

Psi_CYP4V	-----SY-----S-VSVLGISLLIAAVTYLTYRLLSDV	HKWVF-----MKPIPQAGTYPFIGNAHQFK	NAGDF-----F-----RQIEDLTIEFSGEPLFKLWIGP	P-F
Psi_CYP46A2	-----MKFWSAE-----F-VGLLLLVCVGTGVLRTLL	WLWWKPKKLEKLQSQGIKGT-YTILFGDLRLKLY	QTKEAVSRPIDPFSNDILRRASPFSSQVVED	-----CGGKLCYLWLGTS-P-I
Psi_CYP46A1	MA-----LFQVFLSWTAACLFVAFL-I-----	LCIGYCLVQVH-H-MK-----YDHIPGPPRDSFLFGHSATYA	AMRDG-----D-----I IHDRF-LEWAE	-----KYGPCVCRQNFHLV-V
Psi_CYP5A	METLVDVLNVFHIKTSGWSVTLSSLVLF	LGLLYWYSIFPYSVL-----S-----	RCGIKHP-KPVPFGLGNIFMFR	GGFNP-----I-----NDLIK-THGRVCGYLLGR-P-V
Psi_CYP3C1	MFLFD-LFSATSW-----TLLALF-FTLMLLYGIWPYRFF	-----K-----	HLGIKGP-RPLPFIGTLLYFR	GWVGF-----D-----RECQA-KYGDVWGTFDAR-P-V
Psi_CYP3A69	MGYFL-FFSVETW-----ILLITF-ICIFVIYGVKWTGCVF	-----E-----	NLGIPGP-KPYTYVGTGVRHS	VYVED-----D-----QCCAK-KYGVKVMGYEFRSP-M
Psi_CYP3A	MGFLP-ELSVETW-----TLIVFF-VTLVTYGYAPYGGF	-----K-----	KLGIKGP-KPLPFIGTFLEYR	GIHNF-----D-----TECYE-KYGVKVMGYDGRTP-V
Psi_CYP3C2	MGFSL-FFSAETW-----TLLVAL-VTLLFVYVCMWNGIF	-----K-----	KLGVPGP-KPIPFPGTMLAYR	GGTFNF-----D-----EDCSK-KYGRVWGIYDFGR-P-V
Psi_CYP4F2	SLPLVLVSWTGPCQVLLVLGS-GLGAVVAFWITRLRLRH	WYTHR-----L-----	LSCFSKPHANSWLLGHLGQM	QSEEGL-----L-----QVD-DLVQ-KYTHSCSWFLGP-YHL
Psi_CYP4B1	-----WPRTHHWAAVTALCLVAA-----	VYKLAALLAQRH	HALRN-----D-----AESFPGP-RAHWLFGNVREFK	DGNDL-----D-----RVV-KWGK-HDPYAFPIWFGP-VCF

A

B

Psi_CYP4V	LILFHAETVEAILTN-SVHMK	KSYSY-----TFLHPWLJKGLLTS	TGNK	WRQR	RKMLTPTFHFSILTDFLDMNEQA	AAVLVEKLEKQ-AG	G	EFDSFSHITLCALDIICETAMGKKIHAQSHS	DSEYV	SV																				
Psi_CYP46A2	VIVTDPKLVREIMCDKS-GH	DKTPS-----HPLGGYLLNGLVNL	CGQK	WYDR	RKINPVPFHV	DKLKMYGAFSCCCSELIDRWEKL	LDS	ESVELDVWPELENLTGDIISRAFGSSYLEGRRI	-----F	QL																				
Psi_CYP46A1	ILVSCPEGTKELMSQKYS	KDRFFYKKIFSLFGGRFLGNGLVTS	QNH	EQ	WYKQ	RRIMDPAFSSLYRLGLIGTFNERVERLMTKLSDV	ADN	CT	EAGMLKLVNFLTLDVIAKVAFGVLDRLKDRSL	-----FPKAV																				
Psi_CYP5A	VVIADPDMRLQVMVRD-FSSFT	NRMTL-----RFASKPMTDCLLM	L-RNER	WKR	VRSILTPSFS	AAKMR	EMVPLINTVTD	SLMSNLVNS-AES	SE	AFDIHKCFGCF	TMDVIA	SAFGTQVDSQKN	PDD	PFV	HA															
Psi_CYP3C1	LMVADPEI	IKTVL	KECFSVFT	NRRDN	-----PAA-GPL	ADAITAV	KDER	WKR	MSTLSPCFTSGRMQ	IFPIVARY	ADRLTEN	LG	-----THSV	PIDVKQFMAPYS	LDVVTS	SASFGIEANM	NPD	PLN	HL											
Psi_CYP3A69	LAVMDPDM	LKTIL	VKECF	TYFT	NRRNI	-----RLN-GDL	YDSVSTV	EDD	WRI	RNVLTSPSTSGHI	KEMPRIM	KHLSK	ASLQSK	AGN	NE	VVTIKDYF	GAYSVDLM	ASCAFGV	MDL	INN	SS	P	IV	HL						
Psi_CYP3A	LATMDTAM	IKSIL	VKECYS	NFT	NRRDF	-----GLN-GAL	DAITV	V-DEE	WKR	IRSILSPSFTSGRL	KEMYSIM	LQHSS	NLIKSLHKK	AE	AE	VVDVKD	IFGPYSMD	VVTSTAF	SV	DI	INN	PSD	PFV	NI						
Psi_CYP3C2	LCITDPAM	IKTIL	KECYS	LFT	NRRNF	-----RLN-GQL	YDAVSIA	EDD	WKR	IRSILSPSFTSGRL	KEMFIM	KHHSAN	L	TSSMKKK	ADK	E	PLELKEFF	GPYSMD	VVTSTAF	SV	DI	INN	PSD	PFV	NI					
Psi_CYP4F2	VRLFHPDYV	KPLLM	APASITM	KDEL	IY	-----GHLR	PWLGGSLLS	-----NGEE	WSR	RRRLTPAF	HF	DLKTY	AAFKNTS	NTL	LDHNR	HAVA	AE	GS	-----ALEM	FDHVT	MTL	DSL	LRCA	FSD	SNCR	ST	SEY	SAL		
Psi_CYP4B1	LNIHHPDY	VKT	VWTS	-----SEPK	DRVAY	-----SFIE	AWIEG	GLVS	-----GQK	WFR	HRRLLTPG	FHYE	VLKPY	VDLMSD	STV	TMLDK	WERY	AKS	NE	-----SFEL	FEHV	SLMT	LDS	ILKCA	FSD	SHCQ	TES	ST	NAY	IAV

SRS1

SRS2

C

C-Helix region

D

E

Psi_CYP4V	YKMSDIVSR	RQRT	PWF	PDFVY	CFGE	-----GREH	RTLKVL	HSFTH	KVIE	QEAASVS	AGDP	SDSE	QGA	KKR	PAF	-----DMLLK	-----	TTYDD	GSR	MSH																										
Psi_CYP46A2	QTEQVELL	IQAVRS	IYIP	GLK	FPTR	-----NNRR	RKEID	SEV	CDL	RGII	KKREQ	SIA	-----TNPA	STSS	ASH	DDL	LGFL	MDS	-----NSN	QETT	GITT																									
Psi_CYP46A1	QTCLKGM	VFSV	-----RDS	FFV	VNPK	NPFI	KEV	-----REAC	RLRT	TGAQ	WIK	DRKT	AME	-----NGI	DVP	NDI	LQI	IKTS	SVK	-----EES	MTE	EDE																								
Psi_CYP5A	QMF	FS	SFF	RPI	ML	-----FF	AFF	PI	TAP	AR	FLPN	KRRD	QMN	HFF	INII	QKI	IK	QRE	-----QPA	ERR	RDF																									
Psi_CYP3C1	KNILN	FRL	WP	-----II	-----IL	IFP	FGAR	LL	TLL	KLE	MDR	VS	DY	FY	DVI	KRF	KH	Q	-----KDI	ATRA	DF																									
Psi_CYP3A69	SRFF	KIP	-----K	FVFI	-----LQ	IF	P	LL	IPL	FELL	G	SFF	SPT	STA	FFK	TLL	AKI	KA	REG	-----SS	KNS	GDL																								
Psi_CYP3A	KKLV	KFT	TFL	TPL	FV	-----LL	LP	F	LP	VLD	KMD	VTL	SA	ELL	DF	YFN	LK	KIS	DRN	-----NE	KNR	V																								
Psi_CYP3C2	KKML	K	DF	FS	PI	FL	-----IV	FP	FL	GP	VM	KE	MF	SFF	PK	SV	TDF	F	YAA	LQ	KIK	S	NRVH	-----SE	K	SRV	DF																			
Psi_CYP4F2	VELSERI	I	ERR	HK	IL	HHW	D	FY	NK	TEQ	-----GRR	FR	KAL	GIV	HS	FTRE	VQ	KRR	AL	IN	Q	T	K	S	ADL	TRA	Q	R	K	D	F	VD	ILL													
Psi_CYP4B1	YELSYL	INL	R	FR	T	F	YH	S	DL	I	FL	SPH	-----GFR	FR	KAR	K	VA	HS	T	E	E	V	I	R	K	R	E	A	L	G	V	N	R	P	D	G	-----TRA	K	R	N	L	D	F	LD	ILLS	-----

SRS3

SRS4

F

G

Psi_CYP4V	RD	QEE	VD	T	F	FM	RGH	DTT	AS	SMNW	AVHLL	LGSH	PEA	HSK	VQ	QEL	QEV	F	G	SSD	RPV	-----MED	LK	K	L	K	L	E	C	V	I	K	EA	L	R	L	F	-----F	SV	P	F	AR	N	I	GED	CHI	NG	F	K	V	P	K	AN	A	I	V	T	Y	AV	H	R	D	-----Y	PE	PD	AF	R	P	R	F	L	P	EN	-----S																																																		
Psi_CYP46A2	DEM	I	G	E	C	K	L	F	Y	F	AGQ	E	T	T	S	LN	WT	L	V	L	S	M	P	N	W	Q	H	L	A	R	Q	E	V	L	Q	V	C	R	K	Q	-----P	F	S	D	M	N	Q	L	K	I	V	T	M	L	Y	EV	L	R	L	Y	P	P	V	L	F	L	A	M	A	H	A	M	N	I	-----G	G	Y	S	F	P	S	G	M	E	F	R	L	P	I	L	T	M	H	D	-----P	L	W	G	D	D	V	K	E	F	K	P	E	R	F	S	Q	G	I	S	K									
Psi_CYP46A1	EL	M	L	D	N	F	T	F	F	I	AGH	E	T	T	A	N	LA	F	C	I	M	E	L	T	R	R	P	D	I	E	K	M	K	E	V	D	V	G	M	K	Q	-----D	I	S	Y	D	D	L	G	K	L	I	Y	L	S	Q	V	L	K	ET	L	R	M	Y	P	A	P	G	T	S	R	D	-----V	L	E	D	I	V	I	-----D	G	I	H	I	P	G	G	V	T	C	F	F	S	S	Y	V	C	G	R	M	D	-----F	F	F	K	D	-----P	L	T	F	D	P	R	F	H	P	D	A	-----					
Psi_CYP5A	DE	I	V	G	A	F	V	F	L	AGY	E	T	S	S	N	T	LA	F	T	C	Y	L	L	A	I	N	P	E	C	R	K	V	Q	R	E	V	D	E	F	F	S	R	H	E	-----S	P	Y	T	N	V	Q	E	L	K	Y	L	D	M	V	I	S	ET	L	R	L	Y	P	P	G	F	R	A	R	D	-----I	D	Q	D	C	V	L	-----N	G	Q	F	L	P	K	G	A	T	E	I	P	A	G	F	L	H	Y	D	-----H	W	T	E	-----P	E	R	F	I	P	E	R	F	T	P	E	A	-----K					
Psi_CYP3C1	HE	I	L	S	Q	A	L	I	F	I	GGY	E	T	T	S	T	TL	F	L	L	N	L	A	I	N	P	D	A	M	R	T	L	Q	E	E	I	D	A	N	I	P	R	D	A	-----P	L	Y	E	D	V	G	L	Q	Y	L	D	Q	V	L	ES	Q	R	L	I	P	T	A	P	R	L	E	R	V	-----C	K	K	T	T	Q	V	-----H	G	L	T	I	P	K	G	T	L	V	G	I	P	N	L	H	T	D	-----P	F	W	SS	-----P	Q	L	F	R	P	E	R	F	S	K	E	G	-----G							
Psi_CYP3A69	HE	I	L	T	Q	A	T	M	F	M	AGY	E	T	S	A	T	TL	A	F	L	A	N	L	A	R	N	P	E	V	M	K	R	L	Q	E	E	I	D	A	T	F	P	D	K	G	-----A	V	Y	E	E	L	V	Q	M	E	Y	L	D	S	V	N	ES	L	R	L	Y	P	P	A	G	R	L	D	R	V	-----A	K	K	T	V	E	I	-----R	G	I	T	I	P	K	D	M	I	V	V	I	P	Y	A	L	H	R	D	-----P	L	W	PE	-----P	E	E	F	R	P	E	R	F	S	K	Q	N	-----K				
Psi_CYP3A	SE	I	L	S	Q	A	M	I	F	I	AGY	E	T	S	S	G	TL	G	L	A	Y	N	L	A	T	H	P	D	I	Q	K	T	L	Q	E	E	I	D	E	T	F	P	N	K	A	-----R	P	Y	D	A	L	M	Q	M	E	Y	L	D	M	V	N	ES	M	R	L	Y	P	S	G	N	R	L	D	R	V	-----S	K	S	S	V	E	I	-----E	G	V	T	I	P	K	G	T	V	M	I	P	V	T	L	H	R	E	-----P	L	W	PE	-----P	D	A	F	K	P	E	R	F	S	K	E	N	-----K					
Psi_CYP3C2	HE	I	L	S	Q	A	M	I	F	L	AGY	E	T	S	S	S	SL	T	F	L	A	N	L	A	T	N	P	D	I	M	K	R	L	Q	E	E	V	D	S	T	F	P	N	K	G	-----P	V	Y	Q	A	L	M	Q	M	E	Y	L	D	S	V	I	N	ES	L	R	L	Y	P	I	A	P	R	L	E	R	V	-----A	K	A	T	V	E	I	-----N	G	I	V	I	P	K	M	V	M	V	M	P	T	W	P	L	H	R	D	-----P	L	W	PE	-----P	E	A	F	K	P	E	R	F	S	K	E	N	-----K			
Psi_CYP4F2	BE	V	Q	A	E	A	N	T	F	M	AGH	D	T	T	A	S	A	I	C	W	T	L	N	L	A	R	H	E	H	Y	Q	E	K	R	Q	E	V	M	D	L	M	Q	R	D	R	H	K	I	-----W	E	D	L	S	N	L	P	T	T	M	C	I	R	ES	L	R	L	Y	P	A	P	Q	A	V	T	R	K	Y	-----T	R	D	M	A	L	P	G	H	R	T	V	P	A	G	A	I	C	L	V	S	I	Y	G	T	H	N	P	-----V	W	W	T	D	-----P	H	E	F	N	P	E	R	F	D	P	A	R	-----S
Psi_CYP4B1	ED	L	R	A	E	V	D	T	F	M	EGH	D	T	T	A	S	GL	S	F	I	L	S	L	A	C	P	E	H	Q	R	L	C	R	E	E	I	R	T	L	D	G	R	D	-----T	L	S	W	E	D	L	G	K	I	P	Y	T	T	M	C	I	K	ES	L	R	L	Y	P	P	V	P	G	T	S	R	V	-----T	T	K	P	M	T	F	D	G	R	T	L	E	A	G	L	V	G	T	S	V	F	G	I	H	R	N	A	-----V	W	W	E	N	-----P	N	V	F	D	P	L	R	F	L	P	E	N	-----V		

H I-Helix region

I

J

K-Helix region

PERF motif region

SRS6

Psi_CYP4V	AGRPPY	AYIP	FS	AGL	RNC	IG	Q	R	F	A	L	M	E	E	K	V	V	L	A	I	L	R	N	F	N	I	E	A	C	Q	K	-----REEL	P	V	G	E	L	I	L	R	P	-----P	E	N	G	I	W	I	K	E	K	R	K	R	Q	T	-----
Psi_CYP46A2	AT	K	N	K	M	I	F	F	P	FG	A	G	S	R	T	C	I	G	Q	S	F	A	M	E	A	R	L	G	A	M	I	L	Q	R	F	K	F	E	L	S	P	S	Y	L	H	-----A	P	F	F	L	T	L	H	P	Q	H	-----
Psi_CYP46A1	-----PK	P	F	C	Y	C	Y	P	F	F	AL	G	P	R	A	C	L	G	N	F	A	Q	M</																																		