

CYP51	1	-----MDWDYYTLLKTSVAIIIVFVVAKLITSSKSKKK-----	-----TSVVPLPPVLQAWPPFIGSL
CYP51A2	1	-----MELDSENKLLKTGLVIVATLVIAKLIFSFFTSD-----	-----SKKKRLPPTLKAWPPLVGSL
CYP710A1	1	-----MVFSVSIFASLAPYLISAFLLFLLEQLSYLFLK-----	-----KRNIPGPFVFPPIIGNAVAL
CYP710A2	1	-----MVFSVSIFASLAPYLVSAALLFFLIEQLSYLVK-----	-----KRNLPGLFVFPPIIGNAISL
CYP710A3	1	-----MVSSVSLFASLTPYLVSAALLFLLEQLFYRLK-----	-----KRNLPGLFVFPPIIGNVVAL
CYP710A4	1	-----MVSSVSLFASLTPYLVSAALLFLLEQLFYRVK-----	-----KRNLPGLFVFPPIIGNVVAL
CYP702A1	1	-----MVEVYELLTVMVSLIVVKLFHWIYQSKNPKPNE-----	-----KLPPGSMGFPPIGETFEFMKPHD
CYP702A2	1	-----MVEFHELLTVMVSLFLVKIFHWWYQWRNPKTNG-----	-----KLPPGSMGFPPIGETFEFFKPHD
CYP702A8	1	-----MVDVYKLWIVIVSLIVVKLFHLIYQWSNPKCNG-----	-----KLPPGSMGYPIIGETIEFMKPHD
CYP702A5	1	-----MVEVYEFWAVIVSLIVVKLCHWIYQWKNPKGNG-----	-----KLPPGSMGYPIIGETFEFMKLHD
CYP702A6	1	-----MVDLYEFWAVIVSLIVVKLCHSIYQWRNPKSNG-----	-----ELPPGSMGYPIIGETFEFMKPHD
CYP702A3	1	-----MSEIYVLALSVMFSLIVVKLCHWYQWSNPKCKG-----	-----KLPPGSMGFPPIGETFEFMTPFD
CYP708A2	1	-----MSFWWSAAVWIAVAAVISKWLYRWSNPKCNG-----	-----KLPPGSMGLPIIGETCDFEFPHG
CYP708A3	1	-----MSSIWNVAMLMAVAVVRISHWLYRWSNPKCPG-----	-----KLPPGSMGFPPIGETLDFFKPCG
CYP708A4	1	-----MNLFWNTGFCVIVLVVARVGHWWYQWSNPKSNG-----	-----KLPPGSMGFPPIGETLDFFKPYG
CYP708A1	1	-----MNNLISLDIMKEMWVALSFVIALVVKISLWLYRWANPNCSG-----	-----KLPPGSMGFPVIGETVEFFKPYG
CYP87A2	1	-----MALLIWSLLISITHWYSWRNPKCRG-----	-----KLPPGSMGFPLLGESIQFFKPNK
CYP720A1	1	-----MAESAGESYRLLSVSSSTTFLAFIIIFLAGIARRKRRAPHR-----	-----LPPGSRGWPLIGDTFAWLNAVA
CYP724A1	1	-----MLVLSIFLSLGLFFLSILILYISISKNETNDHHS-----	-----SLTGSMDGWPIIGETISFFKPHR
CYP90A1	1	-----MAFTAFLLLSSIAAGFLLLRRTYRMRG-----	-----LPPGSLGLPLIGETFQLIGAYK
CYP90B1	1	-----MFETEHTLLPLLLPSLLSLLFLILLKRRNRKTRFN-----	-----LPPGKSGWPFGETIGYLPYK
CYP90C1	1	-----MQPPASAGLFRSPENLPWPYNMDYLVAGFLVLTAGILLRPWLWLRNRSKTKDGDEEEDNEEKKKGMPNGSLGWPIIGETLNFIACGY-----	-----LPPGKSGWPFGETIGYLPYK
CYP90D1	1	-----MDTSSSLFFSFFFFIIVIFNKINGLRSSPASKKKLNDHHVTSQSHGPKFPHGSLGWPIIGETIEFVSSAY-----	-----LPPGKSGWPFGETIGYLPYK
CYP85A1	1	-----MGAMMVMGMLLIIVSLCSALLRWNQMRYTKNG-----	-----LPPGTMGWPIIGETTEFLKQG-
CYP85A2	1	-----MMMLGLLVIIIVCLCTALLRWNQMRYSKKG-----	-----LPPGTMGWPIIGETTEFLKQG-
CYP707A1	1	-----MDISALFLTLFAGSLFLYFLRCLISQRRFGSSKL-----	-----PLPPGTMGWPIIGETTEFLKQG-
CYP707A3	1	-----MDFSGFLTLTSAALFLCLLRFIAGVRRSSSTKL-----	-----PLPPGTMGWPIIGETTEFLKQG-
CYP707A2	1	-----MQISSSSSSNFFSSLYADEPALITLTIWVVVLLFKWMLHWKEQRL-----	-----PLPPGTMGWPIIGETTEFLKQG-
CYP707A4	1	-----MAETWFLVVPILILCLLLVRVIVSKKKKNSRG-----	-----PLPPGTMGWPIIGETTEFLKQG-
CYP88A3	1	-----MAETTSWIPVWFLMVLGCFGLNWLVRKVNWLYESSLGENRH-----	-----YLPBGDLGWPIIIGNMWSFLRAFK
CYP88A4	1	-----MTETGLILMWFLIILGLFVLKWVLRKVNWLYVSKLGEKKH-----	-----YLPBGDLGWPIIIGNMWSFLRAFK
CYP716A1	1	-----MYMAIMILFLSSILLSLLLLRKHLSHFSYPNLP-----	-----PGNTGLPLIGESFSFLSAGR
CYP716A2	1	-----MYLTIIFLFISSIIIFPLIFLGKHLNFRYPNLP-----	-----PGKIGFPLIGETLSFLSAGR
CYP718	1	-----MVLEPNFVLSWVFLCIAATISSTLFFFRKKHHRFITKKIQKKK-----	-----KLLPGEMGLPWIGETMDFYKAQK
CYP704A1	1	-----MAIIVTTIFILLSFALYLTIRIFTGKSRND-----	-----KRYTPVHATIFDLFFHSH
CYP704A2	1	-----MEILTSIAITVATTIFIVLCFTIYLMIRIFTGKSRND-----	-----KRYAPVHATVFDLLFHSD
CYP704B1	1	-----MSLCLVIACMVTWIFLHRWGQRNKS-----	-----PKTWPLVGAIEQLTNFD
CYP86A2	1	-----MDVSNTMLLVAVVAAYWLWFQRISRWLKG-----	-----PRVWPVLGSLPGLIEQRD
CYP86A4	1	-----MEISNALLVAIVTGYWLWFKRISRWLKG-----	-----PRVWPVLGSLPGLIEQRD
CYP86A8	1	-----MEISTALMILSAITAYFLWTFISRCLKG-----	-----PRVWPVLGSLPGLIENCE
CYP86A7	1	-----MDGSTAAIILTLIVTYIIVFVSLRRSYKG-----	-----PRVWPVLGSLPALITNAH
CYP86A1	1	-----MEALNSILTGYAVALSVYALWYFVLSRRLTG-----	-----PKVLPFVGLPYLIANRS
CYP86B1	1	-----MNFNSSYNLTFNDVFFSSSSSSDPLVSRRLFLLRDQVILELLIAIFVFAITHALRQKKYQG-----	-----LPVWPVLGMLPSLAFGLR
CYP86B2	1	-----MNLFSFSSYNLTATAVSSSCFGSDELLVSRRLFLLRDQVILELLIAIFVFAITHALRQKKYQG-----	-----MPVWPVLGMLPSLISAVR
CYP86C3	1	-----MPLTERVYNHLCCLSDVSLALLGLFVFCVREKVTKKLG-----	-----PTIWPVFGITPEFFFHNR

```

CYP86C4      1  -----MSLTERLYNHLSLFDLLSLLGLFVFCCLREKLTNKR-----PMLWPFVFGITLEFFFFHIN
CYP86C2      1  -----MSLIDRISGHLCLQDVSIALLGLFLFGCLQAKLTNKG-----PVQWPFVFGITPEFFLHVH
CYP86C1      1  -----MNVLISAVVWYTHRLSDVALALVGLFLLSYLREKLVSCKG-----PVMWPFVGIIPMLALNKH
CYP94B1      1  -----MEMLNAIILILFPIIGFVLIFSFTKTLKAKTASPSN-----PTSQYLIQSILSFNKNRH
CYP94B3      1  -----MAFLLSFLILAFLITIIFFLSSSSTKKVQENTTYG-----PPSYPLIGSILSFNKNRH
CYP94B2      1  -----MEASTFILLLVLLVLLVLSAGKHVIYSCRNST-----PKTYPIVIGCLISFYTNRN
CYP94C1      1  -----MLLTISFTIVSFFFIIIFSLFHLLFLQKLRYC-----NCEICHAYLTSSWKKDFI
CYP94D1      1  -----MALLIFIFLLCFPISIFFIFFTKKSSSEFG-----FKSYPIVGSFPGVLNNRH
CYP94D2      1  -----MEHFILISLLCFPIVIFFFIFFPKNSSSEFG-----FKSYPIVGSPLPGLVNNRH
CYP96A10     1  -----MVFISLFEISIAFFCFLLFR-HFLINKKTHR-----LCPTNWPFFGMIPGLLVEIH
CYP96A9      1  -----MALVSLLEISIAFFCFLLFR-IFLISKKPHR-----SFLTNPWLLGMLPGLLTVLP
CYP96A1      1  -----MALITLLEVSISLLFFSFLYGYFLISKKPHR-----SFLTNPWFLGMLPGLLVEIP
CYP96A5      1  -----MAYVGLVEVFIALLVFFFFH--FLIHKKSHQ-----ITPRNPVPLGMLPGVLVMLH
CYP96A11     1  -----MASSISFEASVAIFCFILHLYLFKTTTYNG-----RFPRNPVPLGMLPCLLVVLH
CYP96A2      1  -----MASISLLQVSVAILCFILHLYFLFKKPHG-----RYPRNPVPLRMLPAMLKALH
CYP96A12     1  -----MASVSLDVAIAIICLFFFYMYFKKPHG-----QVFRNPVPIGMLPGFLMVLH
CYP96A13     1  -----MASISLFEASIAIFCFIILHFFLG-----NWPVPLGMLPGLLLEFH
CYP96A7      1  -----MASIGLYEAFIGFLCFLISFYFLVKKPFRYLLIKK-----THQSYPNWPVPLGMLPGILLRLQ
CYP96A8      1  -----MASIGLYEAFIGFLCFLISFYFLVKKPFSYLLIKK-----TLQSYPNWPVPLGMLPGVLLRLQ
CYP96A3      1  -----MAIVIGLLEIFTAFVFFIFFQCLLLHKKTPKP-----LLTNWPALGMLPGLLLQVP
CYP96A4      1  -----MAMIIGLLEIFIAFFFFVYQCFSLHKKTPKH-----MVMNPVPLGMLPGVLFQIP
CYP96A15     1  -----MAMLGFYVTFIFFLVCLFTYFFLQKKPQGQP-----ILKNWPFLRMLPGLMHQIP
CYP97A3      1  MAFPLSYTPTITVKPVTYSRRSNFVVFSSSSNGRDPLEENSVPNGVKSLEKLQEEKRRAELSARIASG-----AFTVRKSSFPSTVKNGLSKIGIP
CYP97C1      1  -----MESSLFSPPSSSSSYSLFTAKPTRLLSPKPKFTFSIRSSIEKPKKLETNSSKSQSWVSPDW-----LTTLTR--TLSSCKNDESGPIA
CYP97B3      1  -----MAFPAAATYPTHFQGGALHLGRDHCFLGFYPTQISSVNSRRASVSICKQSTEPKTN-----GNILDNASNLLTNFLSGGSLGSM
CYP709A1     1  -----MLLTILKSLLVIFVTTILRVLYDTISCYWLTTPRIK-----KIMEQQGVTPGPKRPLTGNI
CYP709A2     1  -----MMVTLVLKYVLVIVMTLILRVLYDSICCYFLTTPRIK-----KFMERQGITGPKRPLTGNI
CYP709B2     1  -----MELLSTINLLAIALVLLVVPKIYGACRILVWRPWMLS-----RRFKKQGISGPKYRILYGNL
CYP709B3     1  -----MELISTINLLTIVLLLFFVSKIWKACWILLRPLMLS-----KRFKKQGISGPKYKILYGNL
CYP709B1     1  -----MGLVIFLALIVLILIIIGLRIFKAFMILVWHPFVLT-----RRLKNQGISGPNYRIFYGNL
CYP721A1     1  -----MAVFFILVLVFFFLVFRFIYSNIWVPWRIQ-----SHFKKQSVTGPSYRIFSGNS
CYP72B1      1  -----MEEESSWFIPKVLVLSVILSLVIVKGMSSLWWRPKIE-----EHFSKQGIRGPPYHFFIGNV
CYP72A11     1  -----MEISVASVTVSVAVVVSWWWRTLQWWFKPKMLE-----SYLRRQGLAGTPYTPLVGDL
CYP72A13     1  -----MEISVASVTVSVAVVVSWWWRTLQRVWLKPKMLE-----SYLRRQGLAGTPYTPLVGDL
CYP72A15     1  -----MEISVASVTISVWLVVSWWIWRTLQWWFKPKMLE-----HYLRRQGLAGTPYTPLVGDL
CYP72A10     1  -----MEISVACVTVSVAVVVSWWWRTLQWWFKPKMLE-----SYLRRQGLAGTPYTPLIGDL
CYP72A14     1  -----MEISVSSVTFSLAVVSWWWRTLKWWFTPKMLE-----RSLRRQGLSGTSYTPLIGDF
CYP72A7      1  -----MSFSVAALPVLVAVVVLWTVRIVKWWIKPKMLE-----SSLKRQGLTGTPYTPLVGDI
CYP72A9      1  -----MEIVIASLALVVLWCTWRILEWWLWPKMLE-----SYLRRQGLVGTTRYTPLVGDV
CYP72A8      1  -----MSDTKISAVAVAAVVVTTVTWVWKGLNVAWLRPKKNE-----AYLKRQGLSGTPFTFLVGDI
CYP72C1      1  -----MLEIITVRKVFLIGFLILILNWWRAVNWVWLRPKRLE-----KYLKKQGFSGNSYRILMGDM
CYP715A1     1  -----MEFFEMSRYWYIFFKVFWVVICLMFLKFLRCWIWVRAQ-----KKLRGNGFVGPAPSFPFNGNL
CYP714A1     1  -----MENFMVEMAKTISWIVVIGVLGLGIRVYGKVMAEQWRMR-----RKLTMQGVKGPPPSLFRGNV
CYP714A2     1  -----MESLVVHTVNAIWCIVIVGIFSVMGYHYGRAVVEQWRMR-----RSLKLQGVKGPPPSIFNGNV
CYP74A       1  -----MASISTPFPISLHPKTVRSKPLKFRVLTRPIKASGSETPDLTVATRTGSKDLPIR-----NIPGNYGLPIVGPIDRWYFY

```

[illegible]

CYP51	54	IRFMKGPIVLLREEYPKLGS-----	VFTVKLLHKNITFLIGPEVSSHFFNAYESEL	SQKEIYKFNVP	TFGPGV	FDV
CYP51A2	54	IKFLKGPIIIMLREEYPKLGS-----	VFTVNLVHKKITFLIGPEVSAHFFKASE	SDL	SQQEVYQFNVP	TFGPGV
CYP710A1	54	VRDPTSFWDKQSSTANISG-----	LSANYLIGKFIVYIRDTEL	SHQIFSNVRPDAFHLIGH	PGFKKLFGD	HNLIYM
CYP710A2	54	VRDPTSFWFQSDTAGTSPG-----	LAANYLIGKFIIYIRDTEL	SHQIFSNVRLEAFHPLGH	PGFKQLFGD	HSLIYL
CYP710A3	54	IRDPTSFWDKQSAMADTSVG-----	LSVNYLIGKFIIYIKDAEL	SNKVFSNIRPDAFQLVG	HPFGKKLFGD	HSLIFM
CYP710A4	54	IRDPTSFWDKQSAMADTSVG-----	LSVNYLIGKFIIYIKDAEL	SNKVLSNIRPDAFQLTG	HPFGKKLFGD	HSLIFM
CYP702A1	57	AFQFP-TFIKERIIRYG-----	PIFRTSLFGAKVIISTDIEL	NMEIAKTN---	HAPGLTKSIAQL	FGE-NNLFFQ
CYP702A2	57	ALQFS-TFIKDRVLRHG-----	PVFRTSLFGDKAIIISMDMEL	NLEMAKAN---	SVPGVTKSVIRL	FGE-NNLFLQ
CYP702A8	57	ALQFS-TFIKKRVLIFFFFFLCMFNM-----	DRFFRTSLFGGKVIISMDNEL	NMEMAKTN---	RTPGITKSIARL	FGEDNNLFLQ
CYP702A5	57	AIQLP-TFVKEKLLRHG-----	PVFRTSLFGGKVIISTDIGL	NMEIAKTN---	HIPGMPKSLERL	FGATNLFVN-
CYP702A6	57	AIQLP-TFVKEKVLRHG-----	PVFRTSLFGGKVIISTDIGL	NMEIAKTN---	HIPGMPKSLARL	FGANNLFVN-
CYP702A3	58	ISLVVSPYLKKRISRYG-----	SKVFRTSLFGAKVIVSIDPDVN	MEIAKAS---	SQLRATESVTRIF	GE-NNPFLQ
CYP708A2	57	LYEIS-PFVKKRMLKYG-----	PLFRTNIFGSNTVVLTEPDII	FEVFRQENKSFVFSY	PEAFVKPF	GKENVFLKH
CYP708A3	57	VEGIP-TFVKKRMIRYG-----	PLFRTNIFGSKTVVSTD	PDVTHQIFRQENTSFEL	GYPDIFVKV	FGKDNLFKE
CYP708A4	57	FYEIS-PYLKKMLRYG-----	PLFRTNILGVKTVVSTD	KDVNMEILRQENKSFIL	SYPDGLMK	PLGKDSLFLKI
CYP708A1	67	FNEIH-PFVKKRMFKHGG-----	SLFRTNILGSKTIVSTDPEVN	FEILKQENRCFIMSYP	EALVRIFG	KDNLFFKQ
CYP87A2	53	TSDIP-PFIKERVVKYK-----	PIFKTNLVGRPIVISTDADLSY	FVFNQEGRCFQSWY	PDFTTHIFG	KKNVGS
CYP720A1	65	G-SHPSSFVEKQIKKYG-----	RIFSCSLFGKWAVVSADPD	FNRFIMQNEGLFQSSY	PKSFRDLVG	KDGVITVH
CYP724A1	58	S-DSIGTFLQQRVSRYG-----	KVFKSNICGGKAVVSCDQEL	NMFILQNEGLFTSDY	PKAMHDILG	KYSLLLAT
CYP90A1	53	T-ENPEPFIDERVARYG-----	SVFMTHLFGIPTIFSADPET	NRFVLQNEGLFECSY	PASICNLLG	KHSLLLMK
CYP90B1	61	A-TTLGDFMQQHVSKYG-----	KIYRSNLFGIPTIVSADAGL	NRFILQNEGLFECSY	PRSIGGILG	KWSMLVLV
CYP90C1	91	S-SRPVTFMDKRKSLYG-----	KVFKTNIIGTPIIISTDAEV	NKVVLQNHGNTFVP	AYPKSITELL	GENSILSIN
CYP90D1	73	S-DRPESFMDKRRLMYG-----	RVFKSHIFGTATIVSTD	DAEVNRAVLQSDSTAF	VPFYPKTVREL	MGKSSILLIN
CYP85A1	55	-----PNFMRNQRLRYG-----	SFFKSHLLGCPTLISMDSEV	NRYILKNESKGLVP	GYPQSM	DILGTCNMAAVH
CYP85A2	52	-----PDFMKNQRLRYG-----	SFFKSHILGCPTIVSMDAEL	NRYILMNESKGLV	AGYPQSM	DILGTCNIAAVH
CYP707A1	54	SQDPNVFFQSKQKRYG-----	SVFKTHVLGCPCVMISSPEA	AKFVLVTKSHLFKPT	FPASKERMLG	KQAIFFFHQ
CYP707A3	54	SQDPNVFFAAKQRRYG-----	SVFKTHVLGCPCVMISSPEA	AKFVLVTKSHLFKPT	FPASKERMLG	KQAIFFFHQ
CYP707A2	67	TENPNSFFATRQNKYG-----	DIFKTHILGCPCVMISSPEA	ARMVLVSKAHLFKPT	YPPSKERMIG	PEALFFHQ
CYP707A4	52	SQNPNVFFTSKQKRYG-----	EIFKTRILGYPVCMLASPEA	ARFVLVTHAHMFKPT	YPRSKEKLIG	PSALFFHQ
CYP88A3	67	TSDPDSFTRTLIKRYGPK-----	GIYKAHMFGNPSIIVTTS	DCRRVLT-DDDAFK	PGWPTSTMEL	IGRKSFVGIS
CYP88A4	66	TSDPESFIQSYITRYGRT-----	GIYKAHMFGYPCVLVTT	PETCRRVLT-DDDAF	HIGWPKSTM	KLIGRKSFVGIS
CYP716A1	56	QGHPEKFITDRVRRFSSSS-----	SCVFKTHLFGSPTAVVTG	ASGNKFLFTNENKL	VVSWWP-DSV	NKIFPSSMQTSS
CYP716A2	55	QGHPEKFVTDVRVHFSSG-----	IFKTHLFGSPFAVVTG	ASGNKFLFTNENKL	VVISWWP-DSV	NKIFPSSMQTSS
CYP718	67	S---NRVFEDFVNPRIIKH-----	GNIFKTRIMGSPITVVNGA	EANRLILSNEFSLV	VSSWPSSSVQ	LMGMNCIMAKQ
CYP704A1	50	-KLYDYETEARTK-----	TFRFLSPGQSEIFTADPRN	VEHILKTRFDNY	SKGPVGT	VNLADLLGHGIFAV
CYP704A2	56	-ELYDYETEAREK-----	TYRFLSPGQSEILTADPRN	VEHILKTRFDNY	SKGHSSREN	MADLLGHGIFAV
CYP704B1	46	-RMHDWLVEYLYNSR-----	TVVVPMPFTTYTYIADP	INVEYVLKTNFS	SNYPK-----	VLLGDGIFNS
CYP86A2	48	-RMHDWITENLRACGG-----	TYQTCICAVPFLAKKQGL	VTVTCDPKNIEHMLK	TRFDNYPKG	PTWQAVFHDLLGQGIFNS
CYP86A4	48	-RMHEWITENLRACGG-----	TYQTCIFAVPFLAKKQGL	VTVTCDPKNLEHMLK	TRFDNYPKG	PTWQSVFHDLLGQGIFNS
CYP86A8	48	-RMHDWISDNLACSG-----	TYQTCICAIPFLAKKQGL	VTVTCDPNLEHILKN	RFDNYPKG	PTWQAVFHDLLGQGIFNS
CYP86A7	48	-RMHDFIADNLRMC GG-----	TYQTCIFPIPF	LAKKQGHVTVTCDPKNLEHILK	TRFDNYPKG	PSWQSVFHDLLGDGIFNS
CYP86A1	51	-RIHDWIADNLRATGG-----	TYQCTMVI	PFVAKAQGFYTVTCHPKNVEHILK	TRFDNYPKG	PMWRAAFHDLLGQGIFNS
CYP86B1	80	GNIYEWLSDVLCLQNG-----	TFQFRGPWFSSLNS----	TITCDPRNVEHILKN	RFSVFPGKSY	FRDNLRLDLLGDGIFNA
CYP86B2	81	SNIYEWLSDVLISQNG-----	TFRFRGPWFSTLNC----	VVTCDPNVEHILK	TRFSIYPKGSY	FRETMDLLGDGIFNT
CYP86C3	57	-DVYGWATRCLKKCRG-----	TFLYNGIWLGGSYG----	AVTCVPIANVEYMLK	TNFKNFPKG	AFFKERFNDLLEDGIFNA

CYP86C4 57 -DVYGWVTRSLKKCRG-----TFLYRGVWLDGSYG----AVTCVPANVEYMLKTNFKNFPKGTFFKSRFNDLLEEGIFNA
 CYP86C2 57 -DMFGWVTRCLTKSRG-----TFPYQGIWFSGSYG----AMTSVPANIEYMLKTNFKNFPKGFEYKERFRDLLEDGIFNA
 CYP86C1 61 -DLFTWCTRCVVRSGG-----TFHYRGIWFGGAYG----IMTADPANVEHILKTNFKNYPKGAFYRERFRDLLEDGIFNA
 CYP94B1 56 -RLLQWYTDLLRLSP-----SQTITVDLLFGRRITITANPENVEHILKTNFYNFPKGKPFDDLGLDGLGGGIFNS
 CYP94B3 54 -RLLQWYTELLRLSP-----SQTILVPLLGNRRITITTNPLNVEYILKTNFFNFPKGKPFDDLGLDGLGGGIFNV
 CYP94B2 50 -RLLDWYTELLTESP-----SRTVIRRLAARRTVVTANPSNVEYILKTNFDNYPKGKPFTEILGDFLNGGIFNV
 CYP94C1 51 -NLSDWYTHLLRRSP-----TSTIKVHVLN---SVITANPSNVEHILKTNFHNYPKGKQFSVILGDLGLGRGIFNS
 CYP94D1 49 -RFLDWTVETLSRCP-----TQTAIFRRPGKQQLIMTANPSNVEYMLKTKFESFPKGQQTFSVLEDLFGHGIFNS
 CYP94D2 49 -RFLDWTVETLSRCP-----TQTAIFRRPGKLQFVMTANPANVEYMLKTKFESFPKGERFISILEDLFGRGIFNS
 CYP96A10 51 -RVYDFITEILEVTN-----LTYPCTGPCFANLDMLVTVDPANIHIMSSNFANYPKGPEFKKLF-DILGDGIFNA
 CYP96A9 51 -RVYDFITEVLEDGN-----LNYLFIGPFLGGIDMLFTVDPANIHIMSSNFANYPKGTEFKKLF-DVLGDGIFNA
 CYP96A1 52 -RVYDFVTELEASN-----LTYPFKGPCFGGLDMLITVDPANIHIMSSNFANYPKGTEFKKIF-DVLGDGIFNA
 CYP96A5 50 -RINDYVAEILEVSN-----LTFAFKGPWFSGMNLITADPSNIQHVSSNFSNYDKGPEFKEMF-DFLGNGIFTA
 CYP96A11 52 -RIYDYIVEILEISD-----LTFSEKGPWFAGMDTLLTVDPANIHMMNSNFSNYIKGSDFKVEF-DVFGDGIITT
 CYP96A2 50 -RIYDYSVKILETSD-----LTFPFKGPRTGMDMLLTVDPANIHIMSSNFSNYIKGPEFQDVF-DVFGDSFITT
 CYP96A12 50 -RIYNFGVEALEMSH-----LTFLFKGPWFAGMDMLFTVDPANIHYYILSSNFSNYTKGADFKEVF-DVFGEMIFSS
 CYP96A13 41 -RIYDFSVEVLENSD-----LTFPFKGPWFTGMDMLFTVDPTNIHHIMSSNFSNYTKGPDFKQVF-DVFGDGIILT
 CYP96A7 59 -RIYDYSVEFLENSN-----MTFQFKGPWFVGMIDILATADPTNIHYIMSSNFSNYIKGPIFHEIF-EAFGDGIINT
 CYP96A8 59 -RIYDCSVEVLENSN-----MTFQFKGPWFVGMVDLATVDPANIHIMSSNFSNYIKGPIFHEIF-EAFGDGIINT
 CYP96A3 52 -RIYDWITEVLEATD-----MTFCFKGPCLSGMDILLTVDPVNIHYILSSNFANYPKGMEFKKIF-EVVGDSIFNV
 CYP96A4 52 -RIYDFVTEALEAEN-----MTGCFIGPWLSGTDILLTVDPVNIQYILSSNFVNPYKGGKFNKIF-EFLGDGIFNV
 CYP96A15 51 -RIYDWTVEVLEATN-----LTFYFKGPWLSGTMDLFTADPRNIHHILSSNFGNYPKGPEFKKIF-DVLGEGILTV
 CYP97A3 92 SNVLDFMFDWTGSDQDYPKVPEAKGSIQAVRNEAFFIPLYELFTYGGIFRLTFGPKSFLIVSDPSIAKHILKDNAKAYSKG-ILAEILDFVMGKGLIPA
 CYP97C1 83 NAKLDDVADLLGG-----ALFLPLYKWMNEYGPITYRLAAGPRNFVIVSDPAIAKHVLRN-YPKYAKG-LVAEVSEFLFGSGFAIA
 CYP97B3 81 PTAEGSVSDLFGKP-----LFLSLYDWLFLEHGGIYKLAFGPKAFVVISDPTIARHVLRENAFSYDKG-VLAEILEPIMGKGLIPA
 CYP709A1 57 LEISAMVSQSASKD--CDSIH-----HDIVGRLLPHYVAWSKQYQGRFIVWNGTDPRLCLTETELIKELLMKHNGVSGRSW-LQQQGTKNFIGRGLLM
 CYP709A2 58 IDISKMLSHSASND--CSSIH-----HNIVPRLLPHYVSWSKQYQGRFIMWNGTEPRCLTETEMIKELLTKHNPVTGKSW-LQQQGTGKFIGRGLLM
 CYP709B2 58 REIRKMKNEAKLMV--LDPNS-----NDIVPRVLPHLQQWKSQYGETFLYWQGTDPRLCISDHELAKQILSNKFVFFSKSK-TKPEILKLKSG-NGLIF
 CYP709B3 58 SEIKKMKKEADLCV--LDPNS-----NDIFPRVFPQYHQWMSQYGDFTLFWGTGKPTIYISNHELAKQVLSKFGFTIIPV-KRPEVFILFG-KGLSF
 CYP709B1 56 SEIKKMKRESHLIS--LDPSS-----NDIFPRILPHYQKWSQYGETFLYWNGTEPRICISDPELAKTMLSNKLGFFVKSK-ARPEAVKLVGSKGLVF
 CYP721A1 51 GEVSRLTAEAKSKP--IPSGRNP----HEFVHRVAPHYHEWSRVYKGTFLYWFSGKPVVATSDPRLIREALTGGSFDRIG---HNPLSKLLYAQGLPG
 CYP72B1 60 KELVGMMLKASSHP--MPFS-----HNILPRVLSFYHHWRKIYGATFLVWFGPTFRLTVADPLIREIFSKSEFYEKNE---AHPLVKQLEGDGLLS
 CYP72A11 57 KKNFSMRAEARSKP--INLT-----DDITPRIVPYPLQMLKTHGRTFFTWFGAIPITITIMDPEQIKEVFNKVYDFQKAH---TFPLGRLIAT-GVLS
 CYP72A13 57 KRNFSMLAEARSKP--INLT-----DDITPRIVPYPLQMLKTHGRTFFTWFGPIPTITIMDPEQIKEVFNKVYDFQKAH---TFPLGRLIAT-GVLS
 CYP72A15 57 KKNFTMLSEARSKP--LKLT-----DDISPRVVPYPLQMFKTYGRTYFTWFGPIPTITIMDPEQIKEVFNKVYDFQKPH---TFPLATIIAK-GLAN
 CYP72A10 57 KRNVNMLTEATSKP--IKLT-----EDITPRVLPHFPQMLKTHGRTFFTWLGPKPTITIMDPEQIKEVFNKVYDFQKAH---TFLLGRLIAT-GIIN
 CYP72A14 57 KKMISMFIATSKP--IKPT-----DDITPRVMPHPLQMLKTHGRTNLTWFGPIPTITIMDPEQIKEVFNKVYDFQKAH---TFPLSKILGT-GLVS
 CYP72A7 56 KRNVDMMMEARSKP--INVT-----DDITPRLLPLALKMLNSHGKTFIWIWGLPTIVITNPEQIKEVFNKVNDFEKAS---TFPLIRLLAG-GLAS
 CYP72A9 53 RRSFMSMLKEARSKP--MKPT-----DDLISLVMPYSFHMNTYGTFTWWSGPIAITIMNPQLIKEVYNKFYDFEKTH---TFPLTSLLTD-GLAN
 CYP72A8 61 KREASMVEQEKSRL--INLT-----DDYTHRVMPLIQQTVDHGKTSYMWMPGPIASVIVTKPEHIKDVLRVYDFPKPP---VHPIVELFAT-GVAL
 CYP72C1 59 RESNQMDQVAHSLP--LPLD-----ADFLPRMMPFLHHTVLKHGKKCFWYGPYPNVIVMDPETLREIMSKHELFPKPK---IGSHNHVFLS-GLLN
 CYP715A1 61 NDMKKLKMASVVVDNSKSSTIIN----HDIHSIALPHFARWQQEYGVFVYWLGIIEPFVYVADPEFLSVMSKGVLGKSWGKPNVFKKDREPMFGTGLVM
 CYP714A1 60 PEMQKIQSQIMSNSKHYSGDNIIA---HDYTSSLFPYLDHWRKQYGRVYTYSTGVKQHLNHNHPELVKELNQANTLNLGKVS-YVTKRLKSLILGRGVIT
 CYP714A2 60 SEMQRIQ----SEAKHCSGDNIIS---HDYSSSLFPHFDHWRKQYGRVYTYSTGLKQHLNHNHPELVKELNQANTLNLGRIT-HITKRLNPILNGGIIT
 CYP74A 78 DQGAEFFFSRIRKYNS-----TVYRVNMPP--GAFIAENPQVVALLDGKSFPVLFVDVKVEKKDLFTGTYPMPST

CYP74B2	56	--GPDKFFRTRAKEYKS-----	TVFRTNIPPTFPFFGNVNPNI	AVLDVKSFSHLFDMDLV	DKRDVLIGDFRPSL
CYP722A1	57	SGKGFYEFVRSRRIRYG-----	SCFRTSLFGETHVFLSTTESARLV	LNNDSGMFTKRYIKSIGELVGDRSL	L
CYP711A1	63	KYGPDVFSVLAKQYG-----	PIFRFQMGRQPLIIIAEAE	LCREVGIIKKFKDLPNRSIPSPISASPLHKKGLFF	
consensus	101		..	.	.

CYP51	126	DYPVRMEQFRFFSSALKGQQLRGYVDQMTKETED-----YFSKWGESG-----EVDLKAELERLITLTASRCLLGR-----EVRD
CYP51A2	126	DYSVRQEQRFFTEALRVNKLKGYVDMVTEAED-----YFSKWGESG-----EVDIKVELERLIILTASRCLLGR-----EVRD
CYP710A1	125	FGEDHKSVRRLAPNFTPKALSTYSALQQLVILR-----HLRQWEGSTSGGSRPVSLRQLVRELNLETSQTVFVGP-----YLDK
CYP710A2	126	FGEDHKTVRRLAPNFTPKALSTYSDLQQIVMLR-----HLRQWEEFSGGTKPVSMRDLVRELNLETSQTVFVGP-----YLDK
CYP710A3	126	FGENHKSVRRLVAPNFTRKPLSAYSSLQQIVILR-----HLRQWEEFSGGSRPVSMRQLIRELNLETSQTVFVGP-----YLDK
CYP710A4	126	FGEDHKSVRRLVAPNFTRKPLSAYSSLQQIVILR-----HLRQWEEFSGGSRPVSMRQLIRELNLETSQTVFVGP-----YLDK
CYP702A1	122	SKESHKHVRNLTFQLLGSQGLKLSVMQDIDLLTR-----THMEEGARRG-----CLDVKEISSKILIECLAKKVTGD-----MEPE
CYP702A2	122	SKESHKHVRNLTFQLLGPQGLKSRMIEDVDLLAR-----TYMEEGARRG-----YLDVKETSSKILIGCLAKKVMGE-----MEPE
CYP702A8	133	STESHKHVRNLTVQMLGSQSLKLRIMENIDLLTR-----THMEEGARDG-----SLDVKETTSKILIECLAKKVMGE-----MEPE
CYP702A5	122	-KDTHKHARSLTNQFLGSQALKLRMIQDIDFLAR-----THMKEGARKG-----CLDVKETASKIVIECLSKKVMGE-----MEPE
CYP702A6	122	-KDTHKHARSLTNQFLGSQALKLRMLQDIDFLVR-----THLKEGARKG-----SLDIKETTSKIIIECLAKKVMGE-----MEPD
CYP702A3	125	SKEIHKYVRNLTSRVFGPEGLKTRLIHIDIDNLLR-----NDVENGARRG-----SFDVREATIKMVGELIAKKIMGE-----TESE
CYP708A2	126	G-NIHKHVQISLQHLGSEALKKKMIGEIDRVTY-----EHLRSKANQG-----SFDAKEAVESVIMAHLPKIISN-----LKPE
CYP708A3	126	V-FIHKYLQKITMQILGSEGLKQTM LGNM DKATR-----DHRSIASQG-----SFNVKEVENLVVAYMTPKLISN-----LKPE
CYP708A4	126	G-NIHKHIKQITLHLLSSEGLKRRKILKMDRVTR-----EHLSSKAKTG-----RLDVKDAVSKLIIAHLTPKMMSN-----LKPD
CYP708A1	137	GKDFHRYMRHIALQLLGPECLKQRFIQQIDIATS-----EHLKSVSFQG-----VVDVKDTSGRILIEQMILMIISN-----IKPE
CYP87A2	122	G-FMYKYLKNMVLTLFGHDGLKK-MLPQVEMTAN-----KRLELWSNQD-----SVELKDATASMIFFDLTAKKLISH-----DPDK
CYP720A1	134	G-DQQRRLHSIASSMMRHDQLKTHFLEVIPVVML-----QTLNFKDGE-----VLLQDICRKAIAHLMVNQLLGV-----SSES
CYP724A1	127	G-EIHRKLKNVTISFINLTKSKPDFLHCAENLSI-----SILKSWKNCR-----EVEFHKEVKIFILSVMNQLLSI-----KPED
CYP90A1	122	G-SLHKRMHSLTMSFANSSIIKDHLMLDIDRLVR-----FNLDSWSSR-----VLLMEEAKKITFELTVKQLMSF-----DPGE
CYP90B1	130	G-DMHRDMRSISLNLFLSHARLRTILLKDVERTHL-----FVLDSWQQNS-----IFSAQDEAKKFTFNLMAKHIMSM-----DPGE
CYP90C1	160	G-PHQKRLHTLIGAFLRSPHLKDRITRDIEASVV-----LTLASWAQLP-----LVHVQDEIKKMTFELVVKVLMST-----SPGE
CYP90D1	142	G-SLHRRFHGLVGSFLKSPLLKAQIVRDMHKFLS-----ESMDLWSEDQ-----PVLLQDVSKTVAFKVLAKALISV-----EKGE
CYP85A1	120	G-SSHRLMRGSLLSLISSTMMRDHILPKVDHFMF-----SYLDQWNELE-----VIDIQDKTKHMAFLSSLTQIAGN-----LRKP
CYP85A2	117	G-PSHRLMRGSLLSLISPTMMKDHLLPKIDDFMR-----NYLCGWDDLE-----TVDIQEKTKHMAFLSSLQIAET-----LKKP
CYP707A1	123	G-DYHAKLRKLVLR-AFMPEsirNMVPDIESIAQ-----DSLRSWEG-T-----MINTYQEMKTYTFNVALLSIFG-----KDEV
CYP707A3	123	G-DYHSLKLRKLVLR-AFMPDAIRNMVPHIESIAQ-----ESLNSWDG-T-----QLNTYQEMKTYTFNVALISILG-----KDEV
CYP707A2	136	G-PYHSTLKRVLVQS-SFMPsALRPTVSHIELLV-----QTLSSWTSQK-----SINTLEYMKRYAFDVAIMSAFGD-----KEEP
CYP707A4	121	G-DYHSHIRKLVQS-SFYPETIRKLIPDIEHIAL-----SSLQSWANMP-----IVSTYQEMKKFAFDVGILAFG-----HLES
CYP88A3	137	F-EEHKRLRLTAAPVNGHEALSTYIPYIEENVI-----TVLDKWTMKG-----EFEFLTHLRKLTFRIIMYIFLS-----SESE
CYP88A4	136	F-EEHKRLRLTSAPVNGPEALSYYIQFIEETVN-----TDLEKWSKMG-----ETEFSLHLRKLTFKVMYIFLS-----SESE
CYP716A1	128	K-EEARKLRMLLSQFMKPEALRRYVGVMDIEIAQR-----HFETEWANQD-----QVIVFPLTKKFTFSIACRSFLS-----MEDP
CYP716A2	124	K-EEAIKTRMLLMPsMKPEALRRYVGVMDIEIAQK-----HFETEWANQD-----QLIVFPLTKKFTFSIACRLFLS-----MDDL
CYP718	137	G-EKHRVLRGIVANSLSYIGLESIPKLCDTVKF-----HHETEWRGKE-----EISLYRSKAVLTFVVFECLYG-----IKVE
CYP704A1	116	D-GEKWKQQRKLVSFEFSTRVLRNFSYSVFR-----TSASKLVGFIAEFALSG-----KSFDQDMLMKCTLDISIFKVGFGVELGCLDGFsKEGEEFMKAfD
CYP704A2	122	D-GEKWRQQRKLSSFEFSTRVLRDFSCSVFR-----RNASKLVGFVSEFALSG-----KAFDAQDLLMRCTLDISIFKVGFGVELKCLDGFsKEGQEFMEAFD
CYP704B1	103	D-GELWRKQRKTASFEFASKNLRDFSTVVKF-----EYSLKLFTILSQASFE-----QQVDMQELLMRMTLDSICKVGFGEIGTLAPELPEN-HFAKAfD
CYP86A2	123	D-GDTWLFQRKTAALEFTTRTLRQAMGRWVN-----RGIKLRFCPILETAQNN-YEPVDLQDLILRLTFDNICGLAFGKDTRTCAPG-LPENGFAfAFD
CYP86A4	123	D-GDTWLFQRKTAALEFTTRTLRQAMGRWVN-----RGIKLRFCPILETAQDN-AEPVDLQDLILRLTFDNICGLAFGKDTRTCAPG-LPENGFAfAFD
CYP86A8	123	D-GDTWLFQRKTAALEFTTRTLRQAMARWVN-----RAIKLRFLPILENARLG-SEPIDLQDLLRLTFDNICGLTFGKDPRTCAPG-LPVNTFAfAFD
CYP86A7	123	D-GDTWRFQRKTAALEFTTRTLRQAMARWVD-----RAIKNRLVPILESARSR-AEPIDLQDVLRLTFDNICGLTFGKDPRTLSPE-FPENGFAfAFD
CYP86A1	126	D-GDTWLMQRKTAALEFTTRTLRQAMARWVN-----GTIKNRLWLILDRAVQN-NKPVDLQDLFLRLTFDNICGLTFGKDPETLSLD-LPDNPFsVAfD
CYP86B1	151	D-DETWRQRKTASIEFHSAKFRQLTTQSLF-----ELVHKRLLPVLETsvKS-SSPIDLQDVLRLTFDNVCMIAFGVDPGCLGPD-QPVIPFAKAfE
CYP86B2	152	D-DGTWRQRKAASVEFHSAKFRQLTSQSLH-----ELVHNRLLPVLETSG-----KIDLQDILLRLTFDNVCMIAFGVDPGCLSPK-LPEIPFAKAfE
CYP86C3	127	D-AESWKEQRRIIITEMHSTRFVEHSFQTTQ-----DLVRKKLLKVMESFARS-QEAFDLQDVLRLTFDNICIAGLGDDPGTLDS-LPLVPFAKAfE

CYP86C4 127 D-DDSWKEQRRRIITEMHSTGFVEHSFQTTQ-----HLVRKLLKVMESFAKS-QEAFDLQDVFLRLTFDIIICLAGLGADPETLAVD-LPQVPFAKAFE
 CYP86C2 127 D-DESWKEQRRRIITEMHSTRFVDHSFQTTTR-----DLIERKLLKVMESFSKS-QEAFDLQEILLRLTFDNICIAGLGDDPGTLDDD-LPHVPFAKAFE
 CYP86C1 131 D-DELWKEERRVAKTEMHSSRFLEHTFTTMR-----DLVDQKLVLPMENLSTS-KRVFDLQDLLRFTFDNICISAFGVYPGSLETG-LPEIPFAKAFE
 CYP94B1 125 D-GELWSSQRLKLSHEFTMRSLREFTFEILR-----EEVQNRLLIPVLSSAVDC-GETVDFQEVLRKFAFDVVCKVSLGWDPDCLDLT-RPVPELVKAFD
 CYP94B3 123 D-GHSWSSQRLKLSHEFSTRSLRSFAFEVLK-----DEVENRLVPVLSTAADV-GTTVDLQDVLKRFADFVVCKVSLGWDPDCLDLT-RPVNPLVEAFD
 CYP94B2 119 D-GNLWLKQRLRATHDFTPksLREY-VTVLR-----NEVEKELLAFLNAAED-SQPFDLQELLRRFTFNIVCIVFLGIDRCTLNPS-SPVSEFDRAFQ
 CYP94C1 117 D-GDTWRFRQRLASLELGSVSVRVFAHEIVK-----TEIETRLLPILTSFSDNPGSVLDLQDVFRFRFSFDITISKLSFGFDPDCLRLP-FPISEFAVAFD
 CYP94D1 118 D-GDMWWKQRTASYEFSTKSLRDFVMSNVT-----VEINTRLVPVLVEAATT-GKLIDLQDILERFAFDNICKLAFNVDCACLGHDGAVGVNFMRAFE
 CYP94D2 118 D-GEMWWKQRTASYEFSTKSLRDFVMSNVT-----VEINTRLVPVLAEAAATN-GKLIDLQDILERFAFDNICKLAFNVDSACLGDGGAAGVNMQAFE
 CYP96A10 120 D-SELWKDLRKSAQSMMPNFQKFSLATSL-----KKLEKGLVPLLDHVAKE-KLAVDLQDMFQRFITDITFVLATG-YDPGCLSVEMPEVEFARALD
 CYP96A9 120 D-SDLWKDLRKSSQSMMPNFQKFSLATSL-----SKLEKGLVPLLDHVAKE-KLVVDLQDVQRFITDITFVLATG-YDPGCLSVEMPEIEFARALD
 CYP96A1 121 D-SELWKDLRKSAQSMMPHDFQRFTRLTIM-----SKLEKGLVPLLDYVAEK-KQVVDLQDVQRFITDITSFVLATG-VDPGCLSTEMPQIEFARALD
 CYP96A5 119 D-SKLWEDMRKSALVVLSHQGFQSFSLRTIT-----CKIKNGLVPVLHDHFAEA-NTVFDLQDVQRFITDITTLTLVTG-CDSSSLSIEMPKNEYAKAMD
 CYP96A11 121 D-SELWKNLRKSYQEMLHHQAFQSFSLSTTR-----SKLKDGLVPLLNHFHFAEE-GTTVDLQDVLGRFTFDITLILITG-SDPRSLSIEMHEDELAKALD
 CYP96A2 119 D-SELWKNMRKSYQAMLHSHQEFQRFMSMTMT-----SKLKYGLVPLLNHFHFAEE-GTTLDLQSVFGRFTFDITFILVTG-SDPRSLSIEMPEVEFAKALD
 CYP96A12 119 D-SELWKNQRKAAQFMLNHQGFQKLSLSATR-----SKLYDGLVPLFNQCCEE-EKVVDLQQVQRFITDITFFIVTG-FDPKSLSIEMPEVEYAKALD
 CYP96A13 110 DDSELWKNLKKASLVMLNHQGFQSLSMSTT-----EVLKDGLVPLFNHFHFAEN-GTVVDLQDVFKRFITDITLVTVTG-SADPRSLSIEMPEVEFAKALD
 CYP96A7 128 D-AELWRDWRNASQLIFNHQRYQNFSASTTK-----SKVNDGLVPLF-----IVDLQDVQRFITDITFIFITG-TDPRSLSIEMPEIEFAKALD
 CYP96A8 128 D-AELWRDWRNASQLIFNHQRYQNFSASTTK-----TKVNDGLVPLFNHFHFAEE-EIVVDLEDVQRFMYDITFIFITG-TDPRSLSIEMPEVEFSKALD
 CYP96A3 121 D-SGLWEDMRNSSHAIQFQFQFVSTSV-----RKLRLQGLVPILENAADK-NILVDLQDLQFQRFITDITSLILMTG-YDPKCLSVEMPKVEFGDAVD
 CYP96A4 121 D-SGLWEDMRNSSHAIQFQFQFVSTSV-----SKLSQGLVPILDNAVEK-HILVDLQDLQFQRFITDITSSILMTG-YDPKCLSVEMPKVEFADAMD
 CYP96A15 120 D-FELWEEMRKSNAHLFHNQDFIELSVSSNK-----SKLKEGLVPLFDNAAQK-NIIELQDVQRFITDITSSILMTG-YDPMSLSIEMLEVEFGAAD
 CYP97A3 191 D-GEIWRRRRRRAIVPALHQQYVAAMIS-----LFGASDRLCQKLDAAALK-GEEVEMESLSRLTLDIIGKAVFNDFDSLNTDGVIEAVYTVLR
 CYP97C1 161 E-GPLWTARRRAVPSLHRRYLSVIVER-----VFCKCAERLVEKLQPYAED-GSAVNMEAKFSQMTLDVIGLSLFNYNFDSLTTDSPVIEAVYTALK
 CYP97B3 160 D-LDTWKLRRRAITPAFHKLYLEAMVKVFSDCSEKMILKSEKLIREKETSSGED-TIELDLEAEFSSALDIIIGLSVFNDFGVSVTKESPVIAVYGTILF
 CYP709A1 147 ANGQDWHHQRHLAAPAFTGERLKG--YARHMVEC-TSKLVERLRKE-----VGEGANEVEIGEEMHKLTAADIISRTKFG-----SSFEKGKELFN
 CYP709A2 148 ANGEAWHHQRHMAAPAFTDRDLKG--YAKHMVEC-TKMAERLRKE-----VGE---EVEIGEEMRRLTAADIISRTKFG-----SSCDKGKELFS
 CYP709B2 147 VNGLDWVRHRRILNPAFSMDKLKL--MTQLMVDC-TFRMFLEWKKQ---RNGVETEQFVLISREFKRLTAADIATAAFG-----SSYAEGIEVFK
 CYP709B3 147 IQGDDWIRHRRILNPAFSMDRLKA--MTQPMGDC-TLRIFEEWRKQ---RRNGEVLIKIEISKEFHKLTAADIATTAAG-----SSYAEGIELCR
 CYP709B1 146 IEGADWVRHRRILNPAFSIDRLKI--MTTVMVDC-TLKMLEEWRKESTKEETHPKIKKEMNEEFQRLTAADIATSAG-----SSYVEGIEVFR
 CYP721A1 141 LRGDQWAFHRRIAKQAFMEKLKR--WVPQMVTS-TMMLMEKWEDMR--NGGEEI--ELEVHKEMHNLSAEMLSRTAFG-----NSVEEGKGIFE
 CYP72B1 147 LKGEKWAHHRKIISPTFHMENLKL--LVPVVLKS-VTDMVDKWSDKL--SENCEV--EVDVYEFQILTEDVISRTAFG-----SSYEDGRAVFR
 CYP72A11 143 YDGDKWAKHRRINPAFHLEKIKN--MVPAFHQS-CSEIVCKWDKL--SDKESS-CEVDWVWGLVSMTADVISRTAFG-----SSYVEGQRIFE
 CYP72A13 143 YDGDKWTKHRRINPAFHLEKIKN--MVPAFHQS-CSEIVGEWDKL--TDKQSS-CEVDIWPVLVSMTADVISRTAFG-----SSYKEGQRIFE
 CYP72A15 143 YDGDKWAKHRRINPAFHIEKIKN--MVPAFHQS-CREVVGEWDQLV--SDKGSS-CEVDWVWGLVSMTADVISRTAFG-----SSYKEGQRIFE
 CYP72A10 143 YDGDKWAKHRRINPAFHIEKIKN--MVPAFHQS-CSDVWGEWVKLV--SDKGSS-CEVDWVWGLVSMTADVISRTAFG-----SSYKEGQRIFE
 CYP72A14 143 YDGDKWAKHRRINPAFHLEKIKN--MVHVFHES-CSELVGEWVKLV--SDKGSS-CEVDWVWGLTSMTADVISRTAFG-----SSYREGHRIFE
 CYP72A7 142 YKGDKWASHRRINPAFHLEKIKN--MIPAFYHC-CSEVVCQWEKLF--TDKESP-LEVDWVWPLVNMADVISHTAFG-----SSYKEGQRIFFQ
 CYP72A9 139 ADGDKWVKHRRINPAFHFEKIKN--MVPTFYKS-CIEVMCEWEKLV--SDKGSS-CELDWVWPLVNMADVISHTAFG-----SSYKEGQRIFFI
 CYP72A8 147 YEGEKWSKHRRINPSFHLEKIKI--MIPAFYES-CSEMISKWEKLV--TEQGSS-NEIDWVWPLVNMADVISHTAFG-----SSYEEGKRIFE
 CYP72C1 145 HEGPKWSKHRRILNPAFRIDNLKS--ILPAFNSS-CKEMLEEWERLA--SAKGTM--ELDSWTHCHDLTRNMLARASFG-----DSYKDGKIKIFE
 CYP715A1 156 VEGDDWTRHRRITPAFAPLNLKV--MTNMMVES-VSNMLDRWGIQIN-----SGNPEFDMESIIGTAGEIIAKTSFG-----VTGENGTQVLK
 CYP714A1 155 SNGPHWAHQRRIIAPEFFLDKVKG--MVGLVVES-AMPMLSKWEEMMK--REGEMVCDIIVDEDLRAASADVISRACFG-----SSFSKGKEIFS
 CYP714A2 151 SNGPHWAHQRRIIAYEFTHDKIKVKGMVGLMVES-AMPMLNKWEEMVK--RGEMGCDIRVDEDLKDVSADVIKACFG-----SSFSKGKAIFS
 CYP74A 146 ELTGGYRILSYLDPSEPKHEKLKLNLLFFLLKSSR--NRIFPEFQATYSELFDLSLEKAFPLRESGFRFQRRNRLLFLG-----SSFL

CYP74B2 124 GFYGGVRVGVYLDTTEPKHAQIKGFAMETLKRSS---KVLWLQELRSNLNIFWGTIESEISKNGAASYIFPLQRCIFSFCLC-----ASLA
CYP722A1 127 QHHHKILRSRLINLFSCRSTALMVRHFDELVVDA-----LGGWEHRG---TVVLLTDLLQITFKAMCKMLVS-----LEKE
CYP711A1 131 TRDKRWSKMRNTILSLYQPSHLTSLIPTMHS-----FITSATHNLDSKPRDIVFSNFLFLKLTTDIIIGQAAFGVDFGLSGKKPIKDVEVTDFIN
consensus 201

CYP51 196 QLFDDVAPLFHDLDKGMQPI SVIFPKLP IAHNCRDRARGKIAKIFSNIATRKRS GDKSEND-----MLQCFIDS KYD-----GRE
 CYP51A2 196 QLFDDVSALFHDLNGLMPLISVLPYLP IAHRRDRAREKLSEIFA KIGSRKRS G-KTEND-----MLQCFIES KYD-----GRQ
 CYP710A1 200 EAKNRFRTDYNLFNLGSMALPIDLP GFAGFGEARRAVKRLGETLGICAGKSKARMAAGEEPACL-----IDFWMQAIVAEN----PQPPH
 CYP710A2 201 EARNTFCTDYNLFNLGSMALPINLP GFAFNKARRAVMNL EKTLSVCAGKSKKRMATGEEPTCL-----IDFWMHAFVTEIESGNPPPLH
 CYP710A3 201 EVKNTIRDDYNVFNPGTMAPIDLP GFFTFGEARRAVSRLVNTMSLCVRKSKEKMAAGENPTCL-----VDFWTHSIVAES----PPPPH
 CYP710A4 201 EVKKTICDDYSLLTLGTMAIPIDLP GFFTFGEARQAVSRLVNTMSVCVGS KAKMAAGENPTCL-----VDFWTHSII EEN----PPPPH
 CYP702A1 193 -AAKELALCWRCFPSGWFRFPNLPGTG VYKMMKARK----RMLHLLKETILKKRASGE-----ELGEFFKIIF----EGAET
 CYP702A2 193 -AAKELALCWRYFQSGWFRFFNLPGTG VYKMMKARK----RMMKLLRKT VLTKRASGE-----ELGEFFNIIFGEMEGET
 CYP702A8 204 -AAKLALCWRYFPSGWFRFPNLPGIG VYNMMKARK----RMKTLLKEEV LKKREAGE-----EFGEFSKIIFGEKEGET
 CYP702A5 192 -AAKELTLCWTFPPRDWFRFAWNFP GTGVYRIVKARN----RMMKV LKETVVKKRASGK-----KLGEFFETIFGD TES--VT
 CYP702A6 192 -AAKELTLCWTFPPREWFGFAWNIP GTGVYRMVKVARN----RMMKV LKETV LKKRASGE-----ELGDFFKTIFGDTERGVKT
 CYP702A3 196 -AVKELGLCWSAFRTSWFQFSYNIP GTTVYRLVKARR----KAAKLLKALILKKKASKE-----GLGDFLDIIFDEMEKDGT A
 CYP708A2 196 -TQATLVDNIMALGSEWFQSPLKLT TLISIKYKFIVSSARRYALQV LKDVFTRRKASRE-----MCGDFLDTMV EEGEKEDVI
 CYP708A3 196 -TQSKLIDNLNAFNLDWFKSFLR LSTWKAVTKALKS---REEAIQVMKDV LMMRKETRE-----KQEDFLNTLLEELEKDG SF
 CYP708A4 196 -TQAKLMGIFKAFTFDWFRTSYLLSAGKGLYNTLWACR---EGMRE LKDIYTMRK TSEE-----KYDDFLNTAIEESEKAGEL
 CYP708A1 208 -TKSKLIESFRDFSFDLVRSPFDPSFWNALYNGLMVRSARSNV MKMLKRMFKERREEATSD-----DSKYGDFMETMIYEVEKEGDT
 CYP87A2 191 -SSENLRANFAFIQGLISFPFDIPGTAYHKCLOGRAK----AMKMLRNMLQERRENPR-----KNPSDFFDYVIEEIQKEGTI
 CYP720A1 204 -EVDMSQLFSDFVDGCLSVPIDLP GFFTYNKAMKARKEIRKINKTIEKRLQNK AASD-----TAG--NGVLGRLL EEEES----
 CYP724A1 197 PARLYVLQDFLSYMKGFISLPIPLPGTGYTNAIKARKLSARVMGM LKEREREEDMN-----NAIREEDFLDSIISNED----
 CYP90A1 190 -WSESLRKEYLLVIEGFFSLPLPLFSTTYRKA IQARRKVAEALTVVMKR REEEEEEG-----AERKKDMLAALLAADDG----
 CYP90B1 200 EETEQLKKEYVTFMKGVSAPLNLPGTAYHKALQSRATILKFIERKMEERKLDIKEEDQEEEEVKTEDEAEMSKSDHVRKQRTDDDLLGW LKHSN----
 CYP90C1 230 -DMNILKLEFEFEEKGLICIPKFPGRTRYKSLKAKERLIKVMKKV EERQVAMTTTSP-----ANDVVDVLLRDGGDSEKQ--S
 CYP90D1 212 -DLEELKREFENFISGLMSLPINFPGTQLHRSLOAKKNMV KQVERIEGKIRKTKNKEE-----DDVIAKDVVDVLLKDSSE--H
 CYP85A1 190 -FVEEFKTAFFKL VVGTLSPIDLPGTNYRCGIOARNNIDRLLRELMOER RD-----SGETFTDMLGYLMKKEGNRY P
 CYP85A2 187 -EVEEYRTEFFKL VVGTLSPIDIPGTNYRSGVQARNNIDRLLTELMQERKE-----SGETFTDMLGYLMKKEDNRYL
 CYP707A1 190 LYREDLKRCYYILEKGYNSMPVNLPGTLFHKSMKARKELSQILARILSERRONG-----SSHNDLLGSFMDGKE----E
 CYP707A3 190 YYREDLKRCYYILEKGYNSMPINLPGLTFHKAMKARKELAQILANILSKRRQNP-----SSTHDLLGSFMEDKA----G
 CYP707A2 205 TTIDVIKLLYQRLERGYNSMPLDLPGLTFHKSMKARIELSEELRKVIEKRRENG-----REEGGLLGVL LGAQDQKRNG
 CYP707A4 189 SYKEILKHNYNIVDKGYNSFPMSLPGTSYHKALMARKQLKTIVSEIICERREKR-----ALQTD FLGHLLNFKNEKGRV
 CYP88A3 206 NVMDALEREYTALNYGVRAMAVNIPGFAYHRALKARKTLVAAFQSI VTERNRQKQNIL-----SNKKDMLDNLLNVKD EDGKT
 CYP88A4 205 HVMDSLEREYTALNYGVRAMGINLPGFAYHRALKARKKLVA AFQSI VTNRRNQRKQNIS-----SNRKDMLDNLIDVKD ENGRV
 CYP716A1 197 ARVRQLEE QFNTVAVGIFSIPI DLPGTRFNRAIKASRLLRKEVSAIVRQRKEELKAGKA-----LEEHDILSHMLMN----IGE
 CYP716A2 193 ERVRKLEEPFTTVMTGVSIPIDLPGTRFNRAIKASRLLSKEVSTIIRORKEELKAGKV-----SVEQDILSHMLMN----IGE
 CYP718 206 IG---MLEVFERVLEGVFALPVEFFPCSKFARAKKARLEIETFLVGK VREKRREMEKEGA-----EKPNTTLFSRLVEELI-KGV
 CYP704A1 207 EGNATSSRVTDPF---WKLKCF L NIGSESRLKKSIAIDKFVYSLITTKRKELSKEQNTS-----VREDILSKFLLESEKD-PENMN----
 CYP704A2 213 EGNVATSSRFIDPL---WKLKWFFNIGSQSKLKKSIAIDKFVYSLITTKRKELAKEQNTV-----VREDILSRFLVESEKD-PENMN----
 CYP704B1 193 TANIIVTLRFIDPL---WKMKKF L NIGSEALLGKSIKVNDFTYSVIRRRKAELLEAQ-----VKHDILSRFIEISDDP-DSKET----
 CYP86A2 214 RATEASLQRFILPE-FLWRLKKW LGLGLEVSLSRSLGEIDGYLDAVINTRKQELLSQRESG-V-----QR-HDDLLSRFMKKKDQS-YSET----
 CYP86A4 214 RATEASLQRFIIPK-FMWKLKKW LGLGLEVSLSRSLGEID EYLAAVINTRKQELMSQQESGTH-----QR-HDDLLSRFMMKKTES-YSDT----
 CYP86A8 214 RATEASLQRFILPE-ILWKFKRW LRLGLEVSLTRSLVQVDNYLSEIITTRKEEMMTQHNG-----KH-HDDLLSRFIKKK-ES-YSD E-----
 CYP86A7 214 GATEATLQRFIMPE-FIWKIRKW LRLGLEDDMSRSISHVDNYLSEIINTRKLELLGQQQDE-----SR-HDDLLSRFMKKK-ES-YSDK-----
 CYP86A1 217 TATEATLKRLLYTG-FLWRIQKAMGIGSEDKLKSLEV VETYMNDAIDARKN-----SP-SDDLLSRFLKKRDVN-GNVLP----
 CYP86B1 242 DATEAAVVRFVMPT-CVWKFMRYL DIGTEKKLKESIKGVDDFADEVIRTRKKELSLEGETTK-----RSDLLTVFMGLRDEK-G-----ES
 CYP86B2 239 DATEATVVRFVMPK-FVWKL MRS LNLGTEKKLKESINGVDDFAEEVIRTRKKEMSLETEIAK-----RPDLLTIFMGLRDEN-G-----QK
 CYP86C3 218 EATESTMF RFMIPP-FIWKPLKFFDIGYEKGLRKAVDVLHEFVDMVDRICKLKEEGTLGN-----RSDVLSRIIEIESHK-TTDEK--DP

CYP86C4 218 EATESTLFRFMIPP-FIWKPMRFLDTGYEKLRIAVGVVHGFVDMIVDRICELKEEETLDN-----RSDVLSRIIQIESHK-RENEI--DP
 CYP86C2 218 EATESTLFRFMIPP-FVWKPMKFFDIGYEKLREAVETVHNFDKMMVERIAMLKDQGTLAN-----SKSDVLSRLIQIESHK-RGDEN--DR
 CYP86C1 222 DATEYTLARFLIPP-FVWKPMRFLGIGYERKLNNVRIVHAFANKTVRERRNKMRLGNLND-----YADLLSRLMQREYEK-EEDTTRGNY
 CYP94B1 216 VAAEISARRATEPVYAVWVKRFLNVGSEKRLREAIKTVHLSVSEITRAKKKSLDIGGDVSD-----KQDLLSRFLAAGH---GEEAV----
 CYP94B3 214 TAAEISARRATEPIYAVWKTQRFLNVGSEKRLREAIKTVHVLVSEIVRAKKKSLEIGTGAEA-----KQDLLSRFLAAGH---NGEAV----
 CYP94B2 209 TASAVSAGRGSAPLSFVWVKFRLVGFGEKELRKAVGEVHNCVDEITRDKKR-----KPA-----NQDFLSRLIVAGE---SDETV----
 CYP94C1 209 TASLLSAKRALAPFLLWTKRFLRIGSEKKLQESINVINRLAGDLIKORRLTG-----LMG-----KNDLISRFMAVVAED-DDEYL----
 CYP94D1 210 TAATIISQRFERSVASCARIKKKLNIGSERVLRESIATVHKFADEIVRNRIDQGRS---SDH-----KEDLLSRFISKEEMN-SPEIL----
 CYP94D2 210 TAATIISQRFQSVISYSWKIKKKLNIGSERVLRESIMIVHKFADEIVRNRIEQGV---SDH-----KEDLLSRFISKEEMN-SPEIL----
 CYP96A10 211 DAEAAIFFRHVKPE-IFWRLQGLLGLGDEKMTKARSTLDRVCSKYIAIKR-DEVSRTGNV-----DSHSDLLTSYMNLD---TTKYKLLNP
 CYP96A9 211 DAEAAIFYRHFKPE-VVWKMQRLLIGVGAELKLKRAHAIFDRVCSKCIASKR-DEISQGID-----SSSSKDLLMSSINVD---TTKYKLLNP
 CYP96A1 212 EAEAAIFFRHVKPE-IVWKMQRFLIGFGDELKMKKAHSTFDRVCSKCIASKR-DEITNGVINI-----DSSSKDLLMCYMNVDTICHTTKYKLLNP
 CYP96A5 210 DAEVVVYRHVKPV-VLWKLQNWIGLGEEKMKKEANAAFDRSCAKYISAKR-EEIISHHSNIGG-----EHAEDLLSVYMNLD---ISKYELLNP
 CYP96A11 212 VVGEGIFFRHVKPK-FLWKLQNWIGFGHEKKMIEANATFDRVCAKYISDKRGEIIRSQRFSDIS-----YGEPELSSSFMKLD---TTKYKLLNP
 CYP96A2 210 DVGEGILYRHFKPR-FLWKLQNWIGFGQEKKLTEANATFDRVCAKYISAKREEIKRSQ---GTS-----NGGSQDLLTSFIKLD---TTKYKLLNP
 CYP96A12 210 DLGEGIFYRHIKPK-FFWKLQNRFGLGQEKRMTEADATFDRVSAKYILAKREEIRSQGDHGAN-----G-ESEDLLTSFIKLD---TTKYELLNP
 CYP96A13 202 HVGEGIMHRHVRPR-LLWKLQKCVGFQGEKKFSKADATLNQACAKYILEKREETSQGFYHSN-----GSESEDILTYHIKID---TTKYELLNP
 CYP96A7 211 DVGDVIVYRHITPR-FVWKLQKWIGIGTEKKMSKANATLDRVCEKLIIAKREELRSQGIIDNAN-----G-DSEDLLTSFIKLD---ATKYELLNP
 CYP96A8 219 DVGDAIVHRHITPR-FVWKLQKWIGIGTEKKMLKAHATFDRVCEKLIIAKREELGSQGITYNSN-----G-EREDLLTSFIKLD---ATKYEVLPK
 CYP96A3 212 GVSDGVFYRHVKPV-FLWRLQYLIGVGVEKRLKRGAVFDQLEKIITAKR-EEINSHGTHHPS-----RGEAIDVLTYYMTMD---TTKYKYLEP
 CYP96A4 212 GVADAMFYRHLKPA-FLWSIQSWIGVGIEKKMRRGLDVFDQMLGKIISAKR-EEIKNHGIHD-S-----KGEAMDVLTYYMTID---TTKYKHLKP
 CYP96A15 211 IGEEATYYRHFKPV-ILWRLQNWIGIGLERKMRTALATVNRMAKIISSRR-KEEISR---AKT-----EPYSKDALTYYMNVD---TSKYKLLKP
 CYP97A3 281 EAEDRSVSPIPWWDIPIWKDISPRQRKVATSLKLINDTLDDLIATCKRMVEEE-ELQFHE-EYM-----NERDPSILHFLLASG-----DD
 CYP97C1 252 EAELRSTDLLPYWKIDALCKIVPRQVKAEKAVTLIRETVEDLIAKCKEIVEREGERINDE-EYV-----NDADPSILRFLLASR-----EE
 CYP97B3 258 EAEHRSTFYFPYWNFPARWIVPRQRKFQSDLKINDCLDGLIQNAKETROETDVEKLQERDYT-----NLKDASLLRFLVDMRG-----VD
 CYP709A1 229 HLTVLQRRCAQATRHLFCFPGSRFLPSKYNREIKSLKKEVERLLIEIIOSSRRDCAEMGRS-----STHGDDLLGLLLNMEDIDKNNNNNN
 CYP709A2 227 LLTVLQRLCAQATRHLFCFPGSRFLPSKYNREIKSLKTEVERLLMEIIDSRRKDSVEIGRS-----SSYGDDLLGLLLNMQDSNKNNNLN--
 CYP709B2 231 SQLELQKCCAAALTDLYFPGIYQLPTPSNLQIWKLDKVNSSIKRIIDARLT--SESKD-----YGN--DLLGIMLTAASSNESEKK--
 CYP709B3 231 SQTELEKYYISSLTNVFIPGTQYQLPTPTNLKLWELHKKVKNSIKRIIDSRLLK--SKCKT-----YGYGDDLLGVMLTAAKSNEYERK--
 CYP709B1 233 SQMELKRCYTTSNLQVSIPGTQYQLPTPSNIRVWKLKMDNSIKRIIDSSRLQ--SKSD-----YGDDLLGILLKAYNTEGKERK--
 CYP721A1 224 LQERMMRLFYLVWRWSVYIPGFRFFPSKTNREIWRIEKQIRVSILKLIENN-K-TAVEKSG-----TLLQAFMSPYT--NQNGQEEK
 CYP72B1 230 LQAQOMLLCAEAFQKVFIPGYRFFPTRGNLKSWKLDKEIRKSLKLIERRRQNAIDGEGE-----ECKEPAKDLL--GLMIQAKN
 CYP72A11 227 LQAELAQLIIQTVRKAFIPGYSYLPPTKGNRRMKAAAREIQVILRGIVNKRRLRAREAG---E-----AP-NDDLLGILLESN--LGQTKGNG
 CYP72A13 227 LQAELAQLIIQAFRKAIPGYRYFPTKGNRRMKAAAREIKFILRGIVNKRRLRAREAG---E-----AP-SDDLLGILLESN--LGQTKGNG
 CYP72A15 227 LQAELAQLIIQAFRKAIPGYSYLPPTKSNRRMKAAAREIQVILRGIVNKRRLRAREAG---E-----AP-SDDLLGILLESN--LRQTEGNG
 CYP72A10 228 LQAELVHLILQAFWKVYIPGYRYLPPTKSNRRMKAAAREIQVILKGIVNKRRLRAREAG---K-----AAPNDDLLGILLESN--LGQAKGNG
 CYP72A14 227 LQAELAQLVMQAFQKFFIPGYIYLPPTKGNRRMKTAAREIQDILRGIVNKRERARESG---E-----AP-SEDLLGILLESN--LGQTEGNG
 CYP72A7 226 LQGELAEILAQAFKKSYPGSRFYPTKSNRRMKAIIDREVDVILRGIVSKREKAREAG---E-----PA-NDDLLGILLESN--SEESQNGNG
 CYP72A9 223 LQAELAHLIILALGKNYIPAYRHFTKNNRRMKTIVKEIQVILRGIVSHREKARDAG---E-----AP-SDDLLGILLKSN--SEQSKGNG
 CYP72A8 231 LQEEQGRRLKALELAFIPGMRFLPTKNNLRMRQINKEVKSRLREIMKQRQGMGTG---E-----AP-KNDLLGILLESN--SGD---HG
 CYP72C1 228 IQQEQLDLGLLAIRAVYIPGSKFLPTKFNRRLRETERDMRAMFKAMTETKEEEIKRGRG-T-----DKNSDCCS--RCWLRIQK
 CYP715A1 238 NLRVQFALFNSNRYVGVFPFSNLSYKQTVKAKGLGHEIDGLLSFINKRKISLAEGDD-----QGHDLGLMLLKAD-----QKGN
 CYP714A1 240 KLRLCLQKAITHNNILFSLNGFTDVVFGTKKHGNGKIDELERHIESLIWETVKERERECVGDH-----KKDLMQLILEGARSSCDGNLEDKTQ
 CYP714A2 238 MIRDLLTAITKRSVLFRENGFTDMVFGSKKHGVDIDALEMELESSLIWETVKERIECKDTH-----KKDLMQLILEGAMRSCDGNLWDKS-
 CYP74A 227 -RDESRRYKLKADAPGLITKWVLFNLHPLLSIG-LPRVIEEPLIHTFSLPPALVKSQYQR-----LYEFLRIRG--EILVEADKLGI

CYP74B2	205	GVDASVSPDIAENGWKTINTWLA	LQVIPTAKLGVVPQPLEEILLHTWPYPSLLIAGNYKK-----	LYNFIDENAGDCLRLGQEEFGL
CYP722A1	195	EELGSMQRDVGVCEAMLAFLNLPWTRFHKGIMARGRYMEMLEKI	IRERRNEINSHNN-----	HHEDFLQQLLAVDNDTPQ
CYP711A1	219	QHVYSTTQLKMDLSGSLSIILGL	IPILQEPFRQVLKRIPGTMDWRVEKTNARLSGQLNEIVSKR-----	AKEAETDSKDFLSLILKARESDPFAKNI
consensus	301	.	.	.

CYP51 274 TTESEVTGLLIAGLFAQHTSSITATWTGAYLI-QNKHWWSAALDEQKKLIGKHG-----DKIDYDVLSEMDFLFRSAK-
 CYP51A2 273 TTESEVTGLLIAALFAQHTSSITSTWTGAYLM-RYKEYFSAALDEQKNLIAKHG-----DKIDHDILSEMDVLYRCIK-
 CYP710A1 280 SGDEEIGGLLFDLFLAAQDASTSSLLWAVTLTD-SEPEVLNRVREEVAKIWSPESEN-----ALITVDQLAEMKYTRSVAR-
 CYP710A2 285 SEDEAIGGLLFDLFLAAQDASTSSLLWAVTFLE-SHPKVLSKVREEVAKIWSPESEN-----HLITADQLAEMKYTRAVAR-
 CYP710A3 281 SKDEEISCVLVDLFLASQDASTSSLLWAVVLE-SEPEVLRVRREDVARFWSPESEN-----ESITADQLAEMKYIRAVAR-
 CYP710A4 281 SKDKEISCVLVDLFLASQDASTSSLLWAVVLE-SEPEVLRVRREDVARFWSSESSEN-----ELITADQLAEMKYTRAVAR-
 CYP702A1 262 MSVDNAIEYIYTLFLLANETTPRILAATIKLIS-DNPKVMKELHREHEGIVRGKTEK-----ETSITWEEYKS-MTFTQMVIN-
 CYP702A2 266 MSVENAVEYIYTFVLVANETTPRILAATVKFIS-DHPKVMQELQREHEEIVRGKAKEK-----EGGLTWEDYKS-MHFTQMVIN-
 CYP702A8 277 MSMKNVIEYIYTFVIANETTPRILAATVKFIS-ENPKVMQELQREHAMIFENKSE-----EAGLTWEDYKS-MTFTNMVIN-
 CYP702A5 263 MSIEIATEYIYTLFVLANETTPGVLAATIKLIS-DNPKVMQELRREHEGIVQDKIKKD-E-----TADLTWEDYKS-MTFTQMVIN-
 CYP702A6 266 ISLESATEYIYTLFLLANETTPAVLAATIKLIS-DHPKVMQELQREHEGIVRDKIEKN-E-----KADLTWEDYKS-MTFTQMVIN-
 CYP702A3 269 LDIDKAVNLIFVFFILSQETTPGVQGVAVKIVA-DHPSVMEELQREHEAIVQNRADK-----DTGVTWEEYKS-MTFTHMVIK-
 CYP708A2 273 FNEESAINLIFAILVVAKESTSSVTSIAIKFLA-ENHKALAEKREHAAAILQNRNGK-----GAGVSWEERYRHQMTFTNMVIN-
 CYP708A3 270 FDQGSAINLIFLLAFALREGTSSCTALAVKFIS-KDPKVLAEKREHKAIVDNRRDK-----EAGVSWEERYRHQMTFTNMVIN-
 CYP708A4 270 LNEAIITLIFTLSCVTQDTTSCATCLAVKFL-ENPKVLAELKKEHEVILQNRADK-----EGGVTWEEYRHQMTFTNMVIN-
 CYP708A1 289 INEERSVELILSLLIASYETTSTMTALTVKFIA-ENPKVLMELKREHETILQNRADK-----ESGVTWEEYRHQMTFTNMVIN-
 CYP87A2 265 LTEEIALDLMFVLLFASFETTSALTIAIKFLS-DDPEVLKRLTEEHETILRNREDA-----DSGLTWEEYKS-MTYTFQFIN-
 CYP720A1 276 LPNESMADFIINLLFAGNETTSKTMFAVYFLT-HCPKAMTQLLEEHDRLAGG-----MLTWQDYKT-MDFTQCVID-
 CYP724A1 272 LNYEEKVSIVLDILLGGFETTSATTLVLYFLA-KSPNLLHKLKEEHAAIRAKKGDGE-----LLNWEDYQK-MEFTQCVIS-
 CYP90A1 263 FSDEEIVDFLVALLVAGYETTSTIMTLAVKFLT-ETPLALAQLKEEHKIRAMKSDS-----YSLEWSDYKS-MPFTQCVVN-
 CYP90B1 296 LSTEQILDLLSLLFAGHETSSVAIALAIFFLQ-ACPKAVEELREEHLEIARAKKELGE-----SELNWDYK-K-MDFTQCVIN-
 CYP90C1 307 QPSDFVSGKIVEMMIPGEETMPTAMTLAVKFLS-DNPVALAKLVEENMEMKRRKLELG-----EEYKWTYMS-LSFTQNVIN-
 CYP90D1 289 LTHNLIANNMIDMMIPGHDSPVPLITLAVKFLS-DSPAALNLLTEENMKLKSLELTG-----EPLYWYNDYLS-LPFTQKVIT-
 CYP85A1 262 LTDEEIRDQVVTILYSGYETTSTTSMALKYLH-DHPKALQELRAEHLAFRERKRQDE-----PLGLEDEVKS-MKFTRAVIY-
 CYP85A2 259 LTDKEIRDQVVTILYSGYETTSTTSMALKYLH-DHPKALEELRREHLAIFRERKRQDE-----PLTLDDIKS-MKFTRAVIF-
 CYP707A1 260 LTDEQIADNIIGVIFAARDTTASVMSWILKYLA-ENPNVLEAVTEEQMAIRKDKKE---E-----GESLTWGDTKK-MPLTSRVIQ-
 CYP707A3 260 LTDEQIADNIIGVIFAARDTTASVLTWILKYLA-DNPTVLEAVTEEQMAIRKDKK---E-----GESLTWEDTKK-MPLTYRVIQ-
 CYP707A2 279 LSDSQIADNIIGVIFAARDTTASVLTWLLKYLA-DHPNLLQEVSRQFSIRQKIKK---E-----NRRISWEDTRK-MPLTTRVIQ-
 CYP707A4 263 LTQEQIADNIIGVLFAAQDTTASCLTWILKYLA-DDQKLLAEVKAQKAIYEENSER---E-----KKPLTWRQTRN-MPLTHKVIV-
 CYP88A3 285 LDDEEIIDVLLMYLNAGHESSGHTIMWATVFLQ-EHPEVLQRAKAEQEMILKSREPE---G-----QKGLSLKETRK-MEFLSQVVD-
 CYP88A4 284 LDDEEIIDLLLMYLNAGHESSGHTIMWATILMQ-EHPMILQKAKEEQERIVKKRAP---G-----QK-LTLKETRE-MVYLSQVID-
 CYP716A1 272 TKDEDLADKIIGLLIGGHTASIVCTFVNYLA-EFPHYQRVLEEQKEILKEKK---E-----KEGLRWEDIEK-MRYSWNVAC-
 CYP716A2 268 TKDEDLADKIIGLLIGGHTTSIVCTFVNYLA-EFPHYQRVLEEQKEILNNKD---V-----NEKLTWEDIEK-MRYSWNVAC-
 CYP718 281 ITEEEVDNMVLLVFAAHDTTSYAMSMFKMLA-QHPTCRDTLLQEHQAQKANKG---E-----GEYLTVEDVKK-MKYSWQVVR-
 CYP704A1 286 --DKYLRLDIILNVMVAGKDTTAAASLSWFLYMLC-KNPLVQEKIVQEIIRDVTSSHEKTT-----DVNGFIESVTEEAALQMQYLHAALS
 CYP704A2 292 --DKYLRLDIILNFMVAGKDTTAAASLSWFLYMLC-KNPLVQEKIVQEIIRDVTFSHEKTT-----DVNGFVESINEEALDEMHYLHAALS
 CYP704B1 269 --EKSLRDIIVLNFIAGRDTTATTLTWTIYMIM-MNENVAEKLYSELQELEKESAEATNTSLHQYDTEDFNSFNEKVTEFAGLLNYDSLGLHYLHAVIT
 CYP86A2 296 ----FLRHVALNFILAGRDTSSVALSWFFWLIT-THPTVEDKIVREICSVLIETRG-TDVSSWTAEP-----LEFDEVDRLVYLKAALS
 CYP86A4 297 ----FLQHVALNFILAGRDTSSVALSWFFWLIT-MHPTVEDKIVREICSVLIETRGTDVVASWTEEP-----LGFDEIDRLVYLKAALS
 CYP86A8 294 ----TLQRVALNFILAGRDTSSVALSWFFWLIT-QHPAIEDKILREICTVLVETRG-DDVALWTDPE-----LSCEELDRLVFLKAALS
 CYP86A7 294 ----YLKYVALNFILAGRDTSSVAMSWFFWLVS-LNPRVEEKIINEICTILIKTRD-TNVSKWTDPE-----LTFDEIDQLVYLKAALS
 CYP86A1 290 --TDVLQRIALNFVLAGRDTSSVALSWFFWLVM-NNREVETKIVNELSMVLKETRG-NDQEKWTEEP-----LEFDEADRLVYLKAALA
 CYP86B1 321 FSDKFLRDICVNFILAGRDTSSVALSWFFWLE-KNPEVEEKIMVEMCKILRQRDDHGNAEK-SDYEP-----VFGPEEIKKMDYLQAALS
 CYP86B2 318 FSDKFLRDICVNFILAGRDTSSVALSWFFWLE-KNPEVEEKIMMGICKILEQRVDHGDTKKNMEYEP-----VFRPEEIKKMDYLQAALS
 CYP86C3 301 STIKFFRQFCTSFILAGRDTSSVALTWFFWLIQ-KHPEVENKIIREISEILRQRGDSPTSKNES-----LFTVKELNDMVYLQAALS

CYP86C4 301 STIRFFRQFCTSFILAGRDTSSVALSWFCWFIQ-KHPEVENKIICEIREILRQRGDSPTSKNES-----LFTVKELNNMVYLQAALS
 CYP86C2 302 FTAKFFRQFCTSFILAGRDTSSVALTWFFWLIT-KHPEVETKILHEIREILNQREKNKYKLDETGES-----SRHFTVKELNDMVYLQAALS
 CYP86C1 307 FSDKYFREFCTSFIIAGRDTTSVALVWFFWLVIQ-KHPEVEKRILREIREIKRKLTTQET-----EDQFEADFREMYYLQAALT
 CYP94B1 296 -----RDSVISFIMAGRDTTSAAMTWLFWLLS-QNDDVETKILDELIR-----NKGSLG-----LGFEDLREMSYTKACLC
 CYP94B3 294 -----RDMVISFIMAGRDTTSAAMTWLFWLLT-ENDDVERKILEEVD-----PLVSLG-----LGFEDLKEMAYTKACLC
 CYP94B2 282 -----RDMVISIIMAGRDTTSAVATRLFWLLT-GHEETEHDLVSEIRSVMK-----EEITGG-----FDYESLKKLSLLKACLC
 CYP94C1 286 -----RDIVVSFLLAGRDTVAAGLTGFFWLIT-RHPEVENRIRREELDRVMG--TGFDSTV-----ARCDREMREMDYLHASLY
 CYP94D1 289 -----RDIVISFILAGRDTTSSALSWFFWLLS-MHPEVEDKILQELNSIRARTGKRIGEV-----YGFHEHLKMMNYLHAAIT
 CYP94D2 289 -----RDIVISFILAGRDTTSSALSWFFWLLS-MHPEVKDKILQELNSIRERTGKRIGEV-----YGFEDLKLMMNYLHAAIT
 CYP96A10 295 SDRFLRDTILTFMLAGRDTTGSGLTWFFWLLI-KNPEVIAKIRQEINTALFQRSKVDDASNNNDSDS-----FSPQELKKLVYLHGAIC
 CYP96A9 293 SDDRFLRDTILSFMLAGRDTTGSALTWFFWLLC-NNQEAMTKIRQEINTNLFPNKTDDGS-VSYSDS-----FNPQEVKKLVYLHGAIC
 CYP96A1 300 SDDKFLRDMILSFMLAGRDTTSSALTWFFWLLS-KNPKAITKIRQEINTQLSPR-----TNDFDS-----FNAQELNKLVVYHGAIC
 CYP96A5 296 NDDNFLKDIKSFMLAGRDAIATTLTWFFWLLS-KNPEAVTKIRQEINTNLPGS-----GMS-----LDADKLNKMMVYLHGAIC
 CYP96A11 299 SDDKFLRDTILAFILAGRDTTASALTWFFWLLS-ENAVVSKIRQEIIN-TNPSKNG-----NGQENLDKLVYLHGAIC
 CYP96A2 294 SDDKFLRDNILAFILAGRDTTATALSFFWLLS-ENPHVAKIHQEIININTDLRSTG-----NSQENVDKLVYLHGAIC
 CYP96A12 296 SDDKFLRDTILAFNLAGRDTTSSALSWFFWLLS-ENPOVVTKIRKEIIDKN--ISKDGR-----NGQENLDKLVYLHGAIC
 CYP96A13 289 SDDKFLRDTILAFVLAGRDTTASALTWFFWLLS-ENPOVVTKIRQEINTSNGGQEKPSK-----EPMEYLNKLVYLHGAIC
 CYP96A7 297 NDDKFLRDTFVTFMAAGRDTSSALTWFFWLLT-ENPNVLSKILQEIINTNLPRGTSDQ-----DMSSYLNKLVYLHGAIC
 CYP96A8 305 SHDKFLRDTFTIGFMAAGRDTASTLTWFFWLLS-KNPNVLTKILQEIINTNLPRGTSDQ-----DMSSYLNKLVYLHGAIC
 CYP96A3 298 SDDRFIKDTILGLIAARDTTSSALTWFFWLLS-KNPEAINKIRQEVNKKMPRFPDPA-----LEKLVYLHGAIC
 CYP96A4 297 SNDKFIRDITILGLVIAARDTTSSALTWFFWLLS-KNPEAMTKIRQEINKKMPKFPDPA-----LDKLVYLDGAVC
 CYP96A15 294 NKDKFIRDVIFSLVLAGRDTTSSVLTWFFWLLS-KHPQVMAKLRHEIN--TKFDNED-----LEKLVYLHGAIC
 CYP97A3 360 VSSQLRDDLMTMLIAGHETSAAVLTWTFYLLT-TEPSVAKLQEEVDSVIGDRFP-----TIQDMKKLYTTRVMN
 CYP97C1 332 VSSQLRDDLMLSLVAGHETTSVLTWTFYLLS-KNSSALRKAQEEVDRVLEGRNP-----AFEDIKELKYITRCIN
 CYP97B3 340 IDDRQLRDDLMTMLIAGHETTAAVLTWAVFLLS-QNPEKIRKAQAEIDAVLGQGP-----TYESMKKLEYIRLIVV
 CYP709A1 313 NNLQLIMDECKTFFFAGHETTALLTWTTMLLA-DNPTWQEKVREEVREVFGRNGLPSVD-----QLSKLTSLSKVIN
 CYP709A2 309 --VQMIMDECKTFFFTGHETTSLLTWTTMLLA-HNPTWQDNVRDEVQVCGQDGVPSVE-----QLSSLTSLNKVIN
 CYP709B2 309 MSIDEIEIECKTFFFAGHETTANLLTWSTMLLS-LHQDWQEKLRREEVFNECGKDKIPDAE-----TCSKLKLMNTVFM
 CYP709B3 311 MRMEIEIECKNFYYAGQGTTSILLTWTTMLLS-LHQDWQEKLRREEVFNECGKDKIPDTE-----TFSKLKLMNMVLM
 CYP709B1 310 MSIEEIIHECRTFFFAGHETTANLLTWTTMLLS-LHQDWQEKLRREEVFKECGKEKTPDSE-----TFSKLKLMNMVIM
 CYP721A1 301 LGIEEVTDECKTFYFAKETTANLMTFVLVLLA-MNQEWNQIAREEVICVLGQTGLPTLD-----ILQDLKTLSMIIN
 CYP72B1 309 VTVQDIVEECKSFFAGQGTTSNLLTWTTMLLS-MHPEWQAKARDEVLRVCGSRDVPKTD-----HVVKLKTLSMILN
 CYP72A11 307 MSTEDLMEECKLFYFAGQETTSVLLVMTMVLSS-QHQDWQARAREEVKQVFGDKPEDAEG-----LNQLKVM-TMILY
 CYP72A13 307 MSTEDLMEECKLFYFAGQETTSVLLVMTMVLSS-QHQDWQARAREEVKQVFGDKPEDAEG-----LNQLKVM-TMILY
 CYP72A15 307 MSTEDLMEECKLFYFAGQETTSVLLVMTMVLSS-QHQDWQARAREEVKQVFGDKPEDAEG-----LNQLKVM-TMILY
 CYP72A10 309 MSTEDVMEECKLFYFAGQETTSVLLVMTMVLSS-QHQDWQARAREEVKQVFGDKPEDETE-----LSQLKVM-TMILY
 CYP72A14 307 MSTEDMMEECKLFYFAGQETTSVLLVMTMVLSS-QHQDWQARAREEVKQVFGDKQPDTEG-----LNQLKVM-TMILY
 CYP72A7 306 MSVEDVMKECKLFYFAGQETTSVLLVMTMVLSS-QHQDWQARAREEVQVFGHNNKPDME-----SLNNLKVM-TMIFN
 CYP72A9 303 LNMEIEIECKLFYFAGQETTSVLLVMTMVLSS-QHQDWQARAREEVQVFGHNNKPDQ-----INQLKVM-TMIIY
 CYP72A8 308 MSIEDVVEECRLFFHAGQETTAVLLVMTMIMLS-QHQDWQARAREEVILKVGKNNKPNFD-----ALSRLKTM-SMILN
 CYP72C1 304 PSKNKDQIQCKAFYLAGQNVTSLSFVMTLVALLS-QHQDWQNKARDEISQAFGNNEPDEFE-----LSHLKVV-TMILH
 CYP715A1 314 FTAKELVDECKTFFFAGHETTALLTWTFMLLA-IHPEWQDTIRREIREVIGDSKIEYN-----KLAGLKKMSWVMN
 CYP714A1 327 SYKSFVVDNCKSIYFAGHETSAVAVSWCLMLLA-LNPSWQTRIRDEVFLHCKN-GIPDAD-----SISNLKTVTMVIQ
 CYP714A2 324 AYRRFVVDNCKSIYFAGHETSAVAVSWCLMLLA-LNPSWQVKIRDEILSSCKN-GIPDAE-----SIPNLKTVTMVIQ
 CYP74A 305 SREEATHNLLFATSFNTWGGMKILFPNMVKRIGPGGHQVHNRLAEIRSVIKSNGGELTMG-----AIEKMELTKSVMY

[illegible]

CYP51 347 EALRLHPPKILLRLTVHSDFTVTTREGK---QYEIPKGHIVATSPAFANRLP-HVYKDPENFDPDFSKEREEDKAAGSCS-----
 CYP51A2 346 EALRLHPPILMLMRASHSDFSVTARDGK---TYDIPKGHIVATSPAFANRLP-HIFKDPDYDPERFSPGREEDKAAGAFS-----
 CYP710A1 354 EVIRYRPPATMVPVHVAIDFPLTET-----YTIPKGTIVFPS--VFDSSF-QGFTEPDRFDPDFSETRQEDQVFKRN-----
 CYP710A2 359 EVVRYRPPATMVPVHIATNDFPLTES-----YTIPKGTIVFPS--VFDASF-QGFTEPNRFDPDFSETRQEDQVFKRN-----
 CYP710A3 355 EVLRYPASPMPVPHVAVSDFRLTES-----YTIPKGTIVFPS--LFDASF-QGFTEPDRFDPDFSETRQEDQVFKRN-----
 CYP710A4 355 EVLRYPASPMPVPHVAVSDFRLTES-----YTIPKGTIVFPS--LFDASF-QGFTEPDRFDPDFSETRQEDQVFKRN-----
 CYP702A1 338 ESLRITSTAPTFRIFDHEFQVGS-----YKIPAGWIFMGYP-NNHFNP-KTYDDPLVFNPNRWEGKDLGAIVS-----R
 CYP702A2 342 ESLRIISTAPTFLRVLEHDFQVGD-----YTIPAGWTFMGYP-HIHFNS-EKYEDPYAFNPNRWEGKDLGAIVS-----K
 CYP702A8 352 ESLRISTTVPVILRKPDHDTKVGD-----YTIPAGWNFMGYP-SAHFDP-TKYEDPLEFNPWRWKGNDLDAIVS-----T
 CYP702A5 341 ESLRITSTVPTVLRIIDHEIQFGD-----YTIPAGWIFMGYP-YVHFNP-EKYDDPLAFNPNRWKGKDLSTIVS-----K
 CYP702A6 344 ESLRITSTVPTVLRIIDHEFQFGE-----YTIPAGWIFMGYP-YVHFNA-EKYDDPLAFNPNRWKGKDLISAIVS-----R
 CYP702A3 345 ESLRFTSTQPTVHRIPDQDVQIGD-----YTLPAGWLFFGIP-QVHFDE-EKYDDPLTFNPNRWQKGDINSTVS-----R
 CYP708A2 350 ETLRMANMAPIMYRKAVNDVEIKG-----YTIPAGWIVAVIPPAVHFND-AIYENPLEFNPWRWEGKELRSGS-----K
 CYP708A3 347 EVLRITNTPLLRKAVQDVEIKG-----YTIPAGWIVAVAPSAVHFDP-AIYENPFEPNPWRWEGKEMIWS-----K
 CYP708A4 347 ESLRITNLAPMLFRKAVKQDVEIKG-----YTIPAGWIVLVVPSLLHYDP-QIYEQPCFNPWRWEGKELRSGS-----K
 CYP708A1 367 ESLRIGSLSPAMFRKAVNDVEIKG-----YTIPAGWIVLVVPSLLHYDP-QIYEQPCFNPWRWEGKELRSGS-----K
 CYP87A2 341 ETARLANIVPAIFRKALRDIKFKD-----YTIPAGWAVMVCPPAVHLNP-EMYKDPVFNPNRWEGSKVTNAS-----K
 CYP720A1 346 ETLRLGGIAIWLMEAKEDVSYQD-----YVIPKGCFVVPFLSAVHLDE-SYYKESLSFNPWRWLDPETQQKRNWRTS-----P
 CYP724A1 347 EALRCGNIVKTVHRKATHDIKFNE-----YVIPKGWKVFPIFTAVHLDL-SLHENPFEPNPWRWTDKAKMNKK-----
 CYP90A1 338 ETLRVANIIGGVFRRAMTDVEIKG-----YKIPKGWKVFSFRAVHLDL-NHFKDARTFNPWRWQSNVTTGPS-----N
 CYP90B1 373 ETLRLGNVVRFLHRKALKDVRYKG-----YDIPSGWKVLPVISAHLDN-SRYDQPNLFNPWRWQQQNGASSSGSGSF-----STWGN
 CYP90C1 383 ETLRMANIINGVWRKALKDVEIKG-----YLIPKGWCVLASFISVHMDE-DIYDNPYQFDPWRWDRINGSANSS-----I
 CYP90D1 365 ETLRMGNVIIGVMRKAMKQDVEIKG-----YVIPKGWCFLAYLRSVHLDK-LYYESPYKFNPNRWQERDMNTSS-----
 CYP85A1 337 ETSRLATIVNGVLRKTTTRDLEINGG-----YLIPKGWRTYVYTREINYDA-NLYEDPLIFNPWRWMMKKSLESQNS-----
 CYP85A2 334 ETSRLATIVNGVLRKTTTHDLEINGG-----YLIPKGWRTYVYTREINYDT-SLYEDPMIFNPWRWMEKSLESKSY-----
 CYP707A1 335 ETLRVASILSFTFREAVEDVEYEG-----YLIPKGWKVLPFLRNIHNSA-DIFSNDPGKFDPSRFEV--APKPNT-----
 CYP707A3 335 ETLRAATILSFTFREAVEDVEYEG-----YLIPKGWKVLPFLRNIHNSA-DIFSNDPGKFDPSRFEV--APKPNT-----
 CYP707A2 355 ETLRAASVLSFTFREAVQDVEYDG-----YLIPKGWKVLPFLRRIHNSA-EFFPDPEKFDPSRFEV--APKPYT-----
 CYP707A4 339 ESLRMAIISFTFREAVQDVEYKG-----YLIPKGWKVMPFLRNIHNSA-KYFSNPEVFDPSRFEV--NPKPNT-----
 CYP88A3 361 ETLRVITFSLTAFREAKTDVEMNG-----YLIPKGWKVLTWFRDVHIDP-EVFPDPRKFDPAWNGFVPKAGA-----
 CYP88A4 359 ETLRVITFSLTAFREAKSDVQMDG-----YIIPKGWKVLTWFRNVHLDP-EIYDPKKFDPSRFEV-YTPKAGT-----
 CYP716A1 347 EVMRIVPPLSGTFREAIIDHFSFKG-----FYIPKGWKLYWSATATHMNP-DYFPEPERFEPNRFEG-SGPKPYT-----
 CYP716A2 343 EVMRIVPPLAGTFREAIIDHFSFKG-----FYIPKGWKLYWSATATHMNP-EYFPEPEKFEPSRFEV-SGPKPYT-----
 CYP718 356 ETMRISPPIFGSFRKAVADIDYGG-----YTIPKGWKILWTTYGTHYNP-EIFQDPMSFDPTIRFDK-P-IQAYT-----
 CYP704A1 366 ETMRLYPPVPEHMRCAENDVLPDG-----HRVSKGDNIIYYISYAMGRMTYIWGDAAEFKPERWLKDG-----VFQPESQF
 CYP704A2 372 ETMRLYPPVPMRCAENDVLPDG-----HRVSKGDNIIYYIAYAMGRMTYIWGDAAEFKPERWLKDG-----LFQPESPF
 CYP704B1 366 ETMRLYPAVPQDPKGVLEDDMLPNG-----TKVKAGGMVTVYPYSMGRMEYNWGSAAALFKPERWLKDG-----VFQNASPF
 CYP86A2 374 ETMRLYPSVPEDSKHVNDVLPDG-----TFVPAGSSVTYSIYAAGRMKSTWGEDCLEFKPERWISPDG-----KFVNHDQY
 CYP86A4 376 ETMRLYPSVPEDSKHVNDVLPDG-----TFVPAGSSVTYSIYAAGRMKSTWGEDCLEFNPERWISPIDG-----KFVNHDQY
 CYP86A8 372 ETMRLYPSVPEDSKRAVKDVLDPDG-----TFVPAGSSVTYSIYSAGRMKSTWGEDCLEFKPERWISQSDG-----RFINHDPF
 CYP86A7 372 ETMRLYPSVPEDSKFVVANDVLPDG-----TFVPSGSNTYSIYSVGRMKFIWGEDCLEFKPERWLEESRD-----EKNQY
 CYP86A1 370 ETMRLYPSVPQDFKYVVEHDVLPDG-----TFVPRGSTVTYSIYSIGRMKFIWGEDCLEFRPERWLTADGER-----FETPKDGY
 CYP86B1 405 EALRLYPSVPVDHKEVQEDDVFPDG-----TMLKKGDKVIYAIYAMGRMEAIWGDCEFRPERWLR---DG-----RFMSSEAY
 CYP86B2 403 ETMRLYPSVPVDHKEVLEDDVFPDG-----TKLKKGEKVIYAIYAMGRMETIWGDCEFRPERWLR---DG-----RYMSSEAY
 CYP86C3 382 ETMRLYPPIPMEMKQAIEDDVFPDG-----TFIRKGSRYVFATYAMGRMESIWGDCESEFKPERWIQ---SG-----NFVNDDQF

CYP86C4 382 ETLRLFPPIPMEMKQAIEDDVLDPDG-----TFVRKGSRVYFSIYAMGRMESIWGKDCEIFRPERWIQ---AG-----KFSVDDQF
 CYP86C2 390 ESLRLYPPIPMEMKQATEEDVFPDG-----TFLRKGSRVYFSVYAMGRMESIWGKDCEMFKPERWIQ---GG-----QYVSDQF
 CYP86C1 385 ESLRLYPSVPMEMKQAIEDDVLDPDG-----TRVKKGARHYSVYSGRIESIWGKDWEFFKPERWIK---EG-----RIVSEDQF
 CYP94B1 360 EAMRLYPPVAWDSKHAANDDILPDG-----TPLKKGDKVTFYPYGMGRMEKVWGKDWEFFKPNRWFESEPSYG-----TKPVLKSVSSF
 CYP94B3 358 EAMRLYPPVSWDSKHAANDDILPDG-----TRVKRGDKVTFYPYGMGRMETLWGTDEEFNPNRWFDSEPGS-----TRPVLKPISPY
 CYP94B2 349 EVMRLYPPVPWDSKHALTDRLPDG-----TLVRAGDRVTFYPYGMGRMEELWGEDWDEFFKPNRWAEYDKT-----CCRVLLKKNPF
 CYP94C1 355 ESMRLFPVPVQFDSKFALNDVLSDG-----TFVNSGTRVTHAYAMGRMDRIWGPDYEEFKPERWLDN-----EGKFRPENPV
 CYP94D1 360 ESLRLYPPVPVDIKSCAEDNVLPDG-----TFVGKGWAITYNIFAMGRMESIWGKDCCRFDPERWIDETNGC-----FRGEDPS
 CYP94D2 360 ESLRLYPPVPVDTMSCAEDNVLPDG-----TFIGKDWGISYNAYAMGRMESIWGKDCCRFDPERWIDETNGG-----FRGENPY
 CYP96A10 380 ESLRLYPPVPFQHKSPTKPDVLPDG-----HKVDANSKILFCLYSLGRMKSVWGEDALEFFKPERWISE-----SGNSVHEPSY
 CYP96A9 377 EALRLYPPVPFNHKSPAHPDVLPDG-----HKVKANSRILFCLYSLGRMKSVWGEDAMEFFKPERWISE-----SGRSVHEPSY
 CYP96A1 376 EALRLYPPVPFQHKSPTKSDVLPDG-----HRVDASSKIVFCLYSLGRMKSVWGEDASEFFKPERWISE-----SGRLIHVPSF
 CYP96A5 369 ESLRLYAPIPFERKTPIKQDVLPDG-----HMDVKNWKILFSVYALGRMRSVWGDASEFFKPERWISER-----NGGLKHEPSF
 CYP96A11 371 EAMRLYPPVSFGRKSPIKSDVLPDG-----HKVQANSKIICLYALGRMRAVWGDALFFKPERWISD-----KGSLRHEPSF
 CYP96A2 367 EAMRLYPPVSFGRKSPIKSDVLPDG-----HKVDANSKIICLYALGRMRAVWGEDASQFFKPERWISE-----NGGIKHEPSF
 CYP96A12 369 ESMRLYPPVAFQRKSPIKPDVLPDG-----HKVEANSVIIIFLALGRMRAVWGEDATEFFKPERWVSE-----SGGLRHAPSF
 CYP96A13 364 EAMRLYPPVPFERMSPIKPDVLPDG-----HKVDSSMKILIFIYALGRMRAVWGEDASEFFKPERWLSE-----TTSLRHEPSF
 CYP96A7 371 ESMRLYPPIPFERKSPIKQDVLPDG-----HKVKSNNLMIFIYAMGRMKTIWGEDAMEFFKPERWISE-----TGGLRHEPSY
 CYP96A8 379 ESMRLYPPIPFQRKSPIKEDVLPDG-----HKVKSNNLMIFIYAMGRMKTIWGEDAMEFFKPERWISE-----TGGVRHEPSY
 CYP96A3 367 ETLRLYPPVPFNHKSPAHPDVLPDG-----HRVDEKWKIVISMYALGRMKSVWGDADFFRPERWISD-----SGRLKHEPSY
 CYP96A4 366 ETLRLYPSVVPFNHKSPAHPDVLPDG-----HKVDKNWRVVIPIYSLGRMKSVWGDADFFRPERWISD-----SGMLRQESSY
 CYP96A15 360 ESMRLYPPLPFNHKSPAHPDVLPDG-----HKVDANSKIVICIYALGRMRSVWGEDALDFKPERWISD-----NGGLRHEPSY
 CYP97A3 431 ESLRLYQPPVLIIRRSIDNDILG-----EYPIKRGEDIFISVWNLHRSPLHWD--AEKFNPERWPLDGPN-----PNETNQNF
 CYP97C1 403 ESMRLYPPVLIIRRAQVPDILPG-----NYKVNTGQDIMISVYNHRSSEVMEK--AEFFLPERFDIDGAI-----PNETNTDF
 CYP97B3 411 EVLRLFPQPPLLIRRTLKPETLPGGHKGEGHKKVPGTDFISVYNLHRSPLYFDN--PHDFEPERFLRTKESNGIEGWAGFDPSRSPGALYPNEIADF
 CYP709A1 385 ESLRLYPPATLLPRMAFEDLKLK-----DLTIPKGLSIWIPVLAIHHSSEELWGKDANQFNPERFG-----GRPFASGR
 CYP709A2 379 ESLRLYPPATLLPRMAFEDIKLK-----DLIIPKGLSIWIPVLAIHHSNELWGEDANEFNPERFT-----TRSFASSR
 CYP709B2 381 ESLRLYGPVNLNLLRLASEDMKLK-----NLEIPKGTITILPIAKMHRDKAVWGSADKFNPMRFANGL-----SRAANHPN
 CYP709B3 383 ESLRLYGPVIKISREATQDMKVG-----HLEIPKGTSTIIPLLKMHRDKATWGEDAEQFNPLRFENGI-----SQATIHPN
 CYP709B1 382 ESLRLYGPVSALAREASVNIKLK-----DLEIPKGTTVVIPLLKMHSKDTLWGSADKFNPMRFANGV-----SRAANHPN
 CYP721A1 373 ETLRLYPPAMTLNRDTLKRKLK-----DLTDIPAGTQLYLSVAMHHDKETWGDADAEFFNPRRFED-----PKKQSA
 CYP72B1 381 ESLRLYPPIVATIRRAKSDVKLG-----GYKIPCGTELLIPIAVHHDQAIWGNVNEFNPARFADGV-----PRAAKHPV
 CYP72A11 378 EVLRLYPPIPQLSRAIHKEMELG-----DLTLPGGVLINLPILLVQDTELWGNDAEFGKPDREFKDGL-----SKATKNQA
 CYP72A13 379 EVLRLYPPVVQLTRAHKEMLK-----DLTLPGGVQISLPILLIQRDRELWGNDAEFGKPDREFKDGL-----SKATKNQV
 CYP72A15 378 EVLRLYPPVTQLTRAHKEMLK-----DLTLPGGVQISLPILLVQHDIELWGNDAEFGNPDREFKDGL-----SKATKSQV
 CYP72A10 381 EVLRLYPPVTHLTRAIDKEMKLK-----DLTLPGGVHISLPIMLVQRDPMLWGTDAEFGKPERFKDGL-----SKATKSQV
 CYP72A14 378 EVLRLYPPVVQLTRAHKEMLK-----DLTLPGGVQISLPVLLVHRDTELWGNDAEFGKPERFKDGL-----SKATKNQV
 CYP72A7 378 EVLRLYPPVAQLKRVVNKEMKLK-----ELTLPGGIQIYLPITLVQRDTELWGDADAEFGKPERFRDGL-----SKATKNQV
 CYP72A9 374 EVLRLYPPVIQMNRAHKEIKLG-----DMTLPGGIQVHMPVLLIHRDTKLWGDADAEFGKPERFKDGI-----AKATKNQV
 CYP72A8 380 EVLRLYPPGILLGRVVEKETKLGE-----DMTLPGGAQVVPVLMVHRDPELWGEDVHEFNPERFADGI-----SKATKNQV
 CYP72C1 375 EVLRLYSPAYFTORITKQEVKLE-----RFSLPEGVVVITPMLLVHHDSDLWGDVKEFFKPERFANGV-----AGATKGR
 CYP715A1 385 EVLRLYPPAPNAQROARNDIEVN-----GRVIPNGTNIWIDVAMHHDVELWGDVNEFFKPERFDGNL-----HGGCKNKM
 CYP714A1 398 ETLRLYPPAAAFVSREALEDTKLK-----NLVVPKGVCIWTLIPTLHRDPEIWGADANEFNPERFSEGV-----SKACKHPQ
 CYP714A2 395 ETLRLYPPAPIVGREASKDIRLG-----DLVVPKGVCIWTLIPALHRDPEIWGPDANDFKPERFSEGI-----SKACKYPQ
 CYP74A 379 ECLRFEPVTAQYGRAKKDLVIESHD---AAFVKVAGEMLYGYQPLATRD--KIFDRADEFVPERFVGEEGEKLLR-----HVLWSNGP

[illegible]

CYP51 424 -YISLGAGRHECPGGSAFLQIKAVWCHLLRNFELELVSP----FPEINWNALVVGAKGNVMVRYKRRPFS-----
 CYP51A2 423 -YIAFGGGRHGCLGEPFAYLQIKATWSHLLRNFELELVSP----FPEIDWNAMVVGKGNVMVRYKRRQLS-----
 CYP710A1 424 -FLAFGWGPHQCVGQRYALNHLVLFIAMFSSLLDFKRLRS--DGCDEIVYCTISPDKGCTVFLSRRVAKYPNFS-----
 CYP710A2 429 -YLAFGWGAHQCVGQRYALNHLVLFIAMFSSLLDFKRLQS--DGCDDIYCTISPDKGCTVFLSKRIVTYPNL-----
 CYP710A3 425 -FLTFGIGSHQCVGQRYALNHLVLFIAMFSSMDFKRVRS--DGCDEIVHIPTMSPDKGCTVFLSSRLVTSP-----
 CYP710A4 425 -FLTFGNGSHQCVGQRYAMNHLVLFIAMFSSMDFKRVRS--DGCDDIVHIPTMSPDKGCTVFLSSRLVTSP-----
 CYP702A1 406 TYIPFGAGSROCVGAEFALKQMAIFIHHLR-DRWSMKIG---TTILRNFVLMFPPNGCEVQFLKDEVDNSSSGSNPDCCNG-----
 CYP702A2 410 TFIPFGAGRRLCVGAEFAKMQMAVFIHHLFR-YRWSMKSG---TTIIRSFMLMFPPGGCDVQISEDTEVDK-----
 CYP702A8 420 NYIPFGAGPRLCVGAYFAKLQMAIFIHHLR-DRWSMKAE---VTVTRSYMLMFPRGCDVQISKDTQEHDSG-----
 CYP702A5 409 TYLPFGSGTRLVGAEFVKLQMAIFIHHLR-DRWSMKAE---TTLLRRFILLVPRGSDVQIS-----
 CYP702A6 412 TYIPFGSGSRLVGAEFVKLQMAIFIHHLR-DRWSMKTE---TTLLRRFVLLVPRGSDVQILEDTKAK-----
 CYP702A3 413 EYMPFGAGGTHCVGSEFAKLIATILLHHLR-FRWSLDPK---TEVLRRTLVFPAGCVVHISKESE-----
 CYP708A2 418 TFMVFGGVRQCVGAEFARLQISIFIHHLVTTYDFSLAQE---SEFIRAPLPYFPKGLPIKISQSL-----
 CYP708A3 415 TFMVFGYGVRLVGAEFARLQISVFLHHLVTTYDFSLAQE---SEIIRSPFHQYTKDLLINISQSPTK-----
 CYP708A4 415 TFMVFGTGLRQCVGAEFARLQISVFLHHLVTTYDFSLHQQ---CEVLRVPAHLPNGISINISKCPKK-----
 CYP708A1 435 TFMVFGGARLQCVGAEFARLQMAIFLHHLVTTYDFSLIDK---SYIIRAPLLRFKPIRITISENPLSSSHQANLF-----
 CYP87A2 409 HFMAFGGMRFCVGTDFTKLQMAAFLHSLVTKYRWEIIG---GNITRTPGLQFPNGYHVKLHKRDE-----
 CYP720A1 419 FYCPFGGGTRFCPGAELARLQIALFLHYFITTYKS-----VHVMLLKYVCLRL-----
 CYP724A1 414 -TTAFGGGVRLVCPGGELGKLQIAFFLHHLVLSYRWKIKSD--EMPIAHPYVEFKRGMLEIEPTKFLED-----
 CYP90A1 407 VFTPFGGGPRLCPGYELARVALSVFLHRLVTGFSWPAEQ---DKLVFFPTTRTQKRYPIFVKRRDFAT-----
 CYP90B1 451 NYMPFGGGPRLCAGSELAKLEMAVFIHHLVLFKNWELAE---DKPFAFPFVDFPNGLPIRVSRIL-----
 CYP90C1 452 CFTPFGGGQRLCPGLELSKLEISIFLHHLVTRYSWTAEE---DEIVSFPTVKMKRRLPIRVATVDDASAPISLEDH-----
 CYP90D1 432 -FSPFGGGQRLCPGLDLARLQSVFLHHLVTRFRWIAEE---DTIINFPTVHMKNKLPWIKRI-----
 CYP85A1 406 -CFVFGGGTRLCPGKELGIVEISSFLHYFVTRYRWEIIG---DELMVFPRVFAPKGFHLRISPY-----
 CYP85A2 402 -FLLFGGGVRLCPGKELGISEVSSFLHYFVTRYRWEENGE---DKLMVFPRVSAPKGYHLKCSPIY-----
 CYP707A1 401 -FMPFGNGTHSCPGNELAKLEMSIMIHHLTTKYRCVCVYY---LLI-TFSFTHFVLFFQIYV-----
 CYP707A3 401 -FMPFGSGIHSOPGNEALAKLEISVLIHHLTTKYRWSIVGP---SDG-IQYGPFPALPQNGLPALERKP-----
 CYP707A2 421 -YMPFGNGVHSCPGSELAKLEMLILLHHLTTSFRWEVIGD---EEG-IQYGPFPVPKKGPIRVTP-----
 CYP707A4 405 -FMPFGSGVHACPGNELAKLQILIFLHHLVSNFRWEVKGG---EKG-IQYSPFPPIQNGLPATFRRHSL-----
 CYP88A3 429 -FLPFGAGSHLCPGNDLAKLEISIFLHHLVLLKYQVKRSNP---ECP-VMFLPHNRPKDNCLARITRTP-----
 CYP88A4 426 -FLPFGGLGSHLCPGNDLAKLEISIFLHHLVLLKYRVERSNP---GCP-VMFLPHNRPKDNCLARITRTP-----
 CYP716A1 414 -YVPFGGGPRMCPGKEYARLEILIFMHNLVNRFKWEKVFP---NENKIVVDPLPIPDKGLPIRIFPQS-----
 CYP716A2 410 -YVPFGGGSRLCPGREYARLEILIFMHNLVNRFKWEKVFP---KENKLVDAPAPIPAKGLPIRIFPQS-----
 CYP718 422 -YLPFGGGPRLCAGHQLAKISILVFMHFVVTGFDWSLVYP---DET-ISMDPLPFPGLMPKISPKVS-----
 CYP704A1 438 KFISFHAGPRICLGKDFAYRQMKIVSMALLHFFRFKMADE---NSKVSYYKMLTLHVDGGLHLCAIPRTST-----
 CYP704A2 444 KFISFHAGPRICLGKDFAYRQMKIVSMALLHFFRFKMADE---NSKVYYKMLTLHVDGGLHLCAIPRTST-----
 CYP704B1 438 KFTAFQAGPRICLGKDSAYLQMKMAMAILCRFYKFHLVP---NHPVKYRMMTILSMAHGLKVTVSRRS-----
 CYP86A2 448 RFVAFNAGPRICLGKDLAYLQMKTIAAAVLLRHRLTVAP---GHKVEQKMSLTLMFKNGLLVNVHKRDLEVMMKSLVPKERNDVVVLNGKCNNGGIGEGVA
 CYP86A4 450 RFVAFNAGPRICLGKDLAYLQMKTIAAAVLLRHRLTVAP---GHKVEQKMSLTLMFKNGLLVNLYKRDLQGIKSLVVKKSD--GVSNGQCNGVIGEGVA
 CYP86A8 447 KFVAFNAGPRICLGKDLAYLQMKSIASAVLLRHRLTVAP---GHKVEQKMSLTLMFKNGLLVNVHERDLTAIAADLRECKSN-----VVNDGVGNGVS
 CYP86A7 444 KFVAFNAGPRICLGKDLAYLQMKSIASAVLLRHRLTVAP---GHRVEQKMSLTLMFKNGLLVNVHERDLTAIAADLRECKSN-----VVNDGVGNGVS
 CYP86A1 445 KFVAFNAGPRICLGKDLAYLQMKSVASAVLLRYRVFPVP---GHRVEQKMSLTLMFKNGLRVYVLPQPRGEVLA-----
 CYP86B1 477 KFTAFNGGPRLCGLKDFAYYQMKSTAAAVYRYKVKVVN---GHKVEPKLALTMVMKHGLMVNLIINRSVSEIDQYYAKSFDEGYIN-----
 CYP86B2 475 KFTAFNGGPRLCGLKDFAYYQMKSTAAAVYRYKVKVVN---GHKVEPKMALTMVMKHGLMVNLMVKSRSVSEIDHYIC-----
 CYP86C3 454 KYVAFNAGPRICLGKTFAYLQMKTIAASVLSRYSIKVAK---DHVVVPRVTTTLYMRHGLKVTISSKSLEEKIHVQD-----

CYP86C4 454 KYVVFNAGPRLCIGKTFAYLQMKMIAASVLLRYSIKVVQ---DHVIAPRVTTNLYMKYGLKVTITPRSLEEKKLESCSM-----
 CYP86C2 462 KYVVFNAGPRLCIGKTFAYLQMKMVAASILLNYSIKVDQ---DHVVVPRVTTTLYMKHGLKVRITPRSLEEKKQDS-----
 CYP86C1 457 KYVVFNGGPRLCVGGKFAYTQMKMVAAILMRYSVKVVQ---GQEIVPKLTTTLYMKNGMNMVLMQPRDW-----
 CYP94B1 439 KFPVFQAGPRVCIGKEMAFQMKYVVGVSLSRFKIIPVC---NNRPVFPVLLTAHMAGGLKVKIKRREQCDSMYI-----
 CYP94B3 436 KFPVFQAGPRVCVKGEMAFQMKYVVGVSLSRFEIVPVN---KDRPVFPVLLTAHMAGGLKVKIKRRSHILNNV-----
 CYP94B2 427 KFPVFQAGPRVCLGEEMAYVQMKYIVASILDREFEIEPI---TDKPDFVPMLTAHMAGGMQVRVHRRDPSLSP-----
 CYP94C1 428 KYPVFQAGARVCIGKEMAIMEMKSIATAVIRRFETRVPASPETTETLRFAPGLTATVNGGLPVMIQERS-----
 CYP94D1 434 KFPAPFHAGPRMCVCKDMAYIQMKSIVAAVLERFVVEVPKG---ERPEILLSMTLRIKGGGLFARVQERS-----
 CYP94D2 434 KFPAPFHAGPRMCLGKEMAYIQMKSIVAAVLERFVVEVPKGG---ERPEILMSVTLRIRGGGLNVRVQERS-----
 CYP96A10 453 KFLSFNAGPRTCLGKEVAMQMKSVAVKIIQNYEMKIVE--GQQ-IEPAPSVILHMKHGLKVTVTKRCLV-----
 CYP96A9 450 KFLSFNAGPRTCLGKEVAMTQMTAVVKIIQNYDINVE--GHK-IKPAPSVILHMKHGLKVTVSKRCLS-----
 CYP96A1 449 KFLSFNAGPRTCLGKEVAMTQMTAVVKIIQNYEIKVVE--GHK-IEPVPSIILHMKHGLKVTVTKRSNLL-----
 CYP96A5 443 KFFVFNSGPRNCLGKNLSFLQMKTVAVEIIRNYDIKVVVE--GHK-IEPASSIILHMKHGLKVTVSKRGLVS-----
 CYP96A11 444 KFLSFNSGPRTCLGKHLAMTQMKMVAVEILHNYEIKVIK--GQK-IKPVLGFIILSMKHGLRITITKRCPY-----
 CYP96A2 440 KFLSFNAGPRTCLGKHLAMTQMKIVAVEILRNYDIKVLQ--GQK-IVPALGFILSMKHGLQITVTKRCSA-----
 CYP96A12 442 KFLSFNAGPRTCPGKQLAMTLMKTVVVEILQNYDIDVIK--GQK-IEPEPGLMLHMKHGLRVTITKRCSA-----
 CYP96A13 437 KFLAFNAGPRSCIGKQLAMTLMKIVVVEILQNYDIKVVK--GQKKIEPAPGPILRMKHGLRVTLTKKC-----
 CYP96A7 444 KFFSFNAGPRTCLGKNLAMNLMKTVIVEILQNYEIKIVS--GQK-IEAKPGLVLHMKHGLKVTMTMKCSSLE-----
 CYP96A8 452 KFLSFNAGPRTCLGKNLAMNLMKTVIVEILQNYEIKIVS--GQK-IEPKPGLILHMKHGLKVTMTKKCSS-----
 CYP96A3 440 KFLAFNAGPRACLGKKLTFLQMKTVAAEIRNYDIKVVVE--GHK-TEPVPSVLFRMQHGLKVNITRI-----
 CYP96A4 439 KFLAFNAGPRTCLGKRLTFLQMKTVAVEIIRNYDIKVVVE--GHK-PPVPSVLLRMQHGLKVSVTKI-----
 CYP96A15 433 KFMFNSGPRTCLGKNLALLQMKMVALEIIRNYDFKVIIE--GHK-VEPIPSILLRMKHGLKVTVTKKI-----
 CYP97A3 503 SYLPFGGGPRKCIIGDMFASFEVATAMLIRRFNFQIAPG---APPVKMTTGATIHTEGLKLTVTKRTKPLDIPSVPIPLPMDTSRDEVSSALS-----
 CYP97C1 476 KFIPFSGGPRKCVGDQFALMEAIVALAVFLQRLNVELVP---DQTISMTTGATIHHTNGLYMKVSQR-----
 CYP97B3 510 AFLPFGGGPRKCIIGDQFALMESTVALAMLFQKFDVELRGT--PESVELVSGATIHAKNGMWCKLKRRSK-----
 CYP709A1 453 HFIPFAAGPRNCIGQQFALMEAKIILATLISKFNFT--ISK--NYRHAPIVVLTIKPKYGVQVILKPLVS-----
 CYP709A2 447 HFMPFAAGPRNCIGQTFAMMEAKIILAMLVSKFSFA--ISE--NYRHAPIVVLTIKPKYGVQLVLKPLDL-----
 CYP709B2 452 ALLAFSMGPRACIGQNFAMEAKTVLAMILQRFRNLN--LSA--DYKHAPADHLTLQPQYDLPVILEPIDG-----
 CYP709B3 454 ALLPFSIGPRACIAKNFAMVEAKTVLTMILQQFQLS--LSP--EYKHTPVDHFDLFPQYGLPVMHLPLG-----
 CYP709B1 453 ALLAFSVGPRACIGQNFVMEAKTVLTMILQRFRFISLCD--EYKHTPVDNVTIQPQYGLPVMQLPLED-----
 CYP721A1 440 LLVPFGLGPRTCVGQNLAVNEAKTVLATILKYYSFR--LSP--SYAHAPVLFVTLQPQNGAHLFFTRISS-----
 CYP72B1 452 GFIPFGLGVRTCIGQNLAILQAKLTLAVMIQRFTFH--LAP--TYQHAPTIVMLLYPQHGAPITFRRLTNHED-----
 CYP72A11 449 SFFPFAWGSRICTIGQNFALLEAKMAMALILQRFSE--LSP--SYVHAPYTVFTIHPQFGAPLIMHKL-----
 CYP72A13 450 SFFPFAWGPRCTIGQNFALLEAKMAMTILIRKFSFE--LSP--SYVHAPYTVLTTHPQFGAPLILHKL-----
 CYP72A15 449 SFFPFAWGPRCTIGQNFALLEAKMAMALILRRFSFE--ISP--SYVHAPYTVITIHQFGAQLIMHKL-----
 CYP72A10 452 SFFPFAWGPRCTIGQNFAMLEAKMAMALILQTFTE--LSP--SYVHAPQTVVTIHPQFGAHLILRKL-----
 CYP72A14 449 SFFPFAWGPRCTIGQNFAMLEAKMAMALILQKFSFE--LSP--SYVHAPYTIITLYPQFGAHLMLHKL-----
 CYP72A7 449 SFFPFGWGPRCTIGQNFAMLEAKMAMALILQKFSFE--LSP--SYVHAPQVTMTTRPQFGAHLILHKL-----
 CYP72A9 445 CFLPFGWGPRCTIGQNFALLEAKMALALILQRFSE--LSP--SYVHSPYRVFTIHPQCGAHLILHKL-----
 CYP72A8 452 SFLPFGWGPRFCPGQNFALMEAKMALVLILQRFSE--LSP--SYTHAPHTVLTILHPQFGAPLIFHML-----
 CYP72C1 446 SFLPFGWGPRCTIGQNFAMLEAKMALFLAMVLQRFSE--LSP--SYTHAPFPAATTFPQHGAILIIRKL-----
 CYP715A1 456 GYMPFGFGGRMCIGRNLTMEYKIVLSLVLSRFEIS--VSP--GYRHSPTYMLSLRPGYGLPLIIRPL-----
 CYP714A1 469 SFVPFGLGTRCLGKNFGMMELKVLVSLIVSRFSFT--LSP--TYQHSPVFRMLVEPQHGVVIRVLRQ-----
 CYP714A2 466 SYIPFGLGPRTCVGNKFGMMELKVLVSLIVSRFSFT--LSP--TYQHSPSHKLLVEPQHGVVIRVLRQ-----
 CYP74A 459 ETETPTVGNKQACAGKDFVVLVARLFVIEIFRRYDSFDIEV-----GTSPGLSSVNFSSLRKASF-----

```

CYP74B2    440 QTGTPSASNKQCAAKDIVTLTASLLVADLFLRYDTITGDS-----GSIKAVVKAK-----
CYP722A1   412 SFLAFGMGGRTCLGLALAKAMMLVFLHRFITTYRWEVWDE---DPSIEKWTLFARLKSGYPITVSRRL-----
CYP711A1   456 AFIPFGIGPRACVGQRFALQETKLTLLHLYRNYIFRHSLE-MEIPQLDYGIILSFKNGVKLRTIKRF-----
consensus  601  .. ..... * .. .... . .... . . . . . . . . . . . . . . . . . . . . . .

```

CYP51	-----
CYP51A2	-----
CYP710A1	-----
CYP710A2	-----
CYP710A3	-----
CYP710A4	-----
CYP702A1	-----
CYP702A2	-----
CYP702A8	-----
CYP702A5	-----
CYP702A6	-----
CYP702A3	-----
CYP708A2	-----
CYP708A3	-----
CYP708A4	-----
CYP708A1	-----
CYP87A2	-----
CYP720A1	-----
CYP724A1	-----
CYP90A1	-----
CYP90B1	-----
CYP90C1	-----
CYP90D1	-----
CYP85A1	-----
CYP85A2	-----
CYP707A1	-----
CYP707A3	-----
CYP707A2	-----
CYP707A4	-----
CYP88A3	-----
CYP88A4	-----
CYP716A1	-----
CYP716A2	-----
CYP718	-----
CYP704A1	-----
CYP704A2	-----
CYP704B1	-----
CYP86A2	545 VNAAVAVAV-
CYP86A4	545 VYLNTGVAVV
CYP86A8	537 S-----
CYP86A7	-----
CYP86A1	-----
CYP86B1	-----
CYP86B2	-----
CYP86C3	-----

CYP86C4	-----
CYP86C2	-----
CYP86C1	-----
CYP94B1	-----
CYP94B3	-----
CYP94B2	-----
CYP94C1	-----
CYP94D1	-----
CYP94D2	-----
CYP96A10	-----
CYP96A9	-----
CYP96A1	-----
CYP96A5	-----
CYP96A11	-----
CYP96A2	-----
CYP96A12	-----
CYP96A13	-----
CYP96A7	-----
CYP96A8	-----
CYP96A3	-----
CYP96A4	-----
CYP96A15	-----
CYP97A3	-----
CYP97C1	-----
CYP97B3	-----
CYP709A1	-----
CYP709A2	-----
CYP709B2	-----
CYP709B3	-----
CYP709B1	-----
CYP721A1	-----
CYP72B1	-----
CYP72A11	-----
CYP72A13	-----
CYP72A15	-----
CYP72A10	-----
CYP72A14	-----
CYP72A7	-----
CYP72A9	-----
CYP72A8	-----
CYP72C1	-----
CYP715A1	-----
CYP714A1	-----
CYP714A2	-----
CYP74A	-----

CYP74B2	-----
CYP722A1	-----
CYP711A1	-----
consensus	701