

	20	30	40
HvMEKK1	FLGKGFSEIV	GSPYMAP	EVLKRNYY..GPEID
HvMEKK2	GAPIIG	GTPAFMAP	EVARGEEO.QGPAD
HvMEKK3	DVPIIG	GTPAFMAP	EVARGEEO.QGPAD
HvMEKK4	GRPIIG	GTPAFMAP	EVARGEEO.QGPAD
HvMEKK5	DVPIIG	GTPAFMAP	EVARGEEO.QGPAD
HvMEKK6	AGPIIG	GTPAFMAP	EVARGEEO.QGPAD
HvMEKK7	FTPGERFTEIV	GSPYMAP	EVLKRNYY..GQEV
HvMEKK8	VNTHSVV	GTPYWMAP	EVIEMSG.VCAAS
HvMEKK9	RRKTFV	GTPFWMAP	EVIQNSDGYNEKAD
HvMEKK10	DRPLGG	TAPAFMAP	EVARGEEO.QGPAD
HvMEKK11	LPLMGG	TAPAFMAP	EVARGEEO.QGPAD
HvMEKK12	DRAIAG	TAPAFMAP	EVARGEEO.QGPAD
HvMEKK13	FKPGEKFSEIV	GSPYMAP	EVLKRNYY..GPEID
HvMEKK14	AGERFSEIV	GSPYMAP	EVLKRNYY..GPEID
HvMEKK15	AGERFTEIV	GSPYMAP	EVLRRSY..GPEVD
HvMEKK16	APRGPR	GTPAWMAP	EVARGEEO.QGPAD
HvMEKK17	RGDRQSRNTFV	GTPCWMAP	EVLQPGTGYNFKAD
HvMEKK18	SIYETPPASSFSGLPLTHVPQVVLSSSYFSEMA	GTPYWMAP	EVIHSHVGYGIKAD
HvMEKK19	MTAAKTMK	GTPHWMAP	EVIHSHVGYGIKAD
HvMEKK20	RPASHACNRALS	CSPDISPNLKAHTA	QKMKKQWKRDR
HvMEKK21	TMSKRNTFI	GTPHWMAP	EVIQESR.YDQKVD
HvMEKK22	FRPGERFSEIV	GSPYMAP	EVLKRNYY..GPEID
HvMEKK23	DRPFVGG	TAPAFMAP	EVARGEEO.QGPAD
HvMEKK24	MINRNGKRHTLV	GTPCWMAP	EVIEMSG.VCAAS
HvMEKK25	SGDRQARNTFV	GTPCWMAP	EVIEMSG.VCAAS
HvMEKK26	TGNRQARNTFV	GTPCWMAP	EVIEMSG.VCAAS
HvMEKK27	DVPIIG	GTPAFMAP	EVARGEEO.QGPAD
HvMEKK28	DVPIIG	GTPAFMAP	EVARGEEO.QGPAD

G(T/S)Px(W/Y/F)MAPEV

	460	470	480	490	
HvRaf-like46	LSRAMTDSPTDNS	SA	GTPFWMAP	ELIR...NEPF	
HvRaf-like123	MARIFGDNQQ..NAN	TQRVV	GTYGYMAP	EYAME...GVF	
HvRaf-like23	VARVQAKNPQEMTG	MTG	GTPGYMAP	EYAL...GKPY	
HvRaf-like62	LAMSM..ADWPPYN	RA	GTASYMAP	EMLGKKD...Y	
HvRaf-like9	VAFENVYCNTLED	DP	GTYRWMAP	EMCK...RKPY	
HvRaf-like86	LARETVTEMMTA	ET	GTYRWMAP	ELYSTVTLQRGEKKHY	
HvRaf-like4	LSRLKHSTFLSSKS	TA	GTPFWMAP	EVLRR...NEQS	
HvRaf-like10	LSKLSRR...NAVGDG	LQLSHMR	GTYGYMAP	EVLG...LPV	
HvRaf-like87	LAKKVSA...STPHLT	CTDIT	GTFGYMAP	EYFSH...GKV	
HvRaf-like108	LSRLKHNTFLSSRS	TA	GTAEMMAP	EVLRR...NEPS	
HvRaf-like109	IAKLINQ...SPADSQ	TTGIV	GTYGYMAP	EYAFS...TRS	
HvRaf-like45	LAKLSGR...NAAGNGDNVG	TGVQLSHMR	GTYGYMAP	EYALG...LPV	
HvRaf-like98	FAKLQOR...GQADPG	SMSKVR	GTRGYMAP	EYVST...APL	
HvRaf-like33	LARLFD.GD...RPCTV	TSQVV	GTLGYMAP	EYAVR...GRM	
HvRaf-like117	LAKWLPD...KCTHQV	VFPIE	GTFGYMAP	EYFMH...GII	
HvRaf-like50	LSRLKLETFLTTKT	GK	GTPQWMAP	EVLRR...SEPS	
HvRaf-like72	VARFODQGGIMTA	ET	GTYRWMAP	EYIN...HQPY	
HvRaf-like100	LSKVKQHTLVSG	GVR	GTLPWMAP	EYLSGK...SDMV	
HvRaf-like75	MSRLFGQESR	VITESRG	GTLGYMAP	EYINN...GVI	
HvRaf-like24	LSRFKATTFISSKS	VA	GTPFWMAP	EVLRR...GEP	
HvRaf-like2	LSKLIDR...DQSK	VMTVMR	GTPGYMAP	EYVLT...SQI	
HvRaf-like101	LAQILLKTG...DPASIS	VIG	GTFGYMAP	EYGYR...LKV	
HvRaf-like26	IARFYVDSKLRVTG	DSN	SITAN	GTLGYMAP	EYAES...GHA
HvRaf-like107	MARIFGDNQE...NAN	TQRVV	GTFGYMAP	EYAMQ...GII	
HvRaf-like57	LAKLNR...DGSDSG	LSRIR	GTRGYMAP	EYVSS...LPI	
HvRaf-like7	LAKLFS.VD...ASVGN	TSHIA	GTYGYMAP	EYALH...GIF	
HvRaf-like11	LSTWLSK	TMSRVR	GTRGYMAP	EYVHR...EVI	
HvRaf-like12	VARHEAANPSDMTG	ET	GTLGYMAP	EYVLR...GNAY	
HvRaf-like85	LAMS LRTADQTRSS	DA	GTLPYMAP	EYVLRGKPD...Y	
HvRaf-like67	IAKLLLG...DDNSVI	CASMP	GTLGYMAP	EYVGL...GKL	
HvRaf-like115	TSCL ETRCQATKG	NK	GTYRWMAP	EYIK...EKPY	
HvRaf-like88	LAKLDRRP...EGSASRGR	EANPSRRIR	GTRGYMAP	EYVSS...LAI	
HvRaf-like21	LARLFG.SD...QSHDV	TNRVV	GTYGYMAP	EYAMR...GSY	
HvRaf-like90	LAKIFSSNN...NEGK	TRKVV	GTYGYMAP	EYASH...GLF	
HvRaf-like92	VARVKDTSQVMTA	ET	GTYRWMAP	EYIE...HKPY	
HvRaf-like43	LAKLAKR...DSASFN	FTHMR	GTMGYMAP	EYALN...TPI	
HvRaf-like34	MARLFLED...ATHVN	TFRIS	GTYGYMAP	EYAMN...GYL	
HvRaf-like35	LAKIFSSND...TEEDI	TNRVV	GTYGYMAP	EYASK...GIF	
HvRaf-like63	LSRLKHSTFLSSKS	TA	GTPFWMAP	EVLRR...NEQS	
HvRaf-like6	MARIFGGDDS...EIN	TLRVV	GTYGYMAP	EYAMD...GVF	
HvRaf-like120	MDTLWKGGYSDLQMAEAYC	V	GQFVRLR	PHTSSP...RFEW	
HvRaf-like25	TARMLGVHLTDAAAPDSAT	SSAFR	GTVGYMAP	EYLAYM...KSP	
HvRaf-like54	LSKLTSKK	EKVMSRIR	GTRGYMAP	EYVHR...EPI	
HvRaf-like83	IARLL...DDNSMI	SGSMP	GTVGYMAP	EYVGL...GKA	
HvRaf-like14	LARLQEGH...THTQ	TTRAA	GTLGYMAP	EYAVH...GSV	
HvRaf-like119	LSKVKCQTLISGG	VR	GTLPWMAP	EYVLR...GSSSLV	
HvRaf-like19	LARLFG.AD...QSREV	TNRVV	GTYGYMAP	EYAMR...GHY	
HvRaf-like36	LAKIFSLND...IEGDI	TNRVV	GTYGYMAP	EYASK...GNF	
HvRaf-like122	LSKLSGR...KAVGDG	VQLSHMR	GTTGYMAP	EYVLR...LPI	
HvRaf-like96	LARETVTEMMTA	ET	GTYRWMAP	EYYSTVTLRHGEKKHY	
HvRaf-like95	LSRLSNSAMS DNS	SA	GTPFWMAP	ELIR...NEPF	
HvRaf-like77	LAKIFGRD...QTQGV	TNRVV	GTHGYMAP	EYVMMR...GNY	
HvRaf-like121	LAKLYKR...DGSSFN	FSHMR	GTDGYMAP	EYVAMN...LPI	
HvRaf-like113	LSRLFGEQQR	ACTINRD	GTFGYMAP	EYVLR...GII	
HvRaf-like55	HARVVTGG...PAASHL	STQAA	GTAGYMAP	EYVIREG...VGA	
HvRaf-like88	IARLL...DDNSIT	STSM	GTVGYMAP	EYVGL...GKA	
HvRaf-like116	LARLIDHDR...ASQ	TTVLA	GTMGYMAP	EYVTT...GKA	
HvRaf-like8	LARILAEAAAGTTPHDIMS	AVA	GTFGYMAP	EYVCA...RKA	
HvRaf-like74	HARFLPDGGQALTG	ET	GTYVYMAP	EYVIR...CEPY	
HvRaf-like5	LAMSM..ADWPPYN	RA	GTASYMAP	EMLGKKD...Y	
HvRaf-like71	LSRLKRETYLTTKT	GK	GTPQWMAP	EVLRR...NEPS	
HvRaf-like105	LSKVKCQTLISGG	VR	GTLPWMAP	EYVLR...GSSNLV	
HvRaf-like82	VARVEAQDDDNMTG	QT	GTLGYMAP	EYVLE...GRPY	
HvRaf-like20	LARLFG.SD...QSHDV	TNRVV	GTYGYMAP	EYAMR...GNY	
HvRaf-like78	LARLLEGH...THTK	TSGAV	GTLGYMAP	EYAIH...GRV	
HvRaf-like99	LSRLKLDLTLSTKT	GK	GTPQWMAP	EVLRR...SEPS	
HvRaf-like70	LSRLKRNTLVSGG	VR	GTLPWMAP	EYVLR...GSSSRV	
HvRaf-like80	LSKLSGR...KAVGDG	VQLSHMR	GTTGYMAP	EYVLR...LPI	
HvRaf-like112	VARLGSQEGQMTA	ET	GTYRWMAP	EYVLR...HKPY	
HvRaf-like1	LARLALD...AVTHVT	TR.VM	GTFGYMAP	EYVASS...GKL	
HvRaf-like3	LARNFMEDQ...THLS	TG.LA	GTFGYMAP	EYVIVH...GQL	
HvRaf-like30	LARLLEGH...THTK	TSRAV	GTLGYMAP	EYVYN...RRV	
HvRaf-like68	LSRLIDR...EDSH	VVTRMR	GTPGYMAP	EYVLR...SKI	
HvRaf-like110	LAMIMDQ...GKAIV	TTEIQ	GTYGYMAP	EYVRS...GKA	
HvRaf-like59	LSRLKIETFLTTKT	GK	GTPQWMAP	EVLRR...NEPS	
HvRaf-like104	VSAI IASSAQRDT	FT	GTFNYMAP	EYVIRSGQK...H	
HvRaf-like106	IAKIMDQ...CSAAPQ	TTGVV	GTTGYMAP	EYVLR...TRN	
HvRaf-like27	LSRLLDEQQT	ICTSSRD	GTLGYMAP	EYVLR...GTI	
HvRaf-like13	IARIFG.QD...QTHGI	TNRVV	GTYGYMAP	EYVVMR...GNY	
HvRaf-like18	LARLFG.RD...QTQAV	TSRVV	GTYGYMAP	EYVVMR...GNY	
HvRaf-like22	MARIFGSNM...TEAN	TNRVV	GTYGYMAP	EYVYASQ...GLF	
HvRaf-like103	MARIFSSNM...TEAN	TNRVV	GTYGYMAP	EYVYASG...GFF	
HvRaf-like49	MARIFDPKGG...LAN	TKRVV	GTYGYMAP	EYVYAMA...GIF	
HvRaf-like118	VARIEVKTEGMP	ET	GTYRWMAP	EYVMIQ...HRPY	
HvRaf-like89	LAKIFSSND...TEGNI	TRRVI	GTYGYMAP	EYVASK...GIF	
HvRaf-like84	LSKMKQATMVSGG	MRGTL	PLPWMAP	EYVLR...MSGTKV	
HvRaf-like31	ISCL ESQCGSGKG	FT	GTYRWMAP	EYVMIK...EKNH	
HvRaf-like91	LSKIKRNTLVSGG	VR	GTLPWMAP	EYVLR...GSSSKV	
HvRaf-like61	LAIMS...SDKPPYN	QA	GTSYMAP	EYVIMGKRD...Y	
HvRaf-like94	MSRLKHNTFLSSKS	TA	GTPFWMAP	EVLRR...NEPA	
HvRaf-like111	VARI EVKTEGMP	ET	GTYRWMAP	EYVMIQ...HRPY	
HvRaf-like32	LARLAMD...FATHVT	TR.VM	GTFGYMAP	EYVASS...GKL	
HvRaf-like51	LARLDPQQT	IITSSRD	GTLGYMAP	EYVLR...GKV	
HvRaf-like44	LAKLSKL...DSSSFN	LTHMR	GTMGYMAP	EYVLR...LPI	
HvRaf-like102	SADLAGELPDDDDGDGKEGRHRTG	SRGRIE	GTRGYMAP	EYVLR...GSP	
HvRaf-like124	TSCL ESHSSRAGAGAGAGT GAGAGGGGSGEGRGTNM	GTYRWMAP	EYVVR...DKPC		
HvRaf-like47	IACEEAYCDPLAN	DP	GTRFWMAP	EYVMIK...HKPY	
HvRaf-like73	MARLFPEAGD...GRSHVQ	T.RVA	GTFNWMAP	EYVLR...GHL	
HvRaf-like65	VSAVLASSIGQRDT	FV	GTYNYMAP	EYVIRSGSS...Y	
HvRaf-like48	MARIFDPKGG...LAN	TKRVV	GTYGYMAP	EYVYAMA...GIF	
HvRaf-like93	LSRFFCEKQSQ	ILTAEVK	GTLGYMAP	EYVFN...GQI	
HvRaf-like52	LAKIFSSND...TQGS	TKKVV	GTYGYMAP	EYVASE...GII	
HvRaf-like66	MARFMFGNOO...KAD	TKRVV	GTYGYMAP	EYVYAMR...GIF	
HvRaf-like28	LSRVLHPGEYAE	AC	GTRLYMAP	EYVLMFQK...Y	
HvRaf-like60	LAMFM...ADWPPYN	RA	GTSYMAP	EYVLR...GKL	
HvRaf-like79	VARVKVQSGVMTA	ET	GTYRWMAP	EYVMIK...LS	
HvRaf-like39	IACEETLCLLLE	DE	GTYRWMAP	EYVMIK...RKPY	
HvRaf-like41	VARVEASNPSDMTG	ET	GTLGYMAP	EYVLR...GHPY	
HvRaf-like64	LARLYEHGA...TAG	TTRVA	GTLGYMAP	EYVLR...SRA	
HvRaf-like29	VSRQRSQEGDMTA	ET	GTYRWMAP	EYVLR...HKPY	
HvRaf-like81	VARVEAQNPKDMTG	AT	GTLGYMAP	EYVLR...GKPY	
HvRaf-like38	LARAFAADI...THLT	TG.VA	GTLGYMAP	EYVVR...GHL	
HvRaf-like56	FAKL LSR...TGSNQN	VSRAR	GTLGYMAP	EYVVR...LPI	
HvRaf-like37	LAKIFSSNI...TEANT	TRKVV	GTYGYMAP	EYVYASH...GIF	
HvRaf-like16	LARLIDHDR...ASQ	TTVLA	GTMGYMAP	EYVTT...GKA	
HvRaf-like40	LAKLTND...AMTHVS	TR.VM	GTFGYMAP	EYVASS...GKL	
HvRaf-like17	LAKLFS.WD...QSQAV	TSHIA	GTYGYMAP	EYVYAMR...GQY	
HvRaf-like97	MAMIFEDE...IEVIN	TGHVV	GTYGYMAP	EYVYAMG...GVF	
HvRaf-like15	IAKLFSNIDD...NQDSTV	TERIV	GTFGYMAP	EYVYAMD...GMV	
HvRaf-like76	MSRLFGKQQR	IITKSRG	GTFGYMAP	EYVITN...GLI	
HvRaf-like69	LAKILDAGGKQGEPPWSSSG	GGAVA	GTVGYMAP	EYVYAYT...RKV	
HvRaf-like42	LSKL SER...DSSSLN	FTQMR	GTTGYMAP	EYVVMN...LPI	
HvRaf-like114	LARMLVKSG...ELESVS	AIG	GTFGYMAP	EYVYASR...LRV	
HvRaf-like53	LSRLKANTYLSSKS	LA	GTPFWMAP	EVLRR...DEPS	

GTxx(W/Y)MAPE

	240	250	260	270	280	290
HvZIK1	LAAIVDKDHT	AHTII	GTPEFMAPELY	SE	ETYTESVDIYSYGMCVLEMVTR	EMFYRRECESV
HvZIK2	LAAILRKSHA	VH.CV	GTPEFMAPEVY	AE	EYNELVDIYSFGMCVLEMVTR	FEPYSECTHPV
HvZIK3	LAAVLRGAQA	AHSV	GTPEFMAPEMY	DE	EDYDELVDVYSFGMCVLEMVTR	FEPYSECTHPV
HvZIK4	LAAIMRTP.K	ARSV	GTPEFMAPELY	DE	EDYDELVDVYSFGMCVLEMVTR	FEPYSECTHPV

GTPEFMAPE(L/V)Y