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CYP76C2      1 -----MDIIFEQALFPLFCFVLSFFIIFFTTTRPRS-SRKVVPSPPGPPRLPIIGN-----IHLVG
CYP76C4      1 -----MDIISGQALFLLFCFISSCFLISTTARSRRS-SGRAATLPPGPPRLPIIGN-----IHQVG
CYP76C1      1 -----MDIISGQALLLLFCFILSCFLIFTTTRSGRI-SRGATALPPGPPRLPIIGN-----IHLVG
CYP76C5      1 -----MDIISGQPMFLLFCFILSCFLFFTAARSRRSPTQVLSKSPPGPPRLPIIGN-----IHLVG
CYP76C6      1 -----MDIISGQPLFLIFCFILSCLLFFTTARSRRSPCQLS-KSPPGPPRLPIIGN-----IHLVG
CYP76C3      1 -----MSLPLYFLLTLFFFFFATAKTRR-SSSTGTLPPGPPILPLVGN-----IFQLG
CYP76C7      1 -----MDIVAVLSLLFIFFLFFFFYYTTGKS-CPGAKNPPGPKLSLLRN-----ILQTV
CYP76G1      1 -----MINQLTKNELIGLFTSIAVLIYVTCFLFYTKRCRTRLPPGPNPWPVIGN-----IFQLA
CYP75B1      1 -----MATLFIITILLATVLFILIRIFSHRRNRSHNNRLLPPGPNPWPVIGN-----LPHMG
CYP705A1     1 -----MDAIVVDSQNCFIIILLCSFSLISYFVFFKK-----PKVNFDLPPSPSLPIIG-----HLHLL
CYP705A24    1 -----MTVMVSFDLLNCFIFTLIFLITLFLFVLFYKK-----PNDGFDVPPSPSLPIIG-----HLHLL
CYP705A12    1 -----MAELIIVDFQNISIFILLCLFSFLCYALFFKKP-----KGFDLPPSPSLPIIG-----HLHLLS
CYP705A13    1 -----MATIVVDFQKIHFPQILLSIFTVICIFVFFFKPKGS--RGCDLPPSPSLPIIG-----HLHLLF
CYP705A15    1 -----MAAMNIVDFQNCFFVLLSLFSLCYSLFFRK---PKEPRLHYDLPPSPPTLPIIG-----HLHLL
CYP705A4     1 -----MIDFQNCFIFILLCLFSRLCYSHFFKK---PKDPRLHFDLPPSPSLPIIG-----HLHLL
CYP705A16    1 -----MAAMINVEFQNCFIFMLLCLFSLLCYSLFFRK-PSSRQNSYDCDLPPSPSMPVIG-----HLHLL
CYP705A19    1 -----MTTTEFQSCFIFLLCLFSLVCYSLFFRK-PSSRRDAHGCDLPPSPSLPVIG-----HLHLL
CYP705A28    1 -----MAAMITVDFQNSFAFIFLCLFSLLCYSLFFRK-AKGSRA--GRDLPPSPSFPVIG-----HLHLL
CYP705A30    1 -----MAAMITVDFQNSFIFILFFLFSLLCYSLFFRK-PKGSRA--GRDLPPSPSFPVIG-----HLHLL
CYP705A32    1 -----MAAMITVDFQNSFIFILFCLFSLICYSLLFFRK-PKDSRA--GRDLPPSPSFPVIGSPQSNLHLL
CYP705A2     1 -----MAVLIIFILLCLLSFLCYSLFFMK-PKDSRD--GRDLPPSPSLPIIG-----HLHLL
CYP705A5     1 -----MITVDFENCIFILLCLFSRLSYDLFFRK-TKDSRA--GCALPPSPSLPIIG-----HLHLL
CYP705A23    1 -----MAAMLTVDFQNCIFILLCLLCLCYPLFFKK-PKVSQD--GFGLPPSPSLPIIG-----HLHLLF
CYP705A20    1 -----MLTVDSQHCFSFILLCFFSLLCYSLFFKCLKDS---HVGRDLQSQSPSLPIIG-----HLHLL
CYP705A21    1 -----MAAIGDCFIFILLCLFSLLFYLIIFRKPKNSRLVAYGCDLPPSPSLPIIG-----HVHLL
CYP705A18    1 -----MATLISVDFQHCIFYIILLCLFSLLCYSLFFRKPKGTRVG--CDLPPSPSLPIIG-----HLHLL
CYP705A6     1 -----MAAIVSDFQNCFIFIVLCLFS-LFCYSLFFKKPKHPRG---CDLPPSPSLPIIG-----HLHLLF
CYP705A33    1 -----MAAFISVDFQNCFIFILLCFFS-LLCYSLFFKKPKDSRG---CDLPPSPSLPIIG-----HLHLL
CYP705A3     1 -----MIAIIVEFQNFIFILLCLFS-LLCHSLFFKKPKDSRS---FVLPSPSPSLPIIG-----HLHLL
CYP705A22    1 -----MEAVISDFQNCFIFILIFLLT-FLCFFFFFKPKDSRVN--FDLPPSPSLPIIG-----HVHLL
CYP705A8     1 -----MGEIMNVDFVNCLILILLCLLSILCYSFFFKK-----PKDGFNLPPSPSLPIIG-----HLHLL
CYP705A9     1 -----MNVDFQNCILILLCLLSFLCYSFFFKK-----PKDGFNLPPSPSLPIIG-----HLHLL
CYP705A25    1 -----MAAISVDFQLCFIFILLAIFFSLFCFSAFFFK-KPKDPQLQGCGLPPSPSLPIIG-----HLHLL
CYP705A27    1 -----MAAITVDFQLCFIFILLGIFSLFCLSAFFFK-KPKDPQLQGCGLPPSPSLPVIG-----HLHLL
CYP712A1     1 -----MDLKLNTKLIILITSLAFPFLYALFKWFLKEQGLAATKLPQSPPALPFI-----HLHLI
CYP712A2     1 -----MFTLNLDMNYTSCSYLFFTLVTIFLLHRLFSSSSRRGLPPGPRGLPVIG-----HMHL
CYP93D1      1 -----MVDLQYFSVILVCLGITVLIQAITNR-----LRDRLPPLPPSPALPIIG-----HIHL
CYP81D6      1 -----MHVSIQHIYKFLDLNMETYFLLLSLAFFLFI SVKLLFGKRLSKFNLPSPARPLPIIGH--LHLKLP
CYP81D7      1 -----METHFLILSLAFLFFISLKLFGKRHSKFNLPSPARPLPIIGH--LHLKQP
CYP81D11     1 -----MSSTKTIMETIYLILSLFFFFIFLSLKLFGPRPRKLNLPSPSRPPIIGH--LHLKLP
CYP81D2      1 -----MEALMLIFTFCFIVLSLIFLIGRIKRLNLPSPAWALPIIGH--LRLKPP
CYP81D3      1 -----MEGQTLIFTFLFISLSLTFIIGRIKRRPNLPSPSWALPIIGH--LRLKPP
CYP81D8      1 -----METKTLIFSILFVVLISLIYLIGLKRKPNLPSPAWSLPVIGH--LRLKPP
CYP81D4      1 -----MDLNQILILSFLSLFTLAIFLLTRSKRKLNLPSPAISLPVIGH--LHLKPP
CYP81D5      1 -----MDLTQILLLSFLFLTISIKLLLLTKSNRKNLPSPAYPLPVIG-----HHLKQP
    
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CYP81D1 1 -----MEETNIRVVLYSIFSLIFLIISFKFLKPKKQNLPPSPPGWLPPIIGH--LRLLKPP
CYP81F3 1 -----MFYVIVLPLALFLLAYKLFFTSKTKRFNLPPSPPYSLPIIGH--HNLKPP
CYP81F4 1 -----MFNYVILPLALFLLAYKFFFTSKKQRYLPPSPSYSLPPIIGH--HLIKPP
CYP81F2 1 -----MDYVLIVLPLALFLIAYKFLFSSKTQGFNLPPGP-TPFPVIGH--LHLVKPP
CYP81F1 1 -----MLYFILLPLLFLVLSYKFLYS-KTQRFNLPPGP-PSRPFVIGH--LHLMKPP
CYP81H1 1 -----MDCILLILTTLVAIFIVKIVLLVTKPNKNLPPSPNICFPPIIGH--LHLKKP
CYP81G1 1 -----MRLVSRIMCSRMGEMIDLFLALMAGFIAVAVVFRSKQKKNLPPNP-VGFPVIGH--LHLKKEP
CYP81K1 1 -----MEDLWFIFFSFLTATLITFFITKKFLWSLNSKLPSP-TPLPIIGH--LHLIKKY
CYP81K2 1 -----MENLWVIFLLTATLITFFITKFLWSQNPKLPPSP-TPLPIIGH--LHLINKY
CYP82C3 1 -----MDTSLFSLFVSIILVVFIALFKKSKKPK--YVKAPAPSGAWPIIGH--LHLGGK
CYP82C4 1 -----MDTSLFSLFVPIILVVFIALFKKSKKPK--YVKAPAPSGAWPIIGH--LHLGGK
CYP82C2 1 -----MDTSLFSLFVPIILVVFIALFKKSKKPK--HVKAPAPSGAWPIIGH--LHLGSK
CYP82F1 1 -----MDLIMFLLSALFIFPVILIKSRLRPNKKNSTAPMVEGAWPIIGH--LHLFDTV
CYP82G1 1 -----MTFLFSTLQLSLFLSALVIFGYIFLRKQLSRCEVDSSTIPEPLGALPIIGH--LHLRKG
CYP71A12 1 -----MEMILMVSLCLTTLITLFLKQFLKRTANKVNLPPSPWRLPIGN--LHQLS
CYP71A13 1 -----MEMILSISLCLTTLITLFLLRFLKRTATKVNLPSPWRLPIGN--LHQLS
CYP71A18 1 -----MEMTLMVSLCLTTLITLFLLRFLKRTAKKVNLPSPWRLPIGN--LHQLS
CYP71A14 1 -----MEMIIISLCLATILALLLKLQFLNRTYAKVNLPPSPWRLPIGN--LHQLS
CYP71A15 1 -----MEIIISLCLATILAFLLKPLLN-RTVAKDNLPPSPWRLPIGN--LHQLS
CYP71A19 1 -----MEIILVTLCLTTLALLLKSILKRTTTNPNLPPSPWRLPIGN--LHQLS
CYP71A20 1 -----MILITLCLTTLALLLKS-ILKRTATKNFNLPSPWRLPIGN--LHQLS
CYP71A27 1 -----MEMILISLCLTTLAFLLKPLLRITTTKPKLPPSPWRLPIGN--LHQLG
CYP71A16 1 -----MEMMILISLCLTTLTLLFFKSLKRPNS--NLPPSPWRLPIGN--LHQLS
CYP71A28 1 -----MILISLCLTTLAFLLNPLLKRTTTTKPNQPPSPWRLPIGN--LHQLS
CYP71A21 1 -----MESMTMIIILQSLIIFITILFFKKQKRGKKSNTPRSPRPLPIGN--LHQLG
CYP71A22 1 -----MESMIRIILLSLIIFITILFFIKQKKGKKSNTPASPRPLPIGN--LHQLG
CYP71A24 1 -----MMMMIILLCSIILITILFFKKQSRGKKSNAAPPSPRPLPIGN--LHQLG
CYP71A26 1 -----MMIMFFLLCSIIFVVTIIFRQKRGKRRNTLPPSPGLPIGN--LHQLG
CYP71A25 1 -----MMMIIILLWSIIFMTILFLKQLSGKKGKTPSPSPGLPIGN--LHQLG
CYP71A23 1 -----MILFLCLTILFIIITILFFKHKHTVNKIINFSPRPLPIGN--LHQLS
CYP71B36 1 -----MATILFLSLLFLSCLLLAAAFTHKKRQHQKPPSPPGFPIGN--LHQLG
CYP71B37 1 -----MATIWFPLLLFLSCLLLAALRLKRRQHQRKPPSPPGFPIGN--LHQLG
CYP71B9 1 -----MATIWFSLLLFLCCLLLAAAFKHKRRTNQQPPSPPGFPIGN--LHQLG
CYP71B10 1 -----MTVLWFVSLILLISILLVAVKHSKRR-WVRQPPSPGLPIGN--LHQLG
CYP71B26 1 -----MDSIWLSSLFFIIFLLAAAFKRKNHGKRRIPSPPGFPIGN--LHQLG
CYP71B33 1 -----MVNIIILSLLFLVILLLLTAFAKRAKRRQHRPIPSPPGFPIGN--LHQLG
CYP71B34 1 -----MTNIWLLSLIFVICILVAVFNHKNRRNYQRTPPSPPGCPPIGN--LHQLG
CYP71B35 1 -----MAHIWLLPLIFLVCILLAVFNHKKHPKYRQFP-CPPGFPPIGN--LHQLG
CYP71B11 1 -----MSLWYIIVAVVFFSTIIVRNTRKTKNLPPGPPRLPIGN--LHQLG
CYP71B12 1 -----MSLWYIIVAVVFFSSMIIVRIIRKTKNLPPGPPRLPIGN--LHQLG
CYP71B14 1 -----MIWWFIVGASFFFAFILIADTRTTKKNLPPGPPRLPIGN--LHQLG
CYP71B13 1 -----MSLWYIIVVVFVFFASIFIAKNTRKTKNLPPGPPRLPIGN--LHQLG
CYP71B6 1 -----MSLFSFPISTELLPWLLLLLIPPLLIFFLLRSPKNLPPGPPRLPIGN--LHQLG
CYP71B28 1 -----MSVFLCFLCLLPLILIFL---KNLKP SKWKLPKLPPIGN--LHQR
CYP71B29 1 -----MAIILCFLIILLPLILIFL---KCLKH SKWKLPKLPPIGN--LHQL

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CYP71B7      1 -----MSILLCFLCLLPVFLVSLVSLSKRLKPSKWKLPPEGKTLPIIGN-----LHNLIT
CYP71B15     1 -----MSVFLCFLVLLPLILIFLN---VLKPSKYKLPPEGKLPPIIGN-----LHQRR
CYP71B23     1 -----MSIFLCFLLLLLLLLVTTIIFT-RKSQSSKLLKLPPEGPKLPPIIGN-----LHYLN
CYP71B16     1 -----MAISLLCLFLITLVSLI--FVVKKIKHSKWDLPSPPTFPVIGN-----LHQVG
CYP71B17     1 -----MAISLLCLFLITFVSLT--IVGCKIKRSIWNLPSPPKLPVIGN-----LHQVG
CYP71B18     1 -----MAISLLSFLIAFASLI--FLGKKIKRSKWNFPSPPKFPVIGN-----LHQIG
CYP71B19     1 -----MAISFLCVFLITFVSLI--FFAKKIKRSKWNLPSPPKFPVIGN-----LHQIG
CYP71B20     1 -----MAISFLCFCLITLASLI--FFAKKIKHLKWNLPSPPKFPVIGN-----LHQIG
CYP71B2      1 -----MTIILCFFFLVSLLTIVSSIFLQKNTSKFNLPPSPSSLPPIIGN-----LHHLA
CYP71B27     1 -----MAILFCFFFLVSLVTLVSSIFFKQIKNTKFNLPSPPSLPPIIGN-----LHHLT
CYP71B21     1 -----MSIFLCFLLLLPLFLVfy---KRLLPKSGKLPPEGPIISLPPIIGN-----LHQIG
CYP71B22     1 -----MSISLYFLLLLPLFLIFF---KLLSPKSGKLPPEGPLGLPIIGN-----LHQIG
CYP71B38     1 -----MSIFLCFLLLLPLSLILF---KLLPSKSGKLPPEGPIGLPIIGN-----LHQIG
CYP71B5      1 -----MSIFLCFLLLLPLSLIFL---KLLPSKSGKLPPEGPKGLPIIGN-----LHQFG
CYP71B31     1 -----MSMFLGLLFLFPLFFILF---KNLLPPRKKLPPEGPTGLPIIGN-----LHQIG
CYP71B8      1 -----MIKSILLCFFFLFPLLLTLF---KLLPSKWKLPPEGTGLPIIGN-----LHQIG
CYP71B32     1 -----MSIFLLCILFLFPLFQIIF---KLLPSKSKLPPEGTGLPIIGN-----LHQIG
CYP71B24     1 -----MSILLYFIALLSLIIKKIKDSNRNLPSPKLPVIGN-----LYQLR
CYP71B3      1 -----MSILLYFFFLPVILSLIFMKKFKDSKRNLPSPKLPPIIGN-----LHQLR
CYP71B25     1 -----MAILQSFLLLSLPFLFTLIYTKMKESKRNLPSPAKLPVIGN-----LHQIQ
CYP71B4      1 -----MVSLLSFFLLLVPFIFLLIFTKKIKESQNLPPSPAKLPPIIGN-----LHQIQ
CYP83A1      1 -----MEDIIGVVALAAVLLFFLYQPKTKRYKLPSPSPLPPIIGN-----LLQLQ
CYP83B1      1 -----MDLLLIAGLVAAAAFFFLRSTTKKSLRNPSPKGLPIIGN-----LHOM
CYP84A1      1 -----MESSISQTLKSLSDPTTSLVIVVSLFIFISFITRRRRPPYPGPRGWPPIIGN-----MLMMD
CYP84A4      1 -----MLTLMTLIVLVPLLLFLFPHLLRRQMLLKPYPGPKGLPPIIGN-----ILMMN
CYP706A1     1 -----METASSNFSLSQILNIEEPYSSVMLGVAALLAVVCYFWIQGKSKSKNGPPLPPGPWPLPIVGN-----LPFLN
CYP706A2     1 -----MGTASSKSNINLSQVLNTEEPYSSVMLAVAALLAVVCYLWIQGKSKSKKEPPLPPGPWPLPIVGN-----LPFLN
CYP706A3     1 -----MTDISSLFRNRSRKDQLDYGLTVIVISTLCWCLWLYAKCKRRSPPLPPGPWGLPIIGN-----LPFLQ
CYP706A7     1 -----MTDIFTFFFTIQNRNDHFDFVLATIVISSVFWYIWVYVSKRFLPPLPPGPRGLPIVGN-----LPFLH
CYP706A5     1 -----MSMLSNLFPDNAIS--LTPYAYAVLILTATFSILWYIFKRSPQPLPPGPRGLPIVGN-----LPFLD
CYP706A6     1 -----MSPISNLFAGNTIN--LTP--YAILILIAIFSILWYLFKRSPQPHLPPEGPRGLPIVGN-----LPFLD
CYP706A4     1 -----MSPISNLFPDNTIN--LTP--YAIVILTTFVFSILWYIFKRSPQPSLPPGPRGLPIVGN-----LPFLD
CYP79B2      1 -----MNTFTSNSSDLTTT-ATETSSFSTLYLLSTLQAFVAITLVMLLKKLMDTP-NKKKPYLPPGPTGWPPIGM-----IPT
CYP79B3      1 -----MDTLASNSSDLTTKSSLGMSSTNMVLLTTLQALAAALCFMLILNKIKSSRNKKLHPLPPGPTGFPVGM-----IPA
CYP79A2      1 -----MLAFIIGLLLLALTMKRKEKKKTMLISPTRNLSLPPGPKSWPIIGN-----LPE
CYP79C1      1 -----MDYYLNNVIFSVVTFSTITLNVFLIKSVVARFLGRRKKLPGPCRGFPPIIGN-----LVG
CYP79C2      1 -----MTIITNPSSFTLVLLSITLVLALARRFSRFMKPKGQLPPGPRGWPPIVGN-----MLQ
CYP79F1      1 -----MMSFTTSLPYPFHILLVFIILSMASITLLGRILSRPTKTKDRSCQLPPGPPGWPPIIGN-----LPE
CYP79F2      1 -----MMMKISFNFCFQILLGFIVFIASITLLGRIFSRPSKTKDRCRQLPPGRPGWPPIIGN-----LPE
CYP703A2     1 -----MILVLASLFAVLILNVLLWRWLKASACKAQRLLPPGPPRLPIIGN-----LLQ
CYP98A8      1 -----MIYLLISLLPIIVATLMLYQRWWRSNIPGPKPKFLLIGN-----LHQM
CYP98A9      1 -----MDLLLSLTTTIIAAYMQNLRRRGNSNIPGPPTRFLVGN-----LHQL
CYP98A3      1 -----MSWFLIAVATIAAVVSYKLIQRLRYKFPFGPSPKPIVGN-----LYDI
CYP78A10     1 -----MTIDMYLSFASRSGSSPFLSLELCLSIFLFLISLFFVFWLTPGGFAWALYKARF---HTRPESKTGPAPGSPGLPIFGL---ILAFVN
CYP78A5      1 -----MSPEAYVLFN---SFNLVTFEAFASVSLIATVAFLLSPPGGLAWAGPGS-----SKSRVSIPIGSPGS-----LSVFS

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CYP78A6      1  -----MATKLESSLIFALLSKCSVLSQTNLAFSLLAVTIIWLAIISLFLWTPGGPAWGKYLFR---LISGSYKTGNVIPGPKGFPLVG-----SMSLMS
CYP78A9      1  -----MATKLDTSLLLALLSKCSLLTQTNLALSLLVASLASLALSFLFFWSHPGGPAWGKYFLHR---RRQ-----TTVIPGPRGLPFVQ-----SMSLMS
CYP78A8      1  -----MRTEIESLWVFALASKFNIMQQHFAASLLVAIAITWFTTITIVFWSHPGGPAWGKYFFTRRFISLDYNRKYKNLIPGPRGFPLVG-----SMSLRS
CYP78A7      1  MELMNLASKETS YWMIALPAGFGSONLHDVSTLGYLFLAVVFLSIVTWALAGGGGVAVKNGRNRLG-----RVAIPGPRGIPVFG-----SLFTLS
CYP77A4      1  -----MFPLISFSPTSLDFTFFFAIIISGFVFIITRWNSNSKKRLNLPPGPPGWPVVGNI-LFQFARS-
CYP77A6      1  -----MSILSFPHTFFFNISPSLFYTIILISSLVLLILTRRSKSKIVKLPFGPPGWPVVGNI-LFQFARS-
CYP77A7      1  -----MSFLSFSPISLDLLSSNVFLTILALIIISGLLKITIYRKHNSNHLNLPPGPPGWPVVGNI-LFQFTRS-
CYP77A9      1  -----MLDISNYVFFFTLVITILLSCLVYILTRHSHNPKCANLPPGPKGWPVVGNI-LLQFARS-
CYP77B1      1  -----MDLTDVIIIFLFAFYFINLWRRYFSAGSSQCSLNLPPGPKGWPVVGNI-LLQVIFQ-
CYP89A4      1  -----MEIWLLILGSLFSLNLLNLLFFRRRD-SSSLPLPPDPNFFPFLGT-LQWLRQG-
CYP89A5      1  -----MEIWLLILGSLFSLNLLNLLFFRRLD-SSSLPLPPDPNFFPFLGT-IQWLRQG-
CYP89A6      1  -----MEIWLLILGSLFSLNLLNLLFFRRRDSFSSPLPPDPNFFPFLGT-LKWLRKG-
CYP89A7      1  -----MEIWLLILGSLFSLNLLNLLFFRRLD-SSSLPLPPDPNFFPFLGT-LQWLRQG-
CYP89A2      1  -----MEIWLLILASLSGSLLFHLLRRRNS--SSPPLPPDPNFFPFLGT-LQWLRQG-
CYP89A3      1  -----MATWFHIFCVSFTVNFLLYLFFRRTN--NNLPLPPDPNFFPMPGP-FQWLRQG-
CYP89A9      1  -----MEITTIIFLIISLTFSLFKLIFFFSTH-----KLPPGPRFPVIGNI-IWLRKKN
CYP73A5      1  -----MDLLLLLEKSLIAVFVAVILATVISKLRGKKLKLPFGPIPPIFCNI-WLQVG
CYP701A3     1  -----MAFFSMISILLGFVIFSSFIFFFKKLLSFSRKNMSEVSTLPSVIVVPGFPVIGNI-LLQLK
consensus   1  .....

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CYP76C2 56 -RNPHHSFADLSKTYGP-----IMSLKFGSLN---TVVWTSPEAAAREVLRTYDQILSSRTP--TNSIRSINHDKVSVVWLPSSSRWRLLRKL SATQLF
 CYP76C4 56 -KNPHSSFADLAKTYGP-----IMSLKFGCLN---SVVWTSPEAAAREVLRTHDQILSGRKS--NDSIRCFGHEEVSVIWLPPSSARWRMLRKL SVTLMF
 CYP76C1 56 -KHPHRSFAELSKTYGP-----VMSLKLGLSLN---TVVWASPEAAAREVLRTHDQILSARSP--TNAVRSINHQDASLVWLPSSSARWRLLRRL SVTQLL
 CYP76C5 57 -KNPHHSFTDLSKTYGP-----VMSLKLGYLN---SVVWTSRDAAREVLKAHDQILSGRYI--TQATKSNNHHEFSVGWIHPSSPRFRKVEEMFTTQLF
 CYP76C6 56 -KNPHHSFTDLSKTYGP-----VMSLKLGLCLN---SVVWIASRDAREVLKTHDQILSGRYI--SEATKSNNHHEFSVGWIHPSSSRFRMLRKL SATQLF
 CYP76C3 48 -FNPHRSLAARSKTYGP-----IMSLKLGRLT---AVVWISSPEAAAKEALRTHDHVMSARTF--NDALRAFDDHHKHSIVWIIPP--SARWRFLKKTITTKYLL
 CYP76C7 51 -EKPHRSLADLSRIYGS-----VMSFKLGCLT---TVVWISSPETAKEVLRKTHDHVLSYRVS--SDPVRAAGHHELSLLWIPP--LARWRFLRKLITRNQLF
 CYP76G1 54 GLPPHDSLTKL SRRHGP-----IMTLRIGSML---TVVWISSSEVAREIFKFKHDAALAGRKI--YEAMKG--GKSSDGLSILTAQY GAYWRMLRRLCTTQFF
 CYP75B1 51 -TKPHRTL SAMVTTYGP-----ILLHLRIFVD---VVVAASKSVAEQFLKIH DANFASREP--NSGAKHMAYNYQD--LVFAPY GHRWRLLRKLSSVHLF
 CYP705A1 56 STLTHKSLQKLS SKYGP-----LLHLRIFNIP---FILVSSD--SLAYEIFRHDVNVSSRGV---GAIDESLAYGSSSGFIQAPYGDYWKFMKKLIATKLL
 CYP705A24 58 FASLHKCFQKLS SKYGP-----FLHLRIFHVP---IVLVSSA--STAYDIFKTNIDNVSYRGD---VAIDECIVFGSFGYFRAPCEDYWKFMRKLIMARAL
 CYP705A12 57 SSLPHKSFQKLS FKYGPE-----LLHLRIFNFP---MVLVSSA--SMAYEVFRTNDVNVSYRFV---PVNKDSL VFGSSSGFVTAPYGDYWKFMKKL I STKLL
 CYP705A13 62 D-LPHKAFQKLS SKYGP-----LLCLRIFNVP---IVLVSSA--SVAYEIFKTHDVNISSHGH---PPIDECLFFGSSSFVMAPYGDYWKFMKKLMVTKLL
 CYP705A15 60 SVLVHRSLOKLS TKYGS-----ILYLRVFSFP---VALVSSA--SIAYEIFREHDVNISSRGF---PPTDDSLFAGSFSFTSAPYGDYWKFMKKLLVTNLL
 CYP705A4 55 SVLLHRSLOKLS TKYGS-----ILYLRVFRFP---VVLVSSA--SIAYEIFRAHDLNISRGF---TPTDDSLFAGSFSFISAPYGDYWKFMKKLLVTNVE
 CYP705A16 62 SSLVHKSFKLSS KYGP-----LLHLRIFNVP---IVLVSSA--SVAYDIFRVH DNVSSRGP---PPFEESLLFGSSSFI SAPYGDYWKFMKKLMVTKLL
 CYP705A19 59 SSLVHKSFKLSS NYGP-----LLHLRIFNVP---IVLVSSA--SVAYDIFRVH DNVSSRGS---PPFEESLLFGSTGFISAPYGDYFKFMKKHLVTKLL
 CYP705A28 60 SVLVHKSFKLSS KYGP-----LLLIRIFHVP---IVLTSSA--SVAYEIFRAQD VNVSSRGH---PPVEESLWFGFSFFFAPYGDYFKFMRKLIATKLL
 CYP705A30 60 SALVHKSFKQLSS KYGP-----LLHLRVFHIP---IVLASSA--SVAYEIFKAQD VNVSSRGH---APVGESLWFGSSSFFFAPYGDYFKFMRKLIATKLL
 CYP705A32 64 SALVHKSFKQLS YKYGP-----LLHLRVFHP---IVLASSA--SVAYEIFKAQD VNVSSRGH---APAGESLWFGSSSFFFAPYGDYFKFMRKLIATKLL
 CYP705A2 53 STLTHKSFQRLS SKYGP-----LLHLRIFHVP---IVLASSA--SVAYEIFRDQD VNVSFRHS---PPIEESLWFGSFSFISAPYGDYWKFMRKL MVTKIL
 CYP705A5 57 FVPFHQSFKNLS SKYGP-----LLHLRFFNFP---IVLVSSA--STAYEIFKAQD VNVSSRPP---PPIEESLILGSSSFINTPYGDYSKFMKKFMVQKLL
 CYP705A23 60 SNLTHKSLQKLS SKYGP-----LLYLRIFNVP---IIFVSSA--SVAYEIFR GHDVNI SFRGN---PPIEESLWVGSFGFFTAPYGDYWKFMKKVMVTKLL
 CYP705A20 57 SSLAHKSLQQLS SKYGP-----LLHLSIFNFP---VVLVSSA--SVAYEIFKAHD LNISSRDN---PPINESLWVGSVFGAPYGDYWKFMKKLLVTKLL
 CYP705A21 59 SSLAHKSLQKLS SKYGP-----LLYLRVFNFP---VVLVSSA--SVAYEIFKAHD LNISSRDN---PSIDDSLLIGSSVFGSAPYGDYFKFMKKLLVTKLL
 CYP705A18 61 SSLTHKSLQKLS SKYGP-----FLHLRIFVSP---IILVSSA--SVAYEIFKAHD VNVSSRGA---AAIDESLWFGSSSFIYAPYGDYWKFMKKLIFATKLL
 CYP705A6 59 SPLTHKSLQKLS SKYGH-----LLHLRIFNVP---VIIVSSA--SVAYEIFRAHD VNVSSRGV---AAIDESLWFGSSGIITAPYGDYWKFMKKLIATKLL
 CYP705A33 59 SSLSHKSLQKLS SKYGP-----LLHLRIFNVP---IILVSSA--SVADEVFR IHDMN ISSRGA---AAIDESLWFGSSGVVYAPYGDYLFVVKLIATKLL
 CYP705A3 58 SVLTHKSLQKLS SKYGP-----LLLIRIFYVP---IILVSSS--SMAYEIFKAHD VNVSSRGI---IALDESLMFGASGILNAPYGDYWKFMKKLMATKLL
 CYP705A22 60 STLTHKSLQKLS SRYGP-----LLYLRIFNVP---IILVSSA--SVAYEIFRTQD VNISSRGV---TAVDES LWFVSGSSFTAPYGDYWKFMKKL TVMKLL
 CYP705A8 57 SLFMHRSLOKLS SKYGP-----LLYLHVFNVP---ILLVSSP--SIAYEIFRAQD VNVSTRDF---PTNEGSLWFGSFSFITAPYGEYWKFMKKLIVTKLL
 CYP705A9 53 SLFMHRSLOKLS SKYGP-----LLYLHVFNVP---ILLVSSP--SIAYEIFRTQD VNVSTRDF---PTNEGSLWFGSFGFTAPS-----
 CYP705A25 61 SVPCYKSFQKLS SKYGP-----FLHLRAFNI P---IVLVSSG--SMANEVLR IQDLNFASRDSGQTPIMEKSLWFGSFGFVSVPYGDYWRFMKKLLLVKLL
 CYP705A27 61 SVPCHKSFQKLS SKYGP-----LLHLRAFNI P---IIVVSSG--SMANEVLR IQDLNFATRQREVSIMEKSLWFGSFGFVSAPYGDYWRFMKKLLVTNLF
 CYP712A1 58 GKVLPVSFQSLAHKYGP-----LMEIRLCA SK---CVVWSSS--SVAREIFKQE LNFSSRPE---FGSAEYFKYRGSRVFLAQYGDYWRFMKKL CMTKLL
 CYP712A2 55 RSSLPRSLQALAH TYGP-----LMTIRLCSLR---VLVVSDS--DTAKLILKTHD PDFASKFV---FGPRQFNVYKGEFFNAPYGSYWRFMKKL CMTKLF
 CYP93D1 51 GPIAHQALHKL SRIYGP-----LMLYLFCSIP---NLI VSSA--EMANEILKSNELN FLNRPT---MQNVDYLYTYSADFFSAPYGLHWKFMKR ICMVELF
 CYP81D6 67 ---LHRTFLSFSQSLGG---APIFCLRLGNRL---TVVWSSY--SIABECFTKNDIVFANRPE---LILGKHIEYNSTTMTSAPYGDHWRNLRR IATLEIF
 CYP81D7 52 ---LHRTFLSFSQSLGD---APIFSLRLGNHL---TVVWSSY--SIABECFTKNDIVLANRPK---FILGKHIEYNFTTMTSAPYGDHWRNLRR IGTLEIF
 CYP81D11 60 ---LHRRFLSLSLSESLNN---AKIFSLSLGSRL---V FVVSSH--AVABECFTKNDVLANRPE---FLVGKHIGYNSTTMVGAAYGDSWRNLRR IGTIEIF
 CYP81D2 51 ---LHRVFLSVSOSLGD---APIISLRLGNRL---L FVVSSH--SIABECFTKNDVILANRQT---TISTKHSYGNSTVVSASYSEHWRNLRR IGALEIF
 CYP81D3 51 ---LHRVFLSVSESLGD---APIISLRLGNRL---V FVVSSH--SIABECFTKNDVLAN-RF---NLASKHSYGCTTVVTASYGDHWRNLRR IGAVEIF
 CYP81D8 51 ---LHRTFLSLSOSLNN---APIFSLRLGNRL---V FVNSSH--SIABECFTKNDVLANRPN---FILAKHVAYDYTTMIAASYGDHWRNLRR IGSVEIF
 CYP81D4 52 ---LHRTFLSLSKSI CN---APVFHLRLGNRL---VYVISSR--SIABECFTKNDVLANRPK---FTISKHLGYNATYLLSASYGDHWRNLRR IAAVEIF
 CYP81D5 51 ---VHRTFHSLSKSLCN---APIFHLRLGNRL---VYVISSH--SIABECFTKNDVLANRPN---IIMAKHVGYNFNTMIAASYGDHWRNLRR IAAVEIF

CYP81D1 54 ---IHRILRSFSETLDHNDGGVMSLRLGSRL---VYVVS SHKVAAEFCFGKNDVLANRPO---VIIGKHVGYNNANMIAAPYGDHWRNLRRRCTIEIF
 CYP81F3 51 ---VHRLFHRLSKTHGP-----IFSLQFGSRR---AVVIS SSSSLATQCFTGQNDIILSNRPC---FLTAKYVAYNYTTVGTAPYGDHWRNLRRICSLEIL
 CYP81F4 51 ---VHRLFHRLSNIHGP-----IFYLRLGSRR---AVVIS SSSSLARECFTGQNDVIVSNRPR---FLTSTKYIAYNYTTIATTSYGDHWRNLRRICSLEIV
 CYP81F2 50 ---VHRLFRRFAEKYGD-----IFSLRYGSRQ---VVVIS SLPVRESFTGQNDVILTNRPH---FLTAKYVAYDYTTIGTAAAYGDHWRNLRRICSLEIL
 CYP81F1 48 ---IHRLLQRYSNQYGP-----IFSLRFSGSRR---VVVIT SPSLAQESFTGQNDIVLSSRPL---QLTAKYVVYNHTTVGTAPYGDHWRNLRRMCSQEIL
 CYP81H1 51 L--LHRILSHLSHSLG-----PVFSLRLGSRL---AVLIS SPTAAEECFITKNDIVLANRPR---FIMGKYVAYDYTSMVTAPYGDHWRNLRRITALEVF
 CYP81G1 62 ---VHRSLRDLSRNLGID----VFILRLGSRR---AVVVT SASAAEEFLSQQNDVVFANRPL---ATLTTEYMGYNNTLVSTAPYGEHWRNLRRFCAVDIL
 CYP81K1 52 P--LPQALRHLSNRYGP-----VLFILKFCRN---VLTLS SP-DSIEECFTNHDLANRPO---TITSDHF SYGYKNFGFAPYGDWRNLRRISTLEVF
 CYP81K2 49 P--LPQALHHLSSNYGP-----VLFILKFCRE---VLILS SP-DSIEECFTNHDLALANRPK---TITSDHF SYGYKNFGFAPYGDWRNLRRISTLEVF
 CYP82C3 52 EQLLYRILGKMADHYGP-----AMSLRLGSSE---TFVGS SF-EVAKDCFTVNDKALASLMT---AAAKHMG-----YVFWLEMRKIAMIIELL
 CYP82C4 52 EQLLYRILGKMADHYGP-----AMSLQLGSNE---AFVVS SF-EVAKDCFTVNDKALASRPM---TAAAKHMGYNFAVFGFAPYSAFWREMRKIATIEILL
 CYP82C2 52 EQLLYRILGKMADQYGP-----AMSLRLGSSE---TFVVS SF-EVAKDCFTVNDKALASRPI---TAAAKHMGYDCAVFGFAPYSAFWREMRKIATLEILL
 CYP82F1 54 N-PTHVTFGAMADVYGP-----VFMALGSIK---VMIINSK-EVAKETIYTVHDKLLE-RPE---LTASKLLGYNDSFLTFSPLYWRETRKIIVAVSELF
 CYP82G1 59 K-LLCKKLAAMSQKHGP-----IFSLKLGFRY---LVVAS DP-KTVKDCFTTNDLATATRPN---IAFGRYVGYNNASLTLAPYGDYWRNLRRKIVTVHLLF
 CYP71A12 51 LH-PHRSLHSLSLRYGP-----LMLLHFGRVP---ILVVS SGEAAQEVLKTHDLKFNRP---SKAVHGLMNGGRDVVFGPYGEYWRQMSVCIILNLL
 CYP71A13 51 LH-PHRSLRSLSLRYGP-----LMLLHFGRVP---ILVVS SGEAAQEVLKTHDLKFNRP---SKAVHGLMNGGRDVVFGPYGEYWRQMSVCIILNLL
 CYP71A18 51 LH-PHRSLHSLSLRYGP-----LMLLHFGRVP---ILVVS SGEAAHEILKTHDLKFNRP---SKAVHGLMNGGRDVVFGPYGEYWRQMSVCIILNLL
 CYP71A14 51 LH-PHRSLRSLSHRYGP-----LMLLHFGRVP---VLVVS SDVAHDLMKTHDLKVANRPO---LKVVEKIFNGGEMVFSPLYGEYWRQIKSVCIVNLL
 CYP71A15 50 LH-PHRSLRSLSHRYGP-----LMLLHFGRVP---ILVVS SDVAHDLMKTHDLKVANRPR---LKVIEIETILNGGREVVFSPLYGEYWRQIKTVCVVHLL
 CYP71A19 51 LN-THRSLRSLSLRYGP-----LMLLHFGRTP---VLIVS SADVAHDILKTYDVICANRPK---TKVIDKILRGGRDVAFAFYGEYWRQMSVICIQNLL
 CYP71A20 48 LH-THRSLRSLSLRYGP-----LMLLHFGRTP---VLIVS SADVAHDVMKTHDLVCANRPK---TKVVDKILSGGRDVAFAFYGEYWRQMSVICIQNLL
 CYP71A27 51 PN-PHRYLHSLSLRYGP-----LMLLHFGRVP---VLVVS CPDVTNDIMKTHDLKFNRP---SKAINIFMEGGRDIFGPLYGEDWKSMSKSLGVVHLL
 CYP71A16 50 LH-PHRALSSLSARHGP-----LMLLRFGRVP---VLIVS SADVAHDVMKTHDLKFNRP---TKSAHKISNGGRDLVFAFYGEYWRNVKSLCTIHL
 CYP71A28 49 LH-PHRSFRLSLRLWS-----AHAPSLRSCPYPFRFSKYISS SDVAHDVMKTHDLKFNRP---TKAVDIIINGGRDVAFSSYGEYWRQMSLCTVHLL
 CYP71A21 50 HH-PHRSLCSLSHRYGP-----LMLLHLGRVP---VLVVS SADVARDILKTHDRVFASRPR---SKLFEKLFYDGRDVAFAFYGEYWRQIKSVCVLRLL
 CYP71A22 50 RH-PHRSLCSLSNRYGP-----LMLLRFGLVP---VLVVS SADVARDILKTYDRVFASRPR---SKIFEKIFYEARDVALAPYGEYWRQMSVCLHLL
 CYP71A24 49 RH-PHRSLCSLSHRYGP-----LMLLHFGSVP---VLVVS ADAAKDVLKTHDRVFASRPR---SKIFDKIFYNGRDVALAPYGEYWRQMSVCLHLL
 CYP71A26 49 RH-PHRSLCSLSHRYGP-----LMLLHFGRVP---VLVVS SAELARDVLKTHDRVFASRPR---SKIFEKLLYDKHDVASAPYGEYWRQMSVCLHLL
 CYP71A25 48 RH-THRSLCDLSRRYGP-----LMLLHLGRVP---VLIVS SADMAQEVLKTHDQAFANRPR---SKLSQKLLYNNRDVASAPYGEYWRQMSVCIHLL
 CYP71A23 47 QH-PHRSLCYLSHRYGP-----LMLLHFGSVP---VIVAS TAAEAARDVLKTHDRVFASRPR---SKIFEKLLYKSRNMASAPYGEYWRQMSVSVLHLL
 CYP71B36 49 EL-PHOSLWRLSKKYGH-----VMLLKFGSIP---TVVVS SSETAKQVLKIHDLHCCSRPS---LAGPRALS YNYLDIAFSPFDDYWKELRRICVQELF
 CYP71B37 49 EL-PHOSLWLSLKKYGP-----VMLLKFGSIP---TVVVS SSETAKQALKIHDLHCCSRPS---LAGPRALS YNYLDIVFSPFDDYWKELRRICVQELF
 CYP71B9 49 EL-PHOSLWLSLKKYGP-----VMLLKLGSVP---TVVVS SSETAKQVLKIHDLHCCSRPS---LA--EELS YNYLDIAFSPFDDYWKELRRICVQELF
 CYP71B10 48 EL-PHOSLCKLSKKYGP-----VMLLKLGRVP---TVIVS TPEAKQVLKDYDLHCCSRPS---LEGTRKLS YNYLDIAFSRFDDYWKELRKLCSQELF
 CYP71B26 49 EL-QHOSLWKL SKKYGP-----VMLLKLCKVP---TLILS SSETAKQALRDYDLHCCSRPS---LAGGRELS YNNLDMSSSPYNEYWKELRKLCSQELF
 CYP71B33 49 EL-PHOSLWKL SKKYGP-----VMLLNLCKVP---TVILS SSETAKQALRDYDLHCCSRPS---LAGGRELS YNNRDISFSPYNDYWKELRKLCTQELF
 CYP71B34 49 EL-PHOSLWKL SKKYGP-----VMLLKLGRVP---TVIVS SSETAKQALKIHDLHCCSRPG---FAGARELS YNYLDIAFSPYDDYWKELRKLAVQELF
 CYP71B35 48 EL-PHOTLWKL SKKYGP-----VMHMLGRVP---TVVVS SSDTARQVLRVHDLHCCSRPS---LSGPRELS YNYLDIAFSPYDDYWKELRKLAVQELF
 CYP71B11 47 SK-PHSSMFKLSEKYGP-----LMLRFGSVS---TVVVS TPETVKEVLKTFDAECCSRPY---MTYPARLTYNLKDIGFCPYTKYWRVVRKMTVVELY
 CYP71B12 47 SK-PHRSMFKLSETYGP-----LMSLKFGSVS---TVVVS TPETVKEVLKTFDVECCSRPN---MTYPARVTYNLKDLCFSPYSKYWRVVRKMTVVELY
 CYP71B14 47 SK-PQRSLFKLSEKYGS-----LMSLKFGNVS---AVVVS TPETVKDVKTFDAECCSRPY---MTYPARVTYNFNDLAFSPYSKYWRVVRKMTVIBLY
 CYP71B13 47 SK-PHRSMFKLSEKYGP-----LVYLKLGKVP---SVVVS TPETVKDVKTFDKDCCSRPF---LTYPARISYNLKDLAFAPYSKYWKA VRKMTVVELY
 CYP71B6 54 SL-PHRSLRDL SLKYGP-----VITVYLGSRV---TVVVS SPETAEEVLKLDSECCTRPK---LSITKSFFYDGLGLGFTKWGDYVYRDRKLCVLELF
 CYP71B28 46 EL-HPRNSRNLSEKYGP-----IVFLRYCFVP---VVVIS SKEAAEEVLKTHDLECCSRPE---TVGTRALS YNFKDIGFAPYGEDWRTMRKLSVLELF
 CYP71B29 46 EL-PPR---NLNHKYGP-----VILLRF CFVP---LVVVS SKEAAEEVLKIHDLECCSRPE---TAGTRKLS YNFKDIGFAPYGEFWKAMRKL SVLELF

CYP71B7 50 GL-PHTCFRNL~~SQKFGP~~-----VMLLHF~~GFVP~~-----VVVLS~~SKEGAEAEALKTDLECCSRPE~~---TVATRM~~LSYNFKDIGFAPYGE~~E~~W~~KALR~~KL~~V~~V~~MELL
 CYP71B15 46 TL-HPRNRRNL~~AE MYGP~~-----VALLQY~~GFVP~~-----VVAT~~SSKEAAAEVLKINDLECCSRPE~~---AAGMRAT~~FYNFKDIGMAPFG~~DE~~W~~SLMR~~KL~~SV~~VE~~LF
 CYP71B23 49 GL-PHKCLLNL~~WKIHGP~~-----VMQLQL~~GYVP~~-----LVVLS~~SNQAAAEVLKTHDLDCCSRPE~~---TIASKT~~TSYNFKDIGFAPYGE~~E~~W~~RALR~~KL~~LAV~~IE~~LF
 CYP71B16 48 EL-PHRSFQRL~~AE RTGH~~-----VMLLHF~~GFVP~~-----VTVLS~~SREAAAEVLRTHDLKCCTRPK~~---LVGSRL~~ISRGFKDISFTPYGE~~E~~W~~RERR~~R~~FLV~~RE~~LF
 CYP71B17 48 EL-PHRSFRR~~LAERTGH~~-----VMLLHL~~GFVP~~-----VTVLS~~SREAAAEVLRTHDLKCCSRPN~~---LVGSRL~~ISRGFKDLNFTPYGE~~E~~W~~KERR~~R~~FLV~~GE~~LF
 CYP71B18 48 EL-PHRSLQRL~~AEKTGD~~-----VMLLHL~~GFVP~~-----VTVLS~~SKEAAAEVLRTHDLNCCSRPN~~---LVGTRLL~~SRGFKDVGFTPYGE~~E~~W~~KERR~~R~~FLV~~RE~~FF
 CYP71B19 48 EL-PHRSLQHL~~AE RYGP~~-----VMLLHF~~GFVP~~-----ITVVS~~SREAAAEVLRTHDLKCCSRPK~~---LVGTRLL~~SRDFKDIGFTPYG~~NE~~W~~KARR~~R~~FAL~~RE~~LF
 CYP71B20 48 EL-PHRSLQHL~~AE RYGP~~-----VMLLHF~~GFVP~~-----VIVVS~~SREAAAEVLRTHDLKCCSRPK~~---LVGTRLL~~SRNFKDVCFTPYG~~NE~~W~~KARR~~R~~FAL~~RE~~LF
 CYP71B2 49 GL-PHRCFHKL~~SIKYGP~~-----LVFLRL~~GSVP~~-----VVVLS~~SSEAAAEAVLKTNDLECCSRPK~~---TVGSGKL~~SYGFKDITFAPYGE~~Y~~W~~RE~~V~~RKLAV~~IE~~LF
 CYP71B27 49 GL-PHRCYHKL~~SIKYGP~~-----VILLHL~~GFVP~~-----VVVLS~~LSEAAAEAVLKTNDLECCSRPK~~---TVGTGKL~~SYGFKDISFVPYSE~~Y~~W~~RE~~M~~RKLAV~~TE~~LF
 CYP71B21 46 KS-LHRSFYKL~~SQBYGP~~-----VMFLRF~~GVVP~~-----VVVFS~~TKEAAAEVLKTHDLETCTRPK~~---LSATGL~~FTYNFKDIGFAQYGED~~WRE~~M~~RKLAM~~LE~~LF
 CYP71B22 46 KS-LHRSFHKL~~SQNYGP~~-----VMFLHF~~GVVP~~-----VVVVS~~TREAAAEVLKTHDLETCTRPK~~---LTATKLF~~SYNYKDIGFAQYGED~~WRE~~M~~RKLAM~~LE~~LF
 CYP71B38 46 KL-LYKSFHKL~~SQBYGP~~-----VLLRL~~GVVP~~-----VIVVS~~SKEGAEAEVLKTHDLETCTRPK~~---TAATGL~~FTYNFKDIGFAPFG~~DD~~W~~RE~~M~~RKIT~~T~~LE~~LF~~
 CYP71B5 46 RF-LHKS~~LHKL~~~~SQBYGP~~-----VMLLHF~~GVVP~~-----VIVVS~~SKEGAEAEVLKTHDLETCSRPK~~---TVGSGL~~FTYNFKDIGFAPYGE~~NE~~W~~RE~~M~~RKIAV~~SE~~LF
 CYP71B31 46 RL-LHSSL~~HKL~~~~SLEHGP~~-----VMLVRW~~GVVP~~-----MAVFS~~SNEAAAEVLKTHDLETCSRPK~~---LVANGL~~FTHGYKDIGFTQYGE~~E~~W~~RE~~M~~KK~~LV~~GL~~LE~~LF
 CYP71B8 48 RL-LHSSF~~HKL~~~~SLEHGP~~-----VMLLRF~~GVVP~~-----MVVLS~~SKEAAAEVLKTHDLETCSRPK~~---LVANGL~~FTRNFKDIAFAQYGED~~WRE~~M~~KK~~LV~~GL~~LE~~LF
 CYP71B32 47 RS-LH~~SVF~~~~HKL~~~~SLXYGP~~-----VMLLRF~~GVVP~~-----VVVFS~~SKEAAAEVLKTHDLDCTRPK~~---LVANGL~~F SRNFKDIGFTQYGED~~WRE~~M~~KK~~LV~~GL~~LE~~LF
 CYP71B24 44 GL-FHKCLHDL~~SKKHGP~~-----VLLRL~~CFID~~-----MVVLS~~SSEAAAEAVLKVHDLCCTRPI~~---TNVTSK~~LWRDQDIGLAPYGE~~S~~RE~~LR~~KL~~S~~FL~~K~~FF~~
 CYP71B3 47 GL-FHRC~~LHDL~~~~SKKHGP~~-----VLLRL~~CFID~~-----MVVLS~~SQETTEEVLKVHDLCCTRPK~~---TNASSK~~F SRDGKIDIAFAPYGE~~VS~~RE~~LR~~KL~~S~~L~~IN~~FF~~
 CYP71B25 50 GM-VHRC~~LHDL~~~~SKKHGP~~-----VMHLQL~~GFVP~~-----LVLS~~SSEAAAEAVLKTNDLECCSRPN~~---TNAARV~~F SRNKNIGLGAYSD~~E~~W~~RE~~L~~RKVAV~~RE~~YF
 CYP71B4 50 GL-LHKCLHDL~~SKKHGP~~-----VMHLRL~~GFAP~~-----MVVLS~~SSEAAAEAVLKTNDLECCSRPI~~---TMASRV~~F SRNGKIDIGFVYGED~~WRE~~L~~RKLSV~~RE~~FF
 CYP83A1 48 KLN~~PQR~~~~FFAG~~~~WAKKYGP~~-----ILSYR~~IGSRT~~-----MVVLS~~SAAELAKEILLKTDVNFADRP~~---HRGHEF~~ISYGRDMALNHYP~~PY~~RE~~IR~~K~~MG~~M~~NH~~LF~~
 CYP83B1 47 KFN~~PQH~~~~FL~~~~FRL~~~~SKLYGP~~-----IFTMK~~IGRR~~-----LAVLS~~SAAELAKEILLKTDLNFTARPL~~---LKGQ~~TMSYQRELGFQY~~TAY~~RE~~M~~R~~K~~M~~CV~~N~~LF
 CYP84A1 58 QL-THR~~GLAN~~~~LAKKYGP~~-----LCHLR~~MGLH~~-----MYAV~~SPEVARQVLQVQDSVFSNRPA~~---TIAISY~~LYDRADMAFAHYGP~~F~~WR~~QR~~M~~K~~V~~CV~~M~~K~~V~~F
 CYP84A4 50 QF-NHR~~GLAKL~~~~SR IYGP~~-----LLHLRL~~GFSH~~-----IFVVS~~SPDIARQVLQVQDVHVSNRPT~~---TIAIRY~~LYGGSDLAF~~CNY~~GP~~F~~WR~~RR~~M~~K~~LY~~V~~M~~LF
 CYP706A1 69 SDV~~LHTQFQAL~~~~TLKHGP~~-----LMKIHL~~GSKL~~-----AIVVS~~SPDMAREVLKTHDITFANHDL~~---EVGKIN~~TYGGEDILWSPYGT~~H~~WR~~RL~~RK~~L~~CV~~M~~K~~MF
 CYP706A2 71 SDV~~LHTQFQAL~~~~TLKYGP~~-----LMKIHL~~GSKL~~-----AIVVS~~SPDMAREVLKTHDITFANHDL~~---EVGKIN~~TYGGEDILWSPYGT~~H~~WR~~RL~~RK~~L~~CV~~M~~K~~MF
 CYP706A3 64 P-ELHTY~~FQGLAKKHGP~~-----IFKLWL~~GAKL~~-----TIVV~~TSSEVAQELKTDNDFANHDVP~~---AVGPV~~NTYGGTEI~~W~~SPYGP~~PK~~WR~~ML~~RK~~L~~CV~~N~~R~~IL
 CYP706A7 64 P-ELHTY~~FHSLAQKHGP~~-----VFKLWL~~GAKL~~-----TIVV~~TSSEATRDLRTNDVIFANDDVP~~---VAGSL~~STYGGVDIVWSPYGP~~E~~W~~P~~M~~LR~~K~~I~~C~~IN~~K~~ML
 CYP706A5 62 P-DLHTY~~FTKLAQSHGP~~-----IFKLNL~~GSKL~~-----TVV~~VNSPSLASEILKQDINFSNHDVP~~---LTARAV~~TYGGDLVWLPYGA~~E~~W~~R~~M~~LR~~K~~V~~CA~~AK~~LF~~
 CYP706A6 60 P-DLHTY~~FTKLAESYGP~~-----IFKLNL~~GSKL~~-----TVV~~VNTPSLAREILKQDINFSNHDVP~~---LTARAV~~TYGGDLVWLPYGA~~E~~W~~R~~M~~LR~~K~~V~~CV~~L~~K~~LL
 CYP706A4 60 P-DLHTY~~FANLAQSHGP~~-----IFKLNL~~GSKL~~-----TIVV~~NPSLAREILKQDINFSNHDVP~~---LTGRAAT~~YGGIDIVWTPYGA~~E~~W~~R~~QL~~R~~K~~I~~CV~~L~~K~~LL
 CYP79B2 72 MLK-SR~~PVFR~~~~WLHSIMKQLNTE~~~~IACVKLGNTH~~-----VITVT~~CPKIAREILKQDALFASRPL~~---TYAQ~~ILSNGYKTCVITPF~~GD~~QFKM~~R~~K~~V~~VM~~T~~BLV~~
 CYP79B3 74 MLK-NR~~PVFR~~~~WLHSLMKELNTE~~~~IACVRLGNTH~~-----VIPVT~~SPRIAREILKQDALFASRPL~~---TYAQ~~ILSNGYKTCVITPF~~GE~~QFKM~~R~~K~~V~~VM~~T~~BLV~~
 CYP79A2 50 ILGR~~NKPVFR~~~~WLHSLMKELNTE~~~~IACIRLANTH~~-----VIPVT~~SPRIAREILKQDALFASRPL~~---TMGTEY~~CSRGYLTVAVEPQGE~~Q~~W~~K~~M~~R~~R~~V~~V~~ASH~~V~~T
 CYP79C1 56 MLK-NR~~PTS~~~~KWIVRVMNDMKTDIACFR~~~~GRVH~~-----VIVIT~~SDVIAREVREKDAVFADRP~~---SYSAEY~~ISGGYNGVVFDEYGE~~R~~Q~~M~~K~~M~~K~~V~~M~~S~~SE~~LM
 CYP79C2 53 MII-NR~~PAHLWIHRVMEELQTDIACYR~~~~FARFH~~-----VITVT~~S SKIAREVLRKDEVLADRSE~~---SYASHL~~ISHGYKNISFSSYGE~~NE~~W~~K~~L~~V~~K~~V~~M~~T~~TK~~LM
 CYP79F1 61 LFM-TR~~PRSKYFRLAMKELKTDIACFN~~~~FAGIR~~-----AITIN~~SDEIAREAFRERDADLADRPO~~---LFIMET~~IGDNYKSMGISPYGE~~Q~~F~~M~~K~~M~~K~~R~~V~~IT~~TE~~IM
 CYP79F2 60 LIM-TR~~PRSKYFHLAMKELKTDIACFN~~~~FAGTH~~-----TITIN~~SDEIAREAFRERDADLADRPO~~---LSIVES~~IGDNYKTMGTSSYGE~~H~~F~~M~~K~~M~~K~~V~~IT~~TE~~IM~~
 CYP703A2 48 LGP----LPHR~~DASL~~~~CDKYGP~~LVYLRL~~GNVD~~-----AITT~~NDPDTIREILLRQDDVFSRPK~~---TLAAV~~HLAGCGDVALAPMCPH~~W~~K~~R~~M~~R~~IC~~ME~~HL~~L
 CYP98A8 44 KPLW~~THSFSEWSETYGP~~-----IISVW~~IGSOLT~~-----VVVSS~~SDLARQVLRDKDHQLSNRHR~~-----IARMT~~QTGTDLVWSDYSPHY~~V~~K~~L~~R~~K~~L~~CT~~LE~~LF
 CYP98A9 44 KPLW~~TQSFSEWSQTYGP~~-----IISVW~~LGSOLA~~-----VVVSS~~SDLAKQVLRDKDYQLCNRHR~~-----TARMT~~QNGSDLIWSDYGAHY~~V~~K~~M~~R~~K~~L~~CT~~LE~~LF
 CYP98A3 44 KPV~~RFR~~~~CY~~~~EWAQSYGP~~-----IISVW~~IGSILN~~-----VVVSS~~AELAKEVLKEHQKLADRHRN~~---RSTEA~~F SRNGQDLIWA~~DY~~GP~~HY~~V~~K~~V~~R~~K~~V~~CT~~LE~~LF~~
 CYP78A10 82 NAL~~THR~~~~ILAN~~~~ADTCKAKA~~-----LMAF~~SVGSTR~~-----FVIT~~SEPETAKEILLSSAFADRPVKES~~-----AYELL~~FDRAMGFAPYGE~~Y~~WR~~NL~~RR~~IS~~ST~~HL~~LF~~
 CYP78A5 66 GSN~~PHR~~~~VLAALAKRFKASP~~-----LMAF~~SVGFSR~~-----FVLS~~SEPETAKEILLSSAFADRPVKES~~-----AYELL~~FHRAMGFAPYGE~~Y~~WR~~NL~~RR~~IS~~ST~~HL~~LF~~

CYP78A6	88	STLAHRR	IADAAEK	CAKR---	LMAFSL	GETR---	VIVTCNPD	VAKEI	LN	NSPVF	FADRPVKES	-----	AYSLMFNRAI	GFAPHC	VYWR	TLRR	IASNHLF	
CYP78A9	84	NTLAHRC	IAATAEK	FRAER---	LMAFSL	GETR---	VIVTCNPD	VAKEI	LN	NSPVF	FADRPVKES	-----	AYSLMFNRAI	GFAPY	CVYWR	TLRK	IASNHLF	
CYP78A8	91	SHVAHQ	IASVAEMS	NAKR---	LMAFSL	GDTK---	VVVTCHPA	VAKEI	LN	NSSVF	FADRPVDET	-----	AYGLMFNRAM	GFAPNG	TYWR	TLRRL	IGSNHLF	
CYP78A7	87	RGLAHR	TLAAMA	WSRANTE---	IMAFSL	GSTP---	VIVASEP	NIARE	IL	MSPHF	FADRPVKQS	-----	AKSLMFSRAI	GFAPNG	TYWR	MLRR	IASTHLF	
CYP77A4	61	GKPF	FEYAED	LKKTYGP	----	IFTLR	MCGTRT	----	MI	ILSDAT	LVEAL	IQRGAL	FASRP	PAE--	NPTR	TIF	SCNKFTVNAKYGPVWRSLRRNMVQNML	
CYP77A6	63	GKQF	YEYVDD	VRKKYGP	----	IYTLR	MGSRT	----	MI	IISDSAL	VHDVLI	QRGPM	FATRP	PTE--	NPTR	TIF	SSNTFTVNASAYGPVWRSLRRNMVQNML	
CYP77A7	66	GKQF	FEYVED	LVKIYGP	----	ILLTLR	LCGTRT	----	MI	IISDASLA	HEAL	IERGAQ	FATRP	PVE--	TPTR	KIF	SSSEITVHSAMYGPVWRSLRRNMVQNML	
CYP77A9	58	GKQF	FEYVDEM	RNIYGP	----	IFTL	KMCI	IRT---	MI	IISDAN	LAHQAL	IERGAQ	FATRP	PAE--	TPTR	KIF	SSSDITVHSAMYGPVWRSLRRNMVQNML	
CYP77B1	55	RRHF	VFLMRD	LRRKKYGP	----	IFTM	QMCQRT	----	MI	IITDEKL	IHEAL	VQRGP	TFASRP	PPD--	SPIR	LMF	SVGKCAINSAEYGSILWRITLRRNFVTEILV	
CYP89A4	52	LGGL	LNNYLR	SVHHRLGP	----	IITLR	ITSRP	----	AI	FVADRSL	AHQAL	VLNGAV	FADRP	PA--	APIS	KI	ISSNQHNISSSLYGATWRLLRRNLTSEIL	
CYP89A5	52	LGGL	LNNYLR	SVHHRLGP	----	IITLR	ITSRP	----	SI	FVADRSL	AHQAL	VLNGAV	FADRP	PA--	APIS	KI	ISSNQHNISSSLYGATWRLLRRNLTSEIL	
CYP89A6	53	LGGL	LDNYLR	SVHHHLGP	----	IITLR	ITSRP	----	AI	FVTDRSL	AHQAL	VLNGAV	FADRP	PA--	ESIS	KI	ISSNQHNISSSLYGATWRLLRRNLTSEIL	
CYP89A7	52	LGGF	NNYVRS	VHHRLGP	----	IITLR	ITSRP	----	AI	FVADGSL	AHQAL	VLNGAV	FADRP	PA--	APIS	KI	ILSNQHTITSCLYGVWRLLRRNIT-EIL	
CYP89A2	51	LGGLE	SYLR	SVHHRLGP	----	IVTLR	ITSRP	----	AI	FVADRSL	THEAL	VLNGG	PSMRT	VHH--	LPVI	SKIVD-EHN	ISSGSYGATWRLLRRNITSEIL	
CYP89A3	51	FDDF	YSYLRS	LHHRLGP	----	IISLR	IFSV	----	AI	FVSDRSL	AHKAL	VLNGAV	FSDR	PPA--	LP	TKI	ITSNQHTISSGSYGATWRLLRRNLTSEIL	
CYP89A9	52	FSD	FQGVLR	DLASRHGP	----	IITL	HVGS	KP---	SI	WVTDRSL	AHQAL	VQNGAV	FSDR	SLA--	LP	TKV	ITSNQHDIHSSVYGSILWRITLRRNLTSEIL	
CYP73A5	51	DDL	NHRNL	VYAKK	FD---	LFLLR	MQRN	----	LV	VVSSPDL	TKE	VLHTQ	GEF	GSRT	RN---	VV	FDI	FTGKGQDMVFTVYGEHWRKMRRIMTVPFF
CYP701A3	61	EKKP	HKTFT	TRWSEIYGP	----	IYSIK	MCSSS	----	LI	VLNST	ETAKE	AMVTR	FSS	SISTR	KL---	NAL	TVL	TCDKSMVATSDYDDFHKLVKRCLLNGILL
consensus	101

CYP76C2 144 SPQRIEATK--TLRENKVKELVSFMSESSER-----EEAVDISRATFITALNIISNLIIFSVDLGNYSN---KSGV-FQDTVIGVMEAVGNPDAANFF
 CYP76C4 144 SPQRTTEATK--ALRMKKVQELVSFMNESSER-----KEAVDISRASYYTTLVNIISNLIIFSVDLGSYDSK---KSNE-FQDTVIGAMEAAGKPDAAANYF
 CYP76C1 144 SPQRIEATK--ALRMNKVKELVSFISESSDR-----EESVDISRVAFITTLNIISNLIIFSVDLGSYNAK---ASINGVQDTVISVMDAAGTPDAANYF
 CYP76C5 145 SPQRIEATK--ALRMKKVQELVNFLSESSER-----GEAVDISRASFTVLTALNIISNLIIFSVDLGSYDSK---NSSAFQEMVIGYMESIGNPDVSNFF
 CYP76C6 144 SPQCIQATK--ALRMKKVQELVNFLSESCER-----EEAVDISHVSFVTALNIISNLIIFSVDLGSYDSK---NSSAFQEMVIGYQESIGNPDLANFF
 CYP76C3 135 SPQNLDAIQ--SLRMKVEELVSLVNEFRER-----GEAIDLARASFTVTFNLIISNALIFSVDLATYDSN---SSSYEFHNTVVHLTDIAGIPNVGDYF
 CYP76C7 138 STQRLEATS--AIRTRKVQELMNFVNKCCER-----REAVNISRASFITSLNIISNALFSTNLANFDDS---KTFHDFQNVVIRMMEISGKPNLADFF
 CYP76G1 142 VTRRLDAMS--DVRSRCVDQMLRFVVEGGQNG-----TKTIDVGRYFFLMAFNLIIGNLMFSRDLLDPDSK---RGSEFFYHTGK-VMEFAGKPNVADFF
 CYP75B1 138 SAKALEDFK--HVRQEEVGTLTRELVVRVGTK-----PVNLLGQLVNMVVALGREMICRRLFGADAD---HKADEFRSMVTEMMALAGVFNIGDFV
 CYP705A1 144 GPQPLVRSQ--DFRSEELERFYKRLFDKAMKK-----ESVMTHKEASRFVNNSLYKMCCTGRSFSVENN-----EVERIMELTADLGALSQKFF
 CYP705A24 146 GPQALERTR--GVRAAELERFHRKLLDKAMKK-----QSLKIGEEARILVNNITLKGMSLGSFSIENN-----DGTKVSEYSIKLADLSQMFC
 CYP705A12 145 RPHALELSK--GNRAEELRRFCLDLQKARKK-----ESVEIGKVALKLTNNIICRMSMGRSCSEKNG-----VAERARELVNKSFALSVKLF
 CYP705A13 149 GPQALEQSR--GARADELERFHANLLSKEMKS-----ETVEIAKEAIKLTNNISICKMIMGRGCLEENG-----EAERVRLVTEFTFALFKKLF
 CYP705A15 148 GPQALERSR--GFRADELDFYENLLDKAMKK-----ESVDICVEALKLSNNSICKMIMGRSCSEENG-----EAERVRLATQLDGLTKKIL
 CYP705A4 143 GPQAHEQSR--GVRADVLERFYGNLFDKAIKK-----QSVEICAEALKLSNNSICKMIMGRSCSEEE-----RFRALATELDVLTKKLF
 CYP705A16 150 GPHALERSR--KIRADELYRLYTNLLDKAMKK-----ESVEIGKEATMKTNNIICKMIMGRSCSEENG-----EAKIVRGLIAESFTLTKKFF
 CYP705A19 147 GPQALERSR--LIRTNELERFYINLLDKATKK-----ESVEIGKEAMKLSNNSICKMIMGRSCLEEKG-----EAERVRLGLIESFYLTKKFF
 CYP705A28 148 GPQALDRSR--KIRADELDRFYRNLLDKAMKK-----ESVEIGEEAAKLNNNIICKMIMGRSCSEKNG-----EAERVRLVIESLALSPKIF
 CYP705A30 148 GPQALERSR--KIRADELDRFYKTLDDKAMKK-----ESVEIGEEAAKLNNNIICKMIMGRSCSEENG-----EAEKFRHLVIESMALTQKIF
 CYP705A32 152 GPQALERSR--KIRADELDRFYRNLLDKAMKK-----ESVDIVEEAAKLNNNIICKMIMGRSCSEDNG-----EAERVRLVIEESTALTKQIF
 CYP705A2 141 GPQALERSR--RFREDELDRFYKTLDDKAMKK-----ESVEIVEEAAKLNNNIICKMIMGRSCSEETG-----EAERIRGLVTESMALTQKIF
 CYP705A5 145 GPQALQRSR--NIRADELERFYKTLDDKAMKK-----QTVIRNEAMKLTNNIICKMIMGRSCSEENG-----EAETVRLVTESEIFLTKKHF
 CYP705A23 148 GPQALQRSR--GIRADALERFYMNLLDKAMKK-----ESVEIGKETMCLIYDSICKMIMGRNFSEENG-----EAERVRLVTEESTALTKKIF
 CYP705A20 145 GPQALERSR--SIRADELERFYRSLLDKAMKK-----ESVEIGKEATKLSINSICRMSMGRSFSSEESG-----EAERVRLVTELDGLTKKVL
 CYP705A21 147 GPQALERSR--GIRADELERFHSSLLDKAVKK-----EIVEIGKEATKLSNNSLWRMSICRSFSEKNG-----EAERVRLVTELDGLTKKVL
 CYP705A18 149 RPQVLENSR--GVRAEELKRFYRLLDKARKN-----ENIEISKEASAMLMNNIICRMSMGRSFSSEENG-----EAERVRLVGESEYALVKKIF
 CYP705A6 147 RPQSLESSR--GIRGEELTRFYNSLLDKARMT-----ESVEISTEAMKLVNNTICRMSMGRSFSSEENG-----EAEKIRGLVGESEYALTKKMF
 CYP705A33 147 RPQVLENSR--GLRAEELQRLYNRLLDKAKMN-----ENVEIGKEATMLMNNIFCRMSMGRSFSSEENG-----EAERVRLVAESYALAKKIF
 CYP705A3 146 RPQVLENSR--GVRVEELHRFYRSLLDKATKN-----ESVEIGKEAMKLMNNITLCKLIMGRSFSSEENG-----ESNRVRLVDETYALSEKIF
 CYP705A22 148 GPQAQEQSR--DIRADDIKRFYRNLDDKARKK-----ESVEIGKEAMLMNNITLCKMMSGRSFSSEENG-----ETEKLRLVTESEIGLMKKMF
 CYP705A8 145 GPQALERSQ--RIRANEVERFYSNLLDKAMKK-----ESVEIADEAMKLVNNTICKMIMGRSFSSEENG-----EAERIRGLVTKSDALLKFFL
 CYP705A9 125 --SGLKHSR--GHKKSQRSYYLNLDDKAVKK-----ESVEIAEAMKLVNNTICMIMGRSFSSEENG-----EAERVRLVTKTDALTKKFI
 CYP705A25 152 GSHSLEQTR--LLRGKELQTFRAMLFDKAAKN-----ETVDVGKEMMKTNNISICRMTMGRSFSSEENG-----EAEQVRLVTKSLSLTKKFL
 CYP705A27 151 GSHSLEQTR--LIREKELKTFRTMLFDKAAKK-----GTVDVGKEMMKTNNISICRMTMGRSFSSEENS-----EAEKVEDLVKSFSLVKKVL
 CYP712A1 146 AVPQLEKFA--DIREEBKLLKLVDSVAKCCREG-----LPCDLSQFIKYTNNTVCRMAMSTRCSGTDN-----EAEIIRLVKKSLELAGKIS
 CYP712A2 143 AGYQLDRFV--DIREEBTLALLSTLVERSUNG-----EACDLGLEFTALTTKLLSKMVMCKRQRNSN-----IPKEIRKIVSDIMACATRFG
 CYP93D1 139 SSRALDSFV--SVRSEELKLLIRVLKKAEEAE-----ESVNLGEQLKELTSLNIITRMMFRKMQSDSDGG---E---KSEEVIKMVVELNELAG--FF
 CYP81D6 154 ASHKLNGFL--SVRKDEIRQLLLRLSKNSRHG-----FAKVEMRHLLFELTINNVMFRMVACKRFYGEGETE-----QDEVAQQRHLMDEIVTSAGAG
 CYP81D7 139 SSHKLNGFL--SVRKDEIRHLLRLSKNSQHG-----FAKVEMRQLFYDLTINNILRMVACKRFYGEGETE-----QDEVARRVTQLIDEIVYRAGVG
 CYP81D11 147 SSLRLNSFV--SIRQDEIRRLIICLAKNSQHG-----FVKVEMKPLFMCLTINNIIRMVACKRFYGDGTE-----NDNEAKHVRQLIAEVVVSAGAG
 CYP81D2 138 SAHRLNSFS--SIRRDEIRRLIGRLLRNSSYG-----FTKVEMKSMFSDLTFNNIIRMLACKCYYGDKGE-----DDPEAKRVRTLIAEAMSSSGPG
 CYP81D3 137 SAHRLNSFS--SIRRDEIRHLIACLR--NSSLE-----FTKVEMKSMFSLTFNNIIRMLACKCYYGDAE-----DDPEAKRVRELIAEGMG--CGAG
 CYP81D8 138 SNHRLNSFL--SIRKDEIRRLVFRLLSRNFSQE-----FVKVDMKSMLSDLTFNNILRMVACKRYYGDVGE-----DDPEAKRVRLIADVACAGAG
 CYP81D4 139 STHRLNSFL--YIRKDEIRRLISHLSDSLHG-----FVEVEMKTLTLNLSANTTIRMLACKRYFGE-----DNDDAKLVKNLVSEAVTSAGAG
 CYP81D5 137 SSHRLSTFS--SIRKDEIRRLITHS--RDSLHG-----FVEVELKSLTLNLAFNNTIMMVACKRYYGDTGTE-----DNDEAKLVRELIAEIMAAAG--SG

CYP81D1 145 STHRLNCF--YVRTDEVRRLISRLSRLAGTK-----KTVVLEKPMMLDITFNNIMRMMTKKRYYGEEET-----DEEEAKRVRKLVADV GANTSSG
CYP81F3 137 SSNRLTNFL--HIRKDEIHRMLTRL SRDVNK-----EIELEPLLSDITFNNIVRMVTKKRYYGDEVH-----NEEEANVFKKLVADINDCSGAR
CYP81F4 137 SSKRLANFL--HIRKEEIQRMLTRL SRDARVG-----KEVELESILYDLTFNNIVRMVTKKIYYGDDVS-----DKEEAELFKKLFITITNSGAR
CYP81F2 136 SSNRLTGFL--SVRKDEIRRLTLTKLSREYDG-----RVVELEPLLADITFNNIVRMVTKRYYGQDVH-----NKEEANLFKKLVTDINDNSGAS
CYP81F1 134 SSHRLIIFQ--HIRKDEILRMLTRL SRYTQTSNES-NDFTHIELEPLLSDITFNNIVRMVTKKRYYGDDVN-----NKEEAELFKKLVYDIAMYSGAN
CYP81H1 138 STNRLNASA--EIRHDEVKMLLQKHLHDL SVER-----PAKVELRQLLTGLTLNVIIMRMMTKKRFFFEEDDG---G---KAGISLEFRELVAEILELSAAD
CYP81G1 149 STARLRDFS--DIRRDEV RAMIRKINVELVTS----GGSVRLKIQPFYGLTYNIIILMSMVACKREDEETK-----EVRKLIREVDFDFAGVN
CYP81K1 138 SSASLQKNS--SIRNEEVSNLCLII FRLSR-----DSRIVDLKYQFTLLTAHIMLRIVSCKRGVKKSDP-----ESEKRFLLDDFKLRFFSSMS-M
CYP81K2 135 SSVSLQKNS--SIRTEEVSNLCSSEFRFSGG-----NSCKVDLRYQFTLLTAHVMLRIVSCKNRGVNESDS-----ESETKFLDEFKSRFFSSLSM
CYP82C3 128 SNRALQMLN--NVRVSEISMVVKDLYSLWVKKGG--EPVMVDLKS WLEDMIANMIMRMVACKRYFVGGA---ESSEHTEEARQWRKGLAKFFHLVGFIF
CYP82C4 140 SNRRLQMLK--HVRVSEITMGVKDLYSLWFKNGGT--KPMVVDLKS WLEDMTLNMIVRMVACKRYFVGGS---VSEDTEEAMQCKKAIKFFHLIGIF
CYP82C2 140 SNRRLQMLK--HVRVSEISMVMQDLYSLWVKKGG--EPVMVDLKS WLEDMSLNMVMRMVACKRYFVGGS-S---LSPEDAEEARQCRKGVANFFHLVGFIF
CYP82F1 140 STSGVDMHM--VSRAREADLAFRALYVRWEKRGK--KEGVLVDMKQEFIDLTANI SLMMVSGKRYFGEN----PNCEVKEARRCGKLIREFLDYFALF
CYP82G1 146 SNHSIEMLG--HIRSSEVNTLIKHLKYGNG-----GTSIVKIDMLFEFLTFNIIILRKMVCKRIGFGEVN-----SDEWRYKEALKHCEYLAVIP
CYP71A12 138 TNKMVASFE--KIREBEELNEMIKKLEKASSS-----SSENLSELFVTLPSDVTSRVALGRKHS ED-----ETARDLKKRVRQIMELLGFFPIGDYV
CYP71A13 138 TNKMVASFE--KIREBEVNAMIEKLEKASSS-----SSENLSELFITLPSDVTSRVALGRKHS ED-----ETARDLKKRVRQIMELLGFFPIGEYV
CYP71A18 138 TNKMVASFE--KIREBEVNAMIEKLEKASSS-----SSENLSELFITLPSDVTSRVALGRKHS ED-----ETARDLKKRVRQIMELLGFFPIGEYV
CYP71A14 138 NKKKVQSFE--KIREBEELSEMMEVEKASSDS-----SPLNLSSELLTITLPSDVTSRVALGRKYSKE-----ESMSDFKIQMRKITELVGGFPVGEYI
CYP71A15 137 NKKMVQSFA--KIREBEERSVMMEKVEKASSDS-----SPLNLSKLLITLPSDVTSRVALGRKYSKE-----ASMSDFKNQVRKITELVGGFPVSEYI
CYP71A19 138 SNKMVRSYK--KIREDEIKLMIEKVENASSCSP-----SPVNLSQLFMTLNDIICRAALGRKYSSK-----EDGIDVENIVRAFSALVGEFFPIGEYI
CYP71A20 135 NNKMVRSYE--KIREBEIKRMIEKLEKASSSSP-----SPVNLSQLMTLNDIICRVALGRKYSGK-----KDGIDVENIVRTFAALLGFFPVGEYI
CYP71A27 138 NNKMVSFE--NIREBEIKVMTEKLEEASSS-----SSVNLKLLMTLNDIICRITLGRKYNEE-----EGGIDIKNLVMTSSEFFGKFFFGDFI
CYP71A16 137 SNKMVQSSE--KRREBEITLLMETLEEASLSS-----SSVNLKLLITNMVSDIMGKVVLCCKYSGE-----EGTIDVKTITKSFDAVGLSPVGEYI
CYP71A28 140 GRQMVSFE--KIREBEITSVIWKLEKQSSSS-----LPVNLSDLLNMSNDVICRIAVGRKYSRE-----ENTSDFENQLRKVMELLGAFPVGDYI
CYP71A21 137 SNKMVTSFR--NVRQBEISLMMEKIQKSSSLQ-----VNVSELLGSLTNDVISRVALGRKYS-----GETDSKELMKRLMMLMGEFVSGTYV
CYP71A22 137 TNKMVSFR--NVRQBEISLMMEKIQKSSSLQ-----VNLSELLGSLTNDVISRVALGRKYS-----DETDFKELMKRLTKLLGEFCVGTIV
CYP71A24 136 SNKMVSFR--DVRQBEISLMIEKIRISSSLR-----INLSEILVNLTNVVICRVALGRKYG-----GKTDFKDLMKRLTRLLGEFVSGSYV
CYP71A26 136 SNKMVSFR--EVREBEISLMMEKIRKSISLP-----VNLKILVSLTNDVICKVALGRKYG-----GETDFKELMERLNKLLGTFVSGSYV
CYP71A25 135 SNKMVSFR--DVRQBEITLMMAKIRKSSSLP-----FNVSKVLECLTNDVICRVALGRKYG-----GETDFKLLTDRLSELLGTFSIGSFV
CYP71A23 134 SNKMVSFR--DVRQBEITLMMETIRKSSSKP-----VNLKILSSLTNDVICRVALGRKYG-----VGTDFKELIDRLMRQLGTFITIGSYV
CYP71B36 136 SVKRVQSFQ--PIKDEEVKKLIDSVSESASQ-----TPVNLSEKFTSLTVRVTKATFCVNFQGT--V---LNSDRFEKLIHDTYFLFLGFSASDYF
CYP71B37 136 SPKQVHLIQ--PIREBEVKKLMNSFSESAAQ-----TPVNLSEKFLDLTVSVICKAAFLDFHTS--V---LNSDNFDKLIHDAFLFLGFSASDYF
CYP71B9 134 SAKRVHSIQ--PIKEBEVRKLVIVSATESASQ-----SPVNLSEKFLDLTVSVICKAAFLDFHTS--V---LNNDGFDKLIHDAFLFLGFSASDNFF
CYP71B10 135 CNKRINSIQ--PIKEAEMEKLIDSIAESASQ-----TLVNLSDTFLSLNVVICKAVFCVNFQGT--V---LNNDKFDQDLVHEALEMLGFSASDFF
CYP71B26 136 SANKIQSIQ--PIKDEEVKKVIDSIAESSLK-----NPVNLKFTFLALTTSVVCKAAFCVVFEGS--V---LNSDRFNKLVDRDTEMLGFSASDFI
CYP71B33 136 SAKNIHSTQ--HIKDEEVKKLIVSIAESASLK-----TPINLNKCLALTVSIVCRIFAVCVVFEGT--V---LNSDSFNKLVIREAFEMLGFSASDFI
CYP71B34 136 SSKQVHSIQ--PIKDEEVKKLIDSISESAAQ-----TPINLNKTLALTVSVVCRITAFVNFEGT--V---LNSERFNNIVREALEMLGFSASDFI
CYP71B35 135 STKQVHSIQ--PIKDEEVKKMIDSIAESASQ-----NPVNLNKKCLELTVSVVCRITAFVVFEGT--V---LNSDRFNKLVREALEMLGFSASADFI
CYP71B11 134 TAKRVQSFQ--HTRKEEVASLVDFITQAASLE-----KPVNLTNKKMLKLSGSVICRVVFGINLQGS--K---LEN-LYEEVIQGTMEVVGSFAAADYF
CYP71B12 134 TAKRVQSFQ--HTRKEEVAALVDFIKQAASLE-----KPVNLTNKKMLKLSGSVICRVVFGINLQGS--K---LEN-TYEEVIQGTVELVGSFAAADYF
CYP71B14 134 TAKRVKSFQ--NVRQBEVASFVDFIKQHASLE-----KTVNMQKLVKLSGSVICKVGFICISLEWS--K---LAN-TYEEVIQGTMEVVGRFAAADYF
CYP71B13 134 TAKRVKSFQ--NIREBEVASFVEFIKHSASLE-----EIVNLTNQLTVKLSGSVICRVVFGINLEGS--K---LEN-TYEEVIHGTMEVLGFSFAADYF
CYP71B6 141 SVKRANSFR--NIREBEELSRVNSFSDSASSG-----SSVDLTANLAKFVASFTORMAFGLSFQGS--G---MDNETFLELFTANRVIKGFFAADIF
CYP71B28 133 SSKKLQSFQ--YIREBEENDLCKVKKLSDLASRR-----SLVNLKTLTFLTVGSIVCRIFGFINLREC-EF---VDEDSIDDLVHKSEVIRNSIFSDFF
CYP71B29 130 TAKKHQYFR--SIREBEENDLLVKKLITELALTR-----SPVNLKTLTFLTVGSIVCRIFGFINLHEC-EF---IDENSISDLVDKSEILEMTSMFSDFF

CYP71B7 137 NTKKFQSF--YIREENDLLIKKLTESALKK-----SPVNLKKTFLTIVASIVCRLAFGVNIHKC-EF---VDEDNVADLVNKFEMLVAGVAFTDFF
CYP71B15 133 SVKKLQSF--YIIEENNLCVKKLSEFATRO-----SPVNLERAIFTLVGNIVCRIGYGINLYEC-DF---FEADRVDLVLKAEAVIRETVFSDF
CYP71B23 136 SLKKFNSFR--YIREENDLLVKKLSEASEKQ-----SPVNLKALFTLSASIVCRLAFGQNLHES-EF---IDEDSMEDLASRSEKIQAQFAFSNFF
CYP71B16 135 CFKKVQYFG--YIVEEENCNLLVKKLTESAVGR-----PPVDLSKSLFWLAASILFRVAFGQSFHDN-KF---IDEDKIDELIFETETAQASFTCSDF
CYP71B17 135 CSKKLQSF--YIKEVECNFLVKKLSESAVDQ-----SPVDLSKTLFWLAASILFRVAFGQSFHES-EF---TDTDKIDELVFETETAQGSFTCSDF
CYP71B18 135 SLKKVQSF--YIREEENCNFLVKKLLESAVDQ-----SPVDLSKTLFWLTASVMFRVAFGQSFHES-EF---IDKDKVDELVFEAETAQASFTCSDF
CYP71B19 135 CLKKVQSF--HIREEENCNFLVKKLSESAVDR-----SPVDLSKSLFWLTASILFRVALGQNFHES-DF---IDKEKIEELVFEAETALASFTCSDF
CYP71B20 135 CLKKVQSF--HIREEENCNFLVKKLSESAVNR-----SPVDLSKSLFWLTASIFFRVALGQNFHES-NF---IDKEKIEELVFEAETALASFTCSDF
CYP71B2 136 SSKKVQSF--YIREEEVDFVVKVSEESALKQ-----SPVDLSKTFVSLTASIIICRVALGQNFNESGFV---IDQDRIEELVTEESAEALGTFVTFSDFF
CYP71B27 136 SLKKVQSYR--YIRGEELEFMVKKLSESALKQ-----SPVDL--TFFSLTASIIIFRVALGRNFHESGSI---IDQEGIEELVTAATTAIGSFTVTFSDFF
CYP71B21 133 SSKKLKAF--YIREEESELLVKKVTESAQTQ-----TLVDLRKALFSYASIVCRLAFGQNFHECDFV---DMDK-VEELVLESETNLGSFAFIDFF
CYP71B22 133 SSKKLKAF--YIREEESEVLVKKLSKSAETR-----TMVDLRKALFSYASIVCRLAFGQNFHECDFV---DMDK-VEDLVLESETNLGSFAFTDFF
CYP71B38 133 SVKKLKSFR--YIREEESELLVKKLSKSVDETQN---SSVDLRKVLFSFTASIIICRVALGQNFHQCDFV---DMEK-VEELVLESEANLGTFAFADF
CYP71B5 133 SQKKLKSFR--YIREDESQLLVKRVSKSALETPT---SSVNLKRVIFTFASIIICRVALGQNFHQCDFV---DMET-VEELVLESETNLGSFAFADF
CYP71B31 133 SPKKHKSFR--YIREEEGDLVKKLSNYAQTQ-----TLVDLRKSLFSYASIIIFRVALGQNFRECDYI---NMDK-LEELVQESSETNVCSLAFTDFF
CYP71B8 135 NPKKHKFFR--YIREEEGDLVKKLSKSSQTQ-----TLVDLRKALFSYASIIIFRVALGQNFRECDYI---DMDR-LEELVQESSETNVCSLAFTDFF
CYP71B32 134 SPKKHKSFR--YIREEEGDLVKKLSNSAQTQ-----TLVDLRKALFSYASIIIFRVALGQNFHQCDFM---DMDR-LEELVLEAETNCGIILALTDFF
CYP71B24 131 STTKVRSFR--YIREENDLMVKKLKEAALKK-----SSVDLSQTLFGLVGSIIIFRSAFGQRFDEGNHV---NAEK--IEDLMFEVQKLGALSNSDLF
CYP71B3 134 STQKRSFR--YIREENDLMVKKLKEAALKK-----NTVDLSQTLFGLVGSIIIFRATFGQRLDQNKHV---NKEK--IEELMFEVQKVGSLSSSDIF
CYP71B25 137 SVKKVQSF--YVREEENHLMVKKLRDLALKQ-----SPVDLSKTLFCLAASTVFRPVFGQSFSDNKHV---SEEK--IEELVFEAQKSLTFKFSDLF
CYP71B4 137 SVKKVQSF--YIREENDLMIKKLELASKQ-----SPVDLSKILFGLTASIIIFRVALGQSFSDNKHV---DQES--IKELMFEVQKSLTFKFSDLF
CYP83A1 136 SPTRVATFK--HVREEEARRMMDKINKAADKS-----EVVDISELMLTFTNSVVCRAFGQKKNED--G---EEMKRFIKILYGTQSVLGIFFSDFF
CYP83B1 135 SPNRVASFR--PVREEECQRMMDKIYKAADQS-----GTVDLSELLSFTNCVVCRAFGQKRYNEY--G---TEMKRFIDILYETQALLGLTFFSDFF
CYP84A1 145 SRKRAESWA--SVR-DEVDMVRSVSCNVGKP-----INVGEQIFALTRNITRYAAFQSACEKGQ-----DEFIRILQEFQSKLFGAFNVADFI
CYP84A4 137 SRKRAESWV--SVD-EEVHKSRLVASNVGKP-----LNIKCLAFSLSRDITFRAAFQSSSSTSDSDE---SRLDEFLEIIEQEFQSKLFGAFNVADYV
CYP706A1 157 TPTLEASY--STRREETRQTVHVMSEMAREG-----SPVNLGEQIFLSIFNVVTRMMWGATVEG-----DERTSLGNETLTLISDISDIEGIQ
CYP706A2 159 TPTLEASY--STRREETRQTVHVMSEMAREG-----SPVNLGEQIFLSIFNVVTRMMWGATVEG-----DERTSLGNETLTLISDISDIEGIQ
CYP706A3 151 RNAMLDS--TDLRRRETRQTVRYLADQARVG-----SPVNLGEQIFLMLNNTVQMLWGCTTVKE-----EEREVVGAEFLEVIREMNDLLLVP
CYP706A7 151 SNATLDSNSFSALRRQETRRTVRYLADRARAG-----LAVNVGEQIFVTILNNTVQMLWGCTTVKE-----EEREKVGAEFLELITEIIDVVGKP
CYP706A5 149 SRKTLDSFY--ELRRKEIRERTRCYLQKGLEK-----SPVNVGEQVFLTMNMLMNLWGGSVKA-----EDMESVGTFFKGVISEITRLLGVP
CYP706A6 147 SHRTLNSFY--ELRRKEIRERTRYLYEQGQEE-----SPVNVGEQVFLTMNMLMNLWGGSVKA-----EEMESVGTFFKGVISEITRLLGEP
CYP706A4 147 SRKTLDSFY--ELRRKEIRERTRYLYEQGRKQ-----SPVKVGDQLFLTMNMLMNLWGGSVKA-----EEMESVGTFFKGVISEITRLLSEP
CYP79B2 164 CPARHRWLH--KRSEENDHLTAWYNNMVKNSGS-----VDFRFMTRHYCGNAIKKLMFGTRTFSEKT---APDGGPTVEDVEHMEAMFEALGTFFAFC
CYP79B3 166 CPARHRWLH--NRAEETDHLTAWYNNMVKNSGS-----VDFRFVTRHYCGNAIKKLMFGTRTFSEKT---EADGGPTLEDIEHMDAMFEALGTFFAFC
CYP79A2 143 SKKSFQMLQ--KRTEEADNLVRYLNNRSVKNRGN--AFVVLDLRLAVRQYSGNVARKMMFCIRHFHGKGS---EDGSGPLEEIEHVESLFTVLTLYLHLYAFA
CYP79C1 148 STKALNLLLK--VRNLESDNLLAYVHNLNKNKDESKTKHGAVVNVRDIVCTHTHNVKMRLLFCRRHFHKT---TMDGSLGLMEKEHFDALFAALDCFFSFY
CYP79C2 145 SPTTLKTLG--YRNIEADNLIVTYVYNLCQLG---SVRKPINVRDITLTYCHAVMMRMMFCQRHFDEV---VENGGGLGPKKEHMDAIYLALDCFFSFN
CYP79F1 153 SVKTLKMLEA--ARTIEADNLIAVHSMYQRS-----ETVDVRELSRVYGYAVTMRMLFGRRHVTKENVFSDDGRLGNAEKHHLEIVFNTLNLCLPSFS
CYP79F2 152 SVKTLNMLEA--ARTIEADNLIAVHSMYQRS-----ETVDVRELSRVYGYAVTMRMLFGRRHVTKENMFSDDGRLGNAEKHHLEIVFNTLNLCLPGFS
CYP703A2 137 TTKRLESFTT--QRAEAEARYLIRDVFKRSETGKP-----INLKEVLGAFSMNVTRMLLCKQFFGPGS-----LVSPKEAQEFLHITHKLFWLLGVIY
CYP98A8 129 SLKSIENFR--SLREEMBARSMVVSILKDLMSNSGDDQERKPVIVRKYLAAVLNTISRLMICKEFG-----SEEGKEFKAIVEKEHLLSGSG
CYP98A9 129 SLKSIENFR--SMREMEVSSMVKSI FNDFMSD-----DQKPVILRNYLDSVALNIVSRLVICKEFG-----PKDGREFRSIVERETRLPGAT
CYP98A3 132 TPKRLESFR--PIREDEVTAMVESVFRDCNLP---ENRAKGLQIRKYLGAFAFNITRLAFGKRFMNAEGV-----VDEQGLEFKAIVSNGLKLGLASL
CYP78A10 169 SPKRIFSSG--ESRRKIGQNMVGEIKN--AMECYG-----EVHKKILHFGSLNNVMSSVFCIKTYNFNEGIV-----YSKESNELEHLVSEGYELLGIFN
CYP78A5 153 SPRRIASFE--GVRVVGIGMKMVKKIKSLVTSACG-----EVEVKKIVHFGSLNNVMSSVFCIKTYNFNEGIV-----YSKESNELEHLVSEGYELLGIFN

CYP76C2 231 P-----FLGFLDLQGNRKTILKACSERLKFVFRGFIDAKLAEKSLRD-----T-NSKDVREDFVDVLLDLTEGDEAE-----LNTNDIVHL
CYP76C4 231 P-----FMGFLDLQGNRKAMRGLTERLFRVFRGFMDAKIAEKSLGN-----YSKDVSNRDFLDSEILNEGDEAE-----LDNNDIEHL
CYP76C1 232 P-----FLRFLDLQGNVKTTFKVCTERLVRVFRGFIDAKIAEKSSQN-----NPKDVSKNDFVDNLLDYK-GDESE-----LSISDIEHL
CYP76C5 232 P-----FMRLLDLQGNSKMKEYSGKLLQVFRFYDARILENSSRI-----DEKDVSSRDFLDALIDLQGGDESE-----INIDIEHL
CYP76C6 231 P-----FMRFLDLQGNSKMRESSGRLLQVFRFYDARIVEKSSRS-----VEKDVSSKDFLDVLLIDLQGGDETE-----INIDIEHL
CYP76C3 223 Q-----YMRFLDLQGTFRKAVLCIEKLFVRFQEFIDARLAKRFSRT-----EKEPKEASSIDMLDSELDLTQQNEAE-----LTMNDIKHL
CYP76C7 226 P-----FLGFLDLQGARKEARLLMHKLFVRFQGFIDTKRSS-----TSRNNNDMLDSELDLAHKKESE-----LDDNNIKHL
CYP76G1 230 P-----LLRFLDPQGIIRKTKQFHVKEAFEIAGEFIREIRTEVREK-----SDEKTKDYLDVLLLEFRGGDGVDEEP-----SSFSSRDINVI
CYP75B1 224 P-----SLDWLDLQGV-----VAGMKRLHKRFDAFLSSILKEHEMNG-----QDQKHTDMLSTLISLKGTDLDGDG-----GSLDTEIKAL
CYP705A1 225 VSKMFRKLLLEKLGISLKFTEIMVVSRRFSELVERILIEYEEK-----MDGH-QGTQFMDALLAAYRDEN-----TEYKTRSHIKSL
CYP705A24 227 VAQIFHKPLEKLGISLLKQIMDVSHKFEELLENIVVKYEEK-----MDNH-QSTEFMDALLAAYQDEN-----AEYKTRNHIKAL
CYP705A12 226 FSNMFR-----KDIMGVSREFDEFLELILVEHEEN-----LEGD-QDRDMIDHLLAAYRNEE-----AEYKTRKQIKSL
CYP705A13 230 LTQVLRRLFEILRISPFKKEITLDVSRKFDELLERILVEHEEK-----TDYD-HGMDLMDVLLAVYRDGK-----AEYKTRDHLKSL
CYP705A15 229 LANMLRAGFKKLVVSLFRKEMDVSSRFDELLERILVEHEDK-----LDMHH-QGTDLVDALLAACRDKN-----AEYKISRNIKSF
CYP705A4 219 FANMLRAWFKKLVVSLFKKETTVISYRFDELLERILVEHEEK-----LDVHH-QRTDLMALLAAYRDEN-----AEYKTRNHIKSI
CYP705A16 231 LAATLRRLEKLGISLQFKEIMGVSRGFDELLERILREHEEK-----PD-EH-HDMDMDALLAAYNDEK-----AEYKTRNQIKAF
CYP705A19 228 LAFTLRRLLEKLGISLQFKEIMGVSRGFDDLLERYLREHEEK-----PDNEH-QDTMDALLAAYRDEK-----AEYKTRNQIKAF
CYP705A28 229 LGMIFHKPLKLLGISLQFKDIKSVSPKFDELLEKFLVEHEEKM-----EEDHY-KANDMDLLEAYGDEN-----AEYKTRNHIKSL
CYP705A30 229 FGMIFHKPLKLLGISLQFKDILSLSRKFDELLEKILFEHEEKK-----AEHN-QANDMDLLEAYGDEN-----AEYKTRNHIKSL
CYP705A32 233 LGMIFDKPLKLLGISLQFKDIKSVS-RFDELLEKILVEHEER-----MGKHY-KANDMDLLEAYGDEN-----AEYKTRNHIKSL
CYP705A2 222 LATIFHKPLKLLGISLQFKEIMSVSRKFDELLEKILVEHEEK-----MEEHH-QGTDMDVLLAAYRDEN-----AEYKTRNHIKSM
CYP705A5 226 LGAMFHKPLKLLGISLQFAKELMNVSNRFDELLEKILVEHEEK-----LQEHH-QTSDMLDMLLEAYGDEN-----AEYKTRDQIKSL
CYP705A23 229 MANVLHKPLKLLGISLQFKEIMDVSNRFDELLERFLVEHEEK-----LNED-QDMMDMGLLAACRDKN-----AECKTRNHIKSL
CYP705A20 226 LVNILRWPLEKLRISLQFKEIMYVSNRFDELLERILVEHEEK-----PNEH-QGTYLMDVLLAAYEDEK-----AEHKTRNHIKSL
CYP705A21 228 FATLLHRPLEKLGISLQFKEIMCVSDSFDEVLERVLEHEEQ-----LDDH-QDRDMDVLLAAYGDEN-----AEHKISRNIKAF
CYP705A18 230 FAATLRRLEKLRIPFRKEIMGVSDRFDELLERILVEHKKDL-----EKEH-QVMDMDVLLAAYRDKN-----AEYKTRNHIKSF
CYP705A6 228 LASLLRKPLKLRISLQFKEIMGVSDRFDELLERILVEHEEKL-----HEEH-QGTDMDVLLAASGDEN-----AEYNTTRNHIKSF
CYP705A33 228 FASVLRLLKLRIPLFKQIMDVSNRFDELLEKILVEHNEKL-----DEEH-KDMDMDVLLAAYADEN-----AEYKTRNHIKSF
CYP705A3 227 LAAILRRPLAKLRISLQFKEIMGVSNKFDELLERILQERKENL-----EEKNN-EGMDMDVLLAAYGDEN-----AEYKITWKHIKAF
CYP705A22 229 LAVLLRRQLQKLGISLQFKDIMGVSNKFDVLEKVLVEHREKP-----EKDQ-GTVMLDVLLAAYGDEN-----AEYKITKNHIKAF
CYP705A8 226 LAAILRKPLKKGITLQFKVFMDSLQFDEVLEKILVENEER-----LEENQ-QGTDIMDKLLEVYGDKT-----SEYKTRDHIKSL
CYP705A9 204 LAGILRKPLQKIGISLQFKELMDASCKFNEVLEKILVEYKEK-----VEEHH-QGTDMDKLEVYGDKE-----AEYKTRDHIKSL
CYP705A25 233 IASIVGQFSKLVGISLQFKEIMEVSRQYDELLEKILKEHEEN-----PNNG-EDRDMMDVLLAAYCADDN-----AEFKISRNIKAL
CYP705A27 232 IANTVGRLLKFKGISLQFKEIMEVSRQYDELLEKILKEHEED-----PNKK-EDRDMMDVLLAAYCADDK-----AEVKTRNQIKAL
CYP712A1 227 VGDVLG-PLKVMDFSCNGKLVAVMEKYDLLVERIMKERE-AK-----AKKKDGTRKDIIDILLETYRDEPT-----AEMKTRNDMKSF
CYP712A2 224 FMELFG-PLRDLDFCNGKLRSSIWRYDELVEKILKEYENDK-----SNEEEEKDKDIVDILLDTYNDPK-----AELRLTMNQIKFF
CYP93D1 221 NVSETFWFLKRLDLQGLKRLKRNARDKYDVIIEIRIMEHEESS-----KKNATGERNMLDVLIDYEDKN-----AEMKLTRENKAF
CYP81D6 239 NAADYLPIMRWFTN--FEKRVKNLAIRIDKFLQSLVDEKR-----ADKEKG--TTMIDHLLSLQES-----QPDYTDVTLKGI
CYP81D7 224 NAADYIPILRWITD--FEKGVKELASRVDEFLOSLVDERR-----VHKQKG--NTMDHLLSLQET-----QPDYTDVTLKGI
CYP81D11 232 NAADYFPILRYVTN--YEKHVKKLAGRVDEFLOSLVNEKR-----VEKVKG--NTMIDHLLSLQET-----QPDYTDVTLKGI
CYP81D2 223 NAADYIPILTWITY--SETRIKKLAGRLDEFLOQLVDEKR-----EGKEKKE--NTMVDHLLCLQET-----QPEYYMDRIKGT
CYP81D3 220 NTADYLPILTWITG--SEKRIKKIASRLDEFLOQLVDEKR-----EGKEKRQ--NTMVDHLLCQET-----QPEYYTDNIKGI
CYP81D8 223 NAVDYLPVLRVSD--YETRVKKLAGRLDEFLOQLVDEKR-----EAKEKG--NTMIDHLLTLQES-----QPDYFTDRIKGN
CYP81D4 221 NPIDYLSILRWVSS--YEKRKKNLGNRFDTFLOQLVDEKR-----AEKEKG--ETMIDHLLALQDI-----QPDYTDVTLKGI
CYP81D5 220 NLADYLP SINWVTN--FENQTKILGNRLDRVLQKLVDEKR-----AEKEKG--QTLIDHLLSFQET-----EPEYYTDVTLKGI

CYP81D1 230 NAVDYVPILRLFSS--YENRVKKLGEETDKFLQGLIDDKR-----GQQETG---TTMIDHLLVLQKS-----DIEYYTDQIKGI
CYP81F3 219 HPGDYLPFMKMFSGS-FEKVKALAEAMDEILQRLLECK-----RDKDGN---TMVNHLLSLQQN-----EPEYYTDVTKGL
CYP81F4 221 HPGEYLPFMKIFGGS-FEKEVKAAAKVIDEMLQRLLECK-----SDKDGN---TMVNHLLSLQOD-----DPEYYTDI IKGL
CYP81F2 219 HPGDYLPILKVFHG-YEKVKALGEAMDAFLQRLLECR-----INGESN---TMVSHLLSLQLD-----QPKYSDVITKGL
CYP81F1 224 HSADYLPILKLFGNK-FEKEVKAIKGSMDLILQRLLECR-----RDKEGN---TMVNHLISLQQO-----QPEYYTDVITKGL
CYP81H1 224 NPADFLPALRWFYDKGLVKRAKRIGERMSLLQGLDEHR-----ANKDRLEFKNTMIAHLLDSQEK-----EPHNSYDQTIKGL
CYP81G1 230 YVGDFLPTLKLFDLDGYRKRAKKLASKLDKFMQKLVDEHR-----KNRGKAELEKTMITRLLSLQES-----EPECYTDI IKGL
CYP81K1 220 NVCDYFPVLRWIGYKCLEKRVIDMQRMRDEYLQRLIDDIR-----MKNIDSS--GSVVEKFLKLQES-----EPEFYADDVTKGI
CYP81K2 219 NVCDYFPVLRWIGYKCLNRVIEIQMRMRDEYLQRLIDDIR-----MKKFDST--GSVVEKFLKLQES-----EPEFYSDDVTKGI
CYP82C3 221 TVSDAFPKLGLWLDLQCHEKEMKQTRRELDVILRWIENHRQQRKV-----SGTKHNSDFVDVMLSLAEQGKLS-----HLQYDANTCIKTT
CYP82C4 233 TVSDAFPTLSFFDLQCHEKEMKQTSSELDVILRWIENHRQQRKF-----SGTKENDSDFIDVMMSLAEQGKLS-----HLQYDANTSIKST
CYP82C2 232 TVSDAFPKLGFDFQCHEKEMKQTGRELDVILRWIENHRQQRKV-----SGTKHNSDFVDVMLSLAEQGKFS-----HLQHDATSIKST
CYP82F1 231 LLSDVAPVLGFLDWK-TKRGMKRTAKGLDKVAEGWIEEHKNKRS-----HGRSEND--YLDILIKILGQDKIP-----GLS-DHTTKIKAL
CYP82G1 228 MIGDVIPWLGLWDFKNSQMKRLFKELDVNTKWLHEHLKRS-----RNEKDQERTIMDLLLDILPED-----IVIS
CYP71A12 223 PAL---AWIDRIN--GFNARIKEVSRGFSDLMDKVVQEHLEA-----GNH-KEDFVDILLSIES-----EKSIGFQAQRDDIKFM
CYP71A13 223 PIL---AWIDGIR--GFNNKIKEVSRGFSDLMDKVVQEHLEA-----SND-KADFVDILLSIEK-----DKNSGFQVQRNDIKFM
CYP71A18 223 PAL---AWIDRIN--GFNSKIVEVSRAYSIDLMEKVVQEHLEA-----GEH-KADFVNILLSIEK-----EKNNGFKVQRNDIKFM
CYP71A14 223 PCL---AWIDKLR--GVDEKAEVSKAFGDLMEKVLQEHLEA-----TDKPTLDFVDVLLSLER-----HERNGVQIRRSDIKFL
CYP71A15 222 PCL---AWIDQIR--CLYNRAEEVSKIFGDLMDKVVQEHLEA-----TNKPTKDFVDILLSFER-----QSKDGIIEVRRSDIKFI
CYP71A19 225 PSL---SWIDKIR--GQDHKMEVDKRFDEFLEERVVKEHEDA-----NKDTRS--DLVDTLTITQS-----DKS-----ALKLI
CYP71A20 222 PSL---SWIDRIR--GLDHKMEVVDKRFDEFLEERVVKEHEEA-----DKETRS--DLVDKLLTITQS-----DKTGQFELEKSALKLI
CYP71A27 223 PSL---AWIDWIS--GIDDKMKDINNKLDFLDSMVQEHVDA-----DHKEPS--DFIDMLLLTIQK-----DKTKRFKFRSDILILI
CYP71A16 222 PSL---AWIGKIT--GSDGKLEKITKQFGDFIEKVLQEHEDT-----TADKETPFDVDMLLTIQR-----DETAQCQLDKSDIKVI
CYP71A28 225 PGL---AWIDKVR--GLDRKMEVSKTFVEFLEERVVQEHVDE-----GENKETPFDVVDILL-IQL-----EKTNEFELEERSDIRLI
CYP71A21 217 PWL---GWIDWIS--GLDGQLNKTGNDLDEFLEKVVQDHVDG-----DG--QRTDFVDVLLRIQR-----EKSIGFEIDRLCIIKAI
CYP71A22 217 PWL---AWIDWIS--GLDGQLKKTGNDLDEFLEKVVQDHEDG-----DA--QRTDFVDVLLRIQR-----EKSVGFIEIDRLSIIKAI
CYP71A24 216 SWL---AWIDWIR--GLDGQLIKISNDLDEFLEERVVQDHVDG-----DG--HKNDFVDVLLTIER-----EKSVGFIEIDRLSIIKAI
CYP71A26 216 PWL---AWIDWIR--GLDCQLEKTANDVDKFFERVVQDHVDG-----NR--DMTDFVDVLLAIQR-----DKTVGFIEINRVSIKAI
CYP71A25 215 PWL---AWIDWIR--GWDAQLDKMGKDLDDFFFEKVVQDHEDG-----DRR--DGTDLIDALLRVKR-----EKSPGFIEIERVSIKAI
CYP71A23 214 PWL---AWTDWVS--GLEARLEKTANDFDKLLERIVQDHEDG-----DG--DKTDFVDVLLAAQR-----DKSFGFDIDRLSIIKAI
CYP71B36 222 PNG--GWIIDWLT--GLHGQRERSVRALDAFYEQMFDLHKQ-----GNKE-GVEDFVDLLLRLEKEE-----TVIGYGKLTNRNHIIKAI
CYP71B37 222 PNG--GWIIDWLT--GLQGQRERSVRGLDAFYEQMFDLHKQ-----GNKE-GVEDFVDLLLRLEKEE-----TVLGYGKLTNRNHIIKAI
CYP71B9 220 PNG--GWIIDWLT--GLQRRREKSVKDLDFYEQMFDLHKQ-----ENKQ-GVEDFVDLLLRLEKEE-----TVLGYGKLTNRNHIIKAI
CYP71B10 221 PYV--GWIIDWFT--GLHARRERSVRDLDAFYEQMIDLHLQ-----KNRESEDDFVDLLLRLEKEE-----AVLGYGKLTNRNHIIKAI
CYP71B26 222 PYV--GWIIDKFN--GLQGWKKSFRDLDAFYEQIFDLHKE-----EKEV-GSEDFVDVLLLRLEKEE-----IVVGNGLTNRNHIIKAI
CYP71B33 222 PYI--GWIIDRFT--GLQGRREKSVXDLDAFYEQIFDLHKE-----EKEV-GSEDFVDVLLLRLEKEE-----TVVGNNNFTNRNHIIKAI
CYP71B34 222 PYV--GRIIDLLT--GLQGRRERSMRDLDAFYEQMFDLHKQ-----KKEE-GSEDFVDVLLLRLEKEE-----AVLGNDKLTNRNHIIKAI
CYP71B35 221 PYV--GWIIDVLT--GLQGRRERSKRDLDNAFFEQMFDLHKE-----GKKE-GNEDFVDVLLLRLEKEE-----AVLGNDKLTNRNHIIKAI
CYP71B11 219 PII--GRIIDRIT--GLHSKCEKIFKAMDAFFDQSIKHLE-----DESI--KDDIIDLLKMERGE-----TELGEFQLTRDNTIKGI
CYP71B12 219 PVV--GRIIDRIT--GLHSKCEKLFKAMDAFFDQSIKHLE-----DEII--KDDIIDLLKMERGE-----TTLGEFQLTRDHTIKGI
CYP71B14 219 PII--GRIIDRIT--GLHSKCEKVFKEMDFFDQSIKHLE-----DTNI--KDDIIGLLKMEKGE-----TGLGEFQLTRNHTIKGI
CYP71B13 219 PVI--GGIIDRIT--GLHNKCEKVFKGTDSFFDHCIKHLE-----DGGS--KDDIIVDLLKVERGE-----IGLGEFQFTNRNHTIKGI
CYP71B6 227 PGF--GWIIDRIS--GLDSSRRKSFQDLDTFFQKAIVDHRE-----KKKTEDREDLIDVLLKLSQSE-----TKLGSSRITDTHIRAI
CYP71B28 220 PGL--MGRLEWIF--SERKRLNRLYSEVDTFFQNILLDHLK-----PGR---ESSDIIDVIMDMKKQE-----KEGDSFKFTTDHLKGM
CYP71B29 217 PGG--IGRFIDWIS--GQNKRFNDNVFSDLDTFFQNILLDYHLK-----PGRKVADSSDIIDVVINMIKKQE-----KDGDSFKLTTDHLKGM

CYP71B7 224 PG--VGWLVDRLS--GQNKTLNNVFSELDITFFQNVLDDHLK-----PGRQVSENPDVVDVMDLDMKKQE-----KDGESFKLITDHLKGI
CYP71B15 220 PGR-IGRFIDCIS--GQNRRLKNNFVVDITFFQNVLNEHLK-----PGR---ESSTIVDLMDMCKKQE-----NDGDALKFTDHLKGM
CYP71B23 223 PG---GWILDKIT--GQSKSLNEIFADLDGFFNQVLDLHLK-----PGRKVLETPDVVDVMDMNMKQS-----QDG-SFKLITDHLKGI
CYP71B16 222 PIAGLGWLADWIS--GKHRWLNNVFFKLDALFQVVIDDHS-----PGRW-KDHKDIVDVMIDVMHKQ-----GKDDSLRLITDHLKGF
CYP71B17 222 PIAGLGWLVDWIS--GQHKRLNDVFLKLDALLQHVVIDDHSN-----PGRS-KDHKDIVDVMIDVMHKQ-----GKDDSLRLITDHLKGL
CYP71B18 222 PIAGLGWLVDCLIS--GQHKRLKDVFFKLDALFQXXXXXXX-----XXXX-XXXXXXXXXXMIDVMQKQ-----RKDDSLKLTINNIKGI
CYP71B19 222 PVAGLGWLVDWFS--GQHKRLNDVFKLDALFQHVVIDDHLN-----PGRS-KEHEDIIDSMIDV IHKQ-----GEDSSLELITDHLKGF
CYP71B20 222 PVAGLGWLVDWFS--GQHKRLNDVFKLDALFQHVVIDDHLN-----PGRS-KEHEDIIDSMIDAIHKE-----GKDSSELELIDHLKGF
CYP71B2 224 PGG-LGRFVDWLF--QRHKINKVFKELDAFYQHVIDDHLK-----PEGR-KNQ-DIVTLILDMIDKQ-----EDSDSFKLNMDNLKAI
CYP71B27 222 PSG-LGRFLDCLF--RTQTNINKVSEKLDAFYQHVIDDHLK-----PSTL-DSSGDIVALMDMIKKK-----GHKDDFKLNVDNIKAV
CYP71B21 220 PAG-LGWAIDRLS--GQHSRLHKAFARLSNFFQHVIDDHLK-----PWQS-EDHSDIVGVMIDMINKE-----SKVGSFKVTYDHLKGV
CYP71B22 220 PAG-LGWVIDRLS--GQHSELHKAFARLSNFFQHVIDDHLK-----PGQS-QDHSDIIGVMIDMINKE-----SKVGSFQVTYDHLKGV
CYP71B38 222 PG---GWLIDRLS--GQHSRVNKAIFYKLTNFYKHVIDDHLK-----TGQP-QDHSDIVSVMIDMINKP-----TKADSFKVTYDHLKGV
CYP71B5 220 PA---GWIIDRLS--GQHSTVMKAFSKLTNFFELVIDDHLK-----SGKI-EDHSDIISVMIDMINKP-----TEVGSYKVIDDHLKGL
CYP71B31 220 PRG-LGWLVDRLS--GQHSRMNIAFSKLTTFEEDVIDDHLK-----TKQL-DDHSDLVMTAMLDVINRP-----RKFGSLKITDHLIAM
CYP71B8 222 PTG-LGWLVDRLS--GQHSRIEKAFSKLTKFFQHVVIDEELK-----IQQS-QDHSNLVSSMIDMINRS-----TEYGSFKLITDHLIAM
CYP71B32 221 PTG-LGWLVDRLS--GRHSRMNKAFAKLTNLFQHVVIDEQLK-----IGQL-QDHSNLVSAMIDMIIRP-----SKFSSFNITSNHLIAM
CYP71B24 217 PGG-LGWVDFVVS--GHNKKLHKVFVEVDITLLNHIIDDLKLN-----SIEEITHDRPDIIDSLIDMIRKQ-----EQGDSFKLITDNLKGI
CYP71B3 220 PAG-VGWFMDFVS--GRHKTLHKVFVEVDITLLNHVIDGHLKN-----PEDKTNQDRPDIIDSLIETIYKQ-----EQDESFKLITDHLKGI
CYP71B25 223 PIPGLGWFIFVVS--GQHKGLHKVFIEVDNFLNHMIDDHOK-----QNPQDRSDIVGSLIDMIHNQ-----EQDKSFKLITDHLKGI
CYP71B4 223 PTAGLKWFIFVVS--GQHKRLYNVFNVDITFFNHVIDDHS-----KKATQDRPDMVDAITDMIDNE-----QQYASFKLITDHLKGV
CYP83A1 222 PYCG---FLDDLIS--GLTAYMKECFERQDITYIQEVNETLD-----PKRVKPETESMIDLLMGIYKEQ-----PFASEFTVDNVKAV
CYP83B1 221 PYFG---FLDNLIT--GLSARLKAFAKELDTYLQELLEDITLD-----PNRPKQETESFIDLLMQIYKDQ-----PFSIKFTHENVKAM
CYP84A1 225 P-----YFGWIDPQGINKRLVKARNDLDGFIIDIDEHMKKKENQN-----AVDDGDVVDITMVDLLAFYSEEAKLVSETADLQNSIKLTRDNLKAI
CYP84A4 221 PS-----WLSWIDPQGINGRVEKARKSLDGFIESVIDDHLHKKKRE-----HDNVDEETDMVDQLLAFYEEEVKVNNSVTKIN-----LDNLKGI
CYP706A1 239 NYSDFFPPLFSRFDQCLVVKQMKGHVKKLDLLFDRVME SHVKMVG-----KKSE--EEDDFLQYLIRVKDDDEK-----APLSMTHVKSL
CYP706A2 241 NYSDFFPPLFSRFDQCLVVKQMKGHVKKLDLLFDRVME SHVKMVG-----KKSE--EEDDFLQYLIRVKDDDEK-----APLSMTHVKSL
CYP706A3 233 NISDFFPVLSRFDLQCLAKRMRPAQRMDQMFDR IINQRLGMD-----RDSSDGRAVDFLDVLKVKDEEAE-----KTKLTMNDVKAV
CYP706A7 236 NVSDFFPVLRSRFDLQCLAKRVRRSAQRMDRMFDR IISQRMGMD-----KGSK-GNGGDFLMVLLNAKDE-----DENMSMNHVKAL
CYP706A5 231 NVSDFFPMLARFDLQGLVKKMHLIYARDLDAITLDRAIEQMORLRS-----RDGDDGECKDFLQHLMKLRDQHEADS-----DVPITMNHVKAV
CYP706A6 229 NVSDFFPRLARFDLQGLVKKMHVCARELDAITLDRAIEQMQLLRT-----RDGDDGECKDFLQHLMKLKDQHEADS-----EVPITVNHVKAV
CYP706A4 229 NVSDFFPWLARFDLQGLVKKRMGVCARELDAVLDRAIEQMKPLRG-----RDDD--EVKDFLQYLMKLDQEGDS-----EVPITINHVKAL
CYP79B2 253 ISDYLP-MLTGLDLNGHBKIMRESSAIMDKYHDP IIDERIKMWR-----EGKRTQIEDFLDIFISIKDEQG-----NPLLTADBLKPT
CYP79B3 255 ISDYLP-MLTGLDLNGHBKIMRESSAIMDKYHDP IIDERIKMWR-----EGKRTQIEDFLDIFISIKDEAG-----QPLLTADBLKPT
CYP79A2 237 LSDYVP-WLRFDLLECHBKVVSNAMRNVSKYNDPFDVDERLMQWR-----NGKMKPEQDFLDMFI IAKDTDG-----KPTLSDEEIKAQ
CYP79C1 243 VADYYP-FLRGWNLQCEEAELREAVDVIARYNKMI IDEKIELWRGQNKDYNRAETKNDVPMIKDWLDILF TLKDENG-----KPLLTPOEITHL
CYP79C2 236 LTNYP-FLRGWNVDKAETE VREAVHI INICNDP I I QER IHLWR-----KKGKQMEEDWLDITLITLKDQDG-----MHLFTFDEIRAQ
CYP79F1 244 PADYVERWLRGWNVDGQEKRVTECNIVRSYNNP I I DERVQLWR-----EEGKAAVEDWLDITFITLKDQNG-----KYLVTPEEIKAQ
CYP79F2 243 PVDYVDRWLGWNLIDGEEERAKVNVNLVRSYNNP I I DERVEIWR-----EKGGKAAVEDWLDITFITLKDQNG-----NYLVTPEEIKAQ
CYP703A2 223 LGDYLP-FWRWVDPSCCEKEMRDVEKRVDEFHTKI IDEHRRAKLE-----DEDKNGDMDFVDVLLSLPGENG-----KAHMEDVEIKAL
CYP98A8 214 TILDHVWVLKWS-SWFFSDKEFLAHLKDRRTKWFRAIMVEE-----DIEIEDHRGFVRKLLVLKEQKE-----LSEETVGGGL
CYP98A9 209 KMLDYTVWLKRLS-SWFTSDKAFMKHMARKRNWFK-RAVMDE-----VYGRDQKCFVQSHLELKEKDE-----LSEETVMGL
CYP98A3 220 SIAEHIPWLRWMPADEKAFAEHGARRDRLTRAIMEEHTLAR-----QKSSGAKQHFDALLITLKDQYD-----LSEDTITIGL
CYP78A10 255 WSDHFFGMRWLDL-QCVRRRRCSLVGRVNVFVGKI INDHKSKRSLRDNPEES-----TYDDDFVDVLLGMHGNSK-----LSDSDMIAV
CYP78A5 238 WSDHFFWFLRWDF-QCVRKRRCRALVSEVNTFVGGI I EKHKMKKGNLNGEE-----NDFVDVLLGLQKDEK-----LSDSDMIAV

CYP78A6	254	WTDHLPWLSEFDL-QRLRSRCSTLVPKVNRFVSRISSEHRNQTGDLP-----RDFVDVLLSLHGSDK-----LSDPDI IAV
CYP78A9	254	WTDHLPWLSEFDL-QRIRSRCNLPKVNRFVNRISSDHREQTRDSP-----SDFVDVLLSLDGPK-----LSDPDI IAV
CYP78A8	260	WTDHLPWLAGLDF-QQIRFRCSQLVPKVNLLSRIIHEQRAATG-----NFLDM LSLQGSEK-----LSESDMVAV
CYP78A7	257	WSDYLPWLGYFYDSIRLNQRCSDLVPRIRTLVKKIIDEHHRVSNSEKKRDIG-----DFVDVLLSLDGDEK-----LQEDDMI AV
CYP77A4	234	PILAPFFSKERKRALEVRREQVDYVVGVIERRRRAIQNPGS-----DKTASSFSYLDTLFDLKIE-----GRKTTPSNEELVTL
CYP77A6	236	PILAPFFYSKERARALEVRCEQVDFIVKLIERRRRAIQKPGT-----DKTASSFSYLDTLFDL KTE-----GRITTPSNEELVSL
CYP77A7	239	PILTTPFNYNERNRALKLRRELVDVFVVGFIKRRRAIR-----TATVSSFSYLDTLFDLR IIE-----GSETTPSDEDLVT L
CYP77A9	231	PILTTPFYFKERKNSLELRRKLVQFVVGFIKRRRLAIRNLGS-----DKTASSFAYLDTLFDLRVD-----GRETSPSDEDLVT L
CYP77B1	227	PVFTPLFRRQVREARELRKLTQLECLVPLIRNRRKFVDAKEN-----PNEEMVSPIGAAAYVDSLFRNLNI-----ERGGE LGDEEIVTL
CYP89A4	225	KFTKLILRKRWEFFQMRREQHDVLLPLIRARRKIVEERKNRSSEEE-----EDNKVYVQSYVDTLLELELPDE-----KRKLNEDEIVSL
CYP89A5	225	KFTKLILRKRWEFFQMRREQHDVLLPLIRARRKIVEERKNRSSEEE-----EDNKEYVQSYVDTLLELELPDE-----KRKLNEDEIVSL
CYP89A6	226	KFTKLIYRKRWEFFQMQSEQQDVLLPLIRARRKIVDERKKSSEEE-----KDNKEYVQSYVDTLLDVLELPDE-----KRKLNEDEIVSL
CYP89A7	224	KFTKLILRKRWEFFQMRREQQDVLLRLIYARRKIVEERKKSSEEE-----EENKEYVQSYVDTLLDVLELPDE-----KRKLNEDEIVSL
CYP89A2	223	KFTKLILRKRWEFFLQIRRQQRDILLPLIRARRRSLKREKR---SEE-----EDKKDYVQSYVDTLLDLELPEE-----NRKLNEEDIMNL
CYP89A3	225	SFTKLF LRKRWEFFLTFRREHKNVLLPLIRSRRKIMIEISKD-----SGKEYIQSYVDTLLDLELPDE-----KRKLNEDEIVSL
CYP89A9	227	SVTKFLLRRKWKEFLELRKLSQESVILLRYVNARSK-----ETTGDVLCYVDTLNLEIPTEEKEG-----GKKRKLSDSEIVSL
CYP73A5	222	YNYGDFIPILRPFLRCYLKICQDVKDRRIALFKKYFVDERKQIASSK-----PTGSEGLKCAIDHILEAEQKGE-----INEDNVLYI
CYP701A3	239	DWRDFFPYLKWIPNKSFEARIQQKHKRRRLAVMNALIQDRLKQ-----NGSESDDDCYLNFIMSEAKTLT-----KEQIAI
consensus	301

CYP76C2 306 LLDLFGA-GTDTNSSSTVEWAMAELLRNPETMVKAAQAEIDCVIGQ---K-GVVEESDLSALPYLQAVVKEIFRLHHPAAPLLVPRKAESD-VEVLG-FMVPK
 CYP76C4 305 LLDMFTA-GTDTSSSTLEWAMAELLRNPKTMVKAAQAEIMDRVLGQ---N-SVVQESDLSGLPYLQAVVKEIFRLHHPAAPLLVPRKAESD-VEVLG-FMVPK
 CYP76C1 305 LLDMFTA-GTDTSSSTLEWAMTELKLNPKTMAKAAQAEIDCVIGQ---N-GIVEESDLSKLPYLQAVVKEIFRLHHPVPLLPVPRKAESD-AEILG-FMVLK
 CYP76C5 306 LLDMFLA-GTDTNSSSTVEWAMTELGNPKTMTKVQDEINRVIRQ---N-GDVQESHISKLPYLQAVVKEIFRLHHPAAPFLLPVPRKAERD-VDILG-FHVPK
 CYP76C6 305 LLDMFVA-GTDTNSSSTVEWAMAELLRNPKTMTKVQDEINHVIQ---N-GDFQESDLSKLPYLQAVVKEIFRLHHPAAPFLLPVPRKAETN-VEILG-FTVLK
 CYP76C3 299 LLDVFVA-GTDTNSSSTMBWAMTELFRSTKEMVKAQSEIRQVIGQ---N-GFVQESDIPSLPYLQAVVKEIFRLHHPAAPFLLPVPRKSES-VDQIMG-FLVPK
 CYP76C7 293 LLDLFLA-GVDTSSSAVWAMAELLRNPKMIVKVQBEIRQVIGL---K-GTVQDLDIVKLPYLQAVVKEIFRLHHPAAPFLLPVPRKSESDDVQIFE-FLTPK
 CYP76G1 307 VFEMFTA-GTDTTSTLEWALAEELHNPRTILTKLQTELRTYFKSS--N-QKLQEDLPNLPYLQAVVKEIFRLHHPAAPFLLPVPHKAMSTCHIFDQ-YTIPK
 CYP75B1 296 LLNMFTA-GTDTASSTVDWALAEELIRHPDIMVKAQBEIDIVVGR---D-RPVNESDIAQLPYLQAVVKEIFRLHHPPTPLSLPHIASES-CEING-YH1PK
 CYP705A1 301 LTVEFFIGAADASSIAIQWAMADIINNREILEKLRREIDSVVGKT----RLVQETDLPNLPYLQAVVKEIFRLHHPPTPLVPRE-FQEGCEIGG--FFVPE
 CYP705A24 303 LAELFFG-AGESSSSTTRWAMGEIFNPNRIFEKLRTEIDSVVGT----RLIQESDLPKLPYLQAVVKEIFRLHHPGAVLPRE-FTQDCNIGG--FYTHE
 CYP705A12 290 IVEIFLG-GTDSQAQTIQWIMAEILNPNPVLKLRRAEIDSVVGGK----RLIQESDLPNLPYLQAVVKEIFRLHHPAAPFLLPVPRKSES-VEVLG-FMVPK
 CYP705A13 306 FVELILG-GTDTSAQTIQWIMAEILKPNILERLRKEIDSVVGT----RLIQEKDLPNLPYLQAVVKEIFRLHHPAAPFLLPVPRKSES-VEVLG-FMVPK
 CYP705A15 306 FADLLFA-GTDTFVQTTQWIMAEILNPNVLERLRGEIDSVVGKA----RLIQETDLPNLPYLQAVVKEIFRLHHPGAVLPRE-FTQDCNIGG--FYTHE
 CYP705A4 296 IADLLFA-GTENOVQTIQWIMAEILNPNVLERLRGEIDSVVGS----RLIQETDLPKLPYLQAVVKEIFRLHHPGAVLPRE-FTQDCNIGG--FYTHE
 CYP705A16 307 IVDMFA-GTDISALTTQGTMAEILNPNVLRIRREIDSVVGS----RLIQETDLPKLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A19 305 LVDIFA-GTDISALTTQGTMAEILNPNVLRIRREIDSVVGS----RLIQETDLPKLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A28 307 FVELLVA-GTDTALATQWIMAEILNPNVLERLRREIESVVGNT----RLIQETDLSNLPYLQAVVKEIFRLHHPASISVRM-SQERCELGG--FYIPE
 CYP705A30 306 FVDLVA-GTDTSVQATQWIMAEILNPNVLERLRREIESVVGNT----RLIQENDLPNLPYLQAVVKEIFRLHHPGAVLPRE-FTQDCNIGG--FYTHE
 CYP705A32 309 FVDLVA-GTDTSAQTIQWIMAEILNPNVLERLRREIESVVGNT----RLVQETDLPNLPYLQAVVKEIFRLHHPGAVLPRE-FTQDCNIGG--FYTHE
 CYP705A2 299 FVDLFA-GTDTSSSTTIQWIMAEILNPNVLERLRREIESVVGKT----RLIQETDLPNLPYLQAVVKEIFRLHHPGAVLPRE-FTQDCNIGG--FYTHE
 CYP705A5 303 FVDLFA-GTEASANTIQWIMAEILKPNILERLRREIESVVGKT----RLVQETDLPNLPYLQAVVKEIFRLHHPGAVLPRE-FTQDCNIGG--FYTHE
 CYP705A23 305 FVDLVA-GTDTSRHATQWIMAEILNPNVLERLRREIESVVGRT----RLVQETDLPNLPYLQAVVKEIFRLHHPGAVLPRE-FTQDCNIGG--FYTHE
 CYP705A20 302 FVELLLG-GTDTSAQTIQWIMAEILNPNVLERLRREIESVVGKT----RLIQEKDLPKLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A21 304 FVELFFA-GTDTSAQSIQWIMAEILNPNVLERLRREIESVVGKT----RLIQETDLPKLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A18 307 FVDLFG-GTDTSVQTTQWIMAEILNPNVLERLRREIESVVGKS----RLIHEQDLPNLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A6 305 FVEIFIG-ATDTSVQTTQWIMAEILNPNVLERLRREIESVVGKT----RLIHEQDLPNLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A33 305 FVELFVG-GTDTSVQTTQWIMAEILNPNVLERLRREIESVVGTS----RMIQETDLPNLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A3 305 FVEFFIG-GTDTSVQTTQWIMAEILNPNVLERLRREIESVVGKT----RLIQETDLPNLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A22 305 FVDLFIG-ATDTSVQTTQWIMAEILNPNVLERLRREIESVVGKS----RLIQETDLPNLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A8 303 FVDLFFA-GTDTATHTIQWIMAEILNPNVLERLRREIESVVGKT----RLIQETDLPNLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A9 281 FVDLFFA-GTDTWTHAIQWIMAEILNPNVLERLRREIESVVGKT----RLIQETDLPNLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A25 309 FVEIFLA-GTDTSAQTIQWIMAEILNPNVLERLRREIESVVGVR----RLIQETDLPNLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP705A27 308 IVEIFLG-GTDTSAQTIQWIMAEILNPNVLERLRREIESVVGTT----RFIQETDLSNLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP712A1 304 LLDVFMA-GTDTSAAMQWAMQJLHNPQAFNKLREIEINNVSQSK----RLVQESDIPSLPYLQAVVKEIFRLHHPAAPFLLPVPRKSES-VEVLG-FMVPK
 CYP712A2 302 ILELFMA-SLDTSAALQWIMAEILNPNVLERLRREIESVVGTTN---RLIQESDIPSLPYLQAVVKEIFRLHHPPTPLMVRE-FQEGCKVKG--FYIPA
 CYP93D1 298 IMNIYGG-GTDTSAITVEWALAEELINHPDIMVKAQBEIDIVVGR---D-RPVNESDIAQLPYLQAVVKEIFRLHHPPTPLSLPHIASES-CEING-YH1PK
 CYP81D6 309 IIVMIA-GSETIATWLEWAMLNVLNHPVLEKARTEIDTKIGFD---RLMDEADTKNLPYLQAVVKEIFRLHHPAAPTNPVPHSTSEDCMLAG--YDVPK
 CYP81D7 294 IIVMIA-GTETLAGTLEWAMLNVLNHPVLEKARTEIDTEVGF---RLMDEADTKNLPYLQAVVKEIFRLHHPAAPTNPVPHSTSEDCMLAG--YDVPK
 CYP81D11 302 IIVMIA-GTDTSAITVEWALAEELINHPDIMVKAQBEIDIVVGR---D-RPVNESDIAQLPYLQAVVKEIFRLHHPPTPLSLPHIASES-CEING-YH1PK
 CYP81D2 294 MLSLIAG-GTDTIAVLEWALSLLNHPVLEKARTEIDRMIGVD---RLVQESDIPSLPYLQAVVKEIFRLHHPAAPFLLPVPRKSES-VEVLG-FMVPK
 CYP81D3 290 MLSLILA-GTDTSAVLEWALSLLNHPVLEKARTEIDRMIGVD---RLVQESDIPSLPYLQAVVKEIFRLHHPAAPFLLPVPRKSES-VEVLG-FMVPK
 CYP81D8 293 MLALILA-GTDTSAVLEWALSLLNHPVLEKARTEIDRMIGVD---RLVQESDIPSLPYLQAVVKEIFRLHHPAAPFLLPVPRKSES-VEVLG-FMVPK
 CYP81D4 291 ILTLIA-GTDTSSVLEWALSLLNHPVLEKARTEIDRMIGVD---RLVQESDIPSLPYLQAVVKEIFRLHHPAAPFLLPVPRKSES-VEVLG-FMVPK
 CYP81D5 290 ILALVA-GTDTSSVLEWALSLLNHPVLEKARTEIDRMIGVD---RLVQESDIPSLPYLQAVVKEIFRLHHPAAPFLLPVPRKSES-VEVLG-FMVPK

CYP81D1 300 ILIMVIA-GTNTSAVTLLEWALSNNLNHPDVIISKARDEIDNRVGLD----RLIEEADLSELPLYLKNIVLETLRRLHPATPLLPHMASEDCKIGS--YDMPR
 CYP81F3 289 MLGMMIA-GTDTSAVTLLEWAMSSLLNHPALELEKAKLEIDEKIGQE----RLIDEPDIANLPYLQNVVSETFRLYPAAPLLVPRSPTEDEIKVGG--YDVPR
 CYP81F4 291 MLGIMVA-SSETSAITLLEWAMASLLNHPKVLDDKVKLEIDEIIGQD----RLIEESDIANLPYLQNVVSETLRLHPAAPVLPVPRSTAEDIKITGG--YDVPR
 CYP81F2 289 MLSMLLA-GTDTAAVTLLEWAMANLLKKPEVLKAKAEIDEKIGEE----RLVDEPDIANLPYLQNVVSETFRLCPAAPLLVPRSPSEDLKITGG--YDIPR
 CYP81F1 294 MMSMLLA-GTETSAVTLLEWAMANLLRNPEVLEKARSEIDEKIGKD----RLIDESDIANLPYLQNVVSETFRLFPVAPFLIPRSPTEDEIKITGG--YDVPR
 CYP81H1 299 ILMVVG-GTDTSAITLLEWAMSNLLNHPQILETTTRQNDTQMETSSSR-RLKKEEDLVNMMNYLKNVVSETLRLYPVAPLMVPHVPSDDCVIGG--FNVPR
 CYP81G1 305 VQVMLLA-GTDTTAVTLLEWAMANLLNHPVLRKLLKTELNEVSKEG----RVFEESDTGKOPYLNNVIVSETLRLFPAPLLVPHASSTDCVAG--FDIPR
 CYP81K1 293 IVLMFNG-GTDTSPVAMBWAVSLLNHPDKLEKLRBEIKSNVKHKG----LIQSDLSLSPYLRCVVIYETLRLYPAAPLLPHCSKSRFNLGN--YEIPE
 CYP81K2 292 VVLMFNA-GSDTSPVIMBWAMALLNHPDKLDDKVRBEIKSNVKHKG----IIQSDLSLSPYLRCVVIYETLRLHPAAPLLPHCSKSRFNLGN--YEIPE
 CYP82C3 303 CLALILG-GSETSPSTLTWALSLLNNDMLKVKQDEIDIHVGRD----RNVEDSDIKNLVYLQAIKETLRLYPAAPLLGHREAMEDCTVAG--YNVPC
 CYP82C4 315 CLALILG-GSDTSASTLTWALSLLNNDKEMKKAQDEIDIHVGRD----RNVEDSDIENLVYLQAIKETLRLYPAGPLLGHREAMEDCTVAG--YVPC
 CYP82C2 314 CLALILG-GSETSPSTLTWALSLLNNDKMLKKAQDEIDIHVGRD----RNVEDSDIENLVYIQAIIKETLRLYPAGPLLGHREATDCTVAG--YVNR
 CYP82F1 309 CLNLVLA-GSETAIVVLVWAVSLLNMPHVLKKAQBEELDSKIGKE----RVVEELDIDKDLVYLQAIKVEFRLYPPVPLVAYRAVVEDFDIAFCKCHVPA
 CYP82G1 296 GHALTIT-GSDSTSITLTWAVSLLNMPAALEAAQBEIDNSVCKG----RWIEESDIQNLKYLQAIKVEFRLYPPAPLITGIREAREDFCVGG--YRVEK
 CYP71A12 292 ILDMFIG-GTSTSTLLEWIMTELIRNPNVMKKLQDEIRSTIRPHGSY---IKEKDVENMKYLKAVIKEVFRVHPPPLIIPRLLSEDKVKG--YNTAA
 CYP71A13 292 ILDMFIG-GTSTSTLLEWIMTELIRNPNVMKKLQDEIRSTIRPHGSY---IKEKEVENMKYLKAVIKEVFRVHPPPLIIPRLLSEDKVKG--YNTAA
 CYP71A18 292 ILDMFIG-GLSTSTLLEWIMTELIRNPECMKKLQDEIRSTIRPHGSY---IKEKEVENMRYLKAVIKEVFRVHPPPLIIPRLLSEDKVKG--YDIAA
 CYP71A14 293 ILDMFLA-GTETTYALLEWIMTELIRHPECMKKLQDEIRAKATKLILY---ISEEDVEDMKYLKAVIKEVFRVHPPPLIIPRLLSEDKVKG--YDIAA
 CYP71A15 292 ILDIFLG-GTTTTNSLLEWIMTELIRHPECMKKLQDEIRGDATNLTIY---RSHEEVEDMKYLKAVIKEGLRLHPPPLIIPRLLSEDKVKG--YDIAA
 CYP71A19 287 IWDMLA-GTATSLSFLEWAMTELMRNPKVMKKLQDEIRSSSR-QGLF---VTEKEAEKMDYLQAVIKEALRLRPPAPLMVPRVSEDKVKG--YNTAA
 CYP71A20 292 IWDMLA-GTATLSFLEWAMTELMRNPKVMKKLQDEIRSSSP-QDLF---VTEKEAEKMYLQAVIKEALRLRPPAPLMVPRVSEDKVKG--YNTAA
 CYP71A27 293 LKDMFFS-GTATTASOLEWIMTELMRHPECMKKLQDEINSFST-HNLN---VTEKEVEKMYLHCVIKEGLRLHPPPLIIPRLLSEDKVKG--YDITSA
 CYP71A16 293 IFEMFLG-STTTTSAVLEWAMTRLMRNPECLKKLQDEIRSVSK-MNSY---VSGKEVENMNYLKAVIKEVFRVHPPPLIIPRLLSEDKVKG--YDITA
 CYP71A28 295 ILEFFLG-GTTTTFTAIDWAMTLVVRHPESMKKLQBEIQTYSR-NKLY---VPEEVENMKYLKAVIKEVFRVHPPPLIIPRLLSEDKVKG--YDITA
 CYP71A21 286 VLDVLA-GTDSYALMDWAMTELLRHPECLRTLQBEVVRTICK-GNLS---VSEEDIQNMNYLKAVIKEVFRVHPPPLIIPRLLSEDKVKG--YDITA
 CYP71A22 286 ILDVVVG-GTDSYALMBWAMTELLHRPECLNRLQBEVVRTICK-GNSS---VSEDDIKDMNYLKAVIKEVFRVHPPPLIIPRLLSEDKVKG--YDITA
 CYP71A24 285 ILDVVVG-DMDTTYTLLWAMTELLCHHECLDRLQBEVVMVCK-DKSG---VSEDDLQDMNYLKAVIKEVFRVHPPPLIIPRLLSEDKVKG--YDITA
 CYP71A26 285 VMNVFVG-GTDTSSTLMEWAMTELLRHPEKCLKRLQBEVVRTICK-DKSS---VSEEDIQNMNYLKAVIKEVFRVHPPPLIIPRLLSEDKVKG--YDITA
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 CYP71B36 295 LMNVLLG-GIGTSAITMTWAMTELLMRNPRVMKKVQSEIRNQIGKKS---MITLDDIDQLHYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITA
 CYP71B37 295 LMNVLLG-GIGTSAITMTWAMTELLMRNPRVMKKVQSEIRNQIGKKS---MITLDDIDQLHYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITA
 CYP71B9 293 LMNVLLG-AINTSMTMTWAMAELIRNPRVMKKVQSEIRNQINKS---VITLDDIDHLPYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITA
 CYP71B10 295 LMNVLLG-GINTSMTMTWAMAELIRNPRVMKKVQSEIRNQINKS---RISFDDTDKLEYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITA
 CYP71B26 295 LMNVLLG-GIDTSAITMTWAMAELAKNPRVMKKVQAEIRNQINKS---RISFDDTDKLEYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITA
 CYP71B33 295 LMDVLLA-GIETSAGTMAWMAELAKNPLVMRKVQSEIRNKFNRE---LISFEDIEQLHYLKTVINETWRLHPPPLIIPRLLSEDKVKG--YDITA
 CYP71B34 295 LMDVLLA-GMDTSAITMTWAMAELAKNPRVMKKVQSEIRSQINKS---RISFDDTDKLEYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITA
 CYP71B35 294 LLDVLLA-GIDTSAITMTWAMTELLARNPRVMKKVQSEIRTQMCNRS---MISFEDMDQLEYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITA
 CYP71B11 291 LFNILNA-GIDTSAQVMTWVMTYLLSNPRVMKKAQAEVREVINKND---DITEEDIERLEYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITP
 CYP71B12 291 LANILNA-GIDTSAQVMTWVMTYLLSNPRVLLKKAQAEVREVINKND---DITEEDIERLOYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITP
 CYP71B14 291 LLNVLLA-GVDTSGHTITWVMTYLLSNPRVMKKAQAEVREVINKND---DITEEDIERLEYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITP
 CYP71B13 291 LLDVLLA-GVDTSGHTITWVMTYLLSNPRVMKKAQAEVREVINKND---NITEEDIERLEYLKMVINETWRLHPPPLIIPRLLSEDKVKG--YDITP
 CYP71B6 301 IMDLFA-GVDTSVITLWMAELSRHPRVMKKVQAEIREHVGDGK---IVTYDDLEALVYMKVINETWRLHPPPLIIPRLLSEDKVKG--YDITP
 CYP71B28 294 ISDIFLA-GVGTSSITLWAMTELLRNPRVMKKVQDEIRTTLDKKE---RITFEDLNQLHYFKLMVINETWRLHPPPLIIPRLLSEDKVKG--YDITP
 CYP71B29 294 ISDIFLA-GVSTSAITLWAMTELLRNPRVMKKVQDEIRTTLDKKE---RITFEDLNQLHYFKLMVINETWRLHPPPLIIPRLLSEDKVKG--YDITP

CYP71B7 300 ISDIFLA-GVNTSAVTLNWAMAELIRNPRVMKKVQDEIRTTLGDKKQ---RITEODLSQVHYFKLVVKEIFRLHPAAPLLLPRETMSHVKIQQ--YDIPV
 CYP71B15 294 ISDIFVA-GIGGVAGITLWCMTELIRNPRVMKKVQDEIRTTLGDKKE---RIKEEDLNQLHYFKLVVKETLRLHPTTPLLPRQTMSHIKIQQ--YDIPA
 CYP71B23 297 ISDIFLA-GVNTSATTLLWAMTELIRNPRVMKKVQDEVRTVLGEKRD---RITEODLNQLNYFKLVVKEIFRLHPAAPLLLPREAMAKIKIQQ--YDIPE
 CYP71B16 298 LTNIIIA-GIDTGALTIMIWMTELARNPELMKNVQGEIRDSFGNNKE---RITKEDLNKVPFLNMVVIKETFRLHVPAPLLLPRETMTTHIKVQ--YDIPP
 CYP71B17 298 LTNIIIA-GIDTGALTIMIWMTELARNPEIMKKVQGEIRDRLGNNRE---RITKEDLDKVPFLNLMVVIKETFRLHVPAPLLLPRETMAHVKVQ--YDIPP
 CYP71B18 298 LTNIFLG-GIDTGALTIMIWMTELARNPEVMKKVQGEIRDRLGNKE---RITEEDLNKVPYLNLMVVIKETFRLHVPAPLLLPRETMAHIKVQ--YDIPP
 CYP71B19 298 LANIFLA-GIDTGALTIMIWAIVTELVKNPKLKIKVQGEIREQLGSNKE---RITEEDIKVPYLNLMVVIKETFRLHPAAPLILPRETMAHIKVQ--YDIPP
 CYP71B20 298 LANIFLA-GIDTGALTIMIWMTELVKNPKLKIKVQGEIREQLGSNKA---RITEEDIKVPYLNLMVVIKETFRLHPAAPLILPRETMAHIKVQ--YDIPP
 CYP71B2 298 VMDVFLA-GIDTSAVIMIWMTELIRNPRVMKKAQESIRTTLCLKKE---RITEEDLGKVEYLNHILKETFRLHPALPFFVVPRETMSHIKIQQ--YDIPP
 CYP71B27 297 LMNIFLA-GIDTGALTIMIWMTELVKKPLVMKRAQENIRGVLCLKRD---RITEEDLCKFDCLKHIVKETLRLHPPVPPFLVPRETISHIKIQQ--YDIPP
 CYP71B21 295 MSDVFLA-GVNAGAITMIWALTELTRHPRVMKKLQOEIRELLGDNKE---KITEODLEKVHYLKLVIQETLRLHPPAPLLLPRETMSDVKIQQ--YNIPK
 CYP71B22 295 MSDVFLA-GVNAGAITMIWAMTELARHPRVMKKLQOEIREILGDNKE---KITEODLEKVHYLKLVIQETLRLHPPAPLLLPRETMSDLKIQQ--YNIPK
 CYP71B38 295 MSDIFLA-GVNGGANTMIWTLTEL SRHPRVMKKLQOEIRAMLGNKE---RITEEDLEKVEYLNLMVVIKETFRLHPPAPLLLPRLTMSDIKIQQ--YNIPK
 CYP71B5 293 MSDVFLA-GVNAGSITMIWIMTEL SRHPRVMKKLQOEIRAAALGNKE---KITEEDLEKVEYLNLMVVIKETFRLHPPAPLLLPRLTMSDINIQQ--YSIPK
 CYP71B31 295 MSDVFLA-GVNAGTVMIMWIMTELTRHPRVMKKLQOEIRATLGNKE---RITEEDLEKVEYLNLMVVIKETFRLHPPAPLLLPRETMSDIEIQ--YHIPK
 CYP71B8 297 MTDIVLG-GVNAGTITMIWIMTELTRHPRVMKKLQOEIRATLGNKE---RITEEDLEKVEYLNLMVVIKETFRLHPPAPLLLPRQVMSDIEIQ--YHIPK
 CYP71B32 296 MSDVFLA-GVNAGTITMVIWIVTELTRHPRVMKKLQOEIRATLGNKE---RITXEDLQKVEYLNLMVVIKETFRLHPPAPLLLPRETMSDIEIQ--YHIPK
 CYP71B24 295 IQDIYLA-GVDTSAITMIWAMAELVKNPRVMKKVQDEIRTCIGIKQNE---KIEEDVDKLOYLKLVVKEITLRLHPAAPLLLPRETMSQIKIQQ--YNIPK
 CYP71B3 298 IQNIYLA-GVDTSAITMIWAMAELVKNPRVMKKAQOEIRTCIGIKQKE---RIEEDVDKLOYLKLVVKEITLRLHPPAPLLLPRETMADIKIQQ--YDIPR
 CYP71B25 299 TQDIFLA-GIDTSAITMIWAMAELVKNPRVMKKVQDEIRSCIGIKKE---RIEEDVDGKLOYLKLVVKEITLRLHPAAPLLLPRETMADIKIQQ--YDIPR
 CYP71B4 299 LSNIYHA-GIDTSAITMIWAMAELVRNPRVMKKAQOEIRTCIGIKQEG---RIMEEDLDKLOYLKLVVKEITLRLHPAAPLLLPRETMADIKIQQ--YDIPQ
 CYP83A1 294 ILDIVVA-GDTAAAAVVMGMYLKYQVQLKKAQAEVREYMKKEKGST---FVTEEDVKNLPHYFRALVKEITLRIEPPVPLLPRACTQDTKIAG--YDIPA
 CYP83B1 293 ILDIVVP-GDTAAAAVVMWMTYLIKYPEAMKKAQDEVRSVIGDKG---YVSEEDIPNLPHYKAVIKEITLRIEPPVPLLPRACTQDTKIAG--YDIPA
 CYP84A1 313 IMDVMFG-GTEIVASAIWALTELRLRSPEDLKRVOQELAEVGLDRR---VEESDIEKLYLKTLCITLKEITLRMHPPPLLLH-ETAEDTSDIG--FFIPK
 CYP84A4 301 IMDVMFG-GTEIVALAIWVLTTELRLRSPENMKRVQDELTSVGLDRWR---VEDTHLEKLYLKTLCITLKEITLRMHPPPLLLH-ETVKDTEISG--YFIPK
 CYP706A1 316 LMDMVLG-GVDTSVNASEFAMAELVSRPEVLNKRLELDQVVGKDN---IVEESHLPKLPYLQAVMKETLRLHPTLPLLVPHRNSSETSVVAG--YTVPK
 CYP706A2 318 LMDMVLG-GVDTSVNASEFAMAELVSRPEVLNKRLELDQVVGKDN---IVEESHLPKLPYLQAVMKETLRLHPTLPLLVPHRNSSETSVVAG--YTVPK
 CYP706A3 312 LMDMVLG-GTDSLHVIEFAMAELLNHPDIMKRAQOQEVDKVVGKEK---VVEESHISKLPYILAIMKETLRLHPTVAPLLVPRRPSQTTVVGG--FTIPK
 CYP706A7 311 LMDMVLG-GTDSLNTIEFAMAELLNKLEIMKRAQOQELDKVVGKNN---IVEEKHITKLPYILAIMKETLRLHPTVAPLLVPRRPSQTTVVGG--FTIPK
 CYP706A5 312 LMDMVLG-GTESSTNTIEFVMAELLSNPELMRRAQOQELDEVVGKDN---IVEESHITSLPYILAVLKETLRLYPTTPLLPHRNPSETALVGG--YTIPK
 CYP706A6 310 LVLDLVG-GTDTSTNTIEFAMAELLRKPELMKRAQOQELDEVVGKDN---IVEESHITSLPYILAVLKETLRLYPTTPLLPHRNPSETALVGG--YTIPK
 CYP706A4 308 LMDMVLG-GTDTSTNTIEFAMAELLSNPELMRRAQOQELDEVVGKDN---IVEESHITSLPYILAVLKETLRLYPTTPLLPHRNPSETALVGG--YTIPK
 CYP79B2 330 IKELVMA-APDNPSNAVEWAMAEMVKNKPEILRKAMBEIDRVVGKER---LVQESDIPKLNYPKALIREAFRLHPVAAFNLPHVALSDTTVAG--YHIPK
 CYP79B3 332 IKELVMA-APDNPSNAVEWAMAEMVKNKPEILRKAMBEIDRVVGKER---LVQESDIPKLNYPKALIREAFRLHPVAAFNLPHVALSDTTVAG--YHIPK
 CYP79A2 314 VTELMLA-TVDNPSNAABWMAEMINBPSIMQKAVBEIDRVVGKDR---LVQESDIPKLNYPKALIREAFRLHPVAAFNLPHVALSDTTVAG--YHIPK
 CYP79C1 331 S-DLDVV-GIDNAVNVLEWTLAEMLNQREILEKAVBEIDRVVGKER---LVQESDIPKLNYPKALIREAFRLHPVAAFNLPHVALSDTTVAG--YHIPK
 CYP79C2 314 CKEINLA-TIDNTMNNVEWTLAEMLNHPEILEKATNELDIIVGKDR---LVQESDIPKLNYPKALIREAFRLHPVAAFNLPHVALSDTTVAG--YHIPK
 CYP79F1 323 CVEFCIA-AIDNPANNMEWTLGEMLNKPEILRKALKELDEVVGDRD---LVQESDIPKLNYPKALIREAFRLHPVAAFNLPHVALSDTTVAG--YHIPK
 CYP79F2 322 CVEFCIA-AIDNPANNMEWTLGEMLNKPEILRKALKELDEVVGKDR---LVQESDIPKLNYPKALIREAFRLHPVAAFNLPHVALSDTTVAG--YHIPK
 CYP703A2 301 IQDMIYA-ATDTSAVTNEWAMAEMIKQPRVMRKIQEELDNVVGSNR---MVDESIDLVLHNLRYRCVRETFRMHPPAGPFLIPHESVRATTING--YYIPA
 CYP98A8 286 VWNMLTA-GADTTAVVIBWAMAEMIKQPRVMRKIQEELDNVVGSR---LMTESDIPKLNYPKALIREAFRLHPVAAFNLPHVALSDTTVAG--YHIPK
 CYP98A9 280 VWNMLTA-GADTTAVVIBWAMAEMIKQPRVMRKIQEELDNVVGSGR---LMSDADIPKLNYPKALIREAFRLHPVAAFNLPHVALSDTTVAG--YHIPK
 CYP98A3 293 LWDMITA-GMDTTAVVIBWAMAEMIKQPRVMRKIQEELDNVVGSLDR---ILTEADFSRLPYLQCVVKEITLRLHPPPLLLPHRNSADVKIG--YDIPK
 CYP78A10 333 LWEMIFR-GTDTVAILLLEWVILARMVLHQPDIQAKAQAEIDCIVGDSG---RQVTDSDLPKLPYLQAVMKETLRLHPPPLLLSWARLSIHDVHVC--PNLVPA
 CYP78A5 312 LWEMIFR-GTDTVAILLLEWVILARMVLHQPDIQAKAQAEIDCIVGDSG---RSLSDSDLPKLPYLQAVMKETLRLHPPPLLLSWARLSIHDVHVC--PNLVPA

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CYP78A6 324 LWEMIFR-GTDTVAVLLEWILARMVLHPDMQSTVQNELDQVVCKS----RALDESDDLASLPYLTAVVKEVLRRLHPPGPLLSWARLAITDITVD-GRLVPA
CYP78A9 324 LWEMIFR-GTDTVAVLLEWILARMVLHPDIQSTVHNELDQIVGRS----RAVEESDVVSLVYLTAVVKEVLRRLHPPGPLLSWARLAITDTIID-GRRVPA
CYP78A8 326 LWEMIFR-GTDTVAVLVEWVLRARIVMHPKVQLTVHDELDRVVGRS----RTVDESDDLPSLTLYLTAMIKKEVLRRLHPPGPLLSWARLSITDTSVD-GYHVPA
CYP78A7 331 LWEMIFR-GTDTTALLTEWIMAEVLVNPVQTKLRDEILTAVGDGAD--GDVADADLAKLPYLNAAVVKETLRLHPPGPLLSWARLSTSDVQLSNGMVTIPK
CYP77A4 308 CSEFLNG-GTDTTGTALIEWGIAQLIANPEIQSRLYDEIKSTVGDDR---VDEKDVDMVFLQAFVKEILLRKHPPTYFSLTHAVMETTTLAG--YDIPA
CYP77A6 310 CSEFLNG-GTDTTGTALIEWGIAQLIVNPEIQSRLYDEIKSTVGD-RE---VEEKDVDMVFLQAVVKEILLRKHPPTYFTLTHSVTEPTTVAG--YDVPV
CYP77A7 310 CSEFLNA-GTDTTGAAIEWGIAELIANPEIQSRLYDEIKSTVG-DRA---VDERDVDMVLLQAVVKEILLRRHPPTYFTLTHSGVTEPTTLAG--YDIPV
CYP77A9 305 CSEFLNA-GTDTTGTALIEWGIAELISNPKIQSRLYDEIKSTVGDDRT---VEEKDLNKMVFLQAFVKEILLRRHPPTYFTLTHGVTEPTNLAC--YDIPV
CYP77B1 305 CSEIVSA-GTDTSATILEWALFHLVTDQNIQEKLYEEVVGVVCKNGV---VEEDDVAKMPYLEAIVKETLRRHPPGHFLLSHAAVKDTTELGC--YDIPA
CYP89A4 306 CSEFLNG-GTDTTATALQWIMANLVKNPEIQKRLYEEIKSVVGEEA---KEVEEEDAQKMPYLKAVVMEGLRRHPPGHFVLPHSVTEDTVLCG--YKVPK
CYP89A5 306 CSEFLNG-GTDTTATALQWIMANLVKNPDIQKRLYEEIKSVVGEEA---NEVEEEDAQKMPYLEAVVMEGLRRHPPGHFVLPHSVTEDTVLCG--YKVPK
CYP89A6 307 CSEFLNA-GTDTTATALQWIMANLVKNPEIQRRLYEEIKSIVGEEA---KEVEEEDAQKMPYLKAVVMEGLRRHPPGHFVLPHSVTEDTVLCG--YKVPK
CYP89A7 305 CSEFLIA-GSDTTATVLQWIMANLVKNQEIQRRLYEEITNVVGEEA---KVVEEKDTQKMPYLKAVVMEALRRHPPGNTVLPHSVTEDTVLCG--YKVPK
CYP89A2 301 CSEFLTA-GTDTTATALQWIMANLVKYPEIQERLHBEIKSVVGRSK---GGGEE-DVEKMPYLKALVLEGLRRHPPGHFLLPHSVTEDTVLCG--YKVPK
CYP89A3 299 CSEFLNA-GTDTTATLQWIMANLVRNQEIQRRLYEEIKSVIGEEEE---KEIEEEMKKMPYLKAVVLEGLRLHPPGHLLLPHRVSEDTVLCG--YRVPK
CYP89A9 300 CSEFLNA-ATDPTATSMQWIMAIMVKYPEIQKRVYBEMKTVFAGEEEEREEREEDLGLKLSYLKAVILLECLRRHPPGHYLSYHKVTHDTVLCG--FLIPR
CYP73A5 300 VENINVA-AIETTLWSIEWGIAELVNHPEIQSKLRNELDTVLCPG----VQVTEPDLHKLPLYLQAVVKETLRLRMAIPLLVPHMNLHDAKLAC--YDIPA
CYP701A3 309 LVWETIIETADTTLVITTEWALYELAKHPSVQDRLCKEIQNVCCGEK-----FKEEQLSQVPLYLNGVFHETLRLKYSEAPIVPIRYAHEDTVLCG--YHVPA
consensus 401 ..... *..*.....

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CYP76C2 399 DTQVFNVWAI GRDPNVWE--NSSRFKPERFLG---KDIDLR-----GRDYELTPFGAGRRICPGLPLAVKTVPLMLASLLYSFDWKL PNGVGS--
 CYP76C4 398 DTQVLVNVWAI GRDPSVWE--NPSQFEPERFMG---KDIDVK-----GRDYELTPFGGRRICPGLPLAVKTVSLMLASLLYSFDWKL PNGVVS--
 CYP76C1 398 DTQVLVNVWAI GRDPSVWD--NPSQFEPERFLG---KDMVDR-----GRDYELTPFGAGRRICPGMPLAMKTVSLMLASLLYSFDWKL PKGVLS--
 CYP76C5 399 DSHVLVNVWAI GRDPNVWE--NPTQFEPERFLG---KDIDVK-----GTNYELTPFGAGRRICPGLPLALKTVHMLASLLYTFEWKLPNGVGS--
 CYP76C6 398 DSQVLVNVWAI GRDPLVWE--NPTHFEPERFLG---KEIDVK-----GTDYELTPFGAGRRICPGLPLAMKTVHMLASLLYTFEWKLPNGVGS--
 CYP76C3 391 NTQVVNVWAI GRDASVWE--NPMKFEPERFLL---RET DVK-----GRDFELIPFGSGRRMCPGISMALKTMHMVLASLLYSFDWKLQNGVVP--
 CYP76C7 387 NTQVLVNVWAI GRDPNVWK--NPTQFEPERFLG---RGIDVK-----GNHFELIPFGAGRRICPGMPLAFRIMHLVLASLLYGF DWEYQNGVVP--
 CYP76G1 402 ETQVLVNVWAI GRDPKTWI--DPIMEFKPERFLSD--PDARDFK-----GQDYELIPFGSGRRMCPALPLASRVLPLAIGSMVRSFDWALENGLNA--
 CYP75B1 389 GSTLLTNVWAI ARDPDQWS--DPLAFKPERFLPGGEKSGVDK-----GSDFELIPFGAGRRICACLSLGLRTIQFLTATLVQGF DWEIAGGVTP--
 CYP705A1 394 NTTLVNVSYAMMRDPDSWQ--DPDEFKPERFLAS--L-----SREEDKKEKILNFLPFSGRRMCPGSNLGYIFVGT AIGMMVQCFDWEI NGDKINM
 CYP705A24 395 GTSLVVNAYAVMRDPDIWE--DPNEFKPERFLDASRL-----GQEEKKEKTLKFLPFAGRRICPGLYLGYTLVETTIGVMVQCFDWEIEGDKVNM
 CYP705A12 382 KTTLLVNVLYAVNRDPDSWE--DPDMFKPERFLVSSIS-----GDEEKIREQAVKYVTFGGRRICPAVKLAHIFMETAIGAMVQCFDWR IKGEKVYM
 CYP705A13 398 NTTLVNVNAYAVMRDPDSWE--DPDEFKPERFLASSRG-----KEEE--REQELKYIPFGSGRRICPGVNLGYIFVGT AIGMMVHCDFWRTNGDKVNM
 CYP705A15 398 KTTLMINAYAVMRDSDSWE--DPDEFKPERFLASSRS-----EQEKERREQAIKYIAFGSGRRICPGENLAYIFLGT AIGVMVQGF EWR I KEEKVNM
 CYP705A4 388 NTSVVNVYAVMRDPDAWE--DPLVFKPERFLASSRA-----EQEERREKEIKYLPFGSGRRICPGENLAYVIMGT AIGVMVQGF EWR I TTEKINM
 CYP705A16 399 STTLVNVNGYAVMRDPNVWE--DPDEFKPERFLASSRL-----REEEIREQALKYIAFGSGRRICPGTNLAYIFVGT AIGMMVQCFDWK IKGDKVDM
 CYP705A19 397 STTLVNVNGYAVMRDPNVWE--DPDEFKPERFLASSRL-----MQEDEIREQALKYIAFGSGRRICPGANVAYIFVGT AIGMMVQCFDWR INGEKVDM
 CYP705A28 399 KTLVNVNTYAIMRDPNFWE--DPDEFKPERFLITSSRS-----EQEDEMREEVLKYIPFSAGRRICPGSNLAYVSLGIAIGVMVQCFDWR IKGEKVNM
 CYP705A30 398 KTLVNVNTYAIMRDPNFWE--DPDEFKPERFLASSRS-----EQEDEVREEVLKYIPFSAGRRICPGSNLAYISLGI VIGVMVQCFDWR IEGEKVNM
 CYP705A32 401 KTLVNVNVYAIMRDPKLWE--DPDEFKPERFLASSRS-----GQEDEIREEVLYKMPFSTGRRICPGSNLAYVSVGT AIGVMAQCFDWR IKGEKVNM
 CYP705A2 391 KTLVNVNSYAIMRDPDFWE--DPDEFKPERFLSISRS-----GQEDEIRDKFLKYIPFASGRRICPGTNLAYASVGT AVGVMVQCFDWK IEGENVNM
 CYP705A5 394 KTRLFVNVYAIMRDPDFWE--DPDEFKPERFLASSRL-----GEDEKREDMLKYIPFGSGRRICPGSHLAYTVVGSVIGMMVQHFDWI IKGEKINM
 CYP705A23 397 NTPLVNVNAYAMMRDPGSWE--DPNEFKPERFLGSGK-----EDEREHGLKYIPFGSGRRICPGINLAYILVGT AIGVMVQCFDWK IKGDKVNM
 CYP705A20 394 KTTLLVNVNAYAVMRDPTIWE--DPDEFKPERFLR-----QEERALKHIAFGSGRRICPGSNLATIFIGT AIGTMVQCFDLS IKGDKVKM
 CYP705A21 396 KTTLLIGNAYVMMRDPVWE--DPDEFKPERFLSSRS-----TQEEERREQALKYIPFGSGRRICPGSSLGYIFVGT AVGMMVQCFDWS IKGDKVQM
 CYP705A18 399 KTTLLVINAYAVMRDPDSWE--DPDEFKPERFLSYRS-----GQEDEK--EQTLKYL SFGGRRICPGVNLGYIFVGT AIGMMVQCFDWK IEGDKVNM
 CYP705A6 397 KTTLLVINAYAVMRDPDSWE--DPDEFKPERFLRSSSS-----GQE---EKPFKYL PFGGRRICPGNLAYIFVGT AIGVMVQCFDWK IKGDKVNM
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 CYP705A3 397 KTTLLVNVYAIMRDSDSWE--DPEKFKPERFLTSSRS-----GEED--EKELKFL PFGSGRRICPGANLGSIFVGT AIGVMVQCFDWK IKEDKVNM
 CYP705A22 397 KTTLLINAYVVMRDPNVWE--DPDEFKPERFLASSRS-----GQEDERREQALKFLPFGSGRRICPGSNLAYMIVGSAIGMMVQCFDWR IEGEKVNM
 CYP705A8 395 KTKLVNVNGYAIMRDPDNWE--DPLEFKPERFLASSRS-----SQKDAIKEEVLYKLSFGSGRRICPGVNLAYVSVETAIGVMVQCFDWK IDGHKINM
 CYP705A9 373 KTTLVNVNGYAMMRDPEYWE--DQEFKPERFLASSRS-----SQNDEIRDELLKYL PFGNGRRICPGANLAYISVGT AIGVMVQCFDWEI KGDKINM
 CYP705A25 401 NTMMVNVYAVLRDPDSWE--YPEEFQPERFMTSPLK-----GKEDEKAQLALNFPFGSGRRICLCKNLGYIFMGVAIGTMVQCFDWR INGDKNM
 CYP705A27 400 NTTMLINTYAMMIDPDSWE--NPKDFQPERFMVSPSK-----GKDDEREQALALNFPFGSGRRACPEKLGYLFTGVAIGTMVQCFDWI IDGDKVNV
 CYP712A1 396 KTRVLVNVYAIMRDSSELWA--DADRFIPERFLESSEE-----KIGEHQMQFKQNFYLPFGSGRRICPGASLAMNVMHIVGVSIVQRF DWS--VDGQKV
 CYP712A2 395 GIKLFINAYGIMRDEPTYK--DPDKFMPERFLVVEQDTERKMGYYQYMLELKGQDVNYLAFSGSGRRICLASHASLVLSLTIGSLVQCFNWT VKGDEDKI
 CYP93D1 390 KTRVLVNVWAI GRDSNQWE--DPLEFRPERFESEWK-----VMSEKMSFCAGRRICPGEKMFVRFVPIILAATIQC FELKVKGSVDMD
 CYP81D6 402 GSMLLVNIVSMHRDPSTWE--DPEMFKPERFKNEKL-----NQKLLSFCMGRRACPGYGLAHRV VSLTLGSMVQCFEWFQRI GQEYVD
 CYP81D7 387 GSMLLVNVVSMHRDPSTWE--APEMFKPERFKNEKL-----NQKLLSFGFGRRACPGVGLAHRMLSLALGSMVQCFEWFQRI GEEYVD
 CYP81D11 395 GTIILVNAWA IHRDPKLWE--EPEKFKPERFEKKGE-----DKKLMFPGIGRRICPGSGLAQRVLTALGSLVQCFEWF EERVEEKYLD
 CYP81D2 387 GTMLLTNAWA IHRDPLLWD--DPTSFKPERFEKEGE-----AKKLMFGLGRRACPGSGLAQRVLTLSLGS LIQCFEWF ERI GEEYVD
 CYP81D3 382 GTMLLT--AWA IHRDPKIWD--DPTSFKPERFEKEGE-----AQKLLGFLGRRACPGSGLAQRLASLTIGSLIQCFEWF ERI GEEYVD
 CYP81D8 386 GTILLTNVWA IHRDPQLWD--DPMSEFKPERFEKEGE-----AQKLMFGLGRRACPGSGLAHRLLINLTLSLGS LIQCFEWF ERI GEEYVD
 CYP81D4 384 GTMVLTNAWAMHRDPEVWE--DPEIFKPERFEKEGE-----AEKLSIFCMGRRACPGAGLAHRLLINQALGSLVQCFEWF ERI VGEDFVD
 CYP81D5 383 RTLLLTNVWAMHRDPEGLWE--EPERFKPERFEKEGE-----ARKLMFPGMGRRACPGAELGKRLVSLALGCLIQSFEWF ERI VGAEI VD

CYP81D1 393 GTLLLVNAWAHHRDPNTWD-~~DPDSEFKPERFEKEEE~~-----AQKLLAFGLGRRACPGSGLAQRIVGLALGSLIQCFE~~WERVGNVEVD~~

CYP81F3 382 GTMVMVNAWAHHRDPELWN-~~EPEKFKPERFNGGEGG~~-----GRGE--DVHKLMPFGNGRRSCPGAGLGQKIVTLALGSLIQCFD~~WQKVNGEAID~~

CYP81F4 384 DTMVMVNAWAHHRDPLWT-~~EPERFNPERFNGGE~~-----GEKD--DVRMLIAFGSGRRICPGVGLAHKIVTLALGSLIQCFD~~WKKVNEKEID~~

CYP81F2 382 GTIVLVNAWAHHRDPLWD-~~EPEKFMPEFEDQE~~-----ASKKLMVFGNGRRICPGATLGQRMVLLALGSLIQCFD~~WEKVNGEDVD~~

CYP81F1 387 DTIVMVNAWAHHRDPEIWE-~~EPEKFNPD~~R~~YNDGCG~~-----SDY--YVYKLMFPFGNGRRICPGAGLGQRIVTLALGTLIQCFE~~WENVKGEEMD~~

CYP81H1 395 DTIVLVNLWAHHRDPSVWD-~~DPTSFKPERFE~~G~~SDQ~~-----FGH--YNGKMMPFGLGRRACPGLSLANRVVGLLLGSMIQCFE~~WESGSGGQVD~~

CYP81G1 398 RTWLFINAWAIQRDPNVWD-~~DPETFKPERFESETHR~~-----GKFLPF~~G~~I~~G~~RRACPGMGLAQLVLSLALGSLIQCFD~~WERDNDVAVD~~

CYP81K1 386 NIMLLVNAWAVHRDGELE-~~EANVFKPERFE~~G~~FGV~~-----DR--DGFRFLPF~~G~~V~~G~~RRACPAAGLGMRVVSLAVGALVQCFE~~WEKVEAGDID~~

CYP81K2 385 NIVLLVNAWAVHRDGELE-~~EADVFKPERFE~~E~~FGV~~-----DR--DGFRFLPF~~G~~V~~G~~RRACPAAGLAMRVVSLAVGALVQCFE~~WEKVEKEDID~~

CYP82C3 396 GTRLIVNVWKIQRDPKVYM-~~EPNEFRPERFITGEAK~~-----DFDVRGQNFELMPFGSGRRSCPGPSLAMQMLHLGLARFLHSF~~E~~VKTVLDRPVD

CYP82C4 408 GTRLIVNVWKIQRDPKVYM-~~EPNEFRPERFITGEAK~~-----EFDVRGQNFELMPFGSGRRSCPGSSLAMQVLHLGLARFLHSF~~D~~VKTVMDMPVD

CYP82C2 407 GTRMLVNVWKIQRDPKVYM-~~EPNEFRPERFITGEAK~~-----EFDVRGQNFELMPFGSGRRSCPGSSLAMQVLHLGLARFLQS~~F~~DVKTVMMDMPVD

CYP82F1 404 GTQLMVS~~SAWK~~IHRDPNVWS-~~NPEQFEPERFLT-SNR~~-----ELDVGCSYKFFPF~~G~~L~~G~~RRSCPAIPLGMRMVHYLLVRFVLSH~~S~~FDLAR~~P~~SSQD~~V~~D

CYP82G1 389 GTRLLVNIWKLHRDPKIWP-~~DPKTFKPERFMEDKSQ~~-----CEKS--NFEYIPFGSGRRSCPGVNLGLRVVHFV~~L~~ARLQ~~G~~FE~~L~~H~~K~~V~~S~~DE~~P~~LD

CYP71A12 386 GTEVLI~~NAWA~~IQRDPAIWGPD~~AE~~E~~F~~K~~P~~ERHLD--STLDYH-----GKDLNFI~~P~~FGSGRRICPGINLALGLVEVTVANLVGR~~F~~DWR~~AE~~AG~~P~~NG-

CYP71A13 386 GTEVLI~~NAWA~~IQRDTAIWGPDA~~E~~E~~F~~K~~P~~ERHLD--SGLDYH-----GKNLNYI~~P~~FGSGRRICPGINLALGLAEVTVANLVGR~~F~~DWR~~VE~~AG~~P~~NG-

CYP71A18 386 GTEVLI~~NAWA~~IHRDPAIWGPD~~AE~~E~~F~~K~~P~~ERHLD--STLDYH-----GQDLKYI~~P~~FGSGRRICPGINLAMGLVEVTLANLVGR~~F~~DW~~S~~V~~D~~PG~~P~~NG-

CYP71A14 387 GTQVI~~NAWA~~IQRDTMTWGD~~AE~~E~~F~~R~~P~~ERHLD--SLVDFR-----GTNFEFI~~P~~FGSGRRICPGIGFAMALVEVTLANLVNRF~~N~~WR~~ME~~VQ~~H~~SG-

CYP71A15 386 GTQVI~~NAWA~~IQRDVTWGD~~AE~~E~~F~~R~~P~~ERHLD--SPLDFR-----GTNFEYI~~P~~FGSGRRICPGIGFAMALVEVTLANLVNRF~~N~~WR~~M~~DAR~~L~~SG-

CYP71A19 380 GTQVI~~NAWA~~IQRDTTTWGD~~AE~~E~~F~~R~~P~~ERHLD--SILDFQ-----GQDFKFI~~P~~FGSGKRI~~C~~PGIGFTSALIGVTLANLVKRF~~N~~WR~~M~~DVE~~P~~QR-

CYP71A20 385 GTQVI~~NAWA~~IQRDTTTWGD~~AE~~E~~F~~K~~P~~ERHLD--TNLDFQ-----GQDFKFI~~P~~FGSGKRI~~C~~PGIGFTSALIGVTLANLVKRF~~N~~WR~~M~~DVE~~P~~QR-

CYP71A27 385 GTHVI~~NAWA~~LQRNPAIWGLDANEYR~~P~~ERHFW--YEF~~G~~FQ-----RTDSKFV~~P~~FGA~~G~~RRICPGIGFSLVLSKLALANLVKRF~~N~~WR~~L~~KV~~G~~PV~~G~~D

CYP71A16 386 GTQVI~~NAWA~~IQRDTATWGS~~DA~~Q~~E~~F~~R~~PERHFD--STWDFV-----GRNFKYI~~P~~FGA~~G~~RRICPGIGLSVMASVTLANLVKRF~~F~~DWR~~V~~ED~~G~~PS~~G~~Y

CYP71A28 382 -----AWAIHRDTEKWPYA~~E~~E~~F~~K~~P~~ERHLD--LPLNFQ-----GQDFNFI~~P~~FGSGRRICPDIDFATMLIEVGLANFVYR~~N~~WR~~V~~ET~~R~~PL~~G~~-

CYP71A21 379 GTQVMINAWAIGREAAWGPDA~~E~~K~~F~~R~~P~~ERHLD--SSVDFR-----GHNFE~~L~~V~~P~~FGA~~G~~RRICPAISFAVVLIEVALANFVHRY~~D~~W~~K~~LP--EDSKE

CYP71A22 379 GTQVMINAWAIGREAAWGPDA~~E~~K~~F~~R~~P~~ERHLN--SSVDFR-----GHNFE~~L~~I~~P~~FGA~~G~~RRICPAISFAVILLIEVTLANLVHRY~~D~~W~~R~~LP--EEYIE

CYP71A24 378 GTHVMINAWAIGREAAWGPDA~~E~~E~~F~~R~~P~~ERHLN--SYVDYR-----GQDTE~~L~~V~~P~~FGA~~G~~RRICPAISFAVVLDEVVLANLVHQ~~F~~DW~~T~~LP--EESTE

CYP71A26 378 GTQVLINAWAIGREAAWGPDV~~E~~E~~F~~R~~P~~ERHLD--SSVDFR-----GQAFELI~~P~~FGSGRRICPAISFAVVLNEVVLANLVHR~~F~~DW~~R~~LS--VESTE

CYP71A25 378 GTQVMINAWAIGREVATWGPDA~~E~~E~~F~~K~~P~~ERHLD--TSVDFR-----GQNFELI~~P~~FGA~~G~~RRICPAV~~S~~FAVVLNEVVLANLVHG~~F~~DW~~K~~LP--EESKE

CYP71A23 376 GTQVI~~NLWA~~VGREAAWGPDA~~N~~E~~F~~R~~P~~ERHLE--SPSDFR-----GQDFELI~~P~~FGA~~G~~RRICPGISFAVVLNEVVLANLVHG~~F~~DW~~Q~~S-----ID

CYP71B36 388 KIRLYVNVWAI~~GRDP~~DTWK-~~DPEEFLPERFVN~~-----SSIDAK-----GQHFELI~~P~~FGSGRRICPAMYMGTTMVEFGLANMLYH~~F~~DW~~K~~LPVGMVA-

CYP71B37 388 KIRLYVNVWAI~~GRDP~~DTWK-~~DPEEFLPERFVN~~-----SNIDAK-----GQNFELI~~P~~FGSGRRICPAMYMGTTMVEFGLANMLYH~~F~~DW~~K~~LP~~E~~GMVV-

CYP71B9 386 KILLYVNVWAI~~GRDP~~DSWK-~~DADMFYPERFMD~~-----NNIDAK-----GQNFELI~~P~~FGSGRRICPAMYMGTTMVEFGLANMLYH~~F~~DW~~E~~V~~P~~DGMVV-

CYP71B10 391 KIRLVNVWAI~~GRDP~~E~~L~~WK-~~DPEEFLPERFMD~~-----CDIDVK-----GQDYELI~~P~~FGSGRRICPAVYMGIT~~T~~VEFGLANMLYH~~F~~DW~~K~~LP~~E~~GVAV-

CYP71B26 388 KIRLVNVWAI~~GRDP~~DTWK-~~DPEEFLPERFMD~~-----SNIDAK-----GQNFELI~~S~~FGSGRRICPGLYMGTTMVEFGLANMLYH~~F~~DW~~K~~LP~~E~~GMVV-

CYP71B33 388 KTIHVNVWAI~~GRDP~~NTWK-~~DPEEFLPERFMD~~-----SNIDTK-----GQNFELI~~P~~FGGRRICPAMYMGTTMVEFGLANMLYH~~F~~DW~~K~~LP~~E~~GMKV-

CYP71B34 388 KIRLVNVWAI~~GRDP~~DTWK-~~DPEEFLPERFMD~~-----NNIDAK-----GQHFELI~~P~~FGGRRICPAVYMGTTMVEFGLANMLYH~~F~~DW~~K~~LP~~E~~GMKV-

CYP71B35 387 KIRLVNVWAI~~GRDP~~DTWK-~~DPEEFLPERFMD~~-----NNIDAK-----GQHFELI~~P~~FGGRRICPAIYMGTTMVEFGLANMLYH~~F~~DW~~K~~LP~~E~~GV~~E~~V-

CYP71B11 384 KTIHVNIWAIHRNPNVWK-~~DPEAFI~~P~~PERFMD~~-----NQIDYK-----GLNFE~~F~~L~~P~~FGSGRRICPGIGMGMAIVHLTLINLLYR~~F~~DW~~K~~LP~~E~~GM~~E~~V-

CYP71B12 384 KTIHVNIWAIHRNPNVWK-~~DPEAFI~~P~~PERFMD~~-----SQIDYK-----GLNFE~~L~~L~~P~~FGSGRRICPGIGMGMAIVHLTLINLLYR~~F~~DW~~K~~LP~~E~~GMKV-

CYP71B14 384 KTIYVNIWAIQRNPNVWK-~~DPEVFI~~P~~PERFMH~~-----SEIDYK-----GVDFELI~~P~~FGSGRRICPMGLGMALVHLTLINLLYR~~F~~DW~~K~~LP~~E~~GMNI-

CYP71B13 384 KTIHVNIWAIHRNPNVWK-~~DPEAFI~~P~~PERFMD~~-----NQIDYK-----GLNFE~~L~~L~~P~~FGSGRRICPGIGMGMAIVHLTLINLLYR~~F~~DW~~K~~LP~~E~~GM~~E~~V-

CYP71B6 394 GTRIVNNAWAIGRNPVWK-~~DPDEFI~~P~~PERFVD~~-----SNVETK-----GTSFELI~~P~~FGSGRRICPAMYVGLSTVEYTLANMLYH~~F~~DW~~K~~A-----T-

CYP71B28 388 KTIQIMINAWAIARDPKLWT-~~NPDEFN~~P~~DRFLD~~-----SSIDYR-----GLNFE~~L~~L~~P~~FGSGRRICPMTMGIAIVELGLINLLYH~~F~~DW~~G~~L~~P~~E-----

CYP71B29 388 KTIQIMINVAIARDPKLWT-~~NPDEFN~~P~~DRFLD~~-----SSIDYK-----GLNFE~~L~~L~~P~~FGSGRRICPMTMGITLVEFALLNLLYH~~F~~DW~~G~~L~~P~~E-----

CYP71B7 394 KTQMMINIYSTARDPKLWT-NPDEFNDRFLD--SSIDYR-----GLNFELLPFSGSRRICPGMTLGITTVELGLLNLLYFFDWVVPVGNV-
 CYP71B15 388 KTQILVNVYAMGRDPKLWE-NADEFNDRFLD--SSVDFK-----GKNYEFIPFGSGRRIICPGMTMGITVEMALLNLLYFFDWGLAK-----
 CYP71B23 391 KTQIMVNVYAI GRDPDLWE-NPEEFKPERFVD--SSVDYR-----GLNFELLPFSGSRRICPGMTMGITVVELGLLNLLYFFDWGLPEGRTV-
 CYP71B16 392 KRRILVNTWAI GRDPTLWI-NPEEFNPERFIN--NPVDYR-----GQHFELLPFSGSRRICPGMGLGITVVELGLLNLLYFFDWRAPDGMTH-
 CYP71B17 392 KRRILVNAWAI GRDPKLWT-DPEEFKPERFID--SPVDYR-----GQHFELLPFSGSRRICPGMAMGMATLELGLLNLLYFFDWKLPDGMTH-
 CYP71B18 392 KRRILVNAWAI GRDPKLWT-NPEEFNPERFIN--SPVDYR-----GQHFELLPFSGSRRICPGISMGMATVELGLLNLLYFFDWKLPDGMTH-
 CYP71B19 392 KRRILVNVSAI GRDPKLWT-NPKEFDPERFMD--SFVDYR-----GQHYELLPFSGSRRICPGMPMGLAAVELGLLNLLYFFDWKLPDGMTH-
 CYP71B20 392 KRRILVNVSAI GRDPKLWT-NPEEFDPERFMD--SSVDYR-----GQHYELLPFSGSRRICPGMPMGLAAVELGLLNLLYFFDWKLPDGMTH-
 CYP71B2 392 KTQIQINVWITIGRDPKRWI-DPEEFNPERFAN--SSVDFR-----GQHFELLPFSGSRRICPGMPMAIASVELALMNLLYFFDWSMPDGTKG-
 CYP71B27 391 KTQIQVNVWITIGRDPKRWI-DPEEFRPERFAN--TCVDFR-----GQHFDFLPFGSGRRIICPAISMAIATVELGLMNLDFDWDWRLPDGMKV-
 CYP71B21 389 NTMIENITYAIGRDPNCWT-NPNEFIPERFVD--SPIDYK-----GQHFELLPFGGRRICPGMATGMTIVELGLLNVLYFFDWSLPGYMAI-
 CYP71B22 389 NTMIENITYSIGRDPNCWE-NPNDENPERFID--SPVEYK-----GQHYELLPFAGRRICPGMATGITIVELGLLNVLYFFDWSLPGMKI-
 CYP71B38 389 NTMIQINTYAI GRDPKYWK-QPGEFIPERFLD--SPIDYK-----GQHFELLPFAGRRICPGMATGITMVELGLLNLLYFFDWSLPGMTI-
 CYP71B5 387 NTMIQINTYTI GRDPKNWT-KPDEFIPERFVD--NPLEYK-----GQHFELLPFAGRRICPGMATGITIVELGLLSLLYFFDWSLPGMTT-
 CYP71B31 389 NAHVINTYAI GRDPKRWI-NPEEFNPERFIN--TSINYK-----GQHYELLPFAGRRICPGMTLGITILELGLLNLLYFFDWSLPGMTI-
 CYP71B8 391 NAHIKISTYAI GRDPKOWI-NPEEFNPERFAN--TSINYK-----GQHYELLPFAGRRICPGMTLGITILELGLLNLLYFFDWSLPGMTI-
 CYP71B32 390 NALIRINTYTI GRDLKOWS-NPE-----RFIN--TSINYK-----GQDYKLLPFAGRRICPGMNLGITILELGLLNLLYFFDWSFPNGMTI-
 CYP71B24 390 KTIILLVNVWSI GRDPKHVK-NPEEFNPERFID--CPIDYK-----GNSFEMLPFGSGRRIICPGIAPAIATVELGLLNLLYHFDWRLPE--ED-
 CYP71B3 393 KTIILLVNAWSI GRNPDLWE-NPEEFNPERFID--CPMDYK-----GNSFEMLPFGSGRRIICPGIAPAIATVELGLLNLLYHFDWRLAE--ED-
 CYP71B25 393 KTIILLVSAWSI GRDPKYWK-NPEEFNPERFID--CPVDYK-----GHSFEFLPFSGSRRICPGMASAIATIELTLNLLYFFDWKLP--EM-
 CYP71B4 394 KRALLVNAWSI GRDPESWK-NPEEFNPERFID--CPVDYK-----GHSCELLPFSGSRRICPGIAMAATIELGLLNLLYFFDWNMPE--KK-
 CYP83A1 389 GTIVNVNAWAVSRDEKEWGPNDPEFRPERFL--EKEVDFK-----GTDYEFIPFGSGRRIICPMRLGAAMLEVPYANLLSFPNFKLPNGMKP-
 CYP83B1 386 KTIIQVNAWAVSRDTAAWGDNPNEFIPERFMNEHKGVDK-----GQDFELLPFSGSRRICPAMHLGIAMVEIPFANLLYKFDWSLPGKIKP-
 CYP84A1 405 KSRVMINAFAI GRDPTSWI-DPDTFRPSRFLFP-GVPDFK-----GNSFEFIPFGSRRICPGMQLGLYALDLAVAHLLHCFWKLPGMKP-
 CYP84A4 394 GSRVMINTYAL GRDPNSWS-DPESEFNPERFLNP-IAPDLK-----GNNFEFVVPFGSRRICPGMQLGLYAFELAVAHLLHCFWKLPGMNP-
 CYP706A1 409 DSKIFINVAIHRDPKNWD-EPNEFKPERFLENS-LDFNG-----GDFKYLPFSGSRRICAAINMAERLVLFNIASLLHSFDWKAPQG----
 CYP706A2 411 DSKIFINVAIHRDPKNWD-EPNEFKPERFLENS-LDFNG-----GDFKYLPFSGSRRICAAINMAERLVLFNIASLLHSFDWKAPQG----
 CYP706A3 405 DSKIFINVAIHRNPVWE-NPLKFDPRFLDMS-YDFKG-----NDFNYLPFGSGRRIICVGMAMGERVVLYNLATFLHSFDWKIPQG----
 CYP706A7 404 DSKVFINVAIHRNPVWE-NPEEFNDRFLDKG-YDFSG-----NDYSYFPFGSGRRIICAGMAMA EKVVLYNLATLLHSFDWRIIGEG----
 CYP706A5 405 NTKIFINVWSIQRDPNVWE-YPTEFRPERFLDKKSCDFTG-----TDYSYLPFGSGRRIICAGIALAERMILYTLATLLHSFDWTIPDG----
 CYP706A6 403 NTKIFINVWSIQRDPNVWE-YPTEFRPERFLDKKSCDFTG-----TDYSYLPFGSGRRIICAGIALAERMILYTLATLLHSFDWKIPEG----
 CYP706A4 401 DTKIFVNVWSIQRDPNVWE-NPEEFRPERFLDNNSCDFTG-----ANYSYFPFGSRRICAGVALAERMVLYTLATLLHSFDWKIPEG----
 CYP79B2 423 GSQVLLSRYGLGRNPVWA-DPLCFKPERHLNEC-----SEVTLTENDLRFISFSTGKRCGAAPALGTALTMMMLARLLQGFQWKL PENETR-
 CYP79B3 425 GSQVLLSRYGLGRNPVWA-DPLSFKPERHLNEC-----SEVTLTENDLRFISFSTGKRCGAAPALGTALTMMMLARLLQGFQWKL PENETR-
 CYP79A2 407 GSHVLLSRMCI GRNPVWD-KPHKEDPERHLSTN-----TCVDLNESDLNLI SF SAGRRCCMGVDIGSAMTYMLARLLQGFQWKL PVPGNK-
 CYP79C1 423 GSHVLSRPGVGRNPKTWD-EPILYRPERHITG-----NEVVLTEPDLRLV SF CTGRRGCVC AKLGTSMIVTLLGRLLQGFQWKTIPP GTTDR-
 CYP79C2 407 GSQVLLSRYGLGRNPKTWD-EPNAFKPERYLDGHVEKS-----LGVTLMPEPDMRFVTFCTGRRSCPGTKIGTSMITMMLARLLQGFQWKL PIGKSS-
 CYP79F1 416 GSHIHVCRPGLGRNPKTWK-DPLVYKPERHLQGD-GIT-----KEVTLVETEMRFV SF STGRRGCICVKVGTIMMVMLARFLQGFQWKL LHRDFGP-
 CYP79F2 415 GSHIHVCRPGLGRNPKTWK-DPLAYEPPERHLQGD-GIT-----KEVTLVETEMRFV SF STGRRGCICVKVGTIMMAMMLARFLQGFQWKL LHRDFGP-
 CYP703A2 394 KTRVFINTHGLGRNTKIWD-DVEDFRPERHWPVEGSGR-----VEISHG-PDFKILPFSACKRKC PGAPLGVTMVLMMLARLLHCFEWS SPGNIDT-
 CYP98A8 379 GATVYVNVQAI GRDPANWI-NPEEFRPERFLQEETDVKGR-----DFRVL PFGSGRRIICPAAQLSMNMLTLMVGNLLHCFSWSSP---VPG-
 CYP98A9 373 GATVYVNVQAI GRDPANWS-NPEEFRPERFLVEETDVKGQ-----DFRVL PFGSGRRIICPAAQLSLNMMTLALGSLHCFSWTSS---TPR-
 CYP98A3 386 GSNVHVNVWAVARDPAVWK-NPEEFRPERFLEEDVDMKGH-----DFRLLPFAGRRICPGAQLGINLVTSMMSHLLHFFVWTPPGQ--TKP-
 CYP78A10 428 GTTAMVNMWAI THDEKVVW-BAHEYKPERFLGAQESNNFP-----IMGSDLRLAPFGAGRRICPGKSMGLATVELWLAQLLGSYKVVW--CGEVD-
 CYP78A5 407 GTIAMVNMWAI THNAKIWT-DPEEAFPERFLISEDVS-----IMGSDLRLAPFGSGRRIICPGKAMGLATVHLWLGQLIQNFQWVKGSCDVE-

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CYP78A6 418 GTTAMVNMWAVSHDPHVWV-DPLEEFKPERFVAKEGEVEFS-----VLGSDLRLAPFGSGRRICPGKNLGFTTVMFWTAMMLHEFEWVG-PSDNGV
CYP78A9 418 GTTAMVNMWAIADHPHVWE-NPLEEFKPERFVAKEGEVEFS-----VLGSDLRLAPFGSGRRVCPGKNLGLTTVTFWTATLLHEFEWLTTPSDEKTV
CYP78A8 420 GTTAMVNMWAIARDPHVWE-DPLEEFKPERFVAKEGEAEFS-----VFGSDLRLAPFGSGKRVCPGKNLGLTTVSWVATLLHEFEWLPVSEANPP
CYP78A7 428 GTTAMVNMWAIHTDQTVWS-DPLKFDPERFTG---NADMD-----IRGDLRLAPFGAGRRVCPGKNMGLATVTRWVAELVRRFEWVGQ-DQTEPV
CYP77A4 401 GVNVEVYLPGLISEDPRIWN-NPKKFDPRFMLGKE--DADITG-----ISGVKMIPIFCVGRRI CPGLAMATIHVHLMMLARMVQEFEWCAHPPGSEI
CYP77A6 402 GINVEFYLPGLINEDPKLWS-DPKKFNPRFISGKE--EADITG-----VTGVKMMPIFCIGRRICPGLAMATVHVHLMMLAKMVQEFEWSAYPESEI
CYP77A7 402 GVNIEFYLPGLISEDPKIWS-EPKKFDPRFISGRE--DADITG-----VAGVKMMPFCVGRRI CPGMGMATVHVHLMMLARMVQEFEWLAYPPQSEM
CYP77A9 398 GANVEFYLPGLISEDPKIWS-KPEKFDPRFITGGE--DADLTG-----VAGVKMMPFCIGRRICPGLGMATVHVHLMMLSRMVQEFEWSSYPPE SQV
CYP77B1 398 GAYVEIYTAWVTENPDIWS-DPGKFRPERFLTGGDGVADWTG-----TRGVTMLPFCAGRRICPAWSLGLLHINLMMLARMIHSEFKWIPVP-DSPP
CYP89A4 400 KGTINFMVAEIGRDPMVWE-EPMAFKPERFMG---EEEAVDITG-----SRGIKMMPIFCAGRRICPGIGLAMLHLEYVANMVREFFEWKEVQ-GHEV
CYP89A5 400 NGTINFMVAEIGRDPKVWE-EPMAFKPERFM---EEAVDITG-----SRGIKMMPIFCAGRRICPGIGLAMLHLEYVANMVREFFDWKEVQ-GHEV
CYP89A6 401 KGTINFMVAEIGRDPKVWE-EPMAFKPERFM---EEAVDITG-----SRGIKMMPIFCAGRRICPGIGLAMLHLEYVANMVREFFEWQEVQ-GHEV
CYP89A7 399 KGTINFLVAEIGRDPKVWE-EPMAFKPERFMG---EEEAVDITG-----SRGIKMMPIFCAGRRICPGIGLAMLHLEYVANMVREFFQWKEVE-GHEV
CYP89A2 394 NGTINFMVAEIGRDPVEWE-EPMAFKPERFMG---EEEAVDLTG-----SRGIKMMPIFCAGRRICPGIGLAMLHLEYVANMVREFFQWKEVE-GHEV
CYP89A3 394 KGTFNINVMIGRDPVWE-EPMEFKPERFIG--EDKEVDVTG-----SRGIKMMPIFCAGRRICPGIGSAMLHLEYFVNVLVKFEFWKEVE-GYEV
CYP89A9 397 QGTINFMVGE MGRDPKIWE-DPLTFKPERFLENGEACDFDMTG-----TREIKMMPIFCAGRRMCPGYALSLHLEYVANLVKFEFWKVEE-GEEV
CYP73A5 393 ESKILVNAWVLANPNSWK-KPEEFRPERFEEESHVEAN-----CNDFRYVPIFCVGRRSCPGIILALPILGITIGRMVQNEFELLPPPGQSKV
CYP701A3 402 GSEIATNLYGCNMDKKRWE-RPEDWWPERFLDDGKYETSD-----LHKTMAFGACKRVCACALQASLMAGIAIGRIVQEFEWKLRDGEVE-
consensus 501 . . . . . * . . . . . * . . . . . * . . . . .

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CYP76C2 483 EDLDMDETFGLTLHKTNPPLHAVPVKKRGRN-----
 CYP76C4 482 EDLDMDETFGITLHRTNTLYATPVKKQTIN-----
 CYP76C1 482 EDLDMDETFGLTLHKTNPPLHAVPVKKRANIN-----
 CYP76C5 483 EDLDMGETFGLTVHKTNPPLLAQL-----
 CYP76C6 482 EDLDMDETFGLTVHKTNPPLLAVPLKKRAIN-----
 CYP76C3 475 GNIDMSETFGLTLHKAKSLCAVPVKKPTISSSY-----
 CYP76C7 471 ENVDMNEAFGATLHKAEPICIVPIKKRV-----
 CYP76G1 488 EEMDMGERIGITLKKAVPLEAIPIPYRGT-----
 CYP75B1 477 EKLNMEESYGLTLQRAVPLVVFHPKRLAPNVYGLGSG-----
 CYP705A1 482 EEATGG-FLITMAH---PLTCTPIPLPRTQNSLISHL-----
 CYP705A24 485 QEGSGLRFFLDLAH---PLKCTPIPRIINHEPSNTQIPNS-----
 CYP705A12 472 E-EAVSGLSLKMAH---PLKCTPVVRFDPFSF-----
 CYP705A13 486 E-ETVAGITLNMMAH---PLRCTPVSRMQLQKSQFVSS-----
 CYP705A15 488 E-EANVGLSLTMAH---PLKVTVPVPTLVPLTQNPINRSS-----
 CYP705A4 478 D-EAVVGLSLTMAH---PLKILPVARTSNLSLQKCL-----
 CYP705A16 489 K-EAIGGLNLTLAH---PLKCTPVARSPPKPF-----
 CYP705A19 487 K-EAIGGLNLTLAH---PLKCTPVARFPKPF-----
 CYP705A28 489 S-ETAGTIMLAMAQ---PLKCTVPVPTLNLLPSSLHIPSS-----
 CYP705A30 488 N-EAAETTALSMAQ---PLKCTPVSRTKNPLPSSLHIPSS-----
 CYP705A32 491 N-EAAGTLVLTMAQ---PLMCTPGPRTLNLPLPSSLHVPIS-----
 CYP705A2 481 N-EAAGTMVLTMAH---PLKCTVPVPTLNLLPP-----
 CYP705A5 484 K-EGG-TMTLTMAH---PLKCTVPVPRNLNT-----
 CYP705A23 483 E-EARGSLVLTMAH---PLKCTPVARTQIPSC-----
 CYP705A20 477 D-EVG-GLNLTMAH---PLECILLVPTQPFISNQIIPSL-----
 CYP705A21 486 D-EAG-GLNLSMAH---SLKCTVPVPRNRPLLADQ-----
 CYP705A18 488 E-ETYGGMNLTMVN---PLKCTVPVPTQPFISNLEILSS-----
 CYP705A6 483 E-ETFEGMNLSMVH---PLKCTPVLRSPQFF-----
 CYP705A33 486 E-ETFEGTLTLMVH---PLKCTPIPRTLFPVTSNLQSPSS-----
 CYP705A3 484 E-ETFEGMTLKMVH---PLTCTPFFEPNLYLLLLISKFPCLILSFGAC-----
 CYP705A22 487 K-EAVKGTILTMAH---PLKLTVPVTRQPPLTWI-----
 CYP705A8 485 N-EVAGKGTLSMAH---PLKCTLVPRSVTPTLTSK-----
 CYP705A9 463 D-EAPGKITLTMAH---PLNCTLVPTLIPVTSTVQIPSS-----
 CYP705A25 491 E--ETGEMTLTMAH---PLKCTPVARINPASFD-----
 CYP705A27 490 E--EAGEMTLTMAH---PLKCTPVTRVNPLASFESDPKWLMEEFDMYC-----
 CYP712A1 488 DLSQSGGSAEMAR---PLVCNPDVDFNTF-----
 CYP712A2 494 KIKLPTGFSASGTAGGSSLMCSEELCFDPFGYQTK-----
 CYP93D1 473 E---GTGSSLPRAT---PLVCVPEVAKEATQSFSLLEPNVNF-----
 CYP81D6 482 NSEDKTVVLMRPTT---PLLAMCKARPVHEILDFAFA-----
 CYP81D7 467 TREE-PMAMMRPAT---PLLAMCKARPVHKFLDFAFA-----
 CYP81D11 475 MRESEKGTMRKAT---SLQAMCKARPVHKVLDASCP-----
 CYP81D2 467 MTEGPG-LTMPKAR---PLEAMCRARDFVGKILPDSS-----
 CYP81D3 461 MTEGGGVIMPKAI---PLVAMCKARPVVGKILNESA-----
 CYP81D8 465 MSEGKG-VTMPKAK---PLEAMCRARPSVVKIFNESV-----
 CYP81D4 464 MTEDEKG-ATLPKAI---PIRAMCKARSIVDKLI-----
 CYP81D5 463 MTEGEG-ITMPKAT---PIRAMCKARAIVGKTI-----

CYP81D1 473 MKEGVG-NTVPKAI---PIKAIICKARPFLHKIIS-----
 CYP81F3 468 MTETPG-MAMRKKI---PLSALCQSRPIMSKLQAHLKG-----
 CYP81F4 468 MSEGPG-MAMRMMV---PIRALCKTRPIMNKLPAATKV-----
 CYP81F2 462 MTENPG-MAMRKLIV---QLRAVCHKRPIMTNLLA-----
 CYP81F1 471 MESTG-LGMRKMD---PIRAMCRPRPIMSKLLL-----
 CYP81H1 479 MTEGPG-LSLPKAE---PIVVTCRTREMASELLFFGSEPSNKNV-----
 CYP81G1 478 MSEGKG-LTMPKSV---PIVAKCKSLPILDKLVL-----
 CYP81K1 469 MRPVFG-VAMAKAE---PIVALPKPWSEMVPILSQL-----
 CYP81K2 468 MRPAFS-VAMDRAE---PIIALLKPCPEMVPILSQL-----
 CYP82C3 484 MSESPG-LTITKAT---PIEVLINPRLKRELFV-----
 CYP82C4 496 MSENPG-LTIPKAT---PIEVLISPRIKEELFV-----
 CYP82C2 495 MTESPG-LTIPKAT---PIEILISPRLKEGLY-----
 CYP82F1 491 MTESNG-LVNHKAT---PIEVNIIPRLHKSLEYVDHIGTDN-----
 CYP82G1 474 MAEGPG-LALPKIN---PIEVVMPRLDPKLYSLL-----
 CYP71A12 471 DQPDLEAFGLDVCCKFPIIAFPSSVI-----
 CYP71A13 471 DQPDLEAIGLDVCRKFPPIIAFPSSVV-----
 CYP71A18 471 DQPDLEAFGLDVCCKNPIIAFPSSVA-----
 CYP71A14 472 DEYDLAESTGLDVCCKFPIIVFPSPA-----
 CYP71A15 471 DEYDLAESTGLDVCCKFPIIVFPSNA-----
 CYP71A19 465 VQHDLEATGLVFRKFPPIIATPSSA-----
 CYP71A20 470 VQHDLEATGLVFRKFPPIIATPSSA-----
 CYP71A27 471 DKPDLEASGLDVCCKFPIIVFPPIAHTH-----
 CYP71A16 472 DKPDLEAGAGIDVCRKFPPIIVFPSSA-----
 CYP71A28 460 -DDGLKQTMGEVCHKFPPIAFLASFTI-----
 CYP71A21 464 NQTNVAESTGMVIHRLFPPIYAIASSTT-----
 CYP71A22 464 DQTNVAESTGMVIHRLFPPIYAIVSSTT-----
 CYP71A24 463 YQTDVAESTGMAVHRMFPPIFAMTT-----
 CYP71A26 463 DQTEVAESTGLAIHRMFPPIYAIASNTT-----
 CYP71A25 463 DKTDVAESSGFVHREFPIYAVASPYLT-----
 CYP71A23 457 DETDVAESIGSVIRRMFPPIYVIPSSTT-----
 CYP71B36 472 EDIDLEESPGLNASKKNELVLVPLKYLHD-----
 CYP71B37 472 EDIDMEESPGLNASKKNELVLVPRKYLNL-----
 CYP71B9 470 EDIDMEESPGLAVGKKNELLLVVPVKYLGH-----
 CYP71B10 475 EDIYMDEASGLTSHKKHDLVLVVPKSLV-----
 CYP71B26 472 EDIDMEAPGLTVSKKSELVLVVPKYLHD-----
 CYP71B33 472 EDMDEAPGLTVNKKNDLLVVPVKYLDN-----
 CYP71B34 472 DDIDMEAPGLTVNKKNELLLVPTKFLDP-----
 CYP71B35 471 KDIDVEAPGLTVNKKNELLLVPEMRRSCG-----
 CYP71B11 468 EDVDLEESYGLVCPKKVPLQLIPVLTQWS-----
 CYP71B12 468 ADVDLEESYGLVCPKKIPLQLIPVL-----
 CYP71B14 468 EDVDLEESYGLVCPKKVPLQLIPVLTQWT-----
 CYP71B13 468 EDVDLEESYGLVCPKKVPELEIPVLTQWT-----
 CYP71B6 473 EEVSVEEAPGLTSHRKHPLHLVENVINRKL-----
 CYP71B28 468 ----KEEAKELITGNEVALDLVQVFLH-----
 CYP71B29 468 ----KEEADKILITGNVAVGLVQVLLH-----

CYP71B7 478 KDINLEETGSI I I SKKTTLELVPVLVHH-----
 CYP71B15 468 ----QEEAKEI INGEENFLAFFQVLHH-----
 CYP71B23 475 KDIDLEEEGAI I I GKKVSELELVPTRRQ-----
 CYP71B16 476 KDIDTEEEAGILTVVKKVPLEKLVPRVQ-----
 CYP71B17 476 KDIDTEEEAGTLTVVKKVHLEKLVPRVP-----
 CYP71B18 476 KDIDTEEEVGTLTIVKKVPLEKLLPVRFQ-----
 CYP71B19 476 KDIDTEEEAGTLTIVKKVPLEKLVPRVQ-----
 CYP71B20 476 KDIDTEEEAGTLTIVKKVPLEQLVPRVQ-----
 CYP71B2 476 EDIDMEEAGNISIVKKIPLQLVPEVQRY-----
 CYP71B27 475 EDIDIEEEAGNVTIVKKLLIYLVPLQRH-----
 CYP71B21 473 ADINMEEAGAFVIAKKVPLELVPVLHY-----
 CYP71B22 473 EDIDMEEAGAFVVAKKVPLELIPTPHQW-----
 CYP71B38 473 EDIDMEEDEGFALIAKKVPLVLIQTSHRW-----
 CYP71B5 471 KDIDMEEEDGAFVIAKKVSELELVP TLHRW-----
 CYP71B31 473 KDIDMEEEDGALNIAKKVPLEQLVPTLP-----
 CYP71B8 475 KDIDMEEEDGALTI AKKVPLELIP TL PASLCIK-----
 CYP71B32 469 EDIDMEEENGALNK TLELIP TL PASLVNKSIR-----
 CYP71B24 472 KDIDMEEAGDVTI I KKVPLEKLVPLVHH-----
 CYP71B3 475 KDIDMEEAGDATIVEKKVPLELVP I IHH-----
 CYP71B25 475 KDMNMEESGDVTIVKKVPLELLPVLYH-----
 CYP71B4 476 KDMMEEAGDLTVDKKVPLELLPVIRISL-----
 CYP83A1 474 DDINMDVMTGLAMHKSQHLKLVPEKVNKY-----
 CYP83B1 473 EDIKMDVMTGLAMHKK EHLVLA PTKHI-----
 CYP84A1 490 SELDMNDVFGLTAPKATRI FAVPTTRLICAL-----
 CYP84A4 479 GDVDTVEGPGLTVPKAIPLVAVPTTRLLCPIVVS-----
 CYP706A1 490 QKFEVEEEKFGLV LKLKSP IVAIPV PRLSDPKLYTA-----
 CYP706A2 492 QKFEVEEEKFGLV LKLKSP IVAIPV PRLSDPKLYTA-----
 CYP706A3 486 ERVEVEEEKFGIVLELKNPLVATPVLRRLSDPNLYL-----
 CYP706A7 485 EKVELEEEKFGILLKLNPLVATPVLRRLSDPNLFL-----
 CYP706A5 487 HVLDLEEEKFGIVLKLKTP IVALPI PRLSNSNFYF-----
 CYP706A6 485 HILDLEEEKFGIVLKLKSP IVALPV PRLSNSNLYL-----
 CYP706A4 483 HVLDLEEEKFGIVLKLK IPIVALPI PRFSDSNLYL-----
 CYP79B2 509 VELMESSHDMFLAKPLVMVGDRLR LPEHLYPTVK-----
 CYP79B3 511 VELMESSHDMFLSKPLVLV GELRRLSEDL YPMVK-----
 CYP79A2 493 IDISESKNDLFMAKPLYAVATPRLAPHVYPT-----
 CYP79C1 509 VELVESKENLFMANPLMACVKPRLDPNMYPK LWTGPA-----
 CYP79C2 497 VELISAESNL FMAKPLLACAKPRLAPSLYPKIQI-----
 CYP79F1 505 LSLEEDDASLLMAKPLHLSVEPRLAPNLYPKFRP-----
 CYP79F2 504 LSLEEDDASLLMAKPLLLSVEPRLASNLYPKFRP-----
 CYP703A2 483 --VEVYGMTMPKAKPLRAI AKPRLAAHLYT-----
 CYP98A8 461 ERIDMSEN PGLLCNMRTPLQALALPRAAARA IPLPLD-----
 CYP98A9 455 EHIDMTEK PGLVCYMKAPLQALASSR LPOELYL-----
 CYP98A3 470 EEIDMSEN PGLVTYMRTPVQAVATPRLPSDLYKRVPYDM-----
 CYP78A10 515 -LSETLKLKLSLEMKN TLVCKAIPRG-----
 CYP78A5 491 -LAEVLKLSMEMKNPLKCKCKAVPRNVGFA-----

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CYP78A6 506 DLSEKLRRLSCEMANPLPAKLRRRRS-----
CYP78A9 507 DLSEKLRRLSCEMANPLAAKLRPRRSFSV-----
CYP78A8 509 DLSEVLRRLSCEMACPLIVNVSSRRKIM-----
CYP78A7 513 DLGEVLRRLSCEMEHPLRAVVEIF-----
CYP77A4 489 DFAGKLEFFT-VVMKNPLRAMVKPRI-----
CYP77A6 490 DFAGKLEFFT-VVMKKPLRAMVKPRV-----
CYP77A7 490 DFAGKLVFA-VVMKKPLRAMVPRVQ-----
CYP77A9 486 DFTGKLVFA-VVMKNPLRARVKARV-----
CYP77B1 487 DPTEITYAFT-VVMKNSLKAQIRSRT-----
CYP89A4 487 DLTEKLEFFT-VVMKHSLKALAVLRRSH-----
CYP89A5 485 DLTEKLEFFT-VVMKHPLKALAVPRRSH-----
CYP89A6 486 DLTEKLEFFT-VVMKHPLKALAVPRRSH-----
CYP89A7 486 DLTEKVEFFT-VIMKHPLKAIAPRRSH-----
CYP89A2 481 DLTEKLEFFT-VVMKHPLKALAVPRRCH-----
CYP89A3 481 DLSEKWEFFT-VVMKYPLKALAVTRRKEKTHIVMA-----
CYP89A9 486 DLSEKQQFITMVMKNPFKANIYPRRK-----
CYP73A5 480 DTSEKGGQFSLHILNHSIIVMKPRNC-----
CYP701A3 486 ----NVDTYGLTSQKLYPIIMAIINPRRS-----
consensus 601 . . . . .

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