGGRG
CYP81F4   -----DIANLPYLQNVIVSETLRLHPPAVLVPRSTAEDIKIGG-----YDVPRDTMMVMNAWAHRDPDLWT-EPEFRNPERFNGGE--GEK
CYP81F2   -----DIANLPYLQNVIVSETLRLCPAAPLLVPRSPTEIDKIGG-----YDIPRGTIVLVNAWAHRDPRLWD-EPEFKPERFEDQE-----
CYP81F1   -----DIAVLPYLQNVIVSETLRLYPVAPFLIPRSPTEIDKIGG-----YDVPRDTIVMNAWAHRDPEIWE-EPEKFNPRYNDGC--G--SD
CYP81H1   -----DLVNMNLYLKNVIVSETLRLYPVAPLMLVPHVPSDDCVIGG-----FNVPRDTIVLVNVAWAHRDPSVWD-DPTSFKPERFEGSD--Q--FG
CYP81G1   -----DTGKCPYLNIVIVSETLRLFPAAAPLLVPHASSTDCVAG-----FDIPRRTWLFVNAWAHRDPNVWD-DPETFKPERFESET-----
CYP81K1   -----DLSSLPYLRCVIYETLRLYPAAPLLPHCSSKRFNLGN-----YEIPENIMLLVNAWAHRDPELWN-EANVFKPERFEGFV--G--D
CYP81K2   -----DLSSLPYLRCVIYETLRLHPPAPLLPHCSSKRFNLGN-----YEIPENTVLLVNAWAHRDPELWN-EADVFKPERFEFV--G--D
CYP82C3   -----DIKNLVYLQAIKKEGLRLYPAAPLLGHREAMEDCTVAG-----YNVPCGTRLIVNVWIKIQRDPKVYM-EPNEFRPERFITGE--AKDFD
CYP82C2   -----DIENLVYLQAIKKEGLRLYPAAPLLGHREAMEDCTVAG-----YNVRRGTRMLVNVWIKIQRDPKVYM-EPNEFRPERFITGE--AKEFD
CYP82C4   -----DIENLVYLQAIKKEGLRLYPAAPLLGPREAMEDCTVAG-----YVPCGTRLIVNVWIKIQRDPKVYM-EPNEFRPERFITGE--AKEFD
CYP82F1   -----DIKDLVYLQAIKKEGLRLYPAAPLLVAYRAVVEDFDIAFCK-----CHVPAGTQLMVSAAWKIHRDPNVWS-NPEQFEPERFLT--S--NRELD
CYP82G1   -----DIQNLKYLQAIKKEGLRLYPAAPLLTGIREAREDCVGG-----YRVEKGTLLVNVWIKIHRDPKIWP-DPKTFKPERFME----DKSQ
CYP76C2   -----DISALPYLQAVVKEGLRLHPPAPLLVPRKAESD-VEVLG-----FMVPKDTQVFNVAWAIGRDPNVWE-NSSRFKPERFLG----KDIDL
CYP76C4   -----DISGLPYLQAVVKEGLRLHPPAPLLVPRKAESD-VEVLG-----FMVPKDTQVFNVAWAIGRDPSVWE-NPSQFEPERFLG----KDIDV
CYP76C1   -----DISKLPYLQAVVKEGLRLHPPAPLLIPRKAESD-AEILG-----FMVLKDTQVFNVAWAIGRDPSVWD-NPSQFEPERFLG----KDMDV
CYP76C5   -----HISKLPYLQAVIKKEGLRLHPPAPLLIPRKAESD-AEILG-----FHVPKDSHVLNVVAWAIGRDPNVWE-NPTQFEPERFLG----KEIDV
CYP76C6   -----DISKLPYLKAVVKEGLRLHPPAPLLIPRKAESD-AEILG-----FTVLKDSQVFNVAWAIGRDPLVWE-NPTHFEPERFLG----KEIDV
CYP76C3   -----DIPSLPYLQAVVKEGLRLHPPAPLLIPRKAESD-AEILG-----FLVPKNTQVFNVAWAIGRDASVWE-NPMKFEPERFLG----RETDV
CYP76C7   -----DIVKLPYLQAVVKEGLRLHPPAPLLIPRKAESD-AEILG-----FLVPKNTQVFNVAWAIGRDPNVWK-NPTQFEPERFLG----RGIDV
CYP76G1   -----DLPNLPYLSAVIMETLRLHPPAPLLIPRKAESD-AEILG-----YTIIPKETQVFNVAWAIGRDPKTIWI-DPIMFKPERFISD--PDARDF
CYP75B1   -----DIAQLPYLQAVIKKEGLRLHPPAPLLIPRKAESD-AEILG-----YHIIPKSTLLTNVAWAHRDPSVWD-DPLAFKPERFLPGGEKSGVDV
CYP706A1  -----HLPKLPYLQAVMKEGLRLHPTPLLVPHRNSETSVVAG-----YTVPKDSKIFINVAWAHRDPKNWD-EPNEFKPERFLS--LDF
    
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CYP706A2 -----HLPKLPYLQAVMKETLRLHPTLP LLVPHRNSSETSVAAG-----YTPVKDSKIFINVAIHRDPKNWD-EPNEFKPERFLENS----LDF
CYP706A3 -----HISKLPYILAIMKETLRLHTVAPLLVPRRPSQTTVVG-----FTIPKDSKIFINAWAIHRNPVWE-NPLKFDPRFLDMS----YDF
CYP706A7 -----HITKLPYILSIMKETLRLHPALPLLIPRCPSETTVIGG-----YTIPNDSKVFINVWAIHRNPVWE-NPLEFNPDRFLDKG----YDF
CYP706A5 -----HITSLPYILAVLKETLRLYPTIPLLVPHRPSETALVGG-----YTIPKNTKIFINWWSIQRDPNWE-YPTFEFRPERFLDKKS---CDF
CYP706A6 -----HITRLLPFISAIMKETLRLYPTIPLLVPHRPSETALVGG-----YTIPKNTKIFINWWSIQRDPNWE-YPTFEFRPERFLDKKS---CDF
CYP706A4 -----HITRLLPYILAIMKETLRLHPTLP LLVPHRPAENTVVG-----YTIPKDTKIFVNWWSIQRDPNWE-NPTEFRPERFLDNNS---CDF
CYP79B2 -----DIPKLNYYKAILREAFRLHPVAAFNLPHVALSDTTVAG-----YHIPKGSQVLLSRYGLGRNPKVWA-DPLCFKPERHLNEC----SEV
CYP79B3 -----DIPKLNYYKAIIREAFRLHPVAAFNLPHVALSDTTVAG-----YHIPKGSQVLLSRYGLGRNPKVWS-DPLSFKPERHLNEC----SEV
CYP79A2 -----DLPNLLNYVKACVKEAFRLHPVAFNLPHMSTTDTVVDG-----YFIPKGSQVLLSRMGIGRNPSVWD-KPHKFDPERHLSTN----TCV
CYP79C1 -----DVPNLLNYVKACCETLRLHPTNPFLVPHMARHDTTLAG-----YFIPKGSQVLLSRPGVGRNPKTWD-EPLIYRPERHITGN----EV
CYP79C2 -----DISQLNYIKACSKESFRLHPANVFMHHVAREDTTLAG-----YFVPGSQVLLSRLGLGRNPKIWD-EPNAFKPERYLDGHVEKSLGV
CYP79F1 -----DIPNLLNYLKACCETFRIHPSAHYVPSHLARQDITLGG-----YFIPKGSQVLLSRPGLGRNPKIWK-DPLVYKPERHLQGD-GITKEV
CYP79F2 -----DIRNLLNYLKACCETFRIHPSAHYVPPHVARQDITLGG-----YFIPKGSQVLLSRPGLGRNPKIWK-DPLAYERHLQGD-GITKEV
CYP703A2 -----DLVHLLNYLRCVWRETFRMHVAGPFLIPHESVRATTING-----YYIPAKTRVFINTHGLGRNTKIWD-DVEDFRPERHWPVE-GSGRVE
CYP98A8 -----DIPILPYLQCVVKEALRLHPSTPLMLPHKASETVWVG-----YKVPKGATVYVNVQAIARDPANWI-NPYEFRPERFLQEETDVKGR-
CYP98A9 -----DIPKLPFLQCVLKEALRLHPPTPLMLPHKASESVQVGG-----YKVPKGATVYVNVQAIARDPANWS-NPDEFRPERFLVEETDVKGQ-
CYP98A3 -----DFSRLPYLQCVVKEFRLHPPTPLMLPHRSNADVKIGG-----YDIPKGSNVHNVWAVARDPAVWK-NPFEFRPERFLEEDVDMKGH-
CYP78A10 -----DLPKLPYVRAIVKETLRMHPPGPLL SWARLSIHDTQIG-T-----HFIPAGTTAMVNMWAITHDEKVPW-EAHEYKPERFLGAQESNNFPI
CYP78A5 -----DIPKLPYLQAVIKETLRLHPPGPLL SWARLAIHDTVHG-P-----NLVPAGTIAMVNMWSITHNKIWT-DPEAFKPERFISEDVS----I
CYP78A6 -----DLASLPYLTAVWKEVLRHPPGPLL SWARLAITDITVD-G-----RLVPAGTTAMVNMWAVSHDPHWV-DPLEFKPERFVAKEGEVEFSV
CYP78A9 -----DVVSLVYLTAVWKEVLRHPPGPLL SWARLAITDITID-G-----RRVPAGTTAMVNMWAIADPHVWE-NPLEFKPERFVAKEGEVEFSV
CYP78A8 -----DLPSLTYLTAIWEVLRHPPGPLL SWARLSITDTSVD-G-----YHVPAGTTAMVNMWAIARDPHVWE-DPLEFKPERFVAKEGEAEFSV
CYP78A7 -----DLAKLPYLNAVVKETLRLHPPGPLL SWARLSTSDVQLSNG-----MVIIPKGTAMVNMWAIHTDQTVWS-DPLKFDPERFTG---NADMDI
CYP77A4 -----DVDKMFVLAQAVKELLRKHPPTYFSLTHAVMETTLAG-----YDIPAGVNVVYLPGISDPRINW-NPKKFDPRFMLGKE--DADI
CYP77A6 -----DVDKMFVLAQAVKEILRRHPPTYFTLTHSVTEPTTVAG-----YDVPVGNVVEFYLPGISDPRINW-DPKKFNDFRFLSGKE--EADI
CYP77A7 -----DVDKMFVLAQAVKEILRRHPPTYFTLTHSVTEPTTVAG-----YDVPVGNVVEFYLPGISDPRINW-DPKKFNDFRFLSGRE--DADI
CYP77A9 -----DLNKMVFLQAVKELLRHPPTYFTLTHSVTEPTTVAG-----YDIPVGNVVEFYLPGISDPRINW-KPEKFDPRFITGGE--DADL
CYP77B1 -----DVAKMPYLEAIVKETLRHPPGHFLLSHAADKDELGG-----YDIPAGAYVEIYTAWVTENPDWS-DPGKFRPERFLTGGDGDVADW
CYP89A4 -----DAQKMPYLKAVVMEGLRRHPPGHFVLPHSVTEDTVLGG-----YKVPKKGTFINFMVAEIGRDPKWE-EPMAFKPERFMGEEEAVD--I
CYP89A5 -----DAQKMPYLEAVVMEGLRRHPPGHFVLPHSVTEDTVLGG-----YKVPKKGTFINFMVAEIGRDPKWE-EPMAFKPERFM--EEAVD--I
CYP89A6 -----DAQKMPYLKAVVMEGLRRHPPGHFVLPHSVTEDTVLGG-----YKVPKKGTFINFMVAEIGRDPKWE-EPMAFKPERFM--EEAVD--I
CYP89A7 -----DTQKMPYLKAVVMEGLRRHPPGHFVLPHSVTEDTVLGG-----YKVPKKGTFINFMVAEIGRDPKWE-EPMAFKPERFMGEEEAVD--I
CYP89A2 -----DVEKMPYLKAVVLEGLRRHPPGHFLLPHSVTEPTTVAG-----YKVPKKGTFINFMVAEIGRDPVWE-EPMAFKPERFMGEEEAVD--L
CYP89A3 -----EMKKMPYLKAVVLEGLRLHPPGHLLLPHRVSDELGG-----YRVPKKGTFINFMVAEIGRDPVWE-EPMEFKPERFLGEDKEVD--V
CYP89A9 -----DLGKLSYLVKAVILEGLRRHPPGHYLSYHKVTHDVLGG-----FLIPROGTINFMVGMGRDPKIWE-DPLTFKPERFLENGEACDFDM
CYP704A1 EEA-----LAQMQLHAALSETMRLYPPVPEHMRCAENDVLPDG-----HRVSKGDNIYYISYAMGRMTYIWGDAAEFKPERWLKDG-----
CYP704A2 EEA-----LDEMHYLHAALSETLRLYPPVDMRCAENDVLPDG-----HRVSKGDNIYYIAYAMGRMTYIWGDAAEFKPERWLKDG-----
CYP704B1 EFAGLLNYDSLGLHLYLHAVITETLRLYPAVQDPKGVLEDDMLPNG-----TKVKAGGMVTVYVPSMGRMEYNWGSDAALFKPERWLKDG-----
CYP86A2 EFD-----EVDRLVYLKAALSETLRLYPSVPEDSKHVNDVLPDG-----TFVPAGSSVTYSIYAGRMKSTWGEDCLEFKPERWISPDG-----
CYP86A4 GFD-----EIDRLVYLKAAISETLRLYPSVPEDSKHVNDVLPDG-----TFVPAGSSVTYSIYAGRMKSTWGEDCLEFNPWISPIDG-----
CYP86A8 SCE-----ELDRLVFLKAALSETLRLYPSVPEDSKRAVKDDVLPDG-----TFVPAGSSVTYSIYAGRMKSTWGEDCLEFKPERWISQSDG-----
CYP86A7 TFD-----EIDQLVYLKAALSETLRLYPSVPEDSKFVANDVLPDG-----TFVPSGNSVTYSIYSGRMKFIWGEDCLEFKPERWLEESRD-----
CYP86A1 EFD-----EADRLVYLKAAALAEVLRHPPGHFVLPHSVTEDTVLGG-----TFVPSGNSVTYSIYSGRMKFIWGEDCLEFRPERWLTADGER-----
CYP86B1 GPE-----EIKKMDYLQAALSEALRLYPSVPVDHKEVQEDDVFPDG-----TMLKKGDVYIAYIYAMGRMEAIWGDCLCFRPERWLR---DG-----
CYP86B2 RPE-----EIKKMDYLQAALSETLRLYPSVPVDHKEVLEDDVFPDG-----TKLKKGEKVYIAYIYAMGRMETIWKDCREFKPERWLR---DG-----
CYP86C3 TVK-----ELNDMVYLQAALSETMRLYPPVPEHMRCAENDVLPDG-----TFVRKGSRYVFATYAMGRMESIWKDCESFKPERWIQ---SG-----
CYP86C4 TVK-----ELNNMVYLQAALSETLRLFPPIPMEMKQAIEDDVLPDG-----TFVRKGSRYVFSIYAMGRMESIWKDCIEFRPERWIQ---AG-----
CYP86C2 TVK-----ELNDMVYLQAALSESLRLYPPVPEHMRCAENDVFPDG-----TFLRKGSRVYFVSIVYAMGRMESIWKDCIEFRPERWIQ---GG-----
CYP86C1 EAE-----DFREMYLQAALTESLRLYPSVPMEMKQAIEDDVLPDG-----TRVKKGARIHYSVYSGRIESIWKDWEFKPERWIK---EG-----
CYP94B1 GFE-----DLREMSYTKACLCEAMRLYPPVAVWDSKHAANDVLPDG-----TPLKKGDVYIYFYPYMGGRMEKVIWGDWDEFKPNRWFEEEPSYG-----

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CYP94B3 GFE-----DLKEMAYTKACLCEAMRLYPPVSWDSKHAANDDVL PDG-----TRVKRGDKVTFYPYGMGRMETLWGT DSEEFNPNRWF DSEPGS----
CYP94B2 DYE-----SLKKLSL LKACLCEVMRLYPPV PWSKHALTDDR L PDG-----TLVRACDRVTFYPYGMGRMEELWGEDWDEFKPNRWAESYDKT----
CYP94C1 RCD-----EMREMDYLHASLYESMRLFPFPVQFDSKFALNDDV L SDG-----TFVNSGTRVTFYHAYAMGRMDRIWGPDYEEFKPERWLDNEGKF----
CYP94D1 GFE-----HLKMMNYLHAAITESLRLYPPVPVDIKSCAEDNVL PDG-----TFVKGKWAITYNIIFAMGRMESIWGKDCDRFDPPERWIDETNGC----
CYP94D2 GFE-----DLKLMNYLHAAITESLRLYPPVPVDTMCAEDNVL PDG-----TFIKGDKWGISYNAYAMGRMESIWGKDCDRFDPPERWIDETNGG----
CYP96A1 NDFDSFNAQELNKL VYLHGALCEALRLYPPVPFQHKSPAKSDV L PSG-----HRVDASSKIVFCLYSLGRMKS VWGEDASEFKPERWISE-----
CYP96A9 YDSDFSFPQEVKLVYLHGAVCEALRLYPPVPFQHKSPAKPDV L PSG-----HKVKANSRILFCLYSLGRMKS VWGEDAMEFKPERWISE-----
CYP96A10 NDSDFSFPQELKLVYLHGAI CESLRLYPPVPFQHKSPKPDV L PSG-----HKVDANSKILFCLYSLGRMKS VWGEDALEFKPERWISE-----
CYP96A5 --GMSLDADKLNKMYLHGALCESLRLYAPIPFERKTPIKQDV L PSG-----HMDKNWKILFSVYALGRMRS VWGODASEFKPERWISER----
CYP96A11 -----NGQENLDKLVYLHGALCEAMRLYPPVSFGRKSPIKSDV L PSG-----HKVQANSKIIICLYALGRMRA VWGDDALEFKPERWVSD-----
CYP96A2 -----NSQENVDKLVYLHGALCEAMRLYPPVSFGRKSPIKSDV L PSG-----HKVDANSKIIICLYALGRMRA VWGEDASQFKPERWISE-----
CYP96A12 -----NGQENLDKLVYLHAALEYSMRLYPPVAFGRKSPIKPDV L PSG-----HKVEANSVIIIFLALGRMRA VWGEDATEFKPERWVSE-----
CYP96A13 -----EPMEYLNVLVYLHGALYEA MRLYPPVPFERMSPIKPDV L PSG-----HKVDSSMKILIFIALGRMRA VWGEDASEFKPERWVSE-----
CYP96A7 -----DMSSYLNKLVYLHGALNESMRLYPPPIPFERKSPIKDDV L PSG-----HKVKSNLNIMIFIYAMGRMKT IWGEDAMEFKPERWISE-----
CYP96A8 -----DMSSYLNKLVYLHGALSES MRLYPPPIPFQRKSPIKEDV L PSG-----HKVKSINIMIFIYAMGRMKT IWGEDAMEFKPERWISE-----
CYP96A3 -----ADLEKLVYLHGAV CETLRLYPPVPFNHKS PAKPDV L PSG-----HRVDEKWKIVISMYALGRMKS VWGDDAEDFRPERWISD-----
CYP96A4 -----ADLDKLVYLDGAV CETLRLYPPVSPFNHKS PAKPDV L PSG-----HKVDKNWRVVIPIYSLGRMKS VWGDDAEDFRPERWISD-----
CYP96A15 -----EDLEKLVYLHAALES MRLYPPPLPFNHKS PAKPDV L PSG-----HKVDANSKIVICIALGRMRS VWGEDALDFKPERWISD-----
CYP97A3 -----QDMKKLYTTRVMNESLRLYPPV LIRRSIDNDILG-----EYPIKRGEDIFISVWNLHRSPLH WDD-AEKFNPERWPLDGNP-----
CYP97C1 -----EDIKELKYITRCINESMRLYPPHPV LIRRAQVPDILPG-----NYKVNTQDIMISVYNIHRSSEVWEK-AEEFLPERFDIDGAI-----
CYP97B3 -----ESMKKLEYIRLIVVEVLR LFPQPLLIRRTLK PETLPGGHKGEKEGHKVPKGT DIFISVYNLHRSPLYF WDN-PHDFEPEPERFLRTKESNGIEG-----
CYP709B2 -----TCSK LKLMNTVFMESLRLYGPV LNLRLASEDMKLG-----NLEIPKGTIT IILPIAKMHRDKAVWGS DADKFNPMRFANGL-----
CYP709B3 -----TFSK LKLMNMVLMESLRLYGPVVIKISREATQDMKVG-----HLEIPKGT SIIIPLLKMH RDKAIWGEDAEQFNPLRFENGI-----
CYP709B1 -----TFSK LKLMNMVIMESLRLYGPV SALAREASVNIKLG-----DLEIPKGT TVIPLLLKMHSDKTLWGS DADKFNPMRFANGV-----
CYP735A1 -----QLSKLTS LSKVINESLRLYPPATLLPRMAFEDIKLG-----DLTIPKGLSIWIPVLA THHSNELWGEDANEFNPERFG-----
CYP735A2 -----QLSSLTSLNKVINESLRLYPPATLLPRMAFEDIKLG-----DLTIPKGLSIWIPVLA THHSNELWGEDANEFNPERFG-----
CYP72A11 -----GLNQLKVM TMILYEVLRLYPPPIQLSRAIHKEMELG-----DLTLPGGV L INLPILLVQDTELWGN DAGEFKPDRFKDGL-----
CYP72A13 -----GLNQLKVM TMILYEVLRLYPPVQLTRAIHKEMQLG-----DLTLPGGVQI SLPILLIQDRELWGN DAGEFKPDRFKDGL-----
CYP72A15 -----GLNQLKVM TMILYEVLRLYPPVTLTRAIHKELKLG-----DLTLPGGVQI SLPILLVQHDIELWGN DAAEFNPD RFKDGL-----
CYP72A10 -----CLS QLKVM TMILYEVLRLYPPVTHLTRAIDKEMKLG-----DLTLPA GVHISLPIMLVQD PMLWGT DAAEFKPERFKDGL-----
CYP72A14 -----GLNQLKVM TMILYEVLRLYPPVQLTRAIHKEMKLG-----DLTLPGGVQI SLPVLLVHRDTELWGN DAGEFKPDRFKDGL-----
CYP72A9 -----GINQLKVM TMIIYEVLRLYPPVIQMN RATHKEIKLG-----DMTLPGGIQVHMPVLLIHRD TKLWGD DAAEFKPERFKDGI-----
CYP72A7 -----SLNQLKVM TMIFNEVLRLYPPVAQLKRVVNKEMKLG-----ELTLPAGIQIYLP TILVQDTELWGD DAAEFKPERFRDGL-----
CYP72A8 -----ALSRLK TMSMILNEVLRLYPPGILLGRTVEKETKLGE-----DMTLPGGAQV VIPVLMVHRDPELWGEDVHEFNPERFADGI-----
CYP72C1 -----GLSHLKVVTMILHEVLR LYSPAYFTCRITKQEVKLE-----RFSLPEGV VVTIPMLLVHHDSDLWGD DVKEFKPERFANGV-----
CYP734A1 -----HVVKLKTLSMILNESLRLYPPIVATIRRAKSDVKLG-----GYKIPCGTELLIPII AVHHDQAIWGN DVNEFNPARFADGV-----
CYP721A1 -----ILDQLKTL SMIINETLRLYPPAMTLNRDTLKRKLG-----DLDIPAGTQLYLSVVA MHHDKETWGD DAAEFNPRFED-----
CYP715A1 -----KLAGLKKMSWVMNEVLR LYPAPNAQRQARN D IEVN-----GRVLPNGTNIWIDVVA MHHDVELWGD DVNEFKPERFDGNL-----
CYP714A1 -----SISNLKTVTMVIQETLRLYPPAAFVSREAL EDTKLG-----NLVVPKGVCIWTLIPTLHRDPEI WGDANEFNPERFSEGV-----
CYP714A2 -----SIPNLKTVTMVIQETMRLYPPAPIVGREASKDIRLG-----DLVVPKGVCIWTLIPALHRDPEI WGPDANDFKPERFSEGI-----
CYP74A -----MGAIEKMELTKSWYEC LRFEPVTAQYGRAKDLVIESHD-----AAFVKV KAGEMLYGYQPLATRD PKIFD-RADEFVPERFV GEEGKLLRH-----
CYP74B2 -----FKTVNEMELVKS VYETLRFSPVPLQFARAKKDFQISSHD-----AVFEVKKGELL CGYQPLVMRDANVFD-EPEEFKPD RYVGETGSELLNY-----
CYP73A5 -----DLHKL PYLQAVVYKETLRMAIPLL VPHARKLHDAKLAG-----YDIPAESKLLVNAWLANNPNSWK-KPEEFRPRFEEEEE---SHVEA-----
CYP722A1 -----FLELEDLSEMPYASKMVKESLRMASVVPWF PRLVLQDCMEG-----YKIKKGNWINIDARS IHL DPTVYS-EPHKFNPLRFEEEA K-----
CYP701A3 -----QLSQVPYLNQV FHETLRKYSAPLVP IRYAHEDTQIGG-----YHVPAGSEIATNIYGCNMDK KRWE-RPEDWVPERFLDDGKYETS DL-----
CYP711A1 -----AHDLQHKFPYLDQVIKEAMRFYMVSP LVARETAKEVEIGG-----YLLPKGTWWLALGV LAKDPKNFP-EPEKFKPERFD PNGEEKHR-----
consensus
501.....510.....520.....530.....540.....550.....560.....570.....580.....590.....

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CYP51A1  SCS-----YISLGAGRHECPGGSFAFLQIKAVWCHLRLNFLELQVSP--FPEINWNALVVGAKGNMVMRYKRRPFS-----
CYP51A2  AFS-----YIAFGGGRHGLGEPFAYLQIKAIWSHLRLNFLELQVSP--FPEIDWNAMVVGKGNMVMRYKRRQLS-----
CYP710A1  RN-----FLAFGWGPHQCVGQRYALNHLVLFIAMFSSLLDFKRLRSDGDEIVYCPTISPKDGCTVFLSRRVAKYPNFS-----
CYP710A2  RN-----YLAFGWGAHQCVGQRYALNHLVLFIAMFSSLLDFKRLQSDGDDIYICPTISPKDGCTVFLSKRIVTYPNL-----
CYP710A3  RN-----FLTTFGGISHQCVGQRYALNHLVLFIAMFSSMDFKRVRSDDGDEIVHIPTMSPKDGCTVFLSSRLVTSP-----
CYP710A4  RN-----FLTTFGNQSHQCVGQRYAMNHLVLFIAMFSSMDFKRVRSDDGDDIYHIPTMSPKDGCTVFLSSRLVTSP-----
CYP702A1  TY-----IPFGAGSRQCVAEFAKLQMAIFIHHLR-DRMSMKIGTTILRNFMFMPNGCEVQFLKDEVDNSSGSGNPDCNG-----
CYP702A2  TF-----IPFGAGRRLCVGAEFAKMQMAVFIHHLFR-YRWSMKSGTTIIRSFMLMFPGGCDVQISEDTEVDK-----
CYP702A8  NY-----IPFGAGPRLCVGAYFAKLLMAIFIHHLCR-YRWSMKAETVTRSYMLMFPGRCDVQISKDTQEHDSDG-----
CYP702A5  TY-----LPFGSGTRLCVGAEFVKLQMAIFIHHLFR-YRWSMKAETTLRRFVLVLPFGSDVQIS-----
CYP702A6  TY-----IPFGSGSRLCVGAEFVKLQMAIFIHHLR-YRWSMKTETTLRRFVLVLPFGSDVQILEDTKAK-----
CYP702A3  EY-----MPFGAGGTHCVGSEFAKLIHHLR-FRSLDPKTEVLRRYTLVFPAGCVVHISKESE-----
CYP708A2  TF-----MVFGGVRQCVAEFAKRLQISIFIHHLVTTYDFSLAQESEFIRAPLPYFPKGLPIKISQSL-----
CYP708A3  TF-----MAFGYGVRLCVGAESRLQMAIFIHHLVAYYDFSMVQDSEIIRSPFHQYTKDLLINISQSPTK-----
CYP708A4  TF-----MVFGTGLRQCAGAEFARLQISVFIHHLVTTYNFSLHQDCEVLRVPAHLPNGISINISKCPKK-----
CYP708A1  TF-----MAFGGGARLCAGAEFARLQMAIFIHHLVTTYDFSLIDKSYIIRAPLLRFSKPIRITISENPLSSSHQANL-----
CYP87A2  HF-----MAFGGGMRFVGTDFTKLQMAAFLHSLVTKYRWEEIKGGNITRTPGLQFPNGYHVKLHKKRD-----
CYP90A1  -----NVFTPFGGGRLCPGYELARVALSVFLHRLVTFGSWPAEQDKLVFFPTTRTQKRYPIFVKRRDFAT-----
CYP90B1  SGSF-----STWGNMYMPFGGPRLCAGSELAKLEMVFIHHLVTKFNWELAEDDKPFAPFVDFPNGLPIRVSRI-----
CYP90C1  -----ICFTPFGGGRLCPGLELSKLEISIFIHHLVTRYSWTAAE-DEIVSFPTVKMKRRLPIRVATVDDASPISLEDH-----
CYP90D1  -----FSPFGGGRLCPGLDLARLETSVFIHHLVTRFRWIAEE-DTIINFPTVHMKNKLPWIWKRI-----
CYP724A1  -----TAFGGGVRVCPGGELGKLQIAFFLHHLVLSYRWKIKSDEMPIAHYVVEFKRGMLEIEPTKFLED-----
CYP720A1  -----WRTSPFYCPFGGGTRFCPGAELARLQIALFLHYFITTYKWTQLKEDRISFFPSARLVNGFKIQLNRRDSDPPNQ-----
CYP85A1  -----CFVFGGTRLCPGKELGIVEISSFLHYFVTRYRWEIEGGDELNVFPRVFAPKGFHLRISPY-----
CYP85A2  -----FLLFGGVRLCPGKELGISEVSSFLHYFVTRYRWEIENGEDKLMVPRVSAKPYHLKCSPY-----
CYP707A1  -----FMPFGNGTHSCPGNELAKLEMSIMIHHLTTKYRCVCVY-----YLLITFSFTHFVLFQIYV-----
CYP707A3  -----FMPFGSGIHSCPGNELAKLEISVLIHHLTTKYRWSIVGSDG-IQYGPFPALPQNGLPIALERKP-----
CYP707A2  -----YMPFGNGVHSCPGSELAKLEMLLILHHLTTSFRWEVIGDEEG-IQYGPFPVPPKGLPIRVTP-----
CYP707A4  -----FMPFGSGVHACPGNELAKLQILIFLHHLVSNFRWEVKGGEKG-IQYSPFPIQNGLPATFRRHSL-----
CYP88A3  -----FLPFAGSHLCPGNLAKLEISIFIHHLKLYQVRSNPECP-VMYLPHTRPTDNCLARISYQ-----
CYP88A4  -----FLPFGLGSHLCPGNLAKLEISIFIHHLKLYQVRSNPGCP-VMFLPHNRPKDNCLARITRMP-----
CYP716A1  -----YVPFGGPRMCPGKEYARLEILIFMHNLVNRFKWEKVFPENKIVVDPLPIPKGLPIRIFPQS-----
CYP716A2  -----YVPFGGSRICPGREYARLEILIFMHNLVKRFKWEKVFPENKLVADPAPIPAKGLPIRIFPQS-----
CYP718    -----YLPFGGPRLCAGHQLAKISILVFMHFVVTGFDWLSLVYVDET-ISMDPLPFPSLGMPIKISPKVS-----
CYP71A12  HGK-----DLNFI PFSGGRRICPGINLALGLVEVTVANLVGRFDWRAEAGPN-GDQPDLTEAFGLDVCRKFP-----IAFPSSVI-----
CYP71A13  HGK-----NLNYI PFSGGRRICPGINLALGLAEVTVANLVGRFDWRVEAGPN-GDQPDLTEAIGIDVCRKFP-----IAFPSSVV-----
CYP71A18  HGQ-----DLKYI PFSGGRRICPGINLAMGLVEVTLANLVGRFDWVSDPGPN-GDQPDLAEDFGLDVCRKFP-----IAFPSSVA-----
CYP71A14  RGT-----NFEFI PFSGGRRICPGIGFAMALVEVTLANLVNRFNWRMEVQHS-GDEYDLAESTGLDVCRKFP-----LIVFPSPA-----
CYP71A15  RGT-----NFEYI PFSGGRRICPGIGFAMALVEVTLANLVNRFNWRMDARLS-GDEYDLAESTGLDVCRKFP-----LIVFPSPA-----
CYP71A28  QGQ-----DFNFI PFSGGRRICPDIDFATMLIEVGLANFVYRFRNWRVETRPL-GDD-DGLKQTMGEVCHKFP-----IAFPPLASFTI-----
CYP71A19  QGQ-----DFKFI PFSGGRRICPGIGFATSALIGVTLANIVKRFNWRMDVEPEQ-RVQHDLTEATGLVFRKFP-----LAIAPSSA-----
CYP71A20  QGQ-----DFKFI PFSGGRRICPGIGFATSALIGVTLANIVKRFNWRMDVEPEQ-RVQHDLTEATGLVFRKFP-----LAIAPSSA-----
CYP71A16  VGR-----NFKYI PFAGARRICPGIGLGSVMVTLANLVKRFNWRVDEGPGSYDKPDLVEGAGIDVCRKFP-----LIVFPSSA-----
CYP71A27  QRT-----DSKFV PFAGARRICPGIGFSLVLSKLANLVKRFNWRKLVGVPVGDGPDLAEASGIDVCRKFP-----LIVFPSSIAHT-----
CYP71A21  RGH-----NFELV PFAGARRICPAISFAVVLIEVALANFVHRYDWKLP-EDSKENQTNVAESTGMVIHRLFP-----YAIASSTT-----
CYP71A22  RGH-----NFELI PFAGARRICPAISFAVVLIEVTLANLVHRYDWRLP-EEYIEDQTNVAESTGMVIHRLFP-----YAIIVSSTT-----
CYP71A24  RGQ-----DTELV PFAGARRICPAISFAVVLDEVLANLVHQFDWTLPEESTEYQTDVAESTGMAVHRMFP-----LAFAMTT-----
CYP71A26  RGQ-----AFELI PFSGGRRICPAISFAVVLNEVLANLVHRFDWRLS-VESTEDQTEVAESTGIAIHRMFP-----YAIASNTT-----
CYP71A25  RGQ-----NFELI PFAGARRICPAVSFAVVLNEVLANLVHGFWDKLP-EESKEDKTDVAESSGFSVHREFF-----YAVASPYLT-----
CYP71A23  RGQ-----DFELI PFAGARRICPGISFAVVLNEVLANLVHGFWDWQS-----IDDETDVAESIGSVIRRMHPL-----YVIPSSTT-----
    
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CYP71B26 KGQ-----NFELL SFGSGRRICPGLYMGTTMVEFGLANMLYHFDWKL PEGMV-VEDIDMEEAPGLTVSKKSELVLPVKYLDH-----
CYP71B33 KGQ-----NFELL PFGGRRMCPAMYMGTTMVEFGLANLLYHFDWKL PEGMK-VEDMDMEEAPGLTVNKKNDL LLLVPVKYLDN-----
CYP71B34 KGQ-----HFELL PFGGRRMCPAVYMGTTMVEFGLANLLYHFDWKL PEGMK-VDDIDMEEAPGLTVNKKNEL ILLVPTKFLDP-----
CYP71B35 KGQ-----HFELL PFGGRRICPAIYMGTTMVEFGLANLLYHFDWKL PEGVE-VKDIDVEEAPGLTVNKKNEL LLLVPEMRRSCG-----
CYP71B36 KGQ-----HFELL PFGSGRRMCPAMYMGTTMVEFGLANMLYHFDWKL PEGMV-AEDIDLEES PGLNASKKNE LLLVPLKYLDH-----
CYP71B37 KGQ-----NFELL PFGSGRRMCPAMYMGTTMVEFGLANLLYHFDWKL PEGMV-VEDIDMEES PGLNASKKNE LLLVPRKYLN-----
CYP71B9 KGQ-----NFELL PFGSGRRICPGMYMGTTMVEFGLANMLYQFDWEVDPGMV-VEDIDMEES PGLAVGKKNEL LLLVPVKYLDH-----
CYP71B10 KGQ-----DYELL PFGSGRRICPAVYMGITTVEFGLANLLYHFDWKL PEGVA-VEDIYMDEASGLTSHKKHDL LLLVPVKSLV-----
CYP71B11 KGL-----NFELL PFGSGRRMCPGIGMGMALVHLTLINLLYRFDWKL PEGME-VEDVDLEESYGLVCPKKVPLQLIPVLTQWS-----
CYP71B12 KGL-----NFELL PFGSGRRICPGIGMGMALVHLTLINLLYRFDWKL PEGMK-VADVLEESYGLVCPKKIPLQLIPVL-----
CYP71B14 KGV-----DFELL PFGSGRRMCPGMGLGMLVHLTLINLLYRFDWKL PEGMN-IEDVDLEESYGLVCPKKVPLQLIPVLTQWT-----
CYP71B13 KGL-----NFELL PFGSGRRICPGIGMGMALVHLTLINLLYRFDWKL PEGME-VEDVDLEESYGLVCPKKVPLQLIPVLTQWT-----
CYP71B6 KGT-----SFELL PFGSGRRICPGMYVGLSTVEYTLANLLYHFDWKL PEGVA-TEEVSVEEAPGLTSHRKHPL LLLVNVNINRKL-----
CYP71B28 RGL-----NFELL PFGSGRRICPGMTMGIAIVELGLNLLYFFDWGLPEK-----EEAKEIITGNEVAL LLLVQVFLH-----
CYP71B29 KGL-----NFELL PFGSGRRICPGMTMGITLVEFALNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B15 KGK-----NYEFL PFGSGRRICPGMTMGITLVEFALNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B23 RGL-----NFELL PFGSGRRICPGMTMGIAIVELGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B7 RGL-----NFELL PFGSGRRICPGMTMGITLVEFALNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B16 RGQ-----HFELL PFGSGRRICPGMGLGITLVEFALNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B17 RGQ-----HFELL PFGSGRRICPGMAMGMATLELGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B18 RGQ-----HFELL PFGSGRRICPGISMGMATLELGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B19 RGQ-----HYELL PFGSGRRICPGMMPGIAAVALGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B20 RGQ-----HYELL PFGSGRRICPGMMPGIAAVALGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B2 RGQ-----HFDLL PFGSGRRICPGMMPGIAAVALGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B27 RGQ-----HFDLL PFGSGRRICPGMMPGIAAVALGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B21 KGQ-----HFELL PFGGRRICPGMATGMTIVELGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B22 KGQ-----HYELL PFGAGRRICPGMATGMTIVELGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B38 KGQ-----HFELL PFGAGRRICPGMATGMTIVELGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B5 KGQ-----HFELL PFGAGRRICPGMATGMTIVELGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B31 KGQ-----HYELL PFGAGRRICPGMATGMTIVELGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B8 KGQ-----HYELL PFGAGRRICPGMATGMTIVELGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B32 KGQ-----DYKLL PFGAGRRICPGMATGMTIVELGLNLLYFFDWGLPEK-----EADKIITGNGVAVGLVQVLLH-----
CYP71B24 KGN-----SFEMLL PFGSGRRICPGIAFAIATVELGLNLLYHFDWRLPEED---KDLDMEEAGDVTIKKVPL LLLVPLVHH-----
CYP71B3 KGN-----SFEMLL PFGSGRRICPGIAFAIATVELGLNLLYHFDWRLPEED---KDLDMEEAGDVTIKKVPL LLLVPLVHH-----
CYP71B25 KGH-----SFEFL PFGSGRRICPGMASAIATIELTLNLLYFFDWKLPEEM---KDMNMEESGDVTIVKKVPL LLLVPIIHH-----
CYP71B4 KGH-----SCELL PFGSGRRICPGIAMAIAIATIELTLNLLYFFDWKLPEEM---KDMNMEESGDVTIVKKVPL LLLVPIIHH-----
CYP83A1 KGT-----DYEFL PFGSGRRMCPGMRLLGAAMLEVPYANLLSFFNFKLPNGMK-PDDINMDVMTGLAMHKSQHL LLLVPELVNHY-----
CYP83B1 KGQ-----DFELL PFGSGRRMCPAMHLGIAAMLEVPYANLLSFFNFKLPNGMK-PDDINMDVMTGLAMHKSQHL LLLVPELVNHY-----
CYP84A1 KGS-----NFELP PFGSGRRMCPGMRLLGIALDVAHILHCFWKL PDGMK-PSELDMNDVFGLTAPKATRL LLLVPTTRLLICAL---
CYP84A4 KGN-----NFELV PFGSGRRMCPGMRLLGIALDVAHILHCFWKL PDGMN-PGDVDTVEGPGTLVPAKAIPL LLLVPTTRLLICAL---
CYP705A1 EDK-----KEKILNLL PFGSGRRMCPGNSLGYIFVGTAGMMVQCFDWEIENGDKINMEEATGG-FLITMAH---PLTCTPIPLPRTQNSLI
CYP705A24 EEK-----KEKTKL PFGAGRRMCPGNSLGYIFVGTAGMMVQCFDWEIENGDKINMEEATGG-FLITMAH---PLTCTPIPLPRTQNSLI
CYP705A15 KER-----REKAIKYIAFGSGRRMCPGNSLGYIFVGTAGMMVQCFDWEIENGDKINMEEATGG-FLITMAH---PLTCTPIPLPRTQNSLI
CYP705A4 EER-----REKEIKYIAFGSGRRMCPGNSLGYIFVGTAGMMVQCFDWEIENGDKINMEEATGG-FLITMAH---PLTCTPIPLPRTQNSLI
CYP705A16 EEI-----REKAIKYIAFGSGRRMCPGNSLGYIFVGTAGMMVQCFDWEIENGDKINMEEATGG-FLITMAH---PLTCTPIPLPRTQNSLI
CYP705A19 DEI-----REKAIKYIAFGSGRRMCPGNSLGYIFVGTAGMMVQCFDWEIENGDKINMEEATGG-FLITMAH---PLTCTPIPLPRTQNSLI
CYP705A20 EER-----R--ALKHIAFGSGRRMCPGNSLGYIFVGTAGMMVQCFDWEIENGDKINMEEATGG-FLITMAH---PLTCTPIPLPRTQNSLI
CYP705A21 EER-----REKAIKYIAFGSGRRMCPGNSLGYIFVGTAGMMVQCFDWEIENGDKINMEEATGG-FLITMAH---PLTCTPIPLPRTQNSLI
CYP705A23 EDE-----REHGLKYIAFGSGRRMCPGNSLGYIFVGTAGMMVQCFDWEIENGDKINMEEATGG-FLITMAH---PLTCTPIPLPRTQNSLI
CYP705A28 DEM-----REEVLKYIAFGSGRRMCPGNSLGYIFVGTAGMMVQCFDWEIENGDKINMEEATGG-FLITMAH---PLTCTPIPLPRTQNSLI
    
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CYP705A30 DEV-----REEVLKYIPFSAGRRCPCGSNLAAYISLGVIGVMVQCFDWRIEGEKVMNMEAET-TALSMAQ---PIKCTPVSRTKNPLPSS
CYP705A32 DEI-----REEVLKYPFSTGRRGCPGSNLAAYVSVGTAIGVMAQCFDWRIKGEKVMNMEAAGT-LVLTMAQ---PLMCTPGPRTLNLPLPSS
CYP705A2  DEI-----RDKFLKYIPFASGRRGCPGTNLAAYASVGTAVGVMVQCFDWKIEGENVMNMEAAGT-MVLTMAH---PLKCTPVPRTLNLLPP-
CYP705A5  DEK-----REDMLKYIPFGSGRRACPGSHLAYTVVGSVIGMMVQHFDMWIKGEKINMKE-GGT-MTLTMAH---PLKCTPVPRNLNT----
CYP705A8  DAI-----KEEVLKYLSPFGSGRRGCPGVNLAAYVSVETAIGVMVQCFDWKIDGCHKINMNEVAGK-GTLSMAH---PLKCTLVPRSVTPLTSTK
CYP705A9  DEI-----RDELLKYLSPFGNGRRACPGANLAAYISVGTAVGVMVQCFDWEIKGDKINMDEAPGK-ITLTMAH---PLNCTLVPRTLIPVTST
CYP705A18 DEK-----EQLTKYLSFGGGRRGCPGVNLYGIFVGTAGIMMVQCFDWEIKGDKVNMEETYGG-MNLTVMN---PLKCTPVPRTLQPFSTFS
CYP705A6  -----EKPFKYLSPFGGGRRGCPGGNLAAYIFVGTAVGVMVQCFDWKIKGDKVNMEETFEG-MNLSMVH---PLKCTPVLRSQPFF---
CYP705A33 DER-----EEAQKYIPFGGGRRGCPGANLASYIFVGTAVGVMVQCFDWGKIKGDKINMEETFEG-LTLTMVH---PIKCTPIPRTLFPVFTSN
CYP705A3  D-----EKELKFLSPFGSGRRGCPGANLGSIFVGTAVGVMVQCFDWKIKEDKVNMEETFEG-MTLKMHV---PICTPFFEPNLYLLLL
CYP705A22 DER-----REQALKFLSPFGSGRRGCPGSNLAAYMIVGSAIGMMVQCFDWRIEGEKVMNKEAVKG-TILTMAH---PLKLTVPVTRQPPLTWI-
CYP705A12 EKI-----REQAVKYVTFGGGRRTCPAVKLAHIFMETAIGAMVQCFDWRIKGEKVMMEAVSG-LSLKMAH---PLKCTPVVRFDPFSPF--
CYP705A13 E-----REQELKYIPFGSGRRGCPGVNLYGIFVGTAGIMMVQCFDWRINGDKVNMEETVAG-ITLNMAH---PLRCTPVSRMQLQKSQF
CYP705A25 DEK-----AQLALNFIPFGSGRRGCLGKNLGYIFMGVAIGTMVQCFDWRINGDKVNMEETGEM--TLTMAH---PLKCTPVARINP-ASFD
CYP705A27 DER-----EQLALNFIPFGSGRRACPGKLGYLFTGVAIGTMVQCFDWIIDGDKVNVEEAGEM--TLTMAH---PLKCTPVTRVNPPLASFE
CYP712A1  KIG-----EHQMFKGQNFYRFLSPFGSGRRGCPGASLANNVMHIGVGSVLRQFDWKS-VDGQKVDLSQGSFSAEMAR---PLVCNPVDHFNTF----
CYP712A2  KMGYYQ-----QYMLELKGQDVNYLAFSGSGRRGCLGASHASLVLSTIGSLVQCFNMTVKGDEDKIKIKLPTGFSASGTAGGSSLMCSPELCFDPFGYQT
CYP93D1  EKM-----MSFGAGRRCSPGKEMVFRFVPIILAAAIQCFELKVKGS-VDMDEGTGS--SLPRAT---PLVCVPVAKEATQSFSL
-----LNQKLLSFGMGRRACPGYGLAHRVSLTLGSMVQCFEWRIGQEYVDNSEDKTVVLMRPTT---PLLAMCKARPIVHFIELD
CYP81D7  -----LNQKLLSFGFGRRACPGVGLAHRRLMSLALGSMVQCFEWRIGEEYVDNREE-PMAMMRPAT---PLAMCKARPIVHKFLD
CYP81D11  -----EDKKLMPFGIGRRSCPGSGLAQRVLTALGSLVQCFEWERVEEKYLDMRESEKGTTRKAT---SLQAMCKARPIVHKVLD
CYP81D2  -----EAKKLMPPFLGRRACPGSGLAQRVLTLSLGSLLQCFEWERIGEEVDMTEGPG-LTMPKAR---PLEAMCRARDFVVGKILP
CYP81D3  -----EAQKLLGFGLGRRACPGSGLAQRLASLTIGSLIQCFFEWERIGEEVDMTEGGGGVIMPKAI---PLVAMCKARPVVGKILN
CYP81D8  -----EAQKLMPPFLGRRACPGSGLAHRLINLTLGSLIQCLEWEKIG-EEVDMSEKKG-VTMPKAK---PLEAMCRARSVVKIFN
CYP81D4  -----EAEKLSIFGMGRRACPGAGLAHRLINQALGSLVQCFEWERVGEDFVDMTEKIG-ATLPKAI---PLRAMCKARSIVDKLI-
CYP81D5  -----EARKLMPFGMGRRACPGAELGKRLVSLALGCLIQSFEWERVGAELVDMTEGEG-ITMPKAT---PLRAMCKARAIVHKTI-
CYP81D1  -----EAQKLLAFGLGRRACPGSGLAQRIVGLALGSLIQCFFEWERVGNVEVDMKEGVG-NTVPKAI---PLKAICKARPFHLHKIIS
CYP81F3  E-----DVHKLMPFGNGRRSCPGAGLGGKIVTLALGSLIQCFFDWQKVNGEAIDMTETPG-MAMRKKI---PLSALCQSRPIMSKLQA
CYP81F4  D-----DVRMLIAFGSGRRICPGVGLAHKIVTLALGSLIQCFFDWKVNKEEIDMSEGGP-MAMRMMV---PLRALCKTRPIMNKLPA
CYP81F2  -----ASKKLMVFGNGRRTCPGATLGQRMVLLALGSLIQCFFDEKVNGEDVDMTENPG-MAMRKLIV---QLRAVCHKRPIMTNLLA
CYP81F1  Y-----YVYKLMPPFGNGRRTCPGAGLQQRIVTLALGTLIQCFFEWENVKGEEMDMSESTG-LGMRKMD---PLRAMCKARTRPIMSKLLL
CYP81H1  H-----YNGKMMPPFLGRRACPGSLANRVLGLLGSMIQCFFEWESGGQVDMTEGPG-LSLPKAE---PLVWTCRPTREMASELLF
-----HRGKFLPFGIGRRACPGMGLAQLVLSLALGSLIQCFFDWERDNDVAVDMSEKKG-LTMPKSV---PLVAKCKSLPILDKLVL
CYP81K1  R-----DGFRFLPFGVGRACPAAGLGMRVVSLAVGALVQCFEWEKVEAGDIDMRPVFG-VAMAKAE---PLVALPKPWSEMPILS
CYP81K2  R-----DGFRFLPFGVGRACPAAGLAMRVVSLAVGALVQCFEWEKVEKEDIDMRPAFS-VAMDRAE---PLIALLKPCPEMPILS
CYP82C3  VRG-----QNFELMPFGSGRRSCPGSLAMQMLHLGLARFLHSFVKTVLDLDRPVDMSSESPG-LTITKAT---PLEVLINPRLKRELFV-
CYP82C2  VRG-----QNFELMPFGSGRRSCPGSSAMQVLHLGLARFLHSFVKTVMMPVDMSSESPG-LTIPKAT---PLEILISPRLKEGLYV-
CYP82C4  VRG-----QNFELMPFGSGRRSCPGSSAMQVLHLGLARFLHSFVKTVMMPVDMSSESPG-LTIPKAT---PLEVLISPRIKEELFV-
CYP82F1  VGG-----QSYKFFPFGIGRRSCPAIPLGMRMVHLLVRFVLSFDLARPSSQVDVDMTESNG-LVNHKAT---PLEVNIIPRLHKSLEYE
CYP82G1  CEK-----SNFEYIPFGSGRRSCPGVNLGLRVVHFVLAARLQGFELHKVSDEPLDMAEGPG-LALPKIN---PVEVVMPRLDPKLYSL
CYP76C2  RGR-----DYELTPFGAGRRICPGLPLAVKTVPLMLASLLYSFDWKL PNGVG-SEDLDMDETFGLTLHKTNPPLHAVPVKKRGRN----
CYP76C4  KGR-----DYELTPFGGRRICPGLPLAVKTVSLMLASLLYSFDWKL PNGVV-SEDLDMDETFGLTLHRTNPLYAI PVKKQTIN----
CYP76C1  RGR-----DYELTPFGAGRRICPGMPLAMKTVSLMLASLLYSFDWKL PKGV-SEDLDMDETFGLTLHKTNPPLHAVPVKKRANIN----
CYP76C5  KGT-----NYELTPFGAGRRICPGLPLALKTVHMLASLLYTFEWKLPNGVG-SEDLDMDETFGLTVHKTNPPLACL-----
CYP76C6  KGT-----DYELTPFGAGRRICPGLPLAMKTVHMLASLLYTFEWKLPNGVG-SEDLDMEETFGLTVHKTNPPLAVPLKKRAIN----
CYP76C3  KGR-----DFELIPFGSGRRMCPGISMALKTMHMLASLLYSFDWKLQNGVV-PGNIDMSETFGLTLHKAKSICAVPVKKPTISSY-
CYP76C7  KGN-----HFELIPFGAGRRICPGMPLAFRIMHVLASLLYGFDEYQNGVV-PENVDMNEAFGATLHKAEPICIVPIKKRV-----
CYP76G1  KGQ-----DYEFLPFGSGRRMCPALPLASRVLPLAIGSMVRSFDWALENGLN-AEEMDMGERIGITLKKAVPLAIPVPIYRGT----
CYP75B1  KGS-----DFELIPFGAGRRICAGLSGLRTIQFLTATLVQGFDELAGGVT-PEKLNMEESYGLTLQRAVPLVHPKPRLAPNVYGL
CYP706A1  NGG-----DFKYLSPFGSGRRICAAINMAERLVLFNIAASLLHSFDWKAPOGQK-----FEVEEKFLVLKLSPLVAIPVPRLSDPKLYT
    
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CYP706A2 NGG-----DFKYL PFGSGRRICAAINMAERLVLFNIASL LHSFDWKPQGGK----FEVEEKFGVLVLLKLSPLVAIVPVRRLSDPKLYT
 CYP706A3 KGN-----DFNYL PFGSGRRICVGMAMGERVVLYNLATL LHSFDWKIPQGER----VEVEEKFGIVLELKNPLVATPVLRLSDPNLYL
 CYP706A7 SGN-----DYSYFPFGSGRRICAGMAMAEKVVLVLYNLATL LHSFDWRIIGEKEK----VELEEKFGILLKLNPLVATPVLRLSDPNLFL
 CYP706A5 TGT-----DYSYL PFGSGRRICAGIALAERMILYTLATL LHSFDWTIPDGHV----LDLEEKFGIVLKLKTPVVALPIPRLSNSNFYF
 CYP706A6 TGT-----DYSYL PFGSGRRICAGIALAERMILYTLATL LHSFDWKIPEGHI----LDLKEKFGIVLKLKSPVVALPVPRLSNSNLYL
 CYP706A4 TGA-----NYSYFPFGSGRRICAGVALAERMVLYTLATL LHSFDWKIPEGHV----LDLKEKFGIVLKLKIPVVALPIPRFSDSNLYL
 CYP79B2 TLT-----ENDLRFISFSTGKRGCAAPALGTAITTMM LARL LQGFTWKL PENETR-VELMESSHDMFLAKPLVMGDLRLPEHLYPTVK-
 CYP79B3 TLT-----ENDLRFISFSTGKRGCAAPALGTAITTMM LARL LQGFQWKL LAGSETR-VELMESSHDMFLSKPLVLV GELRLSEDLYPMVK-
 CYP79A2 DLN-----ESDLNIISFAGRRGCMGVDIGSAMTYML LARL LQGF TWL PVP GKNK-IDISESKNDLFMAKPLYAVATPRLAPHVYPT---
 CYP79C1 VLT-----EPDLRLVSFGTGRRGCVGAKLGTSMIVTLL GRLL LQGF DWT IPPGTTDRVELVESKENLFMANPLMACVKPRLDPNMYPKLTWT
 CYP79C2 TLM-----EPDMRFVTIFGTGRRSCPGTKIGTSMTIML LARL LQGF EWT LPIGKSS-VELISAESNLFMAKPLLACAKPRLAPSLYPKIQI
 CYP79F1 TLV-----ETEMRFVSFSTGRRGCVGKVTIMMVML LARL LQGF FWT LHRDFGP-LSLEEDDASLLMAKPLHLSVEPR LAPNLYPKFRP
 CYP79F2 TLV-----ETEMRFVSFSTGRRGCVGKVTIMMAMMLARFLQGFNWKLHQDFGP-LSLEEDDASLLMAKPLLSVEPR LASNLYPKFRP
 CYP703A2 ISH-----GPDFKILPFSAGKRKCPGAPLGVTMVLMAL LARL LHC FEW SSPGNIDT---VEVYGMTMPKAKPLRAIAKPR LA AHLYT----
 CYP98A8 -----DFRVL PFGSGRRMCPAAQLSMNLM TLVMGNL LHC FSWSSP---VPERIDMSEN PGLLCNMRTPLQALALPRAAARA IPL
 CYP98A9 -----DFRVL PFGSGRRVCPAAQLSLNMMTLALGSL LHC FSWTSS---TPREHIDMTEK PGLVCYMKAPLQALASSR L PQELYL-
 CYP98A3 -----DFRLL PFGAGRRVCPGAQLGINLVTSMMSHL LHH FVW TTPQG-TKPEEIDMSEN PGLVTYMRTPVQAVATPRLPSDLYKR
 CYP78A10 MGSD-----LRLAPFGAGRRVCPGKSMGLATVHLWLAQL LGSYKWS---CGEVDLSETLKL SLEMKN--TLVCKAIPRG-----
 CYP78A5 MGSD-----LRLAPFGSGRRVCPGKAMGLATVHLWIGQLIQNFVWYKGG---SCDELAEV LKLSMEMKNPLKCKKAVPRNVGFA----
 CYP78A6 LGSD-----LRLAPFGSGRRICPGKNL GFTTVMFWTAMML LHEFEW G-PSDGNVDLSEKLR LSCEMANPLPAKLR RRRS-----
 CYP78A9 LGSD-----LRLAPFGSGRRVCPGKNLGLTTVTFWTATL LHEFEW LTPSDEKTVDLSEKLR LSCEMANPLAAKLR PRRSFSV----
 CYP78A8 FGSD-----LRLAPFGSGRRVCPGKNLGLTTV SFWATL LHEFEW LPSVEANPPDLSEVLR LSCEMACPLIVNVSSRRKIM-----
 CYP78A7 RGGD-----LRLAPFGAGRRVCPGKNMGLATVTRWVAELVRRFEW GQD-QTEPVDLGEVLKLSCEMEHPLRAV VTEIF-----
 CYP77A4 TGIS-----GVKMPFGVGRRIICPGLAMATIHVHML LARMVQEF EWCAHPGSEIDFAGKLEFT-VVMKNPLRAMVKPRI-----
 CYP77A6 TGVT-----GVKMPFGIGRRIICPGLAMATVHVHML LAKMVQEF EW SAPPSEIDFAGKLEFT-VVMKKPLRAMVKPRV-----
 CYP77A7 TGVA-----GVKMPFGVGRRIICPGMGMATVHVHML IARMVQEF EW LAYPPQSEIDFAGKLVFA-VVMKKPLRAMVKPRVQ-----
 CYP77A9 TGVA-----GVKMPFGIGRRIICPGLGMVHVHML LSRMVQEF EWSSYPPE SQVDFTGKLVFA-VVMKNPLRARVKARV-----
 CYP77B1 TGTR-----GVTMLPFGAGRRICPAWSL GILHINML LARMIHSFKWIPVP-DSPPDPTETYAFT-VVMKNSLKAQIRSRT-----
 CYP89A4 TGSR-----GIKMPFGAGRRICPGIGLAMLHLEYVYVANMVREFEW KEVQ-GHEVDL TEKFEFT-VVMKHSLKALAVLRRSH-----
 CYP89A5 TGSR-----GIKMPFGAGRRICPGIGLAMLHLEYVYVANMVREFEW KEVQ-GHEVDL TEKLEFT-VVMKHPLKALAVPRRS-----
 CYP89A6 TGSR-----GIKMPFGAGRRICPGIGLAMLHLEYVYVANMVREFEW KEVQ-GHEVDL TEKLEFT-VVMKHPLKALAVPRRS-----
 CYP89A7 TGSR-----GIKMPFGAGRRICPGIGLAMLHLEYVYVANMVREFEW KEVE-GHEVDL TEKVEFT-VIMKHPLKAIAPRRSH-----
 CYP89A2 TGSR-----GIKMPFGAGRRICPGIGLAMLHLEYVYVANMVREFEW KEVQ-GHEVDL TEKLEFT-VVMKHPLKALAVPRRCH-----
 CYP89A3 TGSR-----GIKMPFGAGRRICPGIGSAMLHLEYFVNLVKEFEW KEVE-GYEV DLSEKWEFT-VVMKYPLKALAVTRRKEKTHIVMA
 CYP89A9 TGTR-----EIKMPFGAGRRMCPGYAL SLLHLEYVYVANL VWKFEW KVE-GEEVDLSEKQQFITMVMKNPFKANIYPRRK-----
 CYP704A1 -----VFQPESQFKFISFHAGPRICIGKDFAYRQMKIVSMAL LHF FRFKMADE---NSKVS YKKMLTLHVDGGLHLCAI PRST
 CYP704A2 -----LFQPESPFK FIFSHAGPRICLGKDFAYRQMKIVSMAL LHF FRFKMADE---NSK VYKRMLTLHVDGGLHLCAI PRST
 CYP704B1 -----VFQNASPFKFTA FQAGPRICLGKDSAYLQMKMAMAILCRFYKFHLVP---NHPVKYRMMTILSMAHGLKVTVSRRS-----
 CYP86A2 -----KFNHNDQYRFVAFNAGPRICLGKDLAYLQMK TIAAAVLLRHRLTVAP---GHKVEQKMSLTLFMKNGLLVNVHVRDLVMMKSLVP
 CYP86A4 -----KFINHNDQYRFVAFNAGPRICLGKDLAYLQMK TIAAAVLLRHRLTVVP---GHKVEQKMSLTLFMKNGLLVNLYKRDLQGIKSLVV
 CYP86A8 -----RFINHDPFKFVAFNAGPRICLGKDLAYLQMK SIAASVLLRHRLTVVT---GHKVEQKMSLTLFMKYGLLVNVHERDLTAIADLRE
 CYP86A7 -----EKCNQYKFVAFNAGPRICLGKDLAYLQMK SITASILLRHRLTVAP---GHRVEQKMSLTLFMKFGLKMDVHVRDLTPVEKVVN
 CYP86A1 -----FETPKDGYKFVAFNAGPRICLGKDLAYNQMK SVASAVLLRYRVFPVP---GHRVEQKMSLTLFMKNGLRVYLQPRGEVLA
 CYP86B1 -----RFMSESAYKFTA FNGGPRICLGKDFAYYQMKSTAAAIYRYKVRVDDKG---GHKVEPKMAL TMYMKHGLMVNLINRSVSEIDQYYAK
 CYP86B2 -----RYMSESAYKFTA FNGGPRICLGKDFAYYQMRVYAAAIYRYKVRVDDKG---GHKVEPKMAL TMYMKHGLKVMVKSRSVSEIDHYIC
 CYP86C3 -----NFVNDQFKYVVFNAGPRICLGKTFAYLQMK TIAASVLSRYSIKVAK---DHVVVPRVTTTTLYMRHGLKVTISSKSLEEKIHVQD
 CYP86C4 -----KFVSDQFKYVVFNAGPRICLGKTFAYLQMK MIAASVLLRYSIKVQ---DHVIAPRVTTNLYMKYGLKVTITPRSLEEKKLESCS
 CYP86C2 -----QYVSDQFKYVVFNAGPRICLGKTFAYLQMK MVAASILLNYSIKVDQ---DHVVVPRVTTTTLYMKHGLKVRITPRSLEEKKQDS
 CYP86C1 -----RIVSEDQFKYVVFNGGPRICVGKGFAYYQMKMVAASAILMRYSVKVQ---GQEI VPKLTTTTLYMKNGMNVMLQPRDW
 CYP94B1 -----TKPVLKSVSSFKFPVIFQAGPRVICIGKEMAFYQMKYVVGSVLSR FKIIPVC---NNRPV FVPLLTAHMAGGLKVKIKRREQCDSMYI---

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CYP94B3 -----TRPVLKPISPYKFPVFQAGPRVGVGKEMAFMQMKYVVGSLSRFEIIVPVN---KDRPVFVPLLTAHMAGLKVKIKRRSHILNNV-----
CYP94B2 -----CCRVLKKNVPFKFPVFQAGPRVCLGEEMAYVQMKYIVASILDRFEIEPIP---TDKPDFVPMLTAHMAGGMQVRVHRRDPSLSP-----
CYP94C1 -----RPNPVPKYVPVQAGARVCI GKEMAIMEMKSI AVAIIRRFETR VASPETTETLRFAPGLTATVNGGLPVMIQERS-----
CYP94D1 -----FRGEDPSKFPAPFHAGPRMCGVKDMAYIQMKSIVA AVLERFVVEVPGK---ERPEILLSMTRLRIKGGFLFARVQERS-----
CYP94D2 -----FRGENPYKFPAPFHAGPRMCLGKEMAYIQMKSIVA AVLERFVVEVPGKK--ERPEILMSVTLRIRGGLNVRVQERS-----
CYP96A1 -----SGRLIHVPSFKFLSFNAGPRTCLGKEVAMTQMKTVAVKIIQNYEIKVVE--GHK-IEPVPSIILHMKHGLKVTVTKRSNLL-----
CYP96A9 -----SGRSVHEPSYKFLSFNAGPRTCLGKEVAMTQMKTVAVKIIQNYDINVVE--GHK-IKPAPSVILHMKHGLKVTVSKRCLS-----
CYP96A10 -----SGNSVHEPSYKFLSFNAGPRTCLGKEVAMMOMKSVAVKIIQNYEMKIVE--GQQ-IEPAPSVILHMKHGLKVTVTKRCLV-----
CYP96A5 -----NGGLKHEPSFKFFVFN SGPRNCLGKNLSFLQMKTVAVEIIRNYDIKVVVE--GHK-IEPASSIILHMKHGLKVTVSKRGLVS-----
CYP96A11 -----KGSLRHEPSFKFLSFNSGPRTCLGKHLAMTQMKMVA VEILHNYEIKVIK--GQK-IKPVLGFILSMKHGLRITITKRCPY-----
CYP96A2 -----NGGIKHEPSFKFLSFNAGPRTCLGKHLAMTQMKIVAVEILRNYDIKVLQ--GQK-IVPALGFILSMKHGLQITVTKRCSA-----
CYP96A12 -----SGGLRHAPSFKFLSFNAGPRTCPGKQLAMTLMKT VVEILQNYDIDVIK--GQK-IEPEPGLMLHMKHGLRVITTKRCSA-----
CYP96A13 -----TTSLRHEPSFKFLAFNAGPRSCIGKQLAMTLMKT VVEILQNYDIKVVK--GQKIEPAPGPILRMKHGLRVTLTKK-----
CYP96A7 -----TGGLRHEPSYKFFSFNAGPRTCLGKNLAMNLMKT VIVEILQNYEIKIVS--GQK-IEAKPGLVLHMKHGLKVMTMTKCSSLE-----
CYP96A8 -----TGGVRHEPSYKFLSFNAGPRTCLGKNLAMNLMKT VIVEILQNYEIKIVS--GQK-IEPKPGLILHMKHGLKVMTMTKCCSS-----
CYP96A3 -----SGRLKHEPSYKFLAFNAGPRA CLGKKLTFLQMKTVAAE IIRNYDIKVVVE--GHK-TEPVPSVLF RMQHGLKVNITRI-----
CYP96A4 -----SGMLRQESSYKFLAFNAGPRTCLGKRLTFLQMKTVAVE IIRNYDIKVVVE--GHK- PKPVPSVLLR MQHGLKVSVTKI-----
CYP96A15 -----NGGLRHEPSYKFM AFNSGPRTCLGKNLALLQMKMVA EIIRNYDFKVI E--GHK-VEPIPSILLRMKHGLKVTVTKKI-----
CYP97A3 -----PNETNQYNSYLPFGGPRKCI GDMFALFENVAIAM IIRRFNFQIAPG--APPVKMTTGATIHTTEGLKLVTKR TKPLDIPSVPI-----
CYP97C1 -----PNETNTDFKFI PFSGGPRKCVGDFALMEAI VALAVFLQR LNVELVP---DQTISMTTGATIHTTNGLYMKVSR-----
CYP97B3 WAGFDPSRSPGALYPNEI IADFAFLPFGGPRKCI GDFALMESTVALAM L FQKFDVELRGT--PESVELVSGATI HAKNGMWCKLKRRSK-----
CYP709B2 -----SRAANHPNALLAF SMGPRACTIGQNF AIMEAKTVLAMILQR FRLN-LSA--DYKHAPADH LTLQPQYDLPVILEPIDG-----
CYP709B3 -----SQATIHPNALLPFSIGPRACTI AKNFAMVEAKTVL TMILQQFQLS-LSP--EYKHTPVDHFDLFPQYGLPVMLHPLG-----
CYP709B1 -----SRAANHPNALLAF SVGPRACTIGQNF VMIEAKTVL TMILQRF FIFSLCD--EYKHTPVDNVTIQPQYGLPVMLQPLED-----
CYP735A1 -----GRPFASGRHFIPFAAGPRNCIGQFALMEAKI I L ATILSKFNFT-ISK--NYRHAPIV VLTIKPKYGVQVILKPLVS-----
CYP735A2 -----TRSFASSRHFM PFAAGPRNCIGQTFAMMEAKI I LAMLVSKFSFA-ISE--NYRHAPIV VLTIKPKYGVQVILKPLDL-----
CYP72A11 -----SKATKNQASFFPFAWGSRI CI GQNFALLEAKMAMAL I LQRFSFE-LSP--SYVHAPYTVFTIHPQFGAPLIMHKL-----
CYP72A13 -----SKATKNQVSFFPFAWGPRICI GQNFALLEAKMAMT L I L RKF SFE-LSP--SYVHAPYTVL TTHPQFGAPLILHKL-----
CYP72A15 -----SKATKSQVSFFPFAWGPRICI GQNFALLEAKMAMAL I LRRFSFE-ISP--SYVHAPYTVIT IHPQFGAQLIMHKL-----
CYP72A10 -----SKATKSQVSFFPFAWGPRICI GQNFAMLEAKMAMAL I LQTFTFE-LSP--SYVHAPQTVVTIHPQFGAHLILRKL-----
CYP72A14 -----SKATKNQVSFFPFAWGPRICI GQNFLL EAKMAMSL I LQRFSFE-LSP--SYVHAPYTIITLYPQFGAHLMLHKL-----
CYP72A9 -----AKATKNQVCFLPFGWGPRI CI GQNFALLEAKMAL I L I LQRFSFE-LSP--SYVHSPYRVFTIHPQCGAHLILHKL-----
CYP72A7 -----SKATKNQVSFFPFGWGPRI CI GQNFAMLEAKMAMAL I LQKFSFE-LSP--SYVHAPQVM TTRPQFGAHLILHKL-----
CYP72A8 -----SKATKNQVSFLPFGWGPRI CPGQNFALMEAKMAL V L I LQRFSFE-LSP--SYTHAPHTV LTLHPQFGAPLIFHML-----
CYP72C1 -----AGATKGRLSFLPFS SGPRTCI GQNF SMLQAKLFLAMV LQRFSVE-LSP--SYTHAPFPAATTFPQHGAHL IIRKL-----
CYP734A1 -----PRAAKHPVGFIPFGLGVRTCI GQNLAILQAKL TLAVMIQRFTFH-LAP--TYQHAPT VMLLLYPQHGA PITFRRLTNHED-----
CYP721A1 -----PKKQSALLVPFGLGPRTCV GQNLAVNEAKTVL ATILKYYSFR-LSP--SYAHAPVLFVTLQPQNGAHL IFRISS-----
CYP715A1 -----HGGCKNKMGYMPFGFGGRMC IGRNLT TMEYKIVLSL VLSRFEIS-VSP--GYRHSPTYMLSLRPGYGLPL IIRPL-----
CYP714A1 -----SKACKHPQS FVPFGLGTRL CLGKNFGMMELKVLVSLIVSRFSFT-LSP--TYQHSPVFRMLVEPQHGVVIRVLRQ-----
CYP714A2 -----SKACKYPQSYIPFGLGPRTCV GKNFGMMEVKVLVSLIVSKFSFT-LSP--TYQHSPSHKLLVEPQHGVVIRVV-----
CYP74A VLWS-----NGPETETPTVGNKQCAKDFVVLVARL FVIEIFRRYDSFDIEVGTSP LGSSVNFSSLRKASF-----
CYP74B2 LYWS-----NGPQTGTPTASNKQCAAKDIVTLTASLLVADLFLRYDTITGDSGS-----IKAVVKAK-----
CYP73A5 NGN-----DFRYVPFGVGRRS CPGIILALPILGITIGRMVQN FELLPPPQSKVDTSEKGGQFSLHILNHSIIVMKPRNC-----
CYP722A1 -----ANSFLAFGMGGRTCLGLALAKAMMLVFLHRFITTYRWEVDEQSP IEKWTLFARLKSGYPIRVSRRL-----
CYP701A3 HKT-----MAFGAGKRVGAGALQASLMAGIAGRLVQEF EWKLRDG-----EEENVDTYGLTSQKLYPLMAIINPRRS-----
CYP711A1 -----HPYAFIPFGIGPRACTV GQRFALQEIKLTLHLHLYRNYIFRHSLEMEIPLQLDYGIILSFKNVGLRRTIKRF-----
consensus
601.....610.....620.....630.....640.....650.....660.....670.....680.....690.....

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CYP708A4 -----
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CYP84A4 -----
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CYP705A21 -----
CYP705A23 -----
CYP705A28 LHIPSS-----

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CYP705A32 LHVPIS-----
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CYP705A5 -----
CYP705A8 -----
CYP705A9 VQIPSS-----
CYP705A18 NLEILSS-----
CYP705A6 -----
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CYP705A3 ISKFPCLILSFGAC-----
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CYP89A3 -----
CYP89A9 -----
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CYP704A2 -----
CYP704B1 -----
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CYP86A7 EMRKK-----
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CYP86B1 SFDEGYIN-----
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CYP86C2 -----
CYP86C1 -----
CYP94B1 -----

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CYP715A1 -----
CYP714A1 -----
CYP714A2 -----
CYP74A -----
CYP74B2 -----
CYP73A5 -----
CYP722A1 -----
CYP701A3 -----
CYP711A1 -----
consensus 701.....710.....720.....730
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