

AmqKirA ---MEPAHKVNYELVSNSSN----ENIHRDDVPITFRG---TREARRR-ERLVKRSNGR 48
 AmqKirB ---MSVQFSNS-YEKISETEGTVREEATDAAPTIVSFQP---TVPTRLRPERLVKRSTAR 53
 Nv1 -----KRRLLIGKKKGTV 11
 Nv2 -----RLVSRRGKV 9
 Nv3 -----RLR-PRLVGKHGGL 13
 Nv4 -----
 rKir1.1 -----MGASERSVFRVLIRALTERMFKHLRRWFITHIFGRSRQARIVSKEGRC 49
 mKir2.1 ----MGSVRTNRYISVSSEEDGMKLATMA--VANGFGNGSKVHTRQQCRSRFVKKDGHG 54
 hKir2.2 ---MTAASRANPYSIVSSEEDGLHLVTMS--GANGFGNG--KVHTRRRRCNRNFVKKNGQC 53
 hKir3.1 -MSALRRKFGDDYQVVTSSSSGSLQPQG---PGQDPQQQLVP--KKKRQRFVDKNGRC 53
 hKir3.4 MAGDSRNAMNQDMEIGVTPWDPKIPKQARDYVPIATDRTRLLAEGKKPRQRYMEKSGKC 60
 hKir4.1 -----MTSVAKVYYSQTTQTESRPLMGPGRIRRRRVLTGDGRS 37
 hKir5.1 ----MSYYGSSYHIINAD---AKYPGYP--PEH-----ITAEKRRARRRLLHKDGS 43
 hKir6.2 -----MLSRKGIPEEYVLRLEADP--AKP-----RYRARQRRARFVSKKGC 42
 hKir7.1 -----MDSSNCKVIAPLLSQ--RYRRMVTKDGHS 27

M1

AmqKirA SLVHHHNIPPLSLLGYISDGFTTVLNARWVITLLFAAMYVLSWLLFGFIWGWIDISAYVA 108
 AmqKirB SLVHHKNIPPLSWLAVSISDGFTTLNAEWYIITGLFSAVYLSWLLFTFMWWSFDAAYVS 113
 Nv1 NIVS-DVP--RRPQLYLADHFTTLLDARWRYVFLIFTVSFLVSWLIFGSLWGWVLYRQK 68
 Nv2 NVTAANVE--NKKALYLADPFTTLLDAKWGWIFLAFASGFVTSWLFVGLTWMMIVKLRT 67
 Nv3 KVVAATVAQKHG--MYLSDLFMTMIDSKWRWISLFFITAYTGSWMGFVGVWY---LITYL 68
 Nv4 -----MIDMKWHVYVILLFCVSYILSWVLFGTIWW---LIVLS 34
 rKir1.1 NIEFGNVD-AQSRFIFVDIWTTLVLDLKWRYKMTVFITAFVLSWFLFGLLWYVVAHVHKD 108
 mKir2.1 NVQFINVG--EKGQRYLADIFTTCVDIRWRWMLVIFCLAFVLSWLFVGFVFWLIALLHGD 112
 hKir2.2 NIEFANMD--EKSQRYLADMFTTCVDIRWRWMLLIFSLAFLASWLLFGIIFVWIAVAHGD 111
 hKir3.1 NVQHGNLG--SETSRYLSDLFTTLLVDLKWRYNLFIFILTYTVAWLFMASMWWVIAATR 111
 hKir3.4 NVHHGNV---QETYRYLSDLFTTLLVDLKWRYNLLVFTMVYTVTWLFFGFVWVLAIAIRGD 117
 hKir4.1 NVRMEHI--ADKRFYPLKDLWTFIDMQWRKLLLFSAFAGTWFLFGVWVYLVAVAHGD 95
 hKir5.1 NVYFKHIF--GEWGSYVDIFTTLLVDLKWRYMVFVIFSLSYILSWLIFGSVFWLIAFHGD 101
 hKir6.2 NVAHKNIR--EQ-GRFLQDVFETTLVDLKWPHLLIFTMSFLCSWLLFAMAWVLAFAHGD 99
 hKir7.1 TLQMDG---AQRGLAYLRDANGILMDMRWRWMLVFSASFVHVHLVFAVLWYVLAEMNGD 84

V

P

M2

AmqKirA VTNSS-----CVSNIDGFSASFLFSIETQVTIGYGRFVADDCSFGILILVIQCL 158
 AmqKirB VTNNS-----CIENVGGFSSSFLFSIETQVTIGYGRHYIQSTCHFIFLLVQSL 163
 Nv1 YFNIE-----CIKVDSWTS AFLFSIETQVTIGYGRQVTPHCPEGVFLLIVQCI 118
 Nv2 FDTAS-----CVDNVDSWIS AFLFSIETQVTIGYGRQVTPHCPEGVVCLLVQSL 117
 Nv3 RGGNY-----CVHNVESFVIAFLFSIETQVTIGYGRQISGECPAIIILLNIQSL 118
 Nv4 RGKSV-----CFDQVDDWTTAFLFSIETQVTIGYGRSRTITSKCAEAIITLQVQSI 84
 rKir1.1 LPEFY---PPDNRTPCVENINGMST AFLFSIETQVTIGYGRFRVTEQCATAIFLLIFQSI 165
 mKir2.1 LDTS-----KVSACVSEVNSFTAFLFSIETQVTIGYGRFVTEQCATAIFVVFQSI 166
 hKir2.2 LEPAEG---RGRTPCVMQVHGFM AAFLSIETQVTIGYGLRCVTEECPPAVFMVVAQSI 167
 hKir3.1 LNKAHV---GNYTPCVANVYNFPAFLFFIETEATIGYGRYITDKCEPIILFLFQSI 167
 hKir3.4 LDHVGD---QEWIPCVENLSGFVSAFLFSIETETTIGYGRVITEKCEPIILLVQAI 173
 hKir4.1 LLELD---PPANHTPCVQVHLLTGAFLSLESQTTIGYGRYISEECPLAIVLLIAQLV 152
 hKir5.1 LLND-----PDITPCVDNVSFTGAFLSIETQVTIGYGRVTEECPSVAVLMVILQSI 155
 hKir6.2 LAPSE-----GTAEP CVTSLHSFSSAFLFSIEVQVTIGYGRMVTEECPLAILLIVQNI 154
 hKir7.1 -LELDHDAPPENHTICVKYIITSFTAASFSLQTLTIGYGMTFSPGDCPSAIALLAIQML 143

M2

AmqKirA VGLVIDSFLIGLIFAKITRPNRRKTIIFSDTACINVNKGEKRLQFRIGDVRSSSLVE 218
 AmqKirB IGLFIDSFLIGLIFAKISRPNRKTIIFSIDIACINVNAKGERCLQFRVADVRKNSSLVE 223
 Nv1 VGLIISSTMI GLIFAKLSRPHLRGRTVLF SNHGVIALRD-GKLCLMFRVGDIRTKSOLIE 177
 Nv2 SGLMISASLIGLIFAKLSRPPRAHTIRFSKRAVVSQRD-GKLCIFRVGDIR-KSOLLE 175
 Nv3 SGFLINALIMGLIFAKLSRPNRAETILFSKKALVCVRD-GKMCLTFRVGDIRK-SQILH 176
 Nv4 VGDIIIDAFMLGLTFAKLSRPRERARTVKSRYASICLRD-GKMCLMFRVGDVRK-SQIVE 142
 rKir1.1 LGVIINSFMCGAILAKISRPKRKAKTITFSKNAVISKRG-GKLCILIRVANLR-KSLLIG 223
 mKir2.1 VGCIIIDAFIIGAVMAKMAKPKRNETLVSFNNAVIMRD-GKLCLMWRVGNLR-KSHLVE 224
 hKir2.2 VGCIIIDSFMI GAIMAKMARPKKRAOITLFSHNAVVALRD-GKLCLMWRVGNLR-KSHIVE 225
 hKir3.1 LGSIVDAFLIGCMFIKMSOPKKRAETLMFSEHAVISM RD-GKLTLMFRVGNLR-NSHMVS 225
 hKir3.4 LGSIVNAFMVGC MFVKISOPKKRAETLMFSNNAVISM RD-EKLCLMFRVGDLR-NSHIVE 231
 hKir4.1 LTTILEITFTIGTFQAKIARPKKRAETIRFSQHAVVASHN-GKPCLMIRVANMR-KSLLIG 210
 hKir5.1 LSCIINTFIIIGAALAKMATAKRAOITIRFSYFALIGMRD-GKLCLMWRIGDFR-PNHVVE 213
 hKir6.2 VGLMINAIMGCI FMKTAQAHRRAETLIFS KHAVIALRH-GRLCFMLRVGDLR-KSMIIS 212
 hKir7.1 LGLMLEAFITGAFVAKIARPKNRAFSIRFTDTAVVAHMD-GKPNLIFOVANTR-PSPLTS 201

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AmqKirA	AHVRVQLYWNKDGEDFYRLEQNDLEVGVDSG-TDR-----IILLT-----PVVITHI	266
AmqKirB	AHVRVQLYWHKDGATDEYRLEQNDLEVGVDSG-TDR-----IILLT-----PVVITHI	271
Nv1	SHMRAVVRRCCTKEGKEIGFFOQGLPLRHDLI-----CEEEKIN--LFIPAIVVHE	228
Nv2	VTVRLHCFEYIAGDNG-SLFFNOSELPIAFSPE-----CEPEYEVRFPLTPTIMHM	227
Nv3	CHIRVQLFRTRKTKEGQVLPFYQODLKTGIDWN--DQNYGNNTIFLIL-----PLTIIHV	229
Nv4	AHTRAQLFRYLETSEGTSMPFYQDLRLCYDWRNCDRDDNRNHIFLLM-----PLVVMHI	197
rKir1.1	SHIYKLLKTTITPEGETIILDQTNINFFVD-----AGNENLFFIS-----PLTIYHI	271
mKir2.1	AHVRAQLKRSRITSEGEYIPLDQIDINVGFDSDG-----IDRIFLVS-----PITIVHE	272
hKir2.2	AHVRAQLKRPVITEGEYIPLDQIDINVGFDKG-----LDRIFLVS-----PITILHE	273
hKir3.1	AQTRCKLLKSRQTPGEFEIPLDQLELDVGFSTG-----ADQLFLVS-----PLTICHV	273
hKir3.4	ASIRAKLKRQTPKEGEFIPLNQIDINVGFDTG-----DDRIFLVS-----PLIISHE	279
hKir4.1	CQVTCQLLQTHQTKEGENIRLNQVNVTFQVD-----TASDSPFLIL-----PLTFYHV	258
hKir5.1	CTVRAQLLRYTEDESEG-RMTWAFKDKLVN-----DQIILVT-----PVTIVHE	256
hKir6.2	ATHMQVVRKTTSPGEVPLHQVDIPMENGVG-----GNSIFLVA-----PLIIYHV	260
hKir7.1	VRVSAVLVQ-----ERENGLYQTSVDFHLDGI-----SSDECPFFIF-----PLTYYS	246

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AmqKirA	IKETSPLYVINDSILN-EDIEIVIILEATVESTGLTAQALWSYTEREILFNYKFKPMIY	325
AmqKirB	IKETSPLYAVINDSILN-EDIEIVIILEATVESTGLTAQALWSYTEREILFGRKFIPMTN	330
Nv1	INDESPFYNVSADNLLR-LDFEVVILLEGIVESTGMTTQARTSYIADEIHWGHNFTLVT	287
Nv2	INEQSPLYDLSAAELAQ-ANIEFVAVLEGVVEATGMVTQGRASYLSSEVHWGHDFYPLML	286
Nv3	IDESPFETMTPKDLRS-DFELVAILEGIVVEATGMLTQAKTSYIGEEILWGYEFKNTLD	288
Nv4	IDERSPLYHHTADKLRH-TKFEIVVLDGIVEATGMNTQPKTSYLSQEILWGHDFLOVD	256
rKir1.1	IDHNSPFYHMAAETLSQ-QDFELVVFLDGTVESTSATCQVRTSYVPEEVLWGHYRFPVIVS	330
mKir2.1	IDEDSPLYDLSKQDIDN-ADFEIVVILEGMVEATAMTTCRSSSYLANEILWGHRYEPVLF	331
hKir2.2	IDEASPLFGISRQDLET-DDFEIVVILEGMVEATAMTTCARSSSYLANEILWGHRFEPVLF	332
hKir3.1	IDAKSPFYDLSQRSMT-EOFEIVVILEGIVETTGMTTCQARTSYTEDEVWGHRRFFPVIS	332
hKir3.4	INEKSPFYMMSQAQLHQ-EEFEVVVILEGMVEATGMTTCARSSYMDTEVLWGHRRFTPVLT	338
hKir4.1	VDETSPLKDPPLCS-GE-GDFELVILSGTVESTSATCQVRTSYLPEEILWGYEFTPAIS	316
hKir5.1	IDHESPLYADRKAVAK-DNFEIVVTFIYTGDSGTSHQSRSSYVPREILWGHRRFNDVLE	315
hKir6.2	IDANSPLYDLAPSDLHHHODLEIIVVILEGVVETTGITTCARTSYLADEILWGORFVPIVA	320
hKir7.1	ITPSSPLATLQHE-NP-SHFELVVFLSAMQEGTGEICQRTSYLPSEIMLHHCFFASLLT	304

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AmqKirA	RQSDAKGTWEVDENRLSSIEPCSC-----	349
AmqKirB	REKTAKGTWEVDKRLSDVVTSEGINM-----	357
Nv1	YDCFKNCAMHIDFSRFHDTYPVD-TPRCSAR--ELN-----	320
Nv2	KAADTPDRLEIDFSLFDHTYASS-TPPCSAR--E-----	317
Nv3	HTSWKAGRFVNVSHFDRVVPVDTPRVSA-----	317
Nv4	QSPFDVQYMASDYSKFDDMKKVAMPDLSPFYEQHPLRDENDTSLPNLYI-----	307
rKir1.1	KT--KEGKRVDFHNFEGKIVEVETPHCAMCLY-----	360
mKir2.1	E---EKHYMKVDYSRFHKTYEVPNTPLCSAR--DLAEKKYILSNANSFCYENEV-----	380
hKir2.2	E---EKNQMKIDYSHFHKTYEVPSTPRCSAR--DLVENKFLPSANSFCYENEL-----	381
hKir3.1	L---EEGFVKVDYSQFHATFEVP-TPPYSVK--EQEEMLLMSSPLIAPAITNSKERHNSV	386
hKir3.4	L---EKGFVEVDNTHFDHTYETN-TPSCCAK--ELAEMKRE-----	373
hKir4.1	LS--ASEKVIADFSLEFDQVVKVASPSGLRDSTVRYGD-----	351
hKir5.1	V---KRKYMKVNCLOFEGSVEVY-APFCSAKQLDWKDOQLHIEKAPPVRESCTS-----	365
hKir6.2	E---EDGRYSVDYSKFGNTVKVP-TPLCAR--QLDEDHSLLEALT---LASAR-----	365
hKir7.1	RG--SKGEYQIKMENFDKIVPEFPPTPLVSKS-----	333