### **Supplemental Information**

### Figures legends for supplemental figures

**Figure S1 Sequence alignment of Pdr5p with other fungal transporters.** Pdr5p and 19 sequences from the PFamA database are aligned. The numbers above the columns are the absolute alignment positions. They are not residue numbers. The alignment begins with amino acid 149 of Pdr5p.

**Figure S2 Structural-based sequence alignment of nucleotide binding domains.** The NBDs of 20 structures from the Protein Databank (PDB) and the two NBDs from Pdr5p are organized in a structure-based alignment. Major sequence motifs are indicated above the columns. The ABC signature motif is designated as the C loop in this figure. The sequence names of proteins other than Pdr5p are the PDB codes.

**Figure S3 Hydrophobicity profiles of Pdr5p and Sav1866.** The Kyte-Doolittle scale was used on the entire alignment (left) and on Pdr5p and Sav1866 alone (right). The upper graphs are of TMD1 and the lower are of TMD2. The red circle indicates the misalignment between Pdr5p and Sav1866.

**Figure S4 Hydrophobicity profiles of Pdr5p and mouse Pgp.** The Kyte-Doolittle scale was used on the entire alignment (left) and on Pdr5p and Mouse Pgp alone (right). The upper graphs are of TMD1 and the lower are of TMD2.

**Figure S5 Separation of the NBDs in the open conformation.** The NBDs are further apart in the open conformation than in the closed conformation. The distance between residues G338 and S1039 increases from 5.9 Å to 24 Å in the open conformation.

**Figure S6 The portal between helices 3 and 4.** The open conformation allows access to the substrate-binding pocket of Pdr5p. Helices 3 and 4 are numbered. Measurements were made from the same pair of residues for each conformation.

**Figure S7 Pdr5p as a true dimer.** (A) A schematic showing the relationship of major motifs around the two ATP-binding sites. Letters in Figure S7A designate Walker A [A], Walker B [B], the C-loop [C], and the D-loop [D]. The sequences of the motifs are shown. White letters are canonical residues and black letters are aberrant residues. All aberrant residues surround ATP site 1. The aberrant arginine from the D-loop of ATP site 2 appears to interact only with ATP site 1 (see text for details). (B) A proposed true Pdr5p dimer. Two Pdr5p molecules (green and magenta) are opened into N-terminal and C-terminal halves. The N-terminal half of one monomer associates with the C-terminal half of the other. (C) A schematic depicting the events leading to a true Pdr5p dimer. After opening, one monomer rotates on top of the other so that N-terminal and C-terminal domains are associated.

**Figure S8 Pdr5p TMDs in the open and closed conformations.** (A) The closed conformation model based on Sav1866. The TMDs are opened to the extracellular environment. (B) The open conformation model based on mouse Pgp. The TMDs are closed to the extracellular environment. Numbers in both parts indicate the residues tested by mutagenesis (see text for details).

**Figure S9 Sequence alignment of the TMDs of Pdr5p and mouse Pgp**. The alignments were corrected for hydrophobicity.

**Figure S10 Sequence alignment of the TMDs of Pdr5p and Sav1866**. The alignments were corrected for hydrophobicity.

**Figure S11 MIC assay of TMD Mutants.** Strains were tested on tritylimidazole (Trityl). WT denotes wild-type and  $\Delta$ pdr5 denotes the pdr5 deletion mutant.

**Figure S12 Interfaces between TMDs and NBDs.** (A) Sav1866p, (B) the Pdr5p open conformation model based on Sav1866p, (C) Pgp, and (D) the Pdr5p closed conformation model based on Pgp.

# Multiple Sequence Alignment of Pdr5

	NBD1				Walk	er A		
	230	240	250	260 2	270 28	80 2	1'''''''''''''''''''''''''''''''''''''	'''' '' 00
PDR5 CDR3	VVNIPYKILKSC VSNGVLKYARNI	LRKFQR	SKETNTF	DILKPMDGCLNPC	ELLVVLGRPGS EVTVVLGRPGA	GCTTLLKSI	SSNTHGFDLG ACRTEGFHVA	ADTKISYS DGSVISYD
ABC1	VSNVWLEAANMI	RTAVGMG	KTTRII	DILRGENGVVRNO	<b>EMLVVLGPPGS</b>	GCSTFLKTI	AGETNGLNVD	QSAYFNYQ
CGR1	FLNLPVKLLNAV	WRKARP	PKPGSN-GORRI ARESDTFI	CILKPMDGLLKP	SEALLVLGRPGS	GCSTFLKAI GCTTLLKSI	SNKRGDY-AG	KDSVISYN(
PMR1	VANSVLEIGAFE	RTMAGT		DILRDFDGLVKNO	EMLIVLGRPGS	GCSTFLKTI	AGEMNGIFKD	ANSHMNYQ
PDR10	FGNMPIKYLKMS	WRCI SRRLFHRT	HGKSEDNDSGF	2ILKPMDGCINP(	ELLVVLGRPGA	GC51LLK11 GCTTLLKSI	SVNTHGFKIS	PDTIITYN
PDR12 PDR15	VEEMFRNIASIE FANTVPKLLTKC	PAHLISKFTK	KSDVPLR	IIQNCTGVVES	EMLFVVGRPGA	GCSTFLKCL	SGETSEL-VD SSNSHGEKIA	VQGEFSYDO KDSIVSYNO
ASPOR	VSSMLSAPFRIC	EMMKNR	HSPPK	RILNEFNGLLKS	ELLLVLGRPGS	G <mark>C</mark> STFLKSL	CGELHGLSMS	KESVIHYDO
AtrF AbcA	VGNVWLKTLSL <sup>2</sup>	RIAFGQ	-RFGKQ-PPVR KQRKVI	SLLHDFTGLVRE DILQNLEGLVEA	SEMMLVLGRPGA SEMLVVLGPPGS	GCSTFLKTI GCSTFLKTI	ANDRGAF-AG AGETYGFHVD	VEGEVRYGO KNSNINFQO
abcG10	LSTPFVTIFN		STWRKSSGSTFI	DILHDVTLFNRD	EMLLVLGRPGA	GCSTLLRVI	SNORSSY-VS	VSGDVTYG
ABC2	VVSQFN	IPKL	IKESRQKPPLKI	XILDNAHGCVKP(	SEMULVLGRPGA	GC51LLRV1 GCTTLLNML	ANRRNGY-AQ	ISGDVSFG
PMR4 DEBHA	VLNTLLEIGTME FGNAAYKVVART	RQLTGM	KLQKI	DILRNFDGLVKS	ETLVVLGKPGS	GCSTLLKTI	AGEMNGIETS AAHTYGETID	EDSVLNYQC KNSVLSYDC
Y1ABC2	FTNSVMAIGPMI	KKVLGGN	KGSEV	QILRHFDGLVRA(	<b>FETCVVLGRPGS</b>	G <mark>C</mark> TTFLKSV	ACETYGFHLG	EKSEWNYQ
AGL142C	VGNSPLKALRMI	YQMTPFAR	GREKSEFI	DILKPLDVVFEPO	GRLCVVLGRPGA	GCSTLLKTV	GARTYGFTVA	PESEISYS
		010	<b>o</b> n					
	310 32	20 330	340	<u>'</u> 350	360	370	380	390
CDR3	ITQDEIRNHLRG	EVVYNAEADVHL. EVVYCA <mark>ETETH</mark> FI	PHLTVFETLVTV PNLT <mark>VGETLE</mark> F#	ALMKTPQNRIKG	VD-RESYANHL VS-REEYAKHV	VDVVMATYGI	LSHTRNTKVG LSHTKNTKVG	NDIVRGVSG NDFIRGISG
ABC1	LSAEEMHKRHRG	EAIYTAEVDVHF	PQLSVGDTLTF7	ANARAPRRAPPO	VS-KTLFANHI	RDVVMAIFG	ISHTINTRVG	NEYIRGVSG
CGR1	LTPNEIKKHYRG	EVVYNAEADIHL	PHLTVYQTLVTV	ARLKTPQNRVKG	VT-REDFANHV	TDVAMATYG	LSHTRDTKVG	DLVRGVSG
PMR1 CDR1	ISDKEMRNQFRG LSPHDIERHYRG	EAIYTAETDVHF DVIYSAETDVHF	PQLSVGNTLKF2 PHLSVGDTLEF2	ALARAPRNRLPG	VS-RDQYAEHM	RDVVMAMLGI ASVYMATYGI	LSHTINTRVG LSHTRNTNVG	NDFIRGVSG NDFVRGVSG
PDR10	FSNKEIKNHYRG	EVVYNAESDIHI	PHLTVFQTLYTV	ARLKTPRNRIKG	VD-RDTFAKHM	TEVAMATYG	LSHTADTKVG	DEVRGVSG
PDR12 PDR15	LSSSDIRKHYRG	EVVINAESDIHL	PHLTVXETIDF7 PHLTVYQTLFTV	ARMKTPQNRIK	VD-REAYANHV	TEVAMATYG	LSHTRDTKVG	DLVRGVSG
ASPOR AtrF	VPQQRMIKEFKC LSAEEOLKHFRC	EVVYNQEVDKHF:	PHLTVGQTLEF# PSLTVWOTLKFS	ALARTPAQRIRE	MS-REEFAKHI	TQVVMAVFGI	LSHTYNTKVG ITHTKNTLVG	NDFVRGVSG NEVVRGVSG
AbcA	IA-KQMAHEFRO	EAIYTAEVDVHF	PKLTVGDTLYF7	ARARTPRHIPGO	VN-ATQYAGHM	RDVIMAMFG	ISHTKNTIVG	DFIRGVSG
abcG10 abcG11	IPSKEF-EKYRG	ESIYTPEEDTHH. EPIYTPEEDSHHI	PTLTVRETLNF7 PTLTVRETLDF7	LKCKTPGNRLPD	ET-KRSFRDKV	YDLLVGMFG. FNLLLSMFG	ISKQSDTLVG IVHQADTIVG	NEFIRGLSG NEFIRGLSG
ABC2	MKAEE-AKRYRG	QIIMNT <mark>EEEIFF</mark>	PSLTVGQTMDF7	TRLKVPYNLPNG	MTSQEEIRLET	RKFLLKSMG		DAFVRGVSG
DEBHA	LTPKDIIKHFRG	DVVYCAETESHF	PQLTVGQTLEF?	AKLRTPQNRPEG	VS-REEYAEHL	TKVVMATYG	LSHTKNTKVG	NDFIRGVSG
Y1ABC2 AGL142C	VPRDVMQKNARC FSOKEIKNHLRC	EIVYNAEVDVHF EVIYSAESDTHF	PHLTVGDTLLFA ASLPVGYTLEFA	ALARTPONRLEG ARCRCPOVRPGG	VS-REQHATHV VK-REVFYKHY	RDVSMAMLGI AAAVMAMYGI	LTHTMDTKVG LSHTRYTKVG	NDFVRGVSG NDYIRGVSG
				~				
	Signature	Walker	B D loop		Switch	ו	Gly lo	рор
	400	410	420	430 44	0 450	460	) 470	)
PDR5	VSGGERKRVSIA	EVSICGSKFQCWI	ONATRGLDSATA	LEFIRALKTOAD	ISNTSATVAIY	OCSONAYDLI	NKVCVLDDG	QIYYGPAD
ABC1	VSGGERKRVTIA	EAALSGAP <mark>LQCWI</mark>	ONST <mark>RGLD</mark> SANA	IEFCKTLRVCTR	LFQTTACVSIY	QAPQSAY <b>D</b> M	DKAVVLYEG	QIYFGPAD
CGR1	VSGGERKRVSIA VSGGERKRVSIA	ETLPTKKTVVSWI EVWICGSKFQCWI	ONSTRGLDASPA ONAT <mark>RGLD</mark> SATA	LDYANSLRVMTD LEFVRALKTQAH	ISNRTTLVTLY IAKNVATVAIY	QAGEQIYELM QCSQDAYNLH	MKVLVIDEGI MKVSVLY <mark>EG</mark> Y	CMVYSGPAG CQIYFGDAQ
PMR1	VSGGERKRVSIA	EATLCGSPLOCWI	ONSTRGLDSANA	LEFCKTLNLMSK	YSGTTCAVAIY	OASOSAYDVI	DKVTVLYEGI	QIYFGRTT
PDR10	VSGGERKRVSIA	EVSICGSKFQCWI	DNATRGLD SATA	LEFIKALKTQAT	ITKSAATVAIY	QCSKDAYDLI	DKVCVL	QIFFGPSK
PDR12 PDR15	VSGGERKRVSLV VSGGERKRVSIA	EAQAMNASIYSWI EVAICGARFOCWI	ONATRGLDASTA ONATRGLDSATA	LEFAQAIRTATN LEFIRALKTOAD	MVNNSAIVAIY	QAGENIYELH OCSODAYDLH	DKTTVLYNGI	RQIYFGPAD COLYFGPAK
ASPOR	VSGGERKRVSIA	EMALAHSPLAAWI	DNSTRGLDSATA	LKEVEALRLEAD	LSGSAHAVAIY	QASQSIYDI	NKVVVLYEGI	QIYYGPAK
AbcA	VSGGERKRVSIA VSGGERKRVSIA	EACLSNAPLQCWI	ONSTRGLDASTA	IEFCKTLRMQAD	INGTTACVSLY	QAGESIYELM QAPQAAYDYI	DKVLVLVEG	REIYFGPTS
abcG10	LSGGERKRLTIT	EAMVSSASITCY	OCSTRGLDAASA	LDYAKSIRIMSD	TLHKTTIASFY	QASDSIFNL	NNVAILEKG	<b>RLIYFGPVG</b>
ABC2	VSGGERKRVSII	ECLASKGSVFCWI	DNSTRGLDASTA	LEWAKAVRAMTD	VLGLASIVTLY	QAGNGIYNLI	DKVLVLDEGI	EIYYGPMR
PMR4 DEBHA	VSGGERKRVSIA VSGGERKRVSIA	EATLSQSPLQCWI EVALSFASLOCWI	ONSTRGLDSANA	LEFCKNLALMSK LEFIKALKTSAT	YSGTTACVAIY	QASQSAYDVI QCSQDAYDLI	DKVTVLYEGI DKVILLY <mark>E</mark> GY	QIFFGPTT QIFFGDCK
Y1ABC2	V <mark>SGGERKR</mark> VSIA	ESVVCGAPLQCWI	ONSTRGLDAANA	TEFIRSLRLSAE	MTDASMEVSLY	QASQEAYDM	DKVCVLYEGI	QIYFGKTT
AGL142C	VSGGERKRVSLA	EVTLAGAKLQCWI	JNCTRGLDSATA	LEF VRALRDNAE	VMRTTQLIALY	QUSEAAISLI	DDAPATT RC3	MITEGRE

	<u> 11111111</u>					1			1
	480	490	500	510	520	530	540	550	560
PDR5	KAKKYFED	MGYVCPSR	QTTADFLT	SVTSPSERT.	LNKDMLKKG	IHIPQTPKEMN	DYWVKSPNYK	ELMKEVDQF	RLLN-DDEAS
CDR3	RAAAYFKK	MGFVCQDR	QTTPDFLT	SITSPAERI ·	IKPGYERL-	VPRTPKEFY	RYWRRSPERQ	ALLEEIDES	LDNCENYDQ
ABC1	EAKQYFVN	LGFECPAR	-TTPDFLT:	SMTAPHERI ·	VRPGFEGK-	APRTPEEFA	IAWENSAEYT.	ALQADIEES	KSSHPINGPD
BOTCI	DAKKYFER	IGYYCPPR	KTTADFLT	CTDPAERR	FQKDFEGP-	IPKGPVELE	KAFRESEDYR	LLQEDVES1	ERMLHETDHAD-
CGR1	HAKVYFQK	MGYFCPKR	QTIPDFLT	ITSPAERR.	INKEYLDKG	IKVPQTPLDM	EYWHNSEEYK	<b>QLREEIDE</b>	LAH-QSEDD
PMR1	EAREFFTN	MGFHCPDR	QTTADFLT	SLTSPAERV.	VKPGFEKM-	VPRTPDEFA	KGWKNSAAYK	ELQKEIDD	NTQYPIGGES
CDR1	KAKEYFEK	MGWKCPQR	QTTADFLT	SLTNPAERE.	PLPGYEDK-	VPRTAQEFE	TYWKNSPEYA	ELTKEIDE	FVECERSNT
PDR10	QAKKYFQR	MGYVCPER	QTTADYLT	SITSPSERI ·	KDKDMVKHG	IMIPQTAYEMN	QYWIQSEEYK	QLQVQVNK	ILDT-DSSQQ
PDR12	KAVGYFQR	MGWVKPNR	MTSAEFLT	SVTVDFENR	<b>FLDIKPGYEDK</b> -	VPKSSSEFE	EYWLNSEDYQ	ELLRTYDDY	QSRHPVNET
PDR15	DAKKYFQD	MGYYCPPR	QTTADFLT	SITSPTERI ·	ISKEFIEKG	TRVPQTPKDM	EYWLQSESYK	NLIKDIDS7	LEK-NTDEA
ASPOR	DAKSYFER	QGWECPQR	QTTGDFLT	VTNPSERK.	ARPGMENQ-	VPRTAEDFE	AYWRKSPEYO	KLMSEISH)	EQEHPLEEEGDA
AtrF	KAREYFVN	LGFHCPEK	STTADFLT	SICDPNARQ.	FQPGREAS-	TPKTPEELE	AVFRNSETYK	TICDEVAS	EKKLODTDOED-
AbcA	MAKHYFLQ	MGFVCPDR	QTDADFLT	MTSHLERV.	VQPGYEDR-	VPRTPDEFA	ARWKASPORA	QLMQHIKS)	NAKFALDGEY
abcG10	LAKQYFLD	LGFDCEPR	KSTPDFLT	VTNPQERK	VRPGFEGR-	APETSSDFE	KAWKSSDLYQ	VMLQQQLE	EKKIELE-QPS-
abcG11	MAKQYFMS	LGFDCEPR	KSTPDFLT	VTNPQERI	IKKGFEGR-	TPETSADFE	EAWKNSDIYR	DOLOEOKE	EELIERT-QPK-
ABC2	EARPFMEN	LGFICDDG	ANVADFLT	VTVPTERK	VRDEMKLK-	FPRTAGAIF	SEYEQTAVHD	QAITEYN-Y	PTTEEAQTK-
PMR4	EARKYFED	LGYECPDR	QTTADFLT	SVTSPSERV.	VRRGFEGR-	APITPDDFA	EAWKKSTARA	KLLGEIEE3	EKNYPIKGSS
DEBHA	OAKLYFLE	MGYDCPOR	OTTADFLT	LTNPSERV.	VRPGYENK-	VPRTPEEFY	TYWONSPERK	ALLGEIDD	LNKTDNEER
Y1ABC2	EAKOFFLD	LGFDCADR	OTTGDFLT	LTNPIERI	IRPGWESR-	VPRTPDDFF	KCWLESEARO	LLLODIDE	NNEFVLGGPA
AGL142C	LAKGYFLR	MGWECPPR	QTSADFLT	SVTSPFERK-	SQPGYEDK-	VPRTAREFY	EYWLRSPEHA	VAMKQIQRE	RIAEAKTDAA

TMD 1

	LLL.				11111111	1111111			
	570	580	590	600	610	620	630	640	650
PDR5	REAIKEAHIA	KQSKRARPSSI	PYTVS <mark>YMMQVI</mark>	<b>YLLIRNMWRI</b>	RNNIGFTLFM	<b>IILGNCSMA</b>	LILGSMFE	KIMKKCDTSTF	YFRG:
CDR3	KQKIFEANNA	KKAKHTYNKS:	SYTVS <mark>LPMQVI</mark>	RYIMKRYWDRM	RGDIIVPLSI	VAGNIAMA	LILSSVFY	NLQPNSSSF	YYRTS
ABC1	AEAFRKSRAA	QQGRGQRPNS1	PYTLS <mark>FYQQTI</mark>	KLCLWRGWKRI	LGDPTLTVGA	LFANTLMA	LVISSIFE	NLQMTTSSF	FQRGZ
BOTCI	D-ARQFKASVEE	TKSKTVGPRSI	PYTVSFFRQVI	LACTKREVELT	LODKTTLYTK	<b>(FFIIISNS</b>	LIVGSLFH	IGQSSNTLGN	FSRGO
CGR1	KEEIKEAHIA	KQSKRARPSSI	PYVVS <mark>YMMQVI</mark>	<b>XYILIRNFWRI</b>	KNSASVTLFO	<b>VFGNSAMA</b>	FILGSMFY	KIQKGSSADTF	YFRG2
PMR1	FQQFVESRKA	MQSK <mark>G</mark> QRAKSI	PYTLS <mark>VAEQV</mark>	DICVTRGFORL	KSDYSLTISZ	LIGNTIMA	LIVGSVFY	QLPDDVTSF	ISRG2
CDR1	RETYRESHVA	KQSNNTRPASI	PYTVSFFMQVI	RYGVARNFLRM	KGDPSIPIFS	VFGQLVMG	LILSSVFY	NLSQTTGSF	YYRGZ
PDR10	REQIKNAHIA	KQSKRARPSSI	PYTVSFFLQVI	<b>XYILIRDIWRI</b>	KNDPSIQLFI	<b>VLSHAAMA</b>	LILGSMFY	EVMLSTTTTTF	YYRGZ
PDR12	RDRLDVAKKQ	RLQQGQRENS(	QY <b>VV</b> N <mark>YWTQV</mark>	CMIRGEORV	KODSTYTKVY	LSSFLIKA	LIIGSMPH	<b>KIDDK</b> SQSTTAGA	<b>YSR</b> GC
PDR15	RNIIRDAHHA	KQAKRAPPSSI	PYVVN <mark>YGMQVI</mark>	<b>YLLIRNFWRM</b>	KQSASVTLWQ	VIGNSVMA	FILGSMFY	KVMKKNDTSTF	YFRGZ
ASPOR	DALATFQQKKRE	IQAKHTRPQSI	PYLLS <mark>VPMQII</mark>	KLNTKRAYORV	WNDISSTVST	VISQIIMA	LIIGSVFY	GTPDATAGF	TAKG7
AtrF	D-TRRFQKTVAQ	SKSRTVSKKS	SYTVS <mark>FARQV</mark> I	LACVOREFWLL	WGDKTSLYTK	<b>YFIIISNA</b>	LIVSSLFY	GESLDTSGA	<b>FSRG</b>
AbcA	LDKFKQSRRA	QQAKAQRVSSI	PYTLSYVQQVI	<b>KLCLWRGYQRL</b>	KADPSVTISS	LFGNTIIS	LVIASIFY	NLKADTSTF	FORG2
abcG10	S-TN-FIEQIRN	ENSKTNPTKS	IYTTS <mark>YFTQVI</mark>	RALIARNSQII	WGDRFALISK	<b>VISIIVQT</b>	FVYASLFY	MMKSDVTGL	FNRG
abcG11	K-VA-FVQEVRD	ANSKTNFKKS	QYTTSFVTQV:	ALIKRNFALV	LNDKFGMYSK	<b>YLSVLIQG</b>	FVYASLFY	NMDTDITGL	TRGO
ABC2	K-TKLFQEGIAH	EKDKGLPASS	SFTVSFWTQVI	RTCIKROYOII	WGDKATFFIK	OFSTIVOA	LIAGSLFY	NAPDTTGGL	VKS
PMR4	YDAFVDARRA	AQAKSQRVKSI	PYTISVRKQI	LCVTRGFORL	RCDYSLTATA	LIGNFIMS	LIVGSVFV	NLPNDTSSF	YSRG/
DEBHA	LOOFKDAHNT	KOSNHLRPASI	PYTVSYGMOVI	TIKRNIMRT	KGDPSITIFG	VFGNIVMG	LIISSIFY	NLEDNTGSF	YYRTZ
Y1ABC2	LDNFMGLRKD	AOAKHTRVOSI	PYTISWPMOTI	RLCLWRGFLRI	KODMSTDIAT	VFGNFVMA	LVLSSMF	NMPOTTESF	FSRG7
AGL142C	REOLRDHHIV	ROARHVKSSSI	PYLISFYMOF	RAIVDRIWORL	RGDPSVILFS	IVAYSIMG	LILASCEI	INLKPDTNSL	FNRG
				-					
					1	1			111
	660	670	680	690	700	710	· 72	0 730	
PDR5	AMFFAILFNAFS.	SLLEIFSLYE	RPITEKHRT	SLYHPSADAF	ASVLSEIPSK	LIIAVCEN	IIFYFLVD	FRRNGGVFFFYLLI	INIVA
CDR3	VMYYALLFNAYS	SVLEIYNMYE	RAIVOKHRE	ALYPPMADAI	GSIISDFPLK	VVCSVLFN:	LILYFMVN	FKREPGAFFFYLL	ISPCS
7001	T T THE OT T MOTOR	A A T TITT TT TA A	DDTITUDD	TATING TAT	A CALC CONCOUNT	TTOLEN TITLE		TODDOG DUDINT T	COT N

CDR3	VMYY	ALLFNAYSSVLEIYNMYEGRAIVQKHREYALYPPMADAIGSIISDFPLKV	ACEATENTITA	FMVNFKREPGAFFI	LITELELCE
ABC1	LLFF	ACLLNGFAAALEILILFAQRPIVEKHDRYALYHPSAEAVASMLCDMPYKV	FNAIVFNLVLY	FMANLRREPGAFFI	YLLISFAT
BOTCI	TLFE	SILFLGWLQLSELMKAVGGRPIISRHKDYAFYRPSAVVVARVVQDFPLLL	LQVVPFSIVVY	FITGLDVDAGKYFI	YVLFIYLT
CGR1	AMFE	AILFNAFSSLLEIFSLYEARPITEKHRTYSLYHPSADAFASVISEIPPKI	VTAILFNIIFY	FLVNFRRDAGRFFI	YFLINVIA
PMR1	LLFE	AVLLNSFSSALEILTLYAQRPIVEKQARYAMYHPFAEAISSMLCDMPYKI	LNAITFNVTLY	FMTGLRQNAGAFF	FMLFSFVT
CDR1	AMFE	AVLFNAFSSLLEIMSLFEARPIVEKHKKYALYRPSADALASIISELPVKL	AMSMSFNFVFY	FMVNFRRNPGRFFI	TWLMCIWC
PDR10	AIFE	AILFNAFSSLLEIFSLYETRPITEKHKTYSLYRPSADAFASTFSDVPTKL	ATAVTFNIPYY	FLINLKRDAGAFFI	TFLINIIT
PDR12	MLFY	VLLFASVTSLAEIGNSFSSRPVIVKHKSYSMYHLSAESLQEIITEFPTKF	VAIVILCLITY	WIPFMKYEAGAFF	VILYLLTV
PDR15	AMFE	AILFNAFSCLLEIFSLYETRPITEKHRTYSLYHPSADAFASVLSEMPPKL	ITAVCENIIFY	FLVDFRRNGGVFFI	YFLINVIA
ASPOR	TLFE	AVLLNALIAMNEINSLYSORPIVEKHNSYAFYHPATEAIAGVVSDIPVKF	VIAVVFNLILY	FLAGLHRSAGQFFI	LYLLVTFIV
AtrF	ALFE	SILFLGWLQLTELMPAVTGRGIVARHKEYAFYRPSAVSIARVVMDFPAIF	CMVVPFTIIM	FMTGLDVTASKFF	YFLFVYTT
AbcA	LLFF	AVLMNALGCGLEMLTLYAQRGIIEKHSRYALYHPSAEAFSSMIMDLPYKI	LNAITSNIVLY	FMTNLRREPGAFFI	FVFTSFIL
abcG10	AIYA	AILFNAFVSAGELGLTFYGRRILQKQHSYAMYRPSALHIAMVITDIPLTA	IQVTIFSVIVY	FMYGLQVDAGKFF]	FLFTIFGS
abcG11	AILS	AVIFNAFLSIGEMAMTFYGRRVLQKHKSYALYRPSALHIAQVVTDIPFTA	IQVFLFSIIAY	FMFGLQYDAGKFF]	FCFTLLGA
ABC2	ACFE	ALLFNALLSMSEVTESFKCRPVLIKHKSFAYFHPAAFCIAQIAADIPVIL	VQVSAFSLILY	FMVGLTMSAGHFF	FWIIVVAT
PMR4	LLFF	<b>AVLLNAFSSALEILTLYAQRPIVEKHARYAFHHPFAEALASMLCDVPYKI</b>	ANSFTFNIPLY	FMTHLRREGGPFF	FWIFSVLT
DEBHA	AMFE	<b>AVLFNAFSSMLEIFSLYEARPIVEKHKTYALYHPSADAFASIITELPPKI</b>	FTCLAFNLVLY	FMVNFRRNAGNFFI	YLLVNFTA
Y1ABC2	LLFF	AILINAFASILEILSLYEORPIVDKONRYAMYHPAADALAAIITTFPTKT	LTLVSVNLTIY	FMTNLRREVGPFF]	FFLFSLLC
AGL142C	ALFT	AVLLNSFFSFLEIMSLFEARAIVKKHKSYAFYRPSADAFASIFTELPAKF	TVCICENVPFY	FMVNLRRSTGAFFI	YMLVSLTA

PR5         I         V         WEIL         PR5         I         V         WEIL         PR5         I         V         WEIL         PR5         I         V         WEIL         E         DERMIELL         LI         I         DERMIELL         LI         DERMIELL         DERMIELL         DERMIELL         DERMIELL         DERMIEL         DERMIELL         DERMIELL <thdermiell< th="">         DERMIEL</thdermiell<>			1					1111				
PDRS I IV V HELL FOUNDATION & DEPENDENT OF THE ACCOUNT OF THE ACCO	810 82	800	90	7	780		770	760	50	7	740	
CDR3 1 G C. B BEL K 1 COL S B PARLL LU DE G LIV KLCREAT DIE S LIV S B FARMER BOTT 1 VU KLE REGULE KLOS WY MILLILM G VIEW KHEST GREAT I I LE S LO S DER STATUS AND S	FESLLINEFHGIKFPCA-	PLAYLE	SKWIWYIN.	TTRM	ALPKKK	AYTGF/	MLLLALSI	AMVPA	SLTKTLS.	HLFRCV	INIVAVESMSE	PDR5
ABC1 I LU I COL R MM R I AB MELL MYC IILLII C VILD HLRIL LUI E ELLI E COR BOTCT I LU I COL R M LE RM LE MYC IILLII C VIRK LLRIM IDI E ELLI E ELMY E DER PMRI S'UTEMMI R I S R LL LY WY SHILL LW 'I TR RHLRIM IDI E E TY E HER CORI VI VI W MH R I S R Y LW KY WY SHILL LW 'I TR RHLRIM II DI E E TY E HER PRISE CORI VI VI W MH R I S R Y MY SHILL LW 'I TR RHLRIM II DI E E TY E HER PRISE LIVY.CC N H R Y MY SYNCH Y LY WY SHILL LW 'I TR RHLRIM II DI E E TY E HER PRISE LIVY.CC N H R Y MY SYNCH Y LY WY SHILL LW 'I TR RHL	YEALISNEFHGRVFDCS-	PLAYAY	CKWIRWVN.	MLGW	ALPVIX	TFSGF/	LLLFALS.	AMTPS	SAFTNSLA.	HLFRTI	ISFCSTLFMSH	CDR3
BOTCI       1 L. TCI TCI MARKA LOSSIDD VK SALL LINT G VIEW DUSE IN LIT I LE LANKE E TJDE K.K.H.         PMRI       V. LTMINHI R.I. GRUSS LK LOS MYS SALLL LINT G TIR KLGKKIT I LIT L LE LANKE E BERKY         PMRI       V. LTMINHI R.I. GRUSS LK LOS MYS SALLL LINT G TIR KLGKKIT I LIT L LE LANKE E BERKY         PDRIS       V. LTMINHI R.I. GRUSS LK LOS MYS VILLL MI G TIR KLGKKIT I LIT L LE LANKE E BERKY         PDRIS       I. T.V. MIHL RGU VK LOS MYS VILL MI G TIR KLGKKIT I LIT L LE LANKE E BERKY         PDRIS       V. TV MIHL RGU VK LOS MYS VILL MI G TIR KLGKKIT I LIT L E ELMI E BERKY         PDRIS       V. TV MIHL RGU VK LOS MYS WILL LINT G TIR KLGKKIT I LIT E BERKY         PDRIS       V. TV MIHL RGU VK LOS MYS WILL LINT G TIR KLG	FESLLINEFAGORYTCT-	LAYSE	CRWLNYID	MLPW	VIPLDY	FTGF		ZAMV PA.	ASMSRSLS	MMPRTI	ISPATVLAMSM	ABCI
CGR1 1 VI V BELL RUYEL K LE K WY BELLL LY TO TIPE KLIREM TIPE LE LEVE BEDEK PKR1 CCR1 HCTVC VIELE RUYELS UP TILL WIT VIET RELEREM TIPE LE ELSE BE CCR1 HCTVC VIELE RUYELS UP TILL WIT VIET RELEREM TIPE LE ELSE BE PCR12 LIVE VIET LE RUYELS VIETS HTP VILL WIT VIET RELEREM TIPE LE LEVE BE PCR15 I VIT LEEL RUYELS VIETS HTP VILL WIT VIETS LEREM TIPE LE LE LEVE BE PCR15 I VIT LEEL RUYELS VIETS HTP VILL WIT VIETS LE	FEAGISDEFYNKNITCAP	PLSYSE	FGWLYYIN.	LVSETIW	VIPKPQ	LITGI	ІСЬМЬЬІ.	JAVRES	AALSPSID	SLYRM	TTLTTICITS	BOTCI
PMRI       MCUC UNDERLIGITS OF LADARD LIDITIC UNDERLIGHT AND LIDITIC DELLAY BIRK         CORI       MCUC UNDERLIGITS OF LADARD VIEW LIDITIC UNDERLIGHT AND LIDITIC UNDERLICUNAL AND LIDITIC UNDERLIGHT AND LIDITIC UNDERLIGHT A	FESLMVNEFHDRRFPCN-	PLAYLE	SKWIWYIN.	MLGW	AIPRTK	1YTGF7	MLLLALSI	AMVPA	SETRILO.	HLFRCV	INVIAVFAMSH	CGRI
CDR1 MCLWC VMSHL RAL VCD126 M.P TVLLE WI G VIP PMLWRL 1 IV V ELMV B HE HE PDR10 IIV MSHL RAT VLD VD V CLVLMLCV VIP MLWRL IIIL IV L L ELMT B HR PDR12 LUV C I K V MK N D V CLVLMLCV V UP MLWRL IIIL I L L ELWT B DDR ASPOR V IV SILL RCV SLK LE MV B KLL INV IN INFLWRL IIIL I L L ELWT B DDR ASPOR V IV MMY V R M ITV V M L CILLL LIV V VINK LLD IN CLV VI ELMT B DDR ACC I V T SILL RCV SLL V M L CILLL LIV V VINK LLD IN CLV VI E KLL I M E DDR ACC I V T SILL RCV SLL V M L CILLL LIV V VINK LLD IN CL V VI E KLL I M E DD ACC I V T SILL RCV SLL V M L V I M K S SILL I N V V VINK LLD IN CLV VI E KLL I M E DD ACC I V T SILL RCV SLL V M L V I M I M S SILV VINK VINK E HE R D ACC I V T SILV R K L S V V I M S SILV VIN V VINK LLD IN CL V I E SINK B E DD ACC I V T SILV R K L S V V I M S SILV VIN V VINK LLD I N I W K M E E DD ACC I V T TV M H SI S SK L S V V P VILL MY I M S SILV R M E SILV S S V R V R S SI ACC I V T TV M H SI S SK L S V V P VILL W V VINK MLW S M I D V V E M V E R S SI ACC I V T T M H SI S SK L S V V P VILL W V VINK M E SILV S S V W V V V V I V L LC SLC M M H R I S V C K L V M P SILLL I V V VIP K ILW S M I D V V V V V I V L C CRA	FETLIVNEFHGRNFPCNF	PIAYGE	SRWMNYID.	MLGW	TIPTRN	YTGF.	ILILGLV.	JALVPA.	ASYSRTLS	MIFRTI	SFVTTLTMSM	PMR1
PDR10 I TIV MENL RCLOVEK LEG MVS STLLE M OF THEV.RL TRUE I PL E ELMI E HEM PDR12 IL V.C. SI K.V IM.K.V.DE V.C.V.C.V.M.C.V.V.M.V.C.V.L.V.M.Y.V. PDR15 I VI TLSHL RCV SLK KLE MVP SHLLIIM OF THE NHI TRUE I PL ELVE E HEME PDR15 I VI TUK VR M I JOVS M L CILLLIL IV V VLVVMPP BIN I PL E ELMI E PDR ACTF V TT I L.R.M. LEPIDD VR SILLIIM OF THE NHI BIN I PL E ELMI E FD ACCA ACCA ACCA ACCA ACCA PDR15 ILLIM R RM LEPIDD VR SILLIIM OF THE NHI BIN I PL E ELMI E FD ACCA ACCA ACCA ACCA ACCA I STATUS R R L APPL VS. IN VILL TH TO SILV RAME ACCA	TESLMVNEFHGREFQCA-	PVGYVE	SRWINYIN.	MLGW	VIPTPS	TTGF	VLLLAMV.	AMTPA	GAVSTSIS	HLFRSI	MCIWCIFVMSH	CDR1
PDR12         LL VG C'S I K V MERS VD S V JAVLMLCV G VLF138HELMIRILE I PL E LATE BENER           PDR15         T VI S LER RCVSL KTLE MV S MLL SILL LV G VLFVP MEDMIRILE I PL E LATE BENER           ASPOR         V IV V VM VM V R M I G VLFV MLL SILL LV G VLFVP MEDMIRILE I PL E LATE BENER           ASPOR         V IV V VM VM V R M I G VLFVP MEDMIRILE I PI S LATE BORR           ASPOR         V IV TS ILL RM LS RSUV VLP S ILL LV IV V VLFVE MEDMIRIT I PIS E VLF E SORIM           AbcA         S ILL INM RM SLERSUV VLP VLLLALM G IPN MLMIRIT I PIS E LATE E ON M abcG11         E VLF E SORIM           Abc2         VIT S ALL R I S CLC SM II I VILM G IPN MLMIRIT I PIS E LATE E ON M abcG11         E K IM E E DS VS G III I MIR G IPN MLMIRIT RHI I K KIM EMIRIT           PMR4         VIT S ALL R I S CLC SM II I S III MIR G IPN MLMIRIT I DFI E S KIM E HE E I D INTERNET RHI I S VLE M S IIIL INTER CLPMENMIRIT I DFI E KM E E D I S KIT           PMR4         VIT S ALL R I S CLC M P S IIIL VIT G VIT MHMIRIT I DFI E W E E N E S KIT           PMR4         VIT S ALL R I S CLC W E P S IIIL VIT G VIT MHMIRIT I DFI E W E E D I S S VLE R E E S RALL M P V E R E E D I S ALL VE E W E E S E S S RALL W V E R E E I S ALL VE E W E S E S RALL W E MIRIT W V E V L C C CREATER           PMR5         E VRP8	FESLMINEFHGRNFPCA-	PLSYLE	SKWISYIN.	MLGW	AIPRVQ	4YTGF7	VLLLAFA	JAMVPA	SVSKTLP	HLERCI	INIITVFAMSH	PDR10
PDR15 I VI VV VV V R.M. LEVID VV SHLLL I.M. GO IVK RL. JBARANA I. IPL E BLAI E BORA ASPOR ALTF V TV VK V R.M. LEVID VR STL ILV V V VV VIK. LIDESH SL V PI SE VL B SORIM ALTF V TT SISI RM LEFTED VR STL ILV V V VIK. LIDESH SL V PI SE VL B SORIM abcG10 IL SIL V R LE LEVEL V STL V VIL M TO SIR KLEV VPI SE VIE B SORIM abcG11 I SIL W R LE LEVEL VS IL VIL M TO SIR KLEVEN REI I N S E LMI E B AbcG1 I SIL W R LE LEVEL VS IL VIL M TO SIR KLEVEN REI I N S E LMI E B AbcG1 I SIL W R LE LEVEL VS IL VIL M TO SIR K MEMEW SK WI P S F K M B CM ABCC IVV CM LE R C LOCM I G IV VIL M TO SIR KLEMENW SK WI D S F K M B CM ABCC IVV CM LE R C LEVEL VS IL VIL M TO SIR K MEMEW SK WI D S F K M B CM ABCC IVV CM LE R I STL UVV VIL VILL W VIL K M STR MENW SK WI D S F K R R R I I N K M R R R R R R R R R R R R R R R R R R	FESLVSTEFHHREMLCS-	PLTYAR	IRWLHFIN.	мннw	ATAIGE	YAGEN	LWATWTC	<b>JAHAV</b> G	ATMSKSGV	FIFKEV	TLTVQQCTSF	PDR12
ASPOR       V       IVM       VM       V       IVM       VM       V       IV       <	FESLMINEFHDRRFPCA-	PLAYLE	SIWIWYIN.	ILGW	AIPKTK	AYTGF2	MLLLAISI	AMVPA	SLTKTLQ	HLFRCV	INVIATETLSH	PDR15
ALTF         V         V         CILLIAN         ALTE         V         CILLIAN         CILCIAN         CILLIAN         CILLIAN         CILCIAN         CILLIAN         <	FEMLIANEFHORDFICS-	PIYYAF	FEWIHYLN.	MHPW	VLPVPS	/YTGF\	ILILALIV	DAMC LA	AAITQTVS	AVERTM	VTFIVMFVMSA	ASPOR
AbcA       DS LITLIN M RM SLRLPV VLP S VLLBLM GG IPIG KLHPW RIT I PIG 6 E-LMI E B RD 1         abcG10       LL S L C L R C LCPM I O IS V IL MI GG IPIPK KHPPW WI VL VIDW O D ILS E B KIN E DD 1         ABC2       VV T C K I R I S D G KV SLII I'M G VIPP KHLPW RW II I'T K KM E DD 1         PMA4       SVLTI MMI RTI SSRLSQ KV VLILMVI G VIPP KHLPW RW II DPV E W VE R RE 1         PMA4       SVLTI MMI RTI SSRLSQ KV VLILMVI G VIPP KHLPW RW II DPV E W VE R RE 1         AGL142C       V TLMM R RTI SSRLSQ KV VLILMVI G VIPP KHLPW RW II DPV E WV E W E RE 1         AGL142C       VLD T MEH R V G KL V'M P SILLLL V V VIP K HLPW RW II L PV E WW E RE 1         AGL142C       VLD T MEH R V G KL V'M P SILLLC V V VIP K HLPW RW I L PV E WW E D RL 1         CDR3	YEAVLTNEFSDRIMDCAP	PIAYSY	FGWLFYVN.	LIDGSIW	VIPKQG	TEVGIN	IALNILV.	DAVRES	AALSPTID	SLIRM	VITTIFSITS	AtrF
abcG10 IL SILENV R LDLPLIVO IL VILM T GE SIPR KMHP KEN HI P'S P K LM E DN abcG11 IL SILC I RC LDPM IO IN VILLOWIT C VIPR MLVGR HI D'S P K LM E DN ABC2 IVV T CM L R I STRIJ D' KVJLIN MI GE IDPKHP VVL HDVM G D HS E KKI PRMA SVLTTM MI RI SSRIJ D' KVJLIN MVI G VIPR MLVGR HI DDV E KWE R RE DEBHA V TILMSL RISSKLS MP SILLLIT G VIPPKMLVGR HI DDV E KWE R RE AGL142C VLTTMSL RISSKLS MP SILLLIT G VIPPKMLVGR HI DDV E E WVE R RE AGL142C VLTTMSL RISSKLS MP SILLLIT O VV VIPK HLVGR HI DDV E E WVE R RE AGL142C VLTTMSL RISSKLS MP SILLLIT O VV VIPK HLVGR HI VL PV E V E VR VE R RE AGL142C VLTTMSL RE SV CKIL VM P SILLLIV V V VIPK HLVGR HI LD FI RHME MV E D RI AGL142C VLTTMSH RE V CKIL VM P SILLLI V V V VIPK HLVGR HI L PI RHME MV E D RI BCTCI DD VPSOP	FESLMINEFHNRDFPCM-	PISYGE	ARWIAYIN.	MLGW	ALPTGY	4YTGF2	VLLLGLSI	JAT bea	ASLSRSLV	MFFRSM	TSFILTLTMSM	AbcA
abcd11       TLLS SL CL L RC G LCPS M I O IS VIE LIM IG VIEWHPW SW RHI I CL K LM E BLUE         PMA4       SVLTI MMM RIT SSRLSG LVP VLILMVI TG VIPTRKMGWRWM IDPV G D ILS E BKNIT         PMA4       VITT MMM RIT SSRLSG LVP VLILMVI TG VIPTRKMGWRWM IDPV G D ILS E BKNIT         YIABC2       LLC M MMM RITGOVIKIES L P SIIIL LVI TG VIPTRKMGWRWM L PV G VMV E R RE I         AGG142C       VILT MMM RITGOVIKIES L P SIIIL LVI TG VIPTRKMGWRWL L PI RIME MV E D RI I         AGG142C       VILT M MML RITGOVIKIES L P SIIIL LVI TG VIPTRKMGWRWL L PI RIME MV E D RI I         AGG142C       VILT M MML RITGOVIKIES L P SIIIL VV VV VIPKKILGWRWL L PI RIME MV E D RI I         AGG142C       VILT M MML RITGOVIKIES L P SIIIL VV VV VIPKKILGWRWL L PI RIME MV E D RI I         AGG142C       VILT M MML RIVG CKILV VM P SILLLL V VV VIPKKILGWRWL L PI RIME MV E V I         BOTGI       FORDE	YKALMANEFGDMNFTCND	PFSFPY	FSWYFWIN.	MHPW	SIPKNK	TGGT	ABITEWE.	/SQNIL	JNLSPSLY	AFFRAL	TIFGSTLSMVA	abcG10
ABC2       IVV       TCM: L R IG CONST DO SKVS LIIG THU OF HIGHWORKIN DDPW ED LIS E RKIR DEBHA       VLT TMMIR RI GOSTKISO MIP SILLL LII TO VIPIR MLGWORKIN LDPU E LIVE BERDI PIABC2       ELVE M MIR RIGOSTKISO MIP SILLL LII TO VIPIR MLGWORKIN LDPU E LIVE BERDI AGL142C       VLT TMMIR RIGOSTKISO MIP SILLL LI VI OVIPIR MLGWORKIN LDPU E LIVE BERDI AGL142C       VLT TMMIR RIGOSTKISO MIP SILLLOV VIVIPIR MLGWORKIN L PI RIME MV E D RI I AGL142C         PDR5	FKALMANEFEGLDFNCK-	IFTYAR	FSWFRHIN	MHPW	LIDIDK	'YSGY'	VFIIFML:	LAQNIS	SYLCPSMY	ALFRCI	<b>FLLGASLACTA</b>	abcG11
PMR4       VI_LIMMIR II SERIES LAPP VLILGMVI GG VIPPIKMLGWERWI LDPV ES KUV E R RB         PDEBHA       VI_LIMMIR RIGGVTKIEG L P SIIIL LUI GG VIPPIKMLGWERWI WL PV EG VIVE R RE I         AGGL142C       VILT MEMER RIGGVTKIEG L P SIIIL LUI GG VIPPIKMLGWERWI L PV RE VIVE R RE I         AGGL142C       VILT MEMER RIGGVTKIEG L P SIIIL LUI GG VIPPIKMLGWERWI L PV RE VIVE R RE I         AGGL142C       VILT MEMER RIGGVTKIEG L P SIIIL LUI GG VIPPIKMLGWERWI L PV RE VIVE R RE I         AGGL142C       VILT MEMER RIGGVTKIEG L P SIIIL LUI GG VIPPIKMLGWERWI L PV RE VIVE R RE I         AGGL142C       VILT MEMER RIGGVTKIEG L P SIIIL LUI GG VIPPIKMLGWERWI L PV RE VIVE R RE I         AGGL1	FDAILSNEFHCKIIPCVC	PMAYGE	FVWLFWID	MHPW	MIQKPR	AINGIN	LIISATII	ASKVS	GAAFSTFD	ALFRAI	IVVATTECMTA	ABC2
DEBHA VIIABC2 SLIC M M MI R CI OSS KLEO M P SILLL LI TO VIP KMLWRI LDPIG E LIV E 60 RD I AGL142C VIT M HI R V CKIL V M P SILLO V V VIP KILOWRIL L PI RIME MV E D RI B20 830 840 850 860 870 880 890 900 -E VRR D ISS EVC VV -VDO D VL DD IKT DWRIL L PI RIME MV E D RI FORS 	FESFMVNEFRNRHFPC-A	PVAYAF	SRWMNYID	MLGW	VIPTRN	TTGF	VLILGMV.	2ALVPA	AASSRSLS	MIFRTI	SVLTTFTMSM	PMR4
YIABC2       SLIC M M MI RIJ SV.KIEC L P SIIIL LUT TO SLPIA MIOW RNI LL PV C VN E N RE I         AGL142C       VSLT M HL RV. CKIL VM P SLLLOL V V VIPOK ILOW RNI LL PI RIME MV E D RI I         AGL142C       VSLT M HL RV. CKIL VM P SLLLOL V V VIPOK ILOW RNI LL PI RIME MV E D RI I         B20       830       840       850       860       870       880       890       900         PDR5	FEALIVNEFHGRDFDCS-	PIGYAR	CRWINYLD	MLG W	VIPTPK	TTGF	ILLLALT:	DAMTPA.	GSSTKSLS	HLFRTI	VNFTATLSMSH	DEBHA
AGL142C       VSL       MARL R.VG       CKLL V.M.P       SLLLLL V.V.       VIP K.LLGHW.RKL       L PI RIME MV       E D RI I         B20       B30       B40       B50       B60       B70       B80       B90       900         PDR5	FEAVMVNEFRNREYECS-	PVAYGE	ARWINWLN	MHGW	SLPISY	TTGE	IIILALV:	<b>DALAPA</b>	SVTKTLE	MIFRTI	<b>SLLCTMAMS</b>	Y1ABC2
820       830       840       850       860       870       880       890       900         PDR5	MEAMVANEFDGRIFECS-	PIARIM	SRWLFYLN	ILGW	VIPQKN	/YVGFV	LLLLGLAV	7TMFPA	GAACKTLY	HLFRSV	<b>VSLTATFAMS</b> H	AGL142C
820       830       840       850       860       870       880       890       900         PDR5												
820       830       840       850       860       870       880       890       900         PDR5												
DRS5       = VPROP=	890 900			970	· · • • · · · .	960	<b>.</b>		840	20	220 03	
DKRS	MANWEEPERVILLELCEVI	STOTOM	V V HKDKWR	FIRCTIVO		001	-VPC	VCTVV	-ANTSSTR	- <u>2</u> V	-EVVDRCD	DDD5
ABC1	MARTTELECTRE	TECVI.M	VSVSNVMDI	VI.KI.APD			-T.PG		-D-KTCMS			CDB3
BOTCI       PD IVPSCP	TAFMIFECSPTWIRPPMC	NEGTI.T	VESANKWRI	VI.VSSFR	VKCED	OPT	S-VAG	VCOAV	-GDLSGTNI	PGY	EFVPBARFP	ABC1
DOIGT      TIPRGG-ANDVTGTERCG SVG -RPGDVVSE VISE VISE OF KHKWR GV-M VI FV FI         PMR1       PESI IP-DD-S/DVVR*KICS KG -VGDVVSE VISE VISE OF KHKWR GV-M VI FV FIVE         CDR1      OVPSGP-G/EISSUVCYVSE V/SEVIES OF KKWR GV-M VI FV FIVE         DPR10      OVPSGP-G/EISSUVCYVSE V/SEVIES OF KKWR GV-M VI FV         PDR10      OVPSGP-G/EISSUVCYVSE V/SEVIES OF KKWR GV-M VI FIVE         PDR11      OVPSGP-G/V/SEVIES OF KKWR GV-M VI FV         PDR12      UVPSGP-G/V/SEVIES VCSSG -KGDV/SED ILCO KKWR GV-V/VV/VV/VV/VV/VV         ASPOR      OUPSGP-G/	TAWTYLYTYTATATEVE		VSPSHLWP	VLEOSEN	TUSCAR	GT.S	-EVG	CCAST	-CVTNDER		POTVPSCP	ROTOT
CGN1       PESTEP 30       DVR KICS K - V - DVR KICS K - V - DVR KICS K - V - DVR KICS S - V - DVR KICK - V - V - TVR - V - V - TVR - V - V - TVR - V - V - V - V - V - V - V - V - V -	MAYYTEREVYLTICEEN		FIREND	LIKEGAD	VICDD			NCA CV		- NV	- TYTPPCC	CCP1
PMR1       POS BUDGE AND SERVICE AND SERVICE AND SERVICE AND SERVICE AND	TCEMVEENVEVIVCEEVI	MOTMT	VCMCHDWD	VVTAGEO	VECEN	ONE		TCCAR		_cv	DESET DACD	DMD 1
CDR1      O IPSGPGE GISL WOULD VGS	TCRAVERTATVIAL TREN	TCTTT	VICUKWD	VIACAVO				VICTATI	-FMTCDCM		-OVVDSCD	CDD1
PDR10	LAVITERLELVIERCEVN	SVCTCT.	VDHKNKMD	FIOTNYC	VSCDD		S-TPG	TTCSAL	-WNATCDE	-MV	OVTDSCP	DDP10
PDR12       -Q IP GP-WQ IIT GTORVCS VGA PG D VLSDS ILKES D EIKHKNG GIGM VV FV VLLG         ASPOR       -Q IP GP-WQ IIT GTORVCS VGA PG D VLSDD ILKES D EIKHKNG GIGM VV FV VLLG         Astr       PSQLVP0GP	TYMPECY TYPEYT CEVT	WCMIT	DAVKUAMDI	VILUOVU	TRECDE			VICDAA	-FCTCTAN		AT WDSCD	PDRI0
ASPOR ASPOR OUPS	MAXXX PEREVIT II CEVH		FUKUKMD	TINGIN	TVT CDD				-ONTROTO	- X V		PDR12
ASPOR AtrF PSQLVPQCP	TART VORTER VIET AURT N	TROIDE	CHYCHYRC	TOWN				TOODA				PDRID
AbcA       -DVPSGPG      DVCLURVCSTVRS-VPGQAVVCMATESAVSTV, SHARKER LOVIA MILATIVA         AbcA       -DVPSGPG      DVCLURVCSTVRS-VPGQAVVCMATESAVSTV, SHARKER LOVIA MILATIVA         abcG10       DOTALPROVIASEGTMS ODOR CPSRCA-IEGOMVECE VCSNLDALD KODDRTL VIITELWUTVUTVI MILATIVA         abcG11       -SSIP       CAVGOVALOR KCSVRS-VPGGSLVCMEDALD KODDRTL VIITELWUTVUTVUCMAA         ABC2       OPNIVPICPSEDVICIPLOCI-EQGSLVKOP VDCDLSSISSERVRE CIIWAWALVVIVVVCMAA         PMR4      IVPSGGAVDSISME RICSTVG-QSGSSDVSGTL LEESYC MIKHLWR CILLA LLUMSTLIAT         PMR4      QVPSGPGIPTSCDSICSVVG-VG-CV-GCRDVTCDALIESYSHSEVWR CILLALUMSTLIAT         PBR5      MVPSGGAVDSISSICSVG-VG-CV-GCSDVSGTL LEESYC MIKHLWR CILLA LLUMSTLIAT         PGC1422      MVPSGGAVBOSISSKVCLVG-VG-CV-GCSDVSGTL LEESYC MIKHLWR CILLA LLUMSTLIAT         910       920       930       950       960       970       980       99         PDR5       CKGKGELLVFPRSIVKRKKRGVLTEKNANDPENVGERSDLSDRKMLQESSEESD	TAPTYLYL TYTYLAAFET.		PTPSHIMP	TEESTO	TACAD			CODE		<u> </u>	PSOLVPOGP	ABFOR
ABCA abcG10 DOTAID GUTAS GSTMS ODOR COPY ACCESSIVE SUPPORT OF TRANSFERENCE VITUAL DESTINATION OF TAXANSFERENCE VITUAL DESTINATION OF TRANSFERENCE VITUAL DE				VIDENUC	MODI					DOV	-DVVD9CD	ALIF
abcG10       -ES_IP'OPA'GGSED VRICPLOI-ECGSL KCD MDKTLS VIEW WWW LVAITITT         AbcG1       -ES_IP'OPA'GG	IT WAT DEST THAT AT BE		- KODDDUI	VIDAAID	TTT COMPL		TROM	A CDCA	IMENODOVI	TACHICC		ADCA
ABC21       CP IVP CPSE D S NCC VCG VPGSE V SCD RDS VIV CWW IV VC W M         PMR4			RODDRILL	TIDAALD				TODIC	CREDAVI	LABINGS	DOTAL PHONIL	abcGIU
ABG2       - IVPSG2VDISENTERICS/VG3V93SDVSG1L LEES G MIKHURR CILL LL MAT L AT         PMR4       - OVPSG2VP-TSCDSILCS/VG3V93SDVSG1L LEES G MIKHURR CILL LL MAT L AT         DEBHA       - OVPSG2VP-TSCDSILCS/VG3V93SDVSG1L LEES G MIKHURR CILL LL MAT L AT         Y1ABC2      M VPSG2VP-TSCDSILCS/VG3V93SDVSG1L LEES G MIKHURR CILL LL MAT L AT         AGL142C      M VPSG2VP-TSCDSILCS/VG3V93SDVSG1L LEES G MIKHURR CILL LL MAT L A         AGL142C      M VPSG2VP-TSCDSILCS/VG3V93LR VCGAV I SEE SDVSKK WC124 VV LVVHIMIC         P10       920       930       940       950       960       970       980       99         PDR5       E KQKGEILVFPRSIVKMKKRQULTEKNANDENVGER-SDLSSDRKMLQESSEESDT       DESAYMDGMAPLDFSGSTEISDYSDYMDT       TGGG4LEFKSKAAK-NKVKAENATDEEAYMDGMAPLDFSGSTEISDYSDYMDT         ABC1       EPKKSKGEVLVFRRQPAAIKDAKTDPEAGPPKVGGAVVAANMTGENAG			ATCEMOUI	VI - ACT C						100	DNTVDNCD	ADCGII
PMR4      OFVPSOP-IS-DSIDERS DSIDE NCONCOUNT AND	TANTI NUMBER VALUE IN TANK	TROTT	MUKUTWD	VIPPOVC	TROPIC				-DETEMENT	7.1		ABC2
DEBRA      M VPSGGVE VID RSC V VG - EPGLR V CD I 1 05 E VARHWR M ILG I 1 05 L V V         AGL142C      MVVPDGSVE VID RSC V VG - EPGOS V GTR IE A GATK KWM WGIVLAADDLCV LILI         910       920       930       940       950       960       970       980       99         PDR5       E K KKGELVFPRSIVKRMKKRGVLTEKNANDPENVGERSDLSSDRKMLQESSEESDT       COR3       KSSISKGELVFPRSIVKRMKRGVLTEKNANDPENVGERSDLSSDRKMLQESSEESDT         BOTCI       D TTGGGGALEFKRSKAAK-NKVKAENATEEDEEAYMOGMAPLDFSGSTEISDYSVDYMD	TAP LLEP MOTTLEATETT			THEOTY						CV	-ALVPSCO	PMR4
AGL142CRMVPD SFE PIS KVCL-V0 -VPC SV V CR IE AGT KKWM W IVL L V LILI 910 920 930 940 950 960 970 980 99 PDR5 E KQKGEILVFRKNIRKMCKUTEKNANDEENVGER-SDLSSDRKMLQESSEESDT CDR3 KSISKGETLVFRRNIRKMCMEEDEEAYMDGMAPLDFSGSTEISDYSYDYMDT ABC1 EPKKSKGEVLVFRRQRPAAIKDAKTDEEAYMDGMAPLDFSGSTEISDYSYDYMDT BOTCI D TTGGGALEFKSKAAK-NKVKAENATDEENSPASTSPVPTSGASSNTLEPPQEE	VAP VVPP LVVNIMICEIM	MOINT	L T WOINKNEL	TINEQIV						- X V		VIADOO
AGE142C       ARVED SET FILE AVEL VERY VERY VERY VERY VERY VERY VERY VERY	TAXABEET CAPTERAVET L	TTO TAT	I TIMATEWR	VIEDAVC				COCHAV		-74.1 -77.V		I TABUZ
910       920       930       940       950       960       970       980       99         PDR5       E       KQKGEILVFPRSIVKRMKKRGVLTEKNANDPENVGER-SDLSSDRKMLQESSEESDT         CDR3       KSISKGEVLVFPRSIVKRMKKRGVLTEKNANDPEAVMGMAPLDFSGSTEISDYSVDYMD	LAIAPPPLOVILLLLL	NMGTAT	INTENEMM	ILEFAIG	VNGTR	Q51	-vpg		-LGEPISN	<u> </u>	RMVPDGS	AGL142C
910       920       930       940       950       960       970       980       99         PDR5       E       KQKGEILVFRRIVKRMKRGVLTEKNANDENVGER-SDLSSDRKMLQESSEESDT         CDR3       KSSISKGETLVFRRNIRKMRKMEEDEEAYMDGMAPLDFSGSTEISDYSYDYMD         ABC1       EPKKSKOEVLVFRRQCPAAIKDAKTDPEAGPPKVGGAVVAANMTGENAG         BOTCI       D       TGGGGALEFKRSKAAK-NKVKAENATPDEENSPASTSPVPTSGASSNTLEPPQEE												
910       920       930       940       950       960       970       980       99         PDR5       EC       KQKGEILVFPRSIVKRMKKGVLTEKNANDPENVGER-SDLSSDRKMLQESSEESDT         CDR3       KSSISKGETLVFRRKNIRKMRKMEEDEEAYMDGMAPLDFSGSTEISDYSYDYMD         ABC1       EPKKKSCEVLVFRRQPPAAIKDAKTEEDEEAGPKVGGAVVAANMTGENAG					1 1	1111						
PDR5       E KQKGELLVFPRSIVKRMKKRGVLTEKNANDPENVGER-SDLSSDRKHLQESSEEESDT         CDR3       KSSISKGETLVFRRKNIRKMKMEEDEAAYMDGMAPLDFGSTEISDYSYDYMDABC1         ERKKSKGEVLVFRRGORPAAIKDAKTDPEAAGPKVGGAVVAANMT-GENAG	980 990	0	970	960	50	95	940	)	930	920	910	
CDR3       KSSISKGETLVFRRKNIRKMRKMEEDEEAYMOGMAPLDFSGSTEISDYSYDYMD	TYG-	EEESD-	RKMLQESSI	-SDLSSD	VGER-	-DPEN	-NAN	LTEK-	VKRMKKRG	VFPRSI	EGAK <mark>QKGE</mark> ILV	PDR5
ABC1       ERKKSKGEVLVFRRGQRPAAIKDAKTDPEAGPPKVGGAVVAANMTGENAG         BOTCI       D TTGGGGALEFKRSKAAK-NKVKAENATPDEENSPASTSPVPTSGASSSNTLEPPQEE         CGR1       ECKQKGEMLVFPHSVVKRMKKEGKIRDKTKMHTDKNDIENNSESITSNATNEKNMLQDTYDENADS         PMR1       SE KSKGEVLLFRRGYAPKNSGNSDGDVEQTHGVSSAEKKDGAGSGGEQESA         CDR1       KC MQKGEIVLFLKGSLKKHKRKTAASNKGDIEAGPVAGKLDYQDEAEAVNNEKFTEKG		YDYMD-	STEISDYSY	APLDFSG	AYMDGM	-DEEA		EE	IRKMRKM-	FRRKN	KSSI SKGETLV	CDR3
BOTCI       D TTGGGGALEFKRSKAAK-NKVKAENATPDEENSPASTSPVPTSGASSSNTLEPPQEE         CGR1       CGKQKGEMUVFPHSVVKRMKKEGKIRDKTKMHTDKNDIENNDESITSNATNEKNMLQDTVDENADS         PMR1       SE KSKGEVLLFRRGYAPKNSGNSDGDVEQTHGVSSAEKKDGAGSGGEQESA         CDR1       KG MQKGEIVLFRKGYAPKNSGNSDGDVEQTHGVSSAEKKDGAGSGGEQESA		AG	NMTGENZ	GGAVVAA	GPPKV	-DPEA		CT	RPAAIKDAI	VFRRGQ	ERKK <mark>SKGE</mark> VLV	ABC1
CGR1       E * KQKGEMLVFPHSVVKRMKKEGKIRDKTKMHTDKNDIENNESSITSNATNEKNMLQDTYDENADS         PMR1       SE KSKOEVLLFRAGYAPKNSGNSDGDVEQTHGVSSAEKKKDGAGSGEQESA         CDR1       K * MQKGEIVLFIKGSLKKKKRATAASNKGDIEAGPVAGKLDYQDEAEAVNNEKFTEKG         PDR10       E * KQNGEMLVFPHSVVKKMKKGIVSEKKKKNQPILSTSDAEKDVEMNNNSSATDSRFLRDSDAAIMGNDKTVAKEHYSSPSS		PPQEE-	ASSSNTLEI	SPVPTSG	SPAST	PDEEN		ENAT-	AAK-NKVK	FKRSK	OFTTGGGGGALE	BOTCI
PMR1     SE     KSKGEVLLFRRGYAPKNSGNSDGDVEQTHGVSSAEKKDGAGSGGEQESA       CDR1     KO     MQKGEIVLFLKGSLKKHKRKTAASNKGDIEAGPVAGKLDYQDEAEAVNNEKFTEKGDIEAGPVAGKLDYQDEAEAVNNEKFTEKGDIEAGPVAGKLDYQDEAEAVNNEKFTEKGDIEAGPVAGKLDYQDEAEAVNNEKFTEKG	SESI	DENAD-	KNMLQDTYI	TSNATNE	INSESI	NDIEN	-TKMHTDF	KIRDK-	<b>VKRMKKEG</b>	VFPHSV	EGAK <mark>OKGE</mark> MLV	CGR1
CDR1     KOMOKGEIVLFLKGSLKKHKRKTAASNKGDIEAGPVAGKLDYQDEAEAVNNEKFTEKG       PDR10     EOKQNGEMLVFPHSVVKKMKKGIVSEKKKKNQPTLSTSDAEKDVEMNNNSSATDSRFLRDSDAAIMGNDKTVAKEHYSSPSS		SA	AGSGGEQES	SAEKKDG	THGVS	-DVEC		)G	APKNSGNS	LFRRGY	SEAKSKGEVLL	PMR1
PDR10 E3.KONGEMLVFPHSVVKKMKKKGIVSEKKKKNOPTLSTSDAEKDVEMNNNSSATDSRFLRDSDAAIMGNDKTVAKEHYSSPSS		TEKG-	AEAVNNEK	KLDYODE	GPVAG	-DIEA		ASNKG	LKKHKRKT	LFLKGS	KGAM <mark>OKGE</mark> IVL	CDR1
	NDKTVAKEHYSSPSSSAS	AAIMGN	SRFLRDSDA	NNSSATD	<b>KDVEM</b> N	SDAEK	KNOPTLST	VSEKK	<b>VKKMKKKG</b>	VFPHSV	<b>EGAK</b> ONGEMLV	PDR10
PDR12 KPVEGGGDLLLYKRGHMPELGTENADARTASREEMMEALNGPNVDLEK			PNVDLEK	MMEALNG	<b>FASREE</b>	ADART			MPELGTEN.	LYKRGH	<b>KPVE</b> GGGDLLL	PDR12
PDR15 EGKOKGEMVVFLRSKIKOLKKEGKLOEKHRPGDIENNAGSSPDSATTEKKILDDS-SEGSDS	SSSD	SEGSD-	KKILDDS-S	PDSATTE	NAGSS	GDIEN	-HRP	LOEK-	IKOLKKEGI	VFLRSK	ECAK <mark>OKGE</mark> MVV	PDR15
ASPOR SSTS STAEVLVFRRGHEPAYLRTDSKKPDAESAVELSAMKPTTESGEGDMS			SGEGDMS	AMKPTTE	SAVELS	PDAES		KK	EPAYLRTD	VFRRGH	STSSTAEVLV	ASPOR
ALIF SVGGGGALVFKRSKRAK-KLATQTTQGNDEEKVQDVGDKAALSRGEAMSASNGE		ASNGE-	LSRGEAMS	DKAA	<b>VQDVG</b>	NDEEK		TTQG-	RAK-KLAT	FKRSK	FVCGGGGGALV	AtrF
Abca TEKKPKGEILVFPRGHKALKKGKSDEDLEGGGGRSATVEKIG-SDGLA		LA	KIGSDGI	GRSATVE	GGG	-DLEG		E	KALKKGKS	VFPRGH	FEKKPKGEILV	AbcA
abcG10 DWTSGGMPHKVYKRGKAPKINDDEEERQONAMVENATSK		NATSK-	AMVE		EROON	DDEE			APKIN	VYKRGK	OWTSGGMPHKV	abcG10
abcg11 DHISGGYTHKVYKKGKAPKMNDVEEEKÕONAIVAKATSN		KATSN-	AIVAR		EEKOON	-DVEF			APKMN	VYKKGK	HTSGGYTHKV	abcG11
		TDDTA-	NAQSDNNS	KD-DATV	GHVSE	VSSES		TOPPEC	SKT.WNAVD	LIPREC	KLSSENGPSLL	ABC2
ABC2 KLSSENGPSLLIPREQSKLVNAVRQVDEEGOVSSESGHVSEKD-DATVNAOSDNNSTDDTA								2VDEEG.	DICT A TITZ A TCA			DMD 4
ABC2 KLSSENGPSLLIPREQSKLVNAVRQVDEEGQVSSESGHVSEKD-DATVNAQSDNNSTDDTAPMR4 SEKKSKGEVLLFRRGYQPAHAAG-EGDLEKSSQPSAVAKTDESTPSTT		rr	STPST	AVAKTDE	KSSOPS.	-DLEK	· · · · · · · · · · · · · · · · · · ·	G	PAHAAG-1	LFRRGY	SEKKSKGEVLL	PMR4
ABC2       KLSSENGPSLLIPREOSKLVNAVRQVDEEGQVSSESGHVSEKD-DATVNAQSDNNSTDDTA         PMR4       SEKKSKGEVLLFRRGYQPAHAAG-EGDLEKSSQPSAVAKTDESTPSTT         DEBHA       KMOKGEILLFORKALKKNKRRRNDLESGNIEKISPDYNDDNVTDNEMES		ES	STPSI DNVTDNEMI	AVAKTDE ISPDYNN	KSSQPS. S <mark>GNIEK</mark>	-DLEK		GRN	2PAHAAG-1	LFRRGY LFORKA	SEKKSKGEVLL KGAMOKGEILL	PMR4 DEBHA
ABC2       KLSENGPSLLIPREQSKLVNAVRQVDEEGQVSSESGHVSEKD-DATVNAQSDNNSTDDTA         PMR4       SEKKSKOEVLLFRRGYQPAHAAG-EGDLEKSSQPSAVAKTDESTPSTT         DEBHA       KSMQKGEILLFQRKALKKNKRRRNDLESGNIEKISPDYNNDNVTDNEMES         Y1ABC2       GKSKGEVLVFRKEHIKKQRKEKNGDLESGVTMAGEKGTQESESSNTSI		II SI	STPSI DNVTDNEME SESSNTS	AVAKTDE ISPDYNN GEKGTQE	KSSQPS SGNIEK SGVTMA	-DLEK -DIES -DIES		GRN-	OPAHAAG-I LKKNKRR- I KKORKEKI	LFRRGY LFQRKA VFRKEH	SEKKSKGEVLL KGAMQKGEILL QGAKSKGEVLV	DEBHA YIABC2

		NBD2		Walker A						
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	1000	1010	1020	1030	1040	1050	1060	1070		
PDR5	EI	GLSKSEAIFHW	RNLCYEVQIK/	ETRRILNNVI	<b>)GWVKPGTLTA</b>	LMGASGAGKT	LLDCLAEF	RVTMGVIT-GDILVN		
CDR3	R	KLLDTSNIFHW	RNLTYTVKIKS	SEERVILNNII	<b>)GWVKPGEVTA</b>	LMGASGAGKT	LLNALSEF	<b>LTTGVITSGTRMV</b> N		
ABC1		FIQRQTSTFGW	RDVCYEVQIKE	ETRRILDHVI	<b>)GWVKPGTLTA</b>	LMGVSGAGKT	LLDCLADF	RTSMGVIT-GEMLVD		
BOTCI	ALK	DITGSESVFTWI	ENVEYTVPYL(	GERKILNGVN	<b>IGYPKPGIMVA</b>	LMGASGAGKT	LLNTLSQF	RQKTGVVT-GDMLVD		
CGR1	ITSGSRGGSPQV	GLSKSEAIFHW	QNLCYDVPIK	EVRRILNNV	<b>GWVKPGTLTA</b>	LMGASGAGKT	LLDCLAEF	RTTMGVIT-GDVMVN		
PMR1		AIQROTSIFOW	DVCYDVHIK	EERRILDHVI	<b>GWVKPGTCTA</b>	LMGVSGAGKT	LLDVLATF	RVTMGVVS-GEMLVD		
CDR1	STGSV	DFPENREIFFWI	RDLTYQVKIK	EDRVILDHVI	<b>GWVKPGQITA</b>	LMGASGAGKT	LLNCLSEF	<b>RVTTGIITDGERLV</b> N		
PDR10	SQSNSFSKSDDI	ELSKSQAIFHWI	KNLCYDIPIKN	GKRRILDNVI	<b>GWVKPGTLTA</b>	LIGASGAGKT	LLDCLAEF	RTTMGLIT-GDVFVD		
PDR12		-VIAEKDVFTW	HLDYTIPYDO	ATRKLLSDVI	<b>GYVKPGKMTA</b>	LMGESGAGKT	LLNVLAQF	RINMGVIT-GDMLVN		
PDR15	DNAGL	GLSKSEAIFHWI	RDLCYDVPIK(	GORRILNNV	<b>GWVKPGTLTA</b>	LMGASGAGKT	LLDCLAEF	RVTMGVIT-GNIFVD		
ASPOR		IIPPQKDIFTWI	RDVCYDIEIK	EPRRLLDHVS	GWVKPGTLTA	LMGVSGAGKT	LLDVLAHF	RTSMGVIT-GDMFVN		
AtrF	SFK	RISSSDRIFTW:	SNVEYTVPYGI	<b>IGTRKLLNGV</b>	<b>IGYAKPGVMIA</b>	LMGASGAGKT	<b>LLNTLAQF</b>	RQKMGVVT-GDFLVD		
AbcA		MIERQTAIFQWI	<b>XDVC</b> DIKIGE	<b>ENCRILDHVI</b>	GWVKPGILTA	LMGVSGAGKT	LLDVLATF	RTTMGIIS-GEMLVD		
abcG10	MKD	TLKMRESCFTWI	HIHYTVQLNC	KDLLLLNDVE	GWIKPGQMTA	LMGSSGAGKT	LLDVLAK	KTMGTVT-GKCLLN		
abcG11	MKD	TLHMDGGIFTW	<b>QNIRYTVKVP</b>	GERLLLDNIE	GWIKPGQMTA	LMGSSGAGKT	LLDVLAK	KTLGVVE-GDSHLN		
ABC2	AQG	NLIRNSSVFTW	<b>KNLCYTVKTP</b>	GDRLLLDNV	GWVKPGNLTA	LMGSSGAGKT	LLDVLAQF	KTEGTIR-GSIQVD		
PMR4		AIQRQTAIFQW	EDVCYDIKIK	EPRRILDHV	<b>GWVKPGTCTA</b>	LMGVSGAGKT	LLDVLATF	RVTMGVVT-GQMLVD		
DEBHA		KLPSAGDIFHW	RELTYQVKIKS	EERVILNSVI	<b>GWVKPGQVTA</b>	LMGASGAGKT	LLNALSDF	RLTSGVITSGVRMVN		
Y1ABC2		NLQAQRGIYQW	KDVCYDIKVKI	GERRLLDHVI	<b>GFVKPGTLTA</b>	LMGASGAGKT	LLDVLADF	KSTGVVT-GEMLVN		
AGL142C		IGSDSIFHW	RDVCYDIQIK	ETRRILTNVI	GWVKPGTLTA	LMGY SGAGKT	LLDVLANE	RVRVGVVT-GNIFVD		

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	1080	1090	1100	1110	1120	1130	1140	1150	1160
PDR5	GIPRDKSE	PRSIGYCO	ODLHLKTAT	RESLRESAY	LROPAEVSI	EEKNRYVEEVI	KILEMEKYAD	AVVGVAG	EGLNVEORKRLT
CDR3	GGELDSSE	ORSIGYVO	ODLHLETST	REALKESAR	LROPNSVSI	EKDSYVEKII	DLLEMRTYVD	AIVGVPC	EGLNVEORKRLT
ABC1	GHORDASE	ORKTGYVO	OODLHLOTTT	REALNESAL	LROPAHVPR	EKLAYVDEVI	RLLDMOEYAD	AVVGVPG	EGLNVEORKRLT
BOTCT	GRPLGTAR	ORGTGECE	MDLHDGTDT	REALELSAT	LROEHTVPR	EKTEYVDKTT	DITELGDMOD	AT.VR	-SLSVEORKRVT
CCR1	GRERE	SRSTGYCO		RESLRESAY	ROPSSVST	REKNEYVEAVT	KILEMETVAD	VVCVPC	EGUNVEORKRUT
DMD 1	CPPPDOSE	OPKTCYVO		TOFAL DESAT	DODDHUSH	JEKT DYVEEVT	KLLCMEHYAD	MUCUPC	FCLNVFOPKPLT
CDP1	CHALDSSE	OPSICYVO		TREALOFSAY	LOCANKISKI	KEKDD VVDVVT			FCLNVFOPKPLT
DDD10	CDDDDOGE	DREICYCO		TREADERAY.			EXTEMPT VAD		FCINVEODED
PDRIU	AKDIDAGI	PRSIGICOS	20DLHLKIAI	TRESLEPSAL		SEKDKIVEEVI			DCINVEORKEI
PDRIZ	AKPLPASE	MRSCGIVAG	ZADNHMAELS	RESLRFAAE.	LRQQSSVPL	SEKTETVERTI	TLLGMQNYAE	ALVGKTG	RGLNVEQRKKLS
PDR15	GREEDESE	PRSIGYCQ	2QDLHLKTAT	RESLRESAY.	LRQPSSVSI	SEKNRYVEEVI	KILEMQQYSD.	AVVGVAG	EGTUAEŐKKET.
ASPOR	GRGLDQSF	'QRST <mark>GYV</mark> Q <mark>Q</mark>	QQDLHLETAT	RESLRFSAL	LRQPPNVSI	<b>SEKADAAEDAI</b>	RMLKMEDFAE	AVVGVPG	QGLNVEQRKLLT
AtrF	GRPLGADE	QRGTGFCE	MDLHDNTST]	[REALEFSAL]	LRQDRNVSK	<b>EKLDYVD</b> QII	DLLELNDIQD	AIIG	-SLNVEQKKRVT
AbcA	GOPRDESE	ORKTGYAQ	<b>DODLHLSTAT</b>	REALEFSAL	LROSAHVPR	EKIDYVTEVI	KLLDMTEYAD	AVIGVPG	EGLNVEORKRLT
abcG10	GKELNIDE	ERITGYVE	MDVHNPGLT	REALRESAK	LROEPTVSLO	DKYEYVEOVL	EMMEMKHLGD	ALIGSLETC	IGISVEERKRLT
abcG11	GRELETDE	ERITGYVE	MDVHNPGLT	REALRESAK	LROEPEVSLI	<b>EKFKYVEHV</b> L	EMMEMKHLGD	ALTGTLETC	VGISVEERKRLT
ABC2	GRPLPVSE	ORSAGYCE	DUDVHEAYATT	REALEFSAL	LROSRDTPR	EKLAYVNTII	DILLELHDIAD	TLIGEVO	AGLSVEORKRVT
DMDA	CNPTDOSE	OPKTCYVO	ODTHISTST	TREALVESAL.	LPOPATUSP(	DEKTAVADEVT	KI.I.CMEAVAD		FCLNVFOPKPLM
EPIK4	CHEIDODE			TOPAT UPOAL	DODKCVDK	ZEKDOVIDVI	DITEMERYCD		ECIMUEODED
DEBHA	GREEDASP	QRSIGIVQ	QULILQIST	REALTF SAL	LROPRSVPR	SEKDSI VDI II	RELEMENT SD.		EGENVEQRARET
YIABC2	GEHRDGSF	QRKTGYVQQ	QQDLHTATAT	RESLEFSAL	LRQPSSIPE	SEKLAYVDEVI	RILEMETYAD	AVVGVPG	EGLNVEQRKRLT
AGL142C	GHLRDTSF	ORKTGYCQ	DLHGRTOT	/RDALKFSAY	LROPOSISR	EKNAYVEDII	KLLGMEAYAD	AVVGVTG	EGLNVEORKRLT

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	1170	1180	1190	1200	1210	1220	1230	1240	1250
PDR5	IGVELT2	KPKLLVFLDE P	T <mark>SGLD</mark> SQTAW	ISICQLMKKLAD	HGQAILCTIN	QP <mark>SAILMQ</mark> E	FDRLLFMQRGG	<b>KTVYFGDLG</b>	EGCKTMIDY
CDR3	IAVELV	RPKLLVFLDE P	T <mark>SGLD</mark> SQTAW	<b>SICKLIRKLAN</b>	HGQAILCTIN	QP <mark>SAILLEE</mark>	FDRLLLLQKG-	ETVYFGEFG	ANCHTLIEY
ABC1	IGVELAZ	KPPLLLFVDE P	T <mark>SGLD</mark> SQTSW	AILDLLEKLTH	<b>(SGQAILCTIH</b>	<b>QPSAMLFQR</b>	FDRLLFLAKGG	<b>KTVYFGDIG</b>	ENSKIMTDY
BOTCI	IGVELAZ	KPNLLLFLDEA	TSGLDSQSAY	SIVRFLKMLS	AGQAIVWSIH	<b>OPSSVLIQE</b>	FDMILALNPGG	NTSYFGPVG	ENGSAVVKY
CGR1	IGVELAZ	KPKLLVFLDE P	TSGLDSQTAW	ATCOLMKKLAN	HGQAILCTIH	<b>OPSAMLMQE</b>	FDRLLFLQKGG	<b>QTVYFGDLG</b>	KGCKTMIKY
PMR1	IGVELAZ	KPOLLLFLDE P	TSGLDSQTSW	SILDLIDTLTH	HGOAILCTIH	OPSAMLFOR	FDRLLFLAKGG	RTVYFGEIG	EHSSTLSNY
CDR1	IGVELV2	KPKLLLFLDE P	TSGLDSQTAW	SICKLMRKLAI	HGOAILCTIH	<b>OPSALIMAE</b>	FDRLLFLOKGG	RTAYFGELG	ENCOTMINY
PDR10	IGVELAZ	KPKLLVFLDE P	TSGLDSQTAW	STCOLMKKLAS	RGQAILCTIH	OPSALLMOE	FDRLLFLQEGG	<b>OTVYFGELG</b>	KGCKTMINY
PDR12	IGVELV2	KPSLLLFLDE P	TSGLDSQSAW	SIVOFMRALAI	SGQSILCTIN	<b>PSATLFE</b> Q	FDRLLLLKKGG	KMVYFGDIG	PNSETLLKY
PDR15	IGVELAZ	RPKLLVFLDE P	TSGLDSOTAW	DTCOLMRKLAT	HGOAILCTIH	OPSAILMOO	FDRLLFLOKGO	OTVYFGDLG	EGCKTMIDY
ASPOR	IGVELAZ	KPKLLLFLDE P	TSGLDSQSSW	AICAFLERLAL	SGOAVLCTIH	PSAILFOO	FDOLLFLARGO	KTVYFGPIG	ONSNTLLNY
AtrF	IGVELAZ	KPSLLLFLDE P	TSGLDSQAAF	SIVRFLKKLSI	AGOAILCTIH	OPSSMLIOO	FDMILALNPGG	NTFYFGPVG	HDGGDVIKY
AbcA	IGVELAA	RPOLLLFLDEP	TSGLDSOTSW	AILDLLDKLK	NGOAILCTIH	OPSAMLFOR	FDRLLFLOAGG	RTVYFGEIG	ONSOILIDY
abcG10	IGIELV	KPHI-LFLDEP	TSGLDSOSSY	NIVKFIRKLAL	AGMPLVCTIH	OPSSVLFEY	FDRILLLAKGG	<b>KTVYYGDIG</b>	EKSKTLTSY
abcG11	IGVELV	KPOI-LFLDEP	TSGLDAOSSY	NIIKFIRKLA	AGMPLVCTIH	OPSSVLFEH	FDRILLLAKGG	KTVYFGDIG	EKSKTLTSY
ABC2	IGVELVS	KPSILIFLDEP	TSGLDGOSAY	HTVRFLRKLA	VGOAVLVTIH	PSAOLFAO	FDTLLLLAKGG	<b>KTVYFGEIG</b>	DOAKVVKEY
PMR 4	IGVELAZ	<b>KPOLLLFLDE</b> P	TSGLDSOTSW	SILDLIETLTE	HGOAILCTIH	OPSAMLFOR	FDRLLFLARGO	RTIYFGEIG	ENSSTLSNY
DEBHA	IGVELV	KPKLLVFLDEP	TSGLDSOTAW	SICKLIRKLAL	HGOAILCTIH	OPSAILLKE	FDRLLFLORGO	KTVYFGDLG	DNCOTLIDY
YLABC2	IGVELAZ	KPELLLFLDE P	TSGLDSOTAW	SIVKLLKKLAZ	NGOAILCTIH	OPSAILFOE	FDRLLFLASGO	RTVYYGDIG	POSSILTEY
AGL142C	IGVELV	KPELLLFLDEP	TSGLDSQTAW	SICQLIKKLV	HGQAILCTIN	PSAILMOE	FDRLLLLSNGG	RTVYFGPLG	EGCSTMIQY

	1000	1070		1000	1				
	1260	1270	1280	1290	1300	1310	13	320 1330	0 1340
PDR5	AHKCPADA	NPAEWMLEV	VGAAPGSHA-	-NQDYYEVWI	RNSEEIRAV	QSELDWMER	ELPKKG	SITA	AEDKHEFSQSIIYQ
CDR3	ASKCPQHA	NPAEWMLGV.	IGAAPGTQA-	-NQDYFETWI	RNSPEYRAV	QNELHRLEE	MPGLAS	GEKE	P <b>D</b> TNQAYAASFW <b>K</b> Ç
ABC1	GFPCPHDA	NPAEWMLEV.	IGASPGTTS-	-DIDWHQAWI	RESPECADV	HAELDRLKE	QVPNTP	PPTED	KASYRE FAAPFHQQ
BOTCI	V-QCPPLK	NVAEFILETA	AAKGGKRRDG	KKINWNEEWI	LNSNENKTVI	MQEIVRIKS	ERGKIA	APE2	ASSQRE FGSPVTLQ
CGR1	AHKCPPDA	NPAEWMLEV	VGAAPGSHA-	-NQDYHEVWI	RNSEQFKQV	KQELEQMEK	ELSQKE	LDNDI	EDANKE FATSLWYC
PMR1	APKLSPEA	NPAEWMLEV:	IGAAPGTHS-	-DIDWPAVWI	RESPERKAV	QNHLAELRN	NLSLKP	VATTDND	PAGFN <mark>E</mark> FAAPFA <b>V</b> Ç
CDR1	ADPCPKEA	NPAEWMLQV	VGAAPGSHA-	-KQDYFEVWI	RNSSEYQAV	REEINRMEA	ELSKLP	RDND	P <mark>EALLK</mark> YAAPLWKQ
PDR10	AHKCPPDA	NPAEWMLEIV	VGAAPGTHA-	-SQDYFAIW	RDSEEYREM	QKELDWMER	ELPKRT	EGSS1	NEEQKE FATSTLYC
PDR12	GMKCGVSE	NPAEYILNC:	IGAGATASV-	-NSDWHDLWI	LASPECAAA	RAEVEELHR	TLPGRA	VNDD]	PELATR FAASYMTC
PDR15	AHKCPPDA	NPAEWMLEV	VGAAPGSHA-	-TODYNEVW	RNSDEYKAV	OEELDWMEK	NLPGRS	KEPT	AEEHKPFAASLYYC
ASPOR	ARKCADDE	NPAEWMLEIV	VNAGTNSEG-	ENWFDVW	KRSSECOGV	OTEIDRIHR	EOOSKTO	ASDKDNES	SWSKSEFAMPFWFC
AtrF	V-VCPPSK	NVAEFILETA	AAKATTTKDG	KKIDWNEEWI	RNSEQNORV	LDEIQQIRE	ERSKIP	VTE	IGSPYE FAASTMIC
AbcA	APPCPPDA	NPAEWMLDV:	IGAAPGSHT-	-SINWFETW	RSPEYARV	OEHLAELKH	ERRHOTNI	LFRTTSGOKREDI	KDSYRE FAAPFWAC
abcG10	VRSCTESE	NPAEYILEA:	IGAGTNPGV-	STIDWPEVW	COSPELODV	OAELASLET	AATVOISS	DDODI	HGPPREFATSIWYC
abcG11	VRPCTESE	NPARYTLEA	TGAGVHGKS-	-DVNWPEAW	OSPELADI	SRELAALKE	OGAOOYKI	RSI	OGPARE FSOSTWY
ABC2	A-ACPTEV	NPAEHMIDV	VSGOLSOG	KDWNDVW	ASPEYANM	TTELDETT	EAASKP	PGT	VDDGNEFATTIMEC
PMR /	AHHLTPGE	NPAEWMLDV	IGAAPGTHS-	-DTDWPKVW	ESPERCOV	KDHLSELKS	TLSSK		PNAFREFAAPEHVC
DEDUA	APKCPPDA	NDARWMIEV	IGAADGSHA-	-SODYYDVW	NSSEVUTTI	NHELDIMEC	ELVKKD		PESMKTEAADEWYC
VINDCO	ADDCDKOG	NDA FUMT FV	ICAADCSTA-	-KDMDWDWW	FCDEDVYK	DEELDEMAD			
TIADUZ	CONEDEAC	NEABWRIDEV.	ICAAPGSIA-		NOPENOCIA	OFFI UDMEN	CET WILK D	DEFEC	
AGL142C	SQREPEAC	NPAREMLEI.	IGAAPG5RA-	-TŐDIHEIMI	MSDE I QSV	QEFTURMEN	ELWERP	KEL1	SDQMRE ASSIMIC
	TMD2								
		a para a para				TTTT PTTT			
	1350	1360	1370	138	0 . 13	90 . 1	1400	1410	1420 143
PDR5	TKLVSIRI	FOOTWRSPD	YLWSKFILTI	FNOLFIGET	FFKAGTSLO	GLONOMLAN	FMFTVIF	NPILOOYLPSFV	OORDLYEARERPSI
CDR 3	TIFVVHRI	FOOTWRTPS	TITSKFAMAV	LCSLFNGFT	YYKSONSMO	GLKNOMLSI	TSMEVVL	TTLAOOYVPLFV	TORDLYEARERPSI
ABC1	TYAVTHRY	FOOTWRTPS	TYAKAALCA	VTALETCEV	FYDAPNTOO	GLONOMFAT	FNTLTVF	GOLVOOTMPHEV	TORDLYEVRERPSI
ROTOT	TTELTKET	TTOYNED PS	VI.VCKI.FTSV	TIGTENGET	FWOLCHSTT	DMONRMETS	TT.TT.TP	DTTWNAWUDKEY	ONPALWEAPELDS
CCP1	FOLVCVPI	FOOTMETD	VIMCKVILTT	THOLETCET	FERADETTO	CLONOMI SI		NDLLOOVLDTEV	OOPDLYFAPFPPS
DMD 1	TWOCITRY	E COMMENDED T	TYCKULTUTT	TWATYYCES	PEULONEMO	CLONOMESI			TOPSIVEVDEDDS
PMR1	LWOCLIRV	TYODWREP	TTERTALCO	LIALIVGES.	FFRAGNSMO	CLONOMEST			I ORSLI EVRERPSI
CDRI	TELVSWRI	TVODWRSPG	TTORTELVV	SAALFNGES.	FFRAKNINMQ	GLONOM N			CODDI VE DEDDO
PDRIO	IKLVSIRI	FHQIWRTPF	LWSKFFSTI	VSELFIGET.	FFKANTSLQ	GLQNQMLA	LEWELVVE	NELFŐŐTFEFA	QQRELYEARERPSI
PDR12	IKCVLRRI	ALQFWRSPV	TRAKFFECV	ACALFVGLS	YVGVNHSVG	GALEAPSSI	LFMLLLLA	LAMINQLHVFAY	DSRELYEVREAAS
PDR15	FKMVTIRI	FQQYWRSPD	YLWSKFILTI	FNQVFIGFT	FFKADRSLQ	GLQNQMLSI	IFMYTVIF.	NPILQQYLPSFV	QQRDLYEARERPSI
ASPOR	LYQVTYRV	FQQYWRMPE	YIASKWVLGI	LSGLFIGFS	FFQAKSSLQ	GMQTIVYSI	LFMLCSIF	SSLVQQVMPLFV	TORSLYEVRERPS
AtrF	TLLLTKRI	FROYWRDPS	YYYGKLFVSV	IIGIFNGFT.	FWMLGNSIA	NMQDRMFS1	FLIMIP	PVVLNSIVPKFY	INRALWEAREYPS
AbcA	LYQVQVRV	FQQIWRSPT	<b>YIYSKTALCV</b>	LSALFVGFS	LFHTPNTIQ	GLQNQMFG]	FMLLTLF	GOLIQQIMPHEV	AQRALYEVRDRPA
abcG10	TWEVYKRI	NLIWWRDMS	YVYGIFTQAA	ASGLIIGFT	FWNLDLSSS	DMNQRVFF1	<b>FEILFL</b> G	ILYIFIAIPQFL	IQKAYFK-KDYASI
abcG11	TKEVYKRI	NLIWWRDPY	YTYGSFVQAA	LCGLIIGFT	FWNLQGSSS	DMNORIFF1	FEALMLG	ILLIFVVMPQLI	IQREYFK-RDFASI
ABC2	TKLVTORM	INVSLYRNAD	YVNNKFALHI	FSALFNGFS.	FWMVKDSIG	DLQLKLFTI	FNFIFVA	PGVLAQLQPLFI	HRRNIFETREKKSI
PMR4	LLECLKRV	FAQYYRTPT	TIWSKAALCI	LTSLYIGFS	FFHAONSIO	GLONOMFS	FMLMTIF	GNLVOOIMPNFV	TORSLYEVRERPSI
DEBHA	YKYVTORV	FOOTWRTPS	TYSKVLMSI	FSSLFNGFA	FFKADKSLO	GLONOMEST	FMFFVLF	NTLVOOYLPHEV	AORDLYEVRERPSI
YLABC2	FKIVSKRO	FOALWRTPS	TWSKVFLCA	ASAIFIGES	FFKAPNDMO	GLONKMEST	FMLFLTF	NTVVEOIIPOFD	KMRELY EARERSS
AGI 142C	VIIVSPRV	TOOVWRSPE	TWSKTEMST	FASTFICES	FERSETSTO	GLONOMEAT	ZET.ET.VVT.	TPT.VOOMT.POVV	FORDLEEVRERHS
AGD1420	TTT V DICKV	TAX THROTT			LINNIDIA	CHANGER FR		TTT V XXIIII XI V	
		440	1450	1460	1470	1490	1400	1500	1510
DDDF	DURING TOT			1460	1470	1480	1490		1510
PDRS	RTESHISE	TRAQIEVEV.	PWNILAGTIA	IFILIPIG.	FISNASAAG	QUHERCALI	WLP SCAP		SPNQVAESAAN
CDR3	KTFSWLAP	TAAQITAEL.	PYQVLAATIS	FFSWYYPVG.	LIRNAVISG	AVTHRGVL	IMPTWLPW	FIYSSTLAQFCI	SWNQLADYAAN
ABC1	KVYSWKVE	MLSQIIVEI.	PWNSLMAVIM	FFCWYYPVG.	LERNAILAD	QVTERGAL <sup>4</sup>	FLATMGE.	LIFTSTFTDLMI	AGPETAEAGGN:
BOTCI	RIYGWVAL	CTANIVAEI.	PIALVGVVIY	WALWYWPTG.	LPSDS	STSGY	LETWLWTE.	FLFQASWGQWIC	AFAPSFTVISN
CGR1	RTFSWKAF	ILAQIVVEV	PWNIVAGTLA	YCIYYYSVG	FYANASQAH	QLHERGALI	WLFSIAF	YVYVGSLGLFVI	SFNEVAETAAH:
PMR1	KTYSWQAF	MSANILVEL	PWNALMSVLI	FLCWYYPVG	LORNAS-AD	DLHERGALN	<b>WLLILTF</b>	MLFTSTFSHMMI	AGIELAETGGN
CDR1	RTFSWFAF	IAGQITSEI:	PYQVAVGTIA	FFCWYYPLG	LYNNATPTD	SVNPRGVLN	<b>WMLVTAF</b>	<b>YVYTATMGQLCM</b>	SFSELADNAAN]
PDR10	RTFSWKAF	IVSQILVEI	PWNLLAGTIA	FFVYYYPVG	FYRNASYAN	<b>QLHERGALI</b>	WLFACAF	YVYISSMGVLVI	SCIEIAENAAN]
PDR12	NTFHWSVI	LLCHAAVEN	FWSTLCOFMC	FICYYWPAQ	FSGRAS	HAGFFI	FFYVLIF	PLYFVTYGLWIL	MSPDVPSASM
PDR15	RTFSWLAP	FLSQIIVEI	PWNILAGTIA	YCIYYYAVG	FYANASAAG	QLHERGALT	WLFSIAF	YVYIGSMGLLMI	SFNEVAETAAH
ASPOR	KTYSWKAF	LIANIIVEI	PYOIMMGILT	YACYYYAVV	VODSE	ROGLA	/LLLCIOF	FIYASTFAHMAT	AAMPDTETASA
AtrF	RIYGWFAR	CTANIVCET	PMAIVSSLIT	WLLWYYPVG	FPTDS	STAGY	TELMSMLE	FLFMSSWGOWIC	AFAPSETVISM
AbcA	KTYSWKAR	LIANIVVEL	PWNSLMSVT.M	FLCWYYPIG	LYRNAEPTD	AVHLRGTON	WLMTWTE	LLESSTEAHEMT	AAFDAAENAGM
abcG10	KEYSWCPE	ATSTVTVEL	PEVAVAGETC	FECSEWTAG	TYYNG	EYDEVI	TTTTTY	LETCVSLCOVVS	AFCENVMLAOT
abcG11	KEYSWEDE	ATSTVAVET	PETVISCUT	FECSEWTAC	HKTSD	DEOTRY	WETETTE	MERCUSECOAVA	AVCT NMERAME
ADCGII	KMYSWTAT	VTAT.T.YCPT	DVT.TVCAVT V	EVCWVVVV		HPACCT	THE VML CY	RELYTCMCORTA	AVADNEVEAUT AM
DMD/	KTYCWKAT	MISHITIVEM	DWNTTMAATM	VECWYVDIC	LVKNA PDTH	AVSEDGATA	ALT.T.TWO	L. PTSTEAUMYT	AGTE-TAPTCON
LUIN4	DTT.SWEAT	TTACTTART	DWOTASCUTA	FECHAVADIC	LVDNAFDTD	AVAORGATA		ETVCSTMACLCT	SENELADNAAM
VIDDOO	KILOWEAR	MCGINGATET	TWORDACITLA	TICHTIPIC.	DOWNARD	CVUED COL		T VNOTENDAT	ACTD-WEDWAAN
ITABC2	KTISWQVF	MOSIMVVEL.		PECFITPVG.	POWTAEIND	SVHERGGL		TTONTTANMLI	AGIDNKDTAAQ.
AGL142C	<b>KIFSWKV</b> F	LLSQITAEI.	PWAILGATIS	FFCFYYPVG.	FITHATDAA	NRAEROFL	WSLCVAF.	I IFSATFGQFCI	AGLEKAEPAAII

						1	1			1			1
	1520	153	30 1540	0	1550	1.	560	1570	1	580	1590	1	16
PDR5	SAANLASLLE	TMSLSFC	VMTTPSAMPR	FWI-FM	RVSPLT	YFIQA:	LLAVGVA	NVDVKC	DYELLE	FTPPS	G-MTCGQ	MEPYI	μÇ
CDR3	YAANWISLLI	TISMIFC	VIATKDSMPK	FWV-FL	RCTPLT	ILTSA	MMSIGLG	DSFVKC	APTEILI	FPPQTPG	V-QKCQD	MGAYI	£ S
ABC1	AGGNIANLFE	SLCLIFC	VLANPDTMPR	FWI-FM	RVSPFT	IVSG:	LLSVAVA	MSEVRC	ASNEFLH	FDPLN	GTCAE	MRNYI	ĹΝ
BOTCI	VISNVLPFFE	VMFGLFNG	VVRPISQISV	FWRYWL	YVNPAT:	WIGG	IIAATLS	NVPIEC	ASNEAAY	FNPPS	G-QTCSS	ASDEV	71
CGR1	TAAHIGSLM	TMALSFC	VMATPDAMPR	FWI-FM	RVSPLT	LIDA:	LLSTGVA	NVDIRC	SNTELVI	FTPPC	G-LTCGQ	MTPYI	LN.
PMR1	TGGNLANLLI	SLCLIFC	VLATPDKMPH	FWI-FM	RVSPFT	LVSA	MLSTGTS	GAKVECI	ESVELLH	FEPTA	G-KTCFE	MNTYM	1
CDR1	NAANLATLLE	TMCLNFC	VLAGPDVLPG	FWI-FM	RCNPFT	LVQA	MLSTGLA	NTFVKC	AEREYVS	VKPPN	G-ESCST	LDPYI	ΓK
PDR10	NAANLASLFE	IMSLSFC	VLATPNILPR	FWI-FM	RVSPLT	LIDA	LLSVGLA	MASVVC	SSNELLK	IVPPS	G-MTCSE	MEPTN	<b>1</b> 0
PDR12	SASMINSNLE	AAMLLFC	ILOPREKMPA	WRRLM	INVSPFT	YVVQA:	LVTPLVH	NKKVVC	PHEYNI	MDPPS	G-KTCGE	LSTYN	1D
PDR15	TAAHMGTLLE	TMALSFC	VMATPKVMPR	FWI-FM	RVSPLT	MIDA	LLALGVA	NVDVKC	SNYEMVK	FTPPS	G-TTCGD	MASYI	ΓK
ASPOR	TASAIVVLLI	AMSLTFC	VMQTPTALPG	FWI-FM	RVSPFT	WVSA	MAATQLH	DRVVQC	SPSEMSI	FDPPS	G-QTCGE	MSSFM	15
AtrF	VISNVLPFFE	VMCNLFNG	IVRPYRDYPV	WKYWM	YVNPVT	WLRG	VISSIFP	TVQIDC	SPSETTH	FNPPP	G-QTCAN	AGNEI	Γī
AbcA	NAGNLGNLLI	LLCLLFC	VLATPDQLPR	FWI-FM	RVSPFT	LVSG	MLSVGIS	NTNVTC	ADNEYLR	FDPVN	GTCGE	MGSYN	15
abcG10	LAQTILPLLI	VMLFLFC	VLVPYEQIPM	FWK-FV	HSNPCR	TFLEG	VVTSVLK	NVEVDC	SNEDLTK	FSNPI	N-LTCKE	FKPT-	
abcG11	FAMTLIPLLI	VFLFLFC	VMVPPSSIPT	WRGWV	HLNPCR	TFMEG	IITNILK	TVRVEC	SEEDMAI	FTFPK	SYNTCONY	TSAFC	25
ABC2	VLANPVVI	GTLVSFC	VLVPYAQIQE	FWRYWI	YLNPFN	LMGS	MLVFNLW	GAEIKC	SEHEFAT	FNPPN	G-TTCGD	LKDYI	LZ.
PMR4	TGGNIATLLE	SLCLIFC	VLATKEAMPG	FWV-FM	RVSPFT	LISA	MLSTGVS	GADAVCI	EAVEYLK	FNPPA	N-QTCGD	MSAYI	ΓK
DEBHA	NAANLSSLLE	TMCLTFC	ILASSDSMPR	FWI-FM	RCNPFS	ILVSA:	ILSVALA	NSDVTCI	DYNELLR	FKPED	G-QTCGE	MOTYN	19
Y1ABC2	TAAQIGTLLE	TLMLLFC	VLATKEOMPG	WV-FM	RVSPLT	TFVGG	MMATCMG	RAPVTC	SPHELVR	FPAVP	G-KSCGE	MDGFI	53
AGL142C	PAAILANFYE	TMCLIFSO	VLVTKDNLPR	MW-IWT	TLSPVT	LVSA:	LLSTGSG	MTVEC	PEELIK	FAPPK	G-LFCAL	LEPFA	N

1610 1620 1630 1640 1650 1660 1670 1680

	1610	1620	1630	1640	1650	1660	1670	1680
PDR5	LAKTGY	LTDENATI	TCSFCQISTTNE	YLANVNSF-	YSERWRNYGI	FICYIAFNYI	AGVFFYWL	ARVPKKNGKLSK
CDR3	IAG-G	LLNPEATI	NCKFCIMDKTNC	FLDFMNIS-	IHNFGRDTGI	FIVFIVFNMA	ATVFSYWL	<b>FRVPKGNREKGS</b>
ABC1	GTTIPGLGRIPGAGGY	LRPDTESSRS	NCAFCPIKDTNI	FLQGAHAN-	YNDRWRNFGL	IFVYIIFNII	AALFVYWA	VRVPKKKLGGKD
BOTCI	SAGVG	LTNPDAPI	KLRILPYPSGEE	YMKTLHVT-	PODKWRNFGI	FLGILYQQLG	VGLFLH-Q	<b>ORGESEDGVSDS</b>
CGR1	VAGTG	LTDPSATI	ECHFCQFSYTNE	FLATVSSK-	YYRRWRNYGI	FICFIVEDYV	AGIFLYWL	ARVPKTNGKIAK
PMR1	GLVVNGTQVAAPAGGY	LVDNNATS	NCAFCTIADTDI	YLASVLSY-	YKDAWRNFGI	MWAFIIFNIF	GAVCIYWL	ARVPKGTRSKKT
CDR1	FAG-GY	FETRND-C	SCAFCOMSSTNI	FLKSVNSL-	YSERWRNFGI	FIAFIAINII	LTVIFYWL	ARVPKGNREKKN
PDR10	STGTG	LLDGSSE	ECHFCQFSSTNE	YLATVSSS-	YSRRWMNYGI	FSAYIVFDYC	AAIFLYWL	VRVPKKSKKLKK
PDR12	NNTGY	LVNPTATE	NCQYCPYTVQDQ	VVAKYNVK-	WDHRWRNFGF	MWAYICFNIA	AMLICYYV	VRVKVWSLKSVI
PDR15	LAGTGY	LSDPSATI	ICSFCAVSTTNA	FLATFSSH-	YYRRWRNYGI	FICYIAFDYI	AATFLYWL	SRVPKKNGKISE
ASPOR	MAGGG	LSNPNATS	DCNYCSVAVADE	FLSSVNIY-	WSERWRNFGL	MWVYIVFNIF	LATMLYYT.	RVKKWNLSGLK
AtrF	NIAKNGY	LLNPDASZ	DCQYCPYSNGAE	YMATLNVH-	DGDKWRCFGI	FLAFVIINWI	LVYFFIYT	VRVRGWSFGM
AbcA	NLGG	LADEMATZ	NCSFCPIKETNV	FLGRVSSS-	<b>YSDIWRNF</b> GL	MWVFIVFNIF	AACSLYWW	VRVPRDKKPVAK
abcG10	YG1	VRAVTKODES	ECGYCVFKSGEE	YYKTLGWS-	<b>TENRLRNYGI</b>	LWAFFIFNII	MVVSFVYL	TKKPNR
abcG11	YKPSGY	VESATLNGEI	ACGYCIYKNGEE	YYETLGWS-	ADNRWRNVGI	IIGFFVFNII	MVILFVIL	TRKGSR
ABC2	AGPGAVAI	DLINPSATZ	NCOVCSYSKGOD	YLRTLNLKE	YYYGWRDAGI	VV-LMVFSSY	ALVYLLMK	LRTKMSKKAE
PMR4	VAGG	LQNPMATT	DCAFCTVSTTNM	FLSRISST-	FSEAWRNFGL	MWVYIIFNIA	GALFIYWL	RVPKGK
DEBHA	FAG-GY	LISNDTTV	TCEFCTVASTNV	YLQQVGAD-	SKKSRDIGI	FVCFIAINII	GTIFFYWL	ARVPKTSRQK-N
Y1ABC2	ALGDSAG	LVSSSA-I	MCETCPMKSSDC	FLDSVDIS-	TORWRNWGI	LWAYPLFNIF	AAFALYYF	FRVPKKSKAQKA
AGL142C	NAE-SV	/LLNPAATI	LCTVCPIKNSDY	YLALVNIF-	YNHRWRDWGI	FTIFVATNII	GFAATYWF.	FRVPKSTHITIK

	A	A-loop		Walker A	
				. [	
2031/		20 3		SEVHALMOPNOSOKSTI SAT	AGREDY EVIGGTVEEKGKDLLA
1G6H	LRTENIVKY	- FG	EFKALDGVSISVNK	DVTLIIGPNGSGKSTLINV	ITGEL KADEGRVYFENKDITN
1GAJ	LRTENIVKY	- FG	EFKALDGVSISVNK	<b>DVTLII</b> GPNGSGKSTLINV	ITGFL KADEGRVYFENKDITN
10XT	IIVKNVSKV	- <mark>FK</mark>	KGKVVALDNVNINIEN	<b>SERFGILGPSGAGKTTFMRI</b>	IAGLD VPSTGELYFDDRLVAS
1xef	ITFRNIRFR	- <mark>YK</mark>	PDSPVILDNINLSIKQ	GEVIGIV <mark>GRSGSGKST</mark> LTKL	IQRFY IPENGQVLIDGHDLAL
1R0X	IIMENVTAF	-WEEGFGELLEK SFSH	LCLVGNPVLKNINLNIEK	GEMLAIT <mark>GSTGSGKTS</mark> LLML	ILGEL EASEGIIKHSGR
1R0W	IIMENVTAF	-WEEGFGELLEKVQSFSH	LCLVGNPVLKNINLNIEK	GEMLAIT GSTGSGKTSLLML	ILGEL EASEGIIKHSGR
1Z47	IEFVGVEKI	- <u>YP</u>	GGARSVRGVSFQIRE	GEMVGLLGPSGSGKTTILRL	IAGLE RPTKGDVWIGGKRVT -
2CBZ				SALVAVVGQVGCGKSSLLSA	
		PIG		SELECT CRNGACKTTTLR	
1117	VOEODVSEA	- YP	- NRPDVI VLOGI TETL RP	SEVIAL VGPNGSGKSTVAAL	
1MV5	LSARHVDFA	- YD	DSEQILRDISFEAQP	SI I AFAGPSGGGKST I FSL	LERFY QPTAGE IT I DGQP I DN
1Q1B	VQLQNVTKA	- WG	EVVVSKDINLDIHE	GEFVVFVGPSGCGKSTLLRM	IAGLE TITSGDLFIGEKRMN-
1L2T	IKLKNVTKT	- <mark>Y K</mark>	MGEEIIYALKNVNLNIKE(	GEFVSIM <mark>GPSGSGKST</mark> MLNI	IGCLD KPTEGEVYIDNIKTND
1V43	VKLENLTKR	- <mark>FG</mark>	NFTAVNKLNLTIKD	GEFLVLLGPSGCGKTTTLRM	IAGLE EPTEGRIYFGDRDVT -
1JI0	LEVQSLHVY	- <mark>YG</mark>	AIHAIKGIDLKVPR	GQIVTLIGANGAGKTTTLSA	IAGLV RAQKGKIIFNGQDITN
1800		- <b>Y</b> G		SDVISIIGSSGSGKSIFLRC	
Puis_NBD1	FEKNIHES	VD SP			
Pdr5_NBD2	ALFHWRNLC	- YFVQ	IKAETRRILNNVDGWVKP	GTLTALMGASGAGKTTLLDC	LAERVIMGVITGDILVNGIPRDK
Pap NBD2	VQFSGVVFN	- YP	- TRPSIPVLQGLSLEVKK	GQTLALV <mark>GSSGCGKST</mark> VVQL	LERFYD PMAGSVFLDGKEIKQ
Sav1866	IDIDHVSFQ	- <mark>YN</mark>	DNEAPILKDINLSIEK	GETVAFV <mark>GMSGGGKST</mark> LINL	IPRFYD VTSGQILIDGHNIKD
		_			
		C	2-loop		
			an in the state of the		lllll.
00011	100	110 120		150 160	
2D3W					
	KF	- PAELYHYGIVRTEOTP		GESPLINGLET KKWIPKEEE	MVEKAEKILEELKISHIYDRK-AGE
10XT	NGK	- LIVPPEDRKIGMVFQTW	ALYPNLTAFENIAFP-LT		RKRVEEVAKILDIHH - VLNHF - PRE
1xef	AD	PNWLRRQVGVVLQDN	VLL-NRSIIDNISLANPG	MSVEKVIYAAKL	AGAHDF I SELREGYNT I VGEQ - GAG
1R0X		VSFCSQFS	WIM-PGTIKENIIFGVSY	DEY RYKSVVKACQL	QQD ITKFAEQDNTVLGEG-GVT
1R0W		VSFCSQFS	WIM-PGTIKENIIFGVSY	DEY RYKSVVKACQL	QQD I TKFAEQDNTVLGEG-GVT
1Z47		DLPPQKRNVGLVFQNY	ALFQHMTVYDNVSFG-LR	VPKDEM	DARVRELLRFMRLES - YANRF - PHE
2CBZ		SVAYVPQQA	WIQ-NDSLRENILFGCQL	EPYYRSVIQACAL	LPDLEILPSGDRTEIGEK-GVN
2GHI				-DAIDEEVIKAIKS	AQLYDFIEALPKKWDIIVGNK-GMK
1117				KPTMEEITAAAVK	SGAHSELSGI POGYDTEVDEA - GSO
1MV/5	15	I ENWRSO I GEVSODS	ALM-AGT RENITYGLEG		AFARSEVENMPDQI NTEVGER - GVK
1Q1B		DTPPAERGVGMVFQSY	ALYPHLSVAENMSFG-LK	AKKEVI	NORVNOVAEVLOLAH - LLDRK - PKA
1L2T	LDDD	- ELTKIRRDKIGFVFQQF	NLIPLLTALENVELPLIF	KYRGAMSGEER	RKRALECLKMAELEERFANHK - PNQ
1V43		YLPPKDRNISMVFQ	HMTVYENIAFP-LK	PKDE I	DKRVRWAAELLQIEE - LLNRY - PAQ
1JI0	KP	AHVINRMGIALVPEGR	RIFPELTVYENLMMGAYN	RKDKEGI	KRDLEWIFSLFPRLKERLKQL-GGT
1B0U	VRDKDGQLKVAD	KNQLRLLRIRLIMVFQHF	NLWSHMIVLENVMEAPIQ	VLGLSKHDA	RERALKYLAKVGIDERAQGKY-PVH
				TRON RIKGURESYANHI	AGARDETSELREGTNTTVGEQ-GAG
Puis_NBD1	I N		VIE-ATTIAENIRYGRED		ANAYDE I MKI PHOEDTI VGER-GAO
Pdr5 NBD2	SF	PRS   GYCQQQD	LHLKTATVRESLRFSAYL	ROP AEVS I EEKNRY	VEEVIKILEMEKYADAVVGVA-GEG
Pap NBD2	LN	VQWLRAQLGIVSQEP	ILF-DCSIAENIAYGDNS	RVVSYEEIVRAAKE	ANIHQFIDSLPDKYNTRVGDK-GTQ
Sav1866	FL	TGSLRNQIGLVQQDN	ILF-SDTVKENILLGRP-	- TA TDEEVVEAAKM	ANAHDFIMNLPQGYDTEVGER-GVK
	C-loop	Walker B	D-loop	H-loop	Glv-loop
	190	200 210	220 230	240 24	50 260 270
2D3W	FSGGEKKRNDI	LQMAVLEPELCIL-DES	DSGLDÍĎALKVVADGVŇ	- SLRDG- KRŠFI I VTHYO	ŔĬĿŊŸŀĸ₽ŊŶŸĤŸĿŸ <mark>QĠ-Ŕ</mark> ĬŶĸsĠ
1G6H	LSGGQMKLVEI	GRALMTNPKMIVM-DEP	<b>IAGVAPGLAHDIFNHVL</b>	-ELKAK-GITFLIJEH-RI	DIVLNYIDHLYVMFNG-QIIAEG
1GAJ	LSGGQMKLVEI	GRALMTNPKMIVM-DQP	I <mark>AGVA</mark> PGLAHDI FNHVL	- ELKAK-GITFLIIEH-RI	LDIVLNYIDHLYVMF <mark>NG-Q</mark> IIAEG
1OXT	LSGGQQQRVAL	ARALVKDPS <mark>LLLL-DE</mark> P	F <mark>SNLD</mark> ARMRDSARALVK	- EVQSRLGVTLLVVSH - DF	PADIFAIADRVGVLV <mark>KG-K</mark> LVQVG
1xef	LSGGQRQRIAI	ARALVNNPK <mark>ILIF-DE</mark> A	T <mark>SALD</mark> YESEHVIMRNMH	- K I C - K - GRT V I I I AA - RI	_STVK-NADRIIVME <mark>KG-K</mark> IVEQG
1R0X	LSGGQRARISL	ARAVYKDADLYLL - DSP	FGYLDVFTEEQVFESCV	- CKLMA - NKT <mark>RILVTS - K</mark> M	MEHLR-KADKILILH <mark>QG-S</mark> SYFYG
1R0W	LSGGQRARISL	ARAVYKDAD <mark>LYLL - DS</mark> P	FGYLDVFTEEQVFESCV	- CKLMA - NKT <mark>RILVTS - K</mark> M	MEHLR-KADKILILH <mark>QG-S</mark> SYFYG
1Z47	LSGGQQQRVAL	ARALAPRPQVLLF - DEP	FAAIDTQIRRELRTFVR	- QVHDEMGVTSVFVTH - DO	REALEVADRVLVLHEG-NVEQFG
2CBZ	LSGGQKQRVSL	ARAVYSNADIYLF-DDP	LSAVDAHVGKHIFENVI	GPKGMLKNKTRILVTH-SN	MSYLP-QVDVIIVMS <mark>GG-K</mark> ISEMG
2GHI	LSGGERQRIAT	ARCLLKDPKIVIF-DEA	ISSLDSKIEYLFQKAVE	- DLR-K-NRILIIIAH-RI	STIS-SAESTILLNKG-KIVEKG
1VPL	SKGMVRKLLI	ARALMVNPRLAIL - DEP	T SGLDVLNAREVRKILK	- QASQE - GETTEVSSH - N	
1JJ/	LSGGQRQAVAL	ARALIRKPOVLIL-DDA	TACLDANSQLQVEQLLY	-ESPERISKSVLLIIQ-H	SLVE-QADHILFLEGG-AIREGG
1010	I SGGQRQRLAI	CRTLVAEDSVELL DEA		- SLMK GRIILVIAH - RI	
1010	LSGGOOD RVAL	ARALANNER LLA DOR		- KINEEDGKTVVVVTH	NVAR-EGERIIVIKOG EVEREE
11//12	L SGGORORVAV	ARALVVERDVI IM DEP			
1.110	I SGGEOOMI A	GRAI MSRPKLI MM-DEP	SIGLAPIIVSEVEEVIO	- KINGE-GTTILLVEO-N	AI GAL KVAHYGYVLETG. OLVLEG
1800	LSGGQQQRVSI	ARALAMEPDVILE-DEP	TSALDPELVGEVIRIMO	-QLAEE-GKTMVVVTH-F	AGEARHVSSHVIELHOG-KIEFEG
1MT0	LSGGORORIAI	ARALVNNPKILLE-DEA	TSALDYESEHVIMRNMH	-KIC-K-GRTVIIIAH-R	STVK-NADRIIVMEKG-KIVFOG
Pdr5 NBD1	VSGGERKRVSI	AEVSICGSKFQCW-DNA	TRGLDSATALEFIRALK	TQADIS-NTSATVALYOC	SQDAYDLFNKVCVLDDG-YQIYYG
Pap NBD1	LSGGQKQRIAI	ARALVRNPKILLL-DEA	TSALDTESEAVVQAALD	- KARE GRTTIVIAH - RI	STVRN-ADVIAGEDGG-VIVEQG
Pdr5 NBD2	LNVEQRKRLTI	GVELTAKPKLLVFLDEP	TSGLDSQTAWS I CQLMK	- KLANH - GQAILCTIHQP	SAILMQEFDRLLFMQRGGKTVYFG
Pgp NBD2	LSGGQKQRIAI	ARALVRQPHILLL-DEA	TSALDTESEKVVQEALD	- KARE GRTCIVIAH - RI	STIQN-ADLIVVIQ <mark>NG-K</mark> VKEHG
	IL D D D D L D D L D L		TOALDICOCOLLOCALD	VICKD PTTIIVAL PI	STITH ADVINUENC HIVETO







Supplementary Figure S6





Supplementary Figure S8



## TMD1

PDR5	M		(K	I Y T		l				R L	R	NI R		G	 2( F		F T	M		G		3	0 M	4 L	· I P		SI MM	MF		· · 0 K I	M	' I KK	G	) - SF	- 7	50	TF	= Y	FF	<b>?</b> -	S	6	0			і. 		• •	1 7 (	, .	· ·	I '	- M	 	80	· · ·	• -
гур	11				1		,	' I	•			I				, '			: I				1			: 1				1'			1			' I				1.	•		I			<u>' 1</u>				I '			1 '		' I		•
PDR5 Pgp	Ŧ	GS G I	SA G	M	90 FF G\	) = A / L		F /A	N. Y	A F	1 S 2V	0 S S	U L L FV	EC	L/	= S A A	-	Y G		R	P H	( T	E -	KH RG	RK	12 TY - F	S F	L Y HA	(H (	PS MN	SA IQ	1 DA EI	G	AS	V I - V	_S VF	E D\	I P /H	14 S- D\	4 0  / G	Ē	N	Ť	R L	 T	15  DD	v:	sĸ	Ti	١E	GI	G	30 3K	I G	MF	- K FQ	L A
PDR5 Pgp	I M	' 17   A   A	0 V	CI F	'   = N 3G	' II F	   F 	' Y G	 8 ( F   F	U D L V T R	D G	FF	RR (L	N T	- 1 30 L \	9  9  /	, 0 F L	F F A I	YS	I LI P\	 .   / L	N G	20 1\ LS		' Vi G	-s	I Ma	э- - к		'   2 1 - H L S	0 L S	- -	'   - F D	' E	ve LF	2 S	' 20 LT YA	, k	AG	I A	v A	Ē	- 1 23 EV	, O L	ĀĀ	, T	י ו R1	Ī	2		0 3 3 6				25 R	50 YNP	' I V
PDR5 Pgp	 	' I L E	Ē	AI	2 KR	 6 - L	0 G I	K	' К/	'     	s T	EA	27 10 1	0 VI SI	P A	SA	I M Al	L L F L	, , , ,	' 28 A1	BO So Y A	M	Y1 Y7	' I FG L	F A F	 - - -	29 Pl	90 K K	K	 . L L V	I RV	∿s	ĸv		0 //Y		' I NF	L -	ΑY	3 ′L		S		1	NE	F	'  32 HC	20	KF	P	' CA	EY	33 VF	30 R(	GP/	4 Y A	4
PDR5 Pgp	NI	3	 4( S <sup>-</sup>		S	v	і ' СТ	v	V		0 V -	P (	Q		٢v	· L	36 GE		F		I RG	т` -	YC	3 2Y	' 7 ( Y  - 	iK	DH Sh		R YS	F S I	'   38 G  G0	30 GI	и <mark>А</mark> L Т	Y\ VF	. /V = F	FISI	 3 F F V L	 90 F)  0	 0 VY 3A	L F	FL SV	CI G		4 ( N			<										

### TMD2

PDR5 Pgp	LVSIRL MRILKL	FQQY NSTE	0 Arsp[ AP	OYLW: YFVV	20 SKF11 SIFC/		NQLF GGLC	30 FIGF PAF	'I' TFF SVI	KA FSKV	0 VGV	G TNG	50 TSLC GPPE		1 ' ' ' 1Q - M 2N SN	'   ' ' 60 LAVF LFSL	MFT\ LFL	/IFN IL <mark>G</mark> I	1 ' ' ' 70 PILQ ISFI	' I ' Q - Y TFF	80 L - PSF LQGFT
PDR5 Pgp	VQQRDL FGKAG-	90 YEAR - EIL	'''I ERPSI TKRLI	1 RTFS\ RYMV	00 NIS- F <mark>K</mark> SMI		110 VSWF		і'' К. П. Т.	120 164	TTR	AND	130 AAQV	- F   [ /KGA	1 FAQI T <mark>GSR</mark>	40 FVE\ LAV	/ PWN   FQN	' ' '   15   LA <mark>G</mark>   ANL	0 T   A Y G T G I	' ' F   Y     S	160 YYPIG LIYGW
PDR5 Pgp	FYSNAS	170 AAGQ	LHER	' ' '   18 <u>3ALF\</u> - LTL	NLFSC	I''' CAFY IVPI	'   ' ' 190 VYVC   A   A	SMG	LLV EMKI	' '' 200 ISFN MLS <mark>G</mark>		2 2	10 ELEG	SGK	22   ATE	0 A I EN	I''	230 /VSL	TREQ	KFE	240 TMYAQ
PDR5 Pgp	SLQIPY	50 RNAM	' I ' ' Saani Kkah	260 285 /FGI	LFTMS	2 SLSF TQAM	70 CGVN M	/TTP /FSY	2 SAM AAA	80 PRFW FRFG		29 (RVS /TQQ	0 PLTY LMTF		300 ALLA LLV-	VGVA	NVD	310 / <mark>KCA</mark>	DYEL	3 LEF	1 20 TPPSG
PDR5 Pgp	MTCGQY	0 MEPY	LQLA	340 TGY		35 35	0 T <mark>C</mark> SF	CQ	36 STT		I ' ' ' ANVI	370 SFY	SERW	RNY F	'   ' ' 3 8 0 3   F   5 A   V	CYIA FGAN	39 FNY MAVG(	AGV	FFYW	40 LAR	O VPKKN ATVSA

TN	ИD1
PDR5 2HYD	10 20 30 40 50 60 70 80 MQVKYLLIRNMWRLRN-NIGFTLFMILGNCSMALILGSMFFKIMKK-GDTSTFYFRGSAMFFAILFNAFSS MIKRYLQFVKPYKYRIFATIIVGIIKFGIPMLI-PLLIKYAIDGVINNHALTTDEKVHHLTIAIGIALFIFVIVRPP
PDR5 2HYD	90 100 110 120 130 140 150 160 LLEIFSLYEARPITE-KHRTYSLYHPSADAFASVLSEIPSKLIIAVCFNIFYF -IEFIRQYLAQWTSNKILYDIRKKLYNHLQALSARFYANNQVGQVISRVINDVEQTKDFILTGLMNIWLDCITIIALSIMF
PDR5 2HYD	170 180 190 200 210 220 230 240 LVDFRRNGGVFFFYLLINIVAVFSMSHLF-RCVGSLTKT- FLDVKLT-LAALFIFPFYILTVYVFFGRLRKLTRERSQALAEVQGFLHERVQGISVVKSFAIEDNEAKNFDKKNTNFLTRAL
PDR5 2HYD	250 260 270 280 290 300 310 320 - LSEAMVPASMLLALSMYTGFAIPKKKILR WSKWIWYINPLAYLFESLLINEFHGIKFPCA - EY KHTRWNAYSFAAIN - TVTDIGPIIVI-GVGAY - LAIS
PDR5 2HYD	330 340 350 360 370 380 390 400 41 VPRGP - AYANISS
ТМ	MD2
PDR5 2HYD	10 20 30 40 50 60 70 80 FSQSIIYQTKLVSIRLFQQYWRSPDYLWSKFILTIFNQLFIGFTFFKAGTSLQGLQNQM-LAVFMF MIKRYLQFVKPYKYRIFATIIVGIIK-FGI-PMLIPLLIKYAIDGVINNHALTTDEKVHHLTIAIGIALFIF
PDR5 2HYD	90 100 110 120 130 140 150 160 TVIFNP-ILQQYLPSFVQQRDLYEARERPSRTFSWIS
PDR5 2HYD PDR5 2HYD	90 100 110 120 130 140 150 160 TVIFNPILQQYLPSFVQQRDLYEARERPSRTFSWIS- VIVRPPIEFIRQYLAQWTSNKILYDIRKKLYNHLQALSARFYANNQVGQVISRVINDVEQTKDFILTGLMNIWLDCITII 170 180 190 200 210 220 230 240 250 AGTIAYFIYYPIGFYSNASAAGQLHERGALFWLFSCAFYVYOSMGLLVISFNQVAES- ALSIMFFL
PDR5 2HYD PDR5 2HYD PDR5 2HYD	90       100       110       120       130       140       150       160         TVIFNP-ILQQYLPSFVQQRDLYEARERPSRTFSWIS       130       140       150       FIFAQIFVEVPWNIL         VIVRPPIEFIRQYLAQWTSNKILYDIRKKLYNHLQALSARFYANNQVGQVISRVINDVEQTKDFILTGLMNIWLDCITII         170       180       200       210       220       230       240       250         AGTIAYFIYYPIGFYSNASAAGQLHERGALFWLFSCAFYVYGSMGLUVISFNQVAES       - <t< td=""></t<>
PDR5 2HYD PDR5 2HYD PDR5 2HYD PDR5 2HYD	90 100 110 120 130 140 150 FIFAQIFVEVPWNIL VIVRPPIEFIRQYLAQWTSNKILYDIRKKLYNHLQALSARFYANNQVGQVISRVINDVEQTKDFILTGLMNIWLDCITII 170 180 190 200 210 220 230 240 250 AGTIAYFIYYPIGFYSNASAAGQLHERGALFWLFSCAFYVYVGSMGLLVISFNQVAES ALSIMFFL DVKLTLAALFIFPFYILTVYVFFGRLRKLTRERSQALAEVQGFLHERV 260 270 280 290 300 310 320 330 AANLASLLFTMSLSFCGVMTTPSAMPRFWIFMYRVSPLTYFIQALLA QGISVVKSFAIEDNEAKNFDKKNTNFLTRALKHTRWNAYSFAAINTVTDIGPIIVIGVG-AY 340 350 360 370 380 390 400 410 42 VGVANVDVKCADYELLEFTPPSGMTCGQYMEPYLQLAKTGYLTDENATDTCSFCQISTTNDYLANVNSFYSERWRNYGIFICYI LAISGSIVGTLAAFV

Supplementary Figure S11



