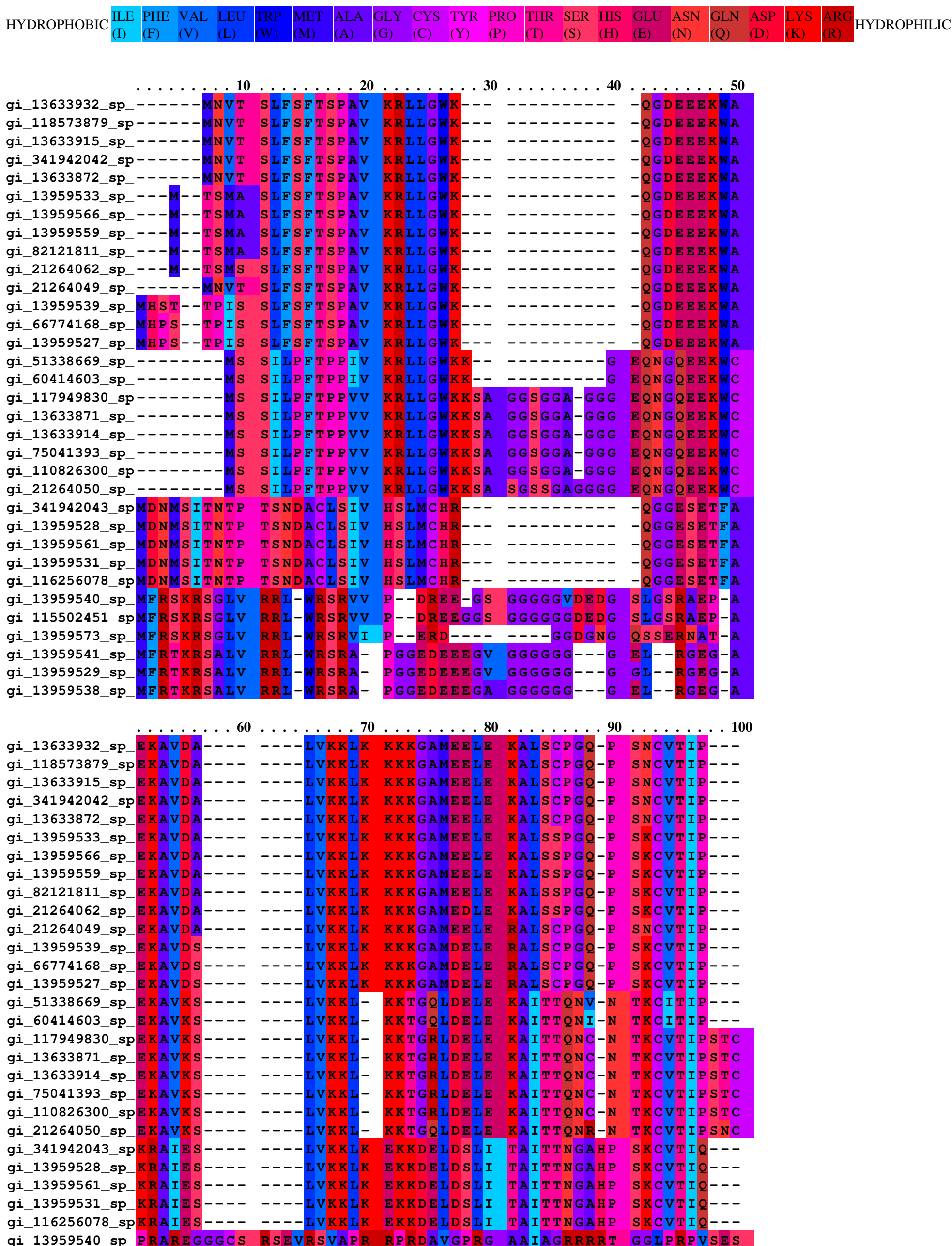


The current colourscheme of the alignment is for **hydrophobicity**.

The hydrophobicity scale used is from Eisenberg *et al* (1984) Abstract
The colour assignments **from hydrophobic to hydrophilic** are:



gi_115502451_sp	PRAAREGGGCG	RSEVRPVAPR	RPRDAVGQRG	AQGAGRRRRA	GGPPRP	MSEP
gi_13959573_sp	VTAE-----	-----QORMAQPR	RAQEGER---	-----	-----RP---	----
gi_13959541_sp	T-----DG-----	-----	RAYGAGG---	-----	GGAGR-	----
gi_13959529_sp	T-----DG-----	-----	RAYGAGG---	-----	GGAGR-	----
gi_13959538_sp	T-----DS-----	-----	RAHGAGG---	-----	GGPGR-	----
110.....120.....130.....140.....150					
gi_13633932_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_118573879_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_13633915_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_341942042_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_13633872_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_13959533_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_13959566_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_13959559_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_82121811_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_21264062_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_21264049_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_13959539_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_66774168_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_13959527_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRV	
gi_51338669_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRL	
gi_60414603_sp	-----	-----	-----RSL	DGRLQVSHRK	GLPHVIYCRL	
gi_117949830_sp	SEIWGLSTAN	TVDQWDTTGL	YSFSEQTRSL	DGRLQVSHRK	GLPHVIYCRL	
gi_13633871_sp	SEIWGLSTAN	TVDQWDTTGL	YSFSEQTRSL	DGRLQVSHRK	GLPHVIYCRL	
gi_13633914_sp	SEIWGLSTPN	TIDQWDTTGL	YSFSEQTRSL	DGRLQVSHRK	GLPHVIYCRL	
gi_75041393_sp	SEIWGLSTPN	TIDQWDTTGL	YSFSEQTRSL	DGRLQVSHRK	GLPHVIYCRL	
gi_110826300_sp	SEIWGLSTPN	TIDQWDTTGL	YSFSEQTRSL	DGRLQVSHRK	GLPHVIYCRL	
gi_21264050_sp	SEIWGLSTPN	TIEQWDTSGL	YSYPDQTRSL	DGRLQVSHRK	GLPHVIYCRL	
gi_341942043_sp	-----	-----	-----RTL	DGRLQVAGRK	GFPHVIYARL	
gi_13959528_sp	-----	-----	-----RTL	DGRLQVAGRK	GFPHVIYARL	
gi_13959561_sp	-----	-----	-----RTL	DGRLQVAGRK	GFPHVIYARL	
gi_13959531_sp	-----	-----	-----RTL	DGRLQVAGRK	GFPHVIYARL	
gi_116256078_sp	-----	-----	-----RTL	DGRLQVAGRK	GFPHVIYARL	
gi_13959540_sp	GAGAGGSPLD	VAEPGGPGWL	PESDCETVTC	CLFSERDAAG	APRDSDGPQA	
gi_115502451_sp	GAGAGSSLLD	VAEPGGPGWL	PESDCETVTC	CLFSERDAAG	APRDASDPLA	
gi_13959573_sp	-----	-----	-----VRC	CLFAERPGE	LPPPPPPPPP	
gi_13959541_sp	-----	-----	-----AGC	CLGKAVRGAK	GHHHPHPPTS	
gi_13959529_sp	-----	-----	-----AGC	CLGKAVRGAK	GHHHPHPSS	
gi_13959538_sp	-----	-----	-----AGC	CLGKAVRGAK	GHHHPHPAA	
160.....170.....180.....190.....200					
gi_13633932_sp	WRWPDQLSHH	ELKPLECCEF	PFGSKQKEVC	INPYHYKRVE	SPVL-----	
gi_118573879_sp	WRWPDQLSHH	ELKPLECCEF	PFGSKQKEVC	INPYHYKRVE	SPVL-----	
gi_13633915_sp	WRWPDQLSHH	ELKPLECCEF	PFGSKQKEVC	INPYHYKRVE	SPVL-----	
gi_341942042_sp	WRWPDQLSHH	ELKPLECCEF	PFGSKQKEVC	INPYHYKRVE	SPVL-----	
gi_13633872_sp	WRWPDQLSHH	ELKPLECCEF	PFGSKQKEVC	INPYHYKRVE	SPVL-----	
gi_13959533_sp	WRWPDQLSHH	ELKPLDICEF	PFGSKQKEVC	INPYHYKRVE	SPVL-----	
gi_13959566_sp	WRWPDQLSHH	ELKPLDICEF	PFGSKQKEVC	INPYHYKRVE	SPVL-----	
gi_13959559_sp	WRWPDQLSHH	ELKPLDICEF	PFGSKQKEVC	INPYHYKRVE	SPVL-----	
gi_82121811_sp	WRWPDQLSHH	ELKPLDICEF	PFGSKQKEVC	INPYHYKRVE	SPVL-----	
gi_21264062_sp	WRWPDQLSHH	ELKPLEVCEY	PFGSKQKEVC	INPYHYKRVE	SPVL-----	
gi_21264049_sp	WRWPDQLSHH	ELKALECCEF	PFGSKQKDVC	INPYHYKRVD	SPVL-----	
gi_13959539_sp	WRWPDQLSHH	ELKPLECCEF	PFGSKQKEVC	INPYHYRRVE	TPVL-----	
gi_66774168_sp	WRWPDQLSHH	ELKPLECCEF	PFGSKQKEVC	INPYHYRRVE	TPVL-----	
gi_13959527_sp	WRWPDQLSHH	ELKPLECCEF	PFGSKQKEVC	INPYHYRRVE	TPVL-----	
gi_51338669_sp	WRWPDLHSHH	ELRAMELCEF	AFNMKKDEV	VNPYHYQRVE	TPVL-----	
gi_60414603_sp	WRWPDLHSHH	ELRAMEMCEY	AFNMKKDEV	VNPYHYQRVE	TPVL-----	
gi_117949830_sp	WRWPDLHSHH	ELKAIENCEY	AFNLKKDEV	VNPYHYQRVE	TPVL-----	
gi_13633871_sp	WRWPDLHSHH	ELKAIENCEY	AFSLKKDEV	VNPYHYQRVE	TPVL-----	
gi_13633914_sp	WRWPDLHSHH	ELKAIENCEY	AFNLKKDEV	VNPYHYQRVE	TPVL-----	
gi_75041393_sp	WRWPDLHSHH	ELKAIENCEY	AFNLKEDEV	VNPYHYQRVE	TPVL-----	
gi_110826300_sp	WRWPDLHSHH	ELKAIENCEY	AFNLKKDEV	VNPYHYQRVE	TPVL-----	
gi_21264050_sp	WRWPDLHSHH	ELRAIETCEY	AFNLKKDEV	VNPYHYQRVE	TPVL-----	
gi_341942043_sp	WRWPDLHK-N	ELKHVKYCQY	AFDLKCDSVC	VNPYHYERVV	SPGIDLSGLT	
gi_13959528_sp	WRWPDLHK-N	ELKHVKYCQY	AFDLKCDSVC	VNPYHYERVV	SPGIDLSGLT	
gi_13959561_sp	WRWPDLHK-N	ELKHVKYCQY	AFDLKCDSVC	VNPYHYERVV	SPGIDLSGLT	
gi_13959531_sp	WRWPDLHK-N	ELKHVKYCQY	AFDLKCDSVC	VNPYHYERVV	SPGIDLSGLT	
gi_116256078_sp	WRWPDLHK-N	ELKHVKYCQY	AFDLKCDSVC	VNPYHYERVV	SPGIDLSGLT	
gi_13959540_sp	RQSPEPEEGG	GPRSREARSR	LLLLEQELKT	VTYSLLKRLK	ERSL-----	
gi_115502451_sp	GAALEP-AGG	G-RSREARSR	LLLLEQELKT	VTYSLLKRLK	ERSL-----	
gi_13959573_sp	GGASPPGPGG	G-----EARSR	LVLLERELKA	VTYALLKRLK	ERSL-----	
gi_13959541_sp	GAGA---AGG	A-----	---EADLKA	LTHSVLKKLK	ERQL-----	
gi_13959529_sp	GAGA---AGG	A-----	---EADLKA	LTHSVLKKLK	ERQL-----	
gi_13959538_sp	GAGA---AGG	A-----	---EADLKA	LTHSVLKKLK	ERQL-----	

	210	220	230	240	250	
gi_13633932_sp	PPVLV	PRHS	EYN	PQHSLLAQFR	N-LGQNEPHM	PHNATFPDSF
gi_118573879_sp	PPVLV	PRHS	EYN	PQHSLLAQFR	N-LGQNEPHM	PLNATFPDSF
gi_13633915_sp	PPVLV	PRHS	EYN	PQHSLLAQFR	N-LGQNEPHM	PLNATFPDSF
gi_341942042_sp	PPVLV	PRHS	EYN	PQHSLLAQFR	N-LGQNEPHM	PLNATFPDSF
gi_13633872_sp	PPVLV	PRHS	EYN	PQHSLLAQFR	N-LGQNEPHM	PLNATFPDSF
gi_13959533_sp	PPVLV	PRHN	EFN	PQHSLLVQFR	N-LSHNEPHM	PQNATFPDSF
gi_13959566_sp	PPVLV	PRHN	EFN	PQHSLLVQFR	N-LSHNEPHM	PQNATFPDSF
gi_13959559_sp	PPVLV	PRHN	EFN	PQHSLLVQFR	N-LSHNEPHM	PQNATFPDSF
gi_82121811_sp	PPVLV	PRHS	EFN	PQHSLLVQFR	N-LSHNEPHM	PHNATFPDSF
gi_21264062_sp	PPVLV	PRHS	EFN	PQHSLLVQFR	N-LSHNEPHM	PLNATFPESF
gi_21264049_sp	PPVLV	PRNS	EFN	AKLSMLPRFR	NPLHQTEPPM	PQNATFPDSF
gi_13959539_sp	PPVLV	PRHS	EYN	PQLSLLAKFR	SASLHSEPLM	PHNATYPDSF
gi_66774168_sp	PPVLV	PRHS	EYN	PQLSLLAKFR	SASLHSEPLM	PHNATYPDSF
gi_13959527_sp	PPVLV	PRHS	EYN	PQLSLLAKFR	SASLHSEPLM	PHNATYPDSF
gi_51338669_sp	PPVLV	PRHT	EIP	AEFPPLDDY	SHS	I PENTNFPAGI
gi_60414603_sp	PPVLV	PRHT	EIP	AEFPPLDDY	SHS	I PENTNFPAGI
gi_117949830_sp	PPVLV	PRHT	EIL	TELPPLDDY	THS	I PENTNFPAGI
gi_13633871_sp	PPVLV	PRHT	EIL	TELPPLDDY	THS	I PENTNFPAGI
gi_13633914_sp	PPVLV	PRHT	EIL	TELPPLDDY	THS	I PENTNFPAGI
gi_75041393_sp	PPVLV	PRHT	EIL	TELPPLDDY	THS	I PENTNFPAGI
gi_110826300_sp	PPVLV	PRHT	EIL	TELPPLDDY	THS	I PENTNFPAGI
gi_21264050_sp	PPVLV	PRHT	EIL	TELPPLDDY	TNS	I PENTNFP TGI
gi_341942043_sp	LQSNAP	PSML	VKDEYVHDFE	GQPSLPTEGH	S-IQTIQHP	PSNRASTETY
gi_13959528_sp	LQSNAP	PSML	VKDEYVHDFE	GQPSLPTEGH	S-IQTIQHP	PSNRASTETY
gi_13959561_sp	LQSNAP	SSMM	VKDEYVHDFE	GQPSLSTEGH	S-IQTIQHP	PSNRASTETY
gi_13959531_sp	LQSNAP	SGML	VKDEYVHDFE	GQPSLATEGH	S-IQTIQHP	PSNRASTETY
gi_116256078_sp	LQSNAP	PSML	VKDEYVHDFE	GQPSLSTEGH	S-IQTIQHP	PSNRASTETY
gi_13959540_sp	DTLLE	AVESRGGVPG	GCVLVP	RAD	LRLG-GQPA	PPQ
gi_115502451_sp	DTLLE	AVESRGGVPG	GCVLVP	RAD	LRLG-GQPA	PPQ
gi_13959573_sp	HSL LQ	AVESRGGTPG	GCVLVA	RGE	LRLGAARRP	PPH
gi_13959541_sp	ELL LQ	AVESRGGTRT	ACLLLPGR LD	CRLGPGAPAS	AQPAQPPSSY	
gi_13959529_sp	ELL LQ	AVESRGGTRT	ACLLLPGR LD	CRLGPGAPAS	AQPAQPPSSY	
gi_13959538_sp	ELL LQ	AVESRGGTRT	ACLLLPGR LD	CRLGPGAPAG	AQPAQPPSSY	

[illegible]

	310										320										330										340										350									
gi_13633932_sp	S	P	F	Q	M	P	A	D	T	P	P	P	A	-	Y	L	P	P	E	-	D	Q	M	T	H	D	T	S	Q	P	M	D	-	-	T	N	M	M	A	-	-	-	-	P	G	I	H			
gi_118573879_sp	S	P	F	Q	M	P	A	D	T	P	P	P	A	-	Y	L	P	P	E	-	D	P	M	T	Q	D	G	S	Q	P	M	D	-	-	T	N	M	M	A	-	-	-	-	P	S	L	P			
gi_13633915_sp	S	P	F	Q	M	P	A	D	T	P	P	P	A	-	Y	L	P	P	E	-	D	P	M	T	Q	D	G	S	Q	P	M	D	-	-	T	N	M	M	A	-	-	-	-	P	P	L	P			

gi_341942042_sp	SPFQMPADTP	PPA-YLPPE-	DPMAQDGSQP	MD---	TNMMA	-----	PPLP	
gi_13633872_sp	SPFQMPADTP	PPA-YLPPE-	DPMAQDGSQP	MDTNMTNMTA		-----	PTLP	
gi_13959533_sp	SPFQLPADTP	PPA-YMPPD-	DQMGQDNSQP	MDT---	SNNMI	-----	PQIM	
gi_13959566_sp	SPFQLPADTP	PPA-YMPPD-	DQMGQDNSQP	MDT---	SNNMI	-----	PQIM	
gi_13959559_sp	SPFQLPADTP	PPA-YMPPD-	DQMAPDNSQP	MDT---	SSNMI	-----	PQTM	
gi_82121811_sp	SPFQLPADTP	PPA-YMPPD-	DQMGQDNSQS	MDT---	SNTMI	-----	PQIM	
gi_21264062_sp	SPFQLPADTP	PPA-YMPPD-	EQMGQDGSQS	MET---	GSSLA	-----	PQNM	
gi_21264049_sp	SPFQMP-ETP	PPA-YMPPE-	EPMTQDCPQP	MD---	TNLLA	-----	PNLP	
gi_13959539_sp	SPYQHSVDTP	PLP-YHATE-	ASETQSG-QP	V	DATADRHVV	-----	LSIP	
gi_66774168_sp	SPYQHS					-----		
gi_13959527_sp	SPYQHS					-----		
gi_51338669_sp		ETP	PPG-YLSE	EDG	ETSDHQMNHS	MDAGSP-NLS	-----	PNPM
gi_60414603_sp		ETP	PPG-YLSE	EDG	ETSDHQMNPS	MDAGSP-NLS	-----	PNPM
gi_117949830_sp		ETP	PPG-YISE	EDG	ETSDQQLNQS	MDTGSPAELS	-----	PTTL
gi_13633871_sp		ETP	PPG-YISE	EDG	ETSDQQLNQS	MDTGSPAELS	-----	PTTL
gi_13633914_sp		ETP	PPG-YISE	EDG	ETSDQQLNQS	MDTGSPAELS	-----	PTTL
gi_75041393_sp		ETP	PPG-YISE	EDG	ETSDQQLNQS	MDTGSPAELS	-----	PTTL
gi_110826300_sp		ETP	PPG-YISE	EDG	ETSDQQLNQS	MDTGSPAELS	-----	PTTL
gi_21264050_sp		ETP	PPG-YISE	EDG	EASDQQMNQS	MDTGSPAELS	-----	PSTL
gi_341942043_sp	PGQQQNGFTA	QPATYHHNST	TTWTGSR	TAP	YTPNLP	HHQN	GHLQHHPPMP	
gi_13959528_sp	PGQQQNGFTA	QPATYHHNST	TTWTGSR	TAP	YTPNLP	HHQN	GHLQHHPPMP	
gi_13959561_sp	PGQQQNGFTG	QPATYHHNST	TTWTGSR	TAP	YTPNLP	HHQN	GHLQHHPPMP	
gi_13959531_sp	PGQQQNGFTG	QPATYHHNST	TTWTGSR	TAP	YPPNLP	HHQN	GHLQHHPPMP	
gi_116256078_sp	PGQQQNGFTG	QPATYHHNST	TTWTGGR	TAP	YTPNLP	HHQN	GHLQHHPPMP	
gi_13959540_sp	RLCGPESPPP	PYSRLSP	PDQ	YKP-LD	LSDS	TL	SYTETEAT	NSLITAPGEF
gi_115502451_sp	RLCGPESPPP	PYSRLSP	PRDE	YKP-LD	LSDS	TL	SYTETEAT	NSLITAPGEF
gi_13959573_sp	RLCGPESPPP	PYSRLSP	NDE	QKP-LD	LSDS	TL	SYTETEAT	NSPNVTPGEF
gi_13959541_sp	RLCELESPPP	PYSRY-PM	DF	LKPTAG	CPDA	VPSSAETGGT	NYL--	APGGL
gi_13959529_sp	RLCELESPPP	PYSRY-PM	DF	LKPTAD	CPDA	VPSSDETGGT	NYL--	APGGL
gi_13959538_sp	RLCELESPPP	PYSRY-PM	DF	LKPTAD	CPDA	VPSSAETGGT	NYL--	APGGL

						360		370			380		390		400																			
gi_13633932_sp	P	-----	DI	HRG	DVQ	AV	A	Y	E	E	P	K	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	A	F	H	--	AS	
gi_118573879_sp	S	-----	EI	NRG	DVQ	AV	A	Y	E	E	P	K	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	A	F	H	--	AS	
gi_13633915_sp	S	-----	EI	NRG	DVQ	AV	A	Y	E	E	P	K	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	A	F	H	--	AS	
gi_341942042_sp	A	-----	EI	SRG	DVQ	AV	A	Y	E	E	P	K	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	A	F	H	--	AS	
gi_13633872_sp	A	-----	EI	NRG	DVQ	AV	A	Y	E	E	P	K	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	R	F	H	--	AS	
gi_13959533_sp	P	-----	SI	SSR	DVQ	PV	A	Y	E	E	P	K	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	A	F	H	--	AS	
gi_13959566_sp	P	-----	SI	SSR	DVQ	PV	A	Y	E	E	P	K	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	A	F	H	--	AS	
gi_13959559_sp	P	-----	SI	SSR	DVQ	PV	A	Y	E	E	P	K	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	A	F	H	--	AS	
gi_82121811_sp	P	-----	NI	STR	DVQ	PV	A	Y	E	E	P	K	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	A	F	H	--	AS	
gi_21264062_sp	P	-----	R	--G	DVQ	PV	E	Y	Q	E	P	S	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	A	Y	H	--	AS	
gi_21264049_sp	L	-----	EI	SNRT	DVH	PV	A	Y	Q	E	P	K	H	W	C	S	I	V	Y	Y	E	L	N	N	R	V	G	E	A	F	L	--	AS	
gi_13959539_sp	N	-----	G	----	DFR	PV	C	Y	E	E	P	Q	H	W	C	S	V	A	Y	Y	E	L	N	N	R	V	G	E	T	F	Q	--	AS	
gi_66774168_sp		-----		----	DFR	PV	C	Y	E	E	P	Q	H	W	C	S	V	A	Y	Y	E	L	N	N	R	V	G	E	T	F	Q	--	AS	
gi_13959527_sp		-----		----	DFR	PV	C	Y	E	E	P	L	H	W	C	S	V	A	Y	Y	E	L	N	N	R	V	G	E	T	F	Q	--	AS	
gi_51338669_sp	S	-----	PA	HNNL	DLQ	PV	T	Y	C	E	P	A	F	W	C	S	I	S	Y	Y	E	L	N	Q	R	V	G	E	T	F	H	--	AS	
gi_60414603_sp	S	-----	PA	HNNL	DLQ	PV	T	Y	C	E	P	A	F	W	C	S	I	S	Y	Y	E	L	N	Q	R	V	G	E	T	F	H	--	AS	
gi_117949830_sp	S	-----	PV	NHSL	DLQ	PV	T	Y	S	E	P	A	F	W	C	S	I	A	Y	Y	E	L	N	Q	R	V	G	E	T	F	H	--	AS	
gi_13633871_sp	S	-----	PV	NHSL	DLQ	PV	T	Y	S	E	P	A	F	W	C	S	I	A	Y	Y	E	L	N	Q	R	V	G	E	T	F	H	--	AS	
gi_13633914_sp	S	-----	PV	NHSL	DLQ	PV	T	Y	S	E	P	A	F	W	C	S	I	A	Y	Y	E	L	N	Q	R	V	G	E	T	F	H	--	AS	
gi_75041393_sp	S	-----	PV	NHSL	DLQ	PV	T	Y	S	E	P	A	F	W	C	S	I	A	Y	Y	E	L	N	Q	R	V	G	E	T	F	H	--	AS	
gi_110826300_sp	S	-----	PV	NHSL	DLQ	PV	T	Y	S	E	P	A	F	W	C	S	I	A	Y	Y	E	L	N	Q	R	V	G	E	T	F	H	--	AS	
gi_21264050_sp	S	-----	PV	NHGM	DLQ	PV	T	Y	S	E	P	A	F	W	C	S	I	A	Y	Y	E	L	N	Q	R	V	G	E	T	F	H	--	AS	
gi_341942043_sp	PHPGHYW	-PV	HNELAF	QPPPI			SNHPAPEYWC									S	I	A	Y	F	E	M	D	V	Q	V	G	E	T	F	K	V	P	S
gi_13959528_sp	PHPGHYW	-PV	HNELAF	QPPPI			SNHPAPEYWC									S	I	A	Y	F	E	M	D	V	Q	V	G	E	T	F	K	V	P	S
gi_13959561_sp	PHPGHYW	-PV	HNELAF	QPPPI			SNHPAPEYWC									S	I	A	Y	F	E	M	D	V	Q	V	G	E	T	F	K	V	P	S
gi_13959531_sp	PHPGHYW	-PV	HNELAF	QPPPI			SNHPAPEYWC									S	I	A	Y	F	E	M	D	V	Q	V	G	E	T	F	K	V	P	S
gi_116256078_sp	PHPGHYW	PPV	HNELAF	QPPPI			SNHPAPEYWC									S	I	A	Y	F	E	M	D	V	Q	V	G	E	T	F	K	V	P	S
gi_13959540_sp	S	-----		----	DAS	MS	P	D	A	T	K	P	S	H	W	C	S	V	A	Y	W	E	H	R	T	R	V	G	R	L	Y	A	--	VY
gi_115502451_sp	S	-----		----	DAS	MS	P	D	A	T	K	P	S	H	W	C	S	V	A	Y	W	E	H	R	T	R	V	G	R	L	Y	A	--	VY
gi_13959573_sp	S	-----		----	DAS	TS	P	D	A	V	K	R	S	H	W	C	N	V	A	Y	W	E	H	R	T	R	V	G	R	L	Y	T	--	VY
gi_13959541_sp	S	-----		----	DSQ	LL	L	E	P	G	D	R	S	H	W	C	V	V	A	Y	W	E	E	K	T	R	V	G	R	L	Y	C	--	VQ
gi_13959529_sp	S	-----		----	DSQ	LL	L	E	P	G	D	R	S	H	W	C	V	V	A	Y	W	E	E	K	T	R	V	G	R	L	Y	C	--	VQ
gi_13959538_sp	S	-----		----	DSQ	LL	L	E	P	G	D	R	S	H	W	C	V	V	A	Y	W	E	E	K	T	R	V	G	R	L	Y	C	--	VQ

		410		420		430		440		450
gi_13633932_sp	STSVLVDGFT	D-PS	NNKNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV				
gi_118573879_sp	STSVLVDGFT	D-PS	NNKNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV				
gi_13633915_sp	STSVLVDGFT	D-PS	NNKNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV				
gi_341942042_sp	STSVLVDGFT	D-PS	NNKNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV				
gi_13633872_sp	STSVLVDGFT	D-PS	NNKNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV				
gi_13959533_sp	STSVLVDGFT	D-PA	NNKS	SF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV			
gi_13959566_sp	STSVLVDGFT	D-PS	NNKS	SF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV			
gi_13959559_sp	STSVLVDGFT	D-PS	NNKS	SF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV			

gi_82121811_sp	STSVLVDGFT	D-PSNNKNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV
gi_21264062_sp	STSVLVDGFT	D-PSNNKNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV
gi_21264049_sp	STSVLVDGFT	D-PSNNRNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV
gi_13959539_sp	SRSVLIDGFT	D-PSNNRNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV
gi_66774168_sp	SRSVLIDGFT	D-PSNNRNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV
gi_13959527_sp	SRSVLIDGFT	D-PSNNRNRF	CLGLLSNVNR	NSTIENTRRH	IGKGVHLYYV
gi_51338669_sp	QPSMTVDGFT	D-PSNSE-RF	CLGLLSNVNR	NAAVELTRRH	IGRGVRLYYI
gi_60414603_sp	QPSMTVDGFT	D-PSNSE-RF	CLGLLSNVNR	NAAVELTRRH	IGRGVRLYYI
gi_117949830_sp	QPSLTVDGFT	D-PSNSE-RF	CLGLLSNVNR	NATVEMTRRH	IGRGVRLYYI
gi_13633871_sp	QPSLTVDGFT	D-PSNSE-RF	CLGLLSNVNR	NATVEMTRRH	IGRGVRLYYI
gi_13633914_sp	QPSLTVDGFT	D-PSNSE-RF	CLGLLSNVNR	NATVEMTRRH	IGRGVRLYYI
gi_75041393_sp	QPSLTVDGFT	D-PSNSE-RF	CLGLLSNVNR	NATVEMTRRH	IGRGVRLYYI
gi_110826300_sp	QPSLTVDGFT	D-PSNSE-RF	CLGLLSNVNR	NATVEMTRRH	IGRGVRLYYI
gi_21264050_sp	QPSLTVDGFT	D-PSNSE-RF	CLGLLSNVNR	NATVEMTRRH	IGRGVRLYYI
gi_341942043_sp	CPVVTVDGYV	D-PSGGD-RF	CLGQLSNVHR	TEAIERARLH	IGKGVQLECK
gi_13959528_sp	CPIVTVDGYV	D-PSGGD-RF	CLGQLSNVHR	TEAIERARLH	IGKGVQLECK
gi_13959561_sp	CPIVTVDGYV	D-PSGGD-RF	CLGQLSNVHR	TEAIERARLH	IGKGVQLECK
gi_13959531_sp	CPIVTVDGYV	D-PSGGD-RF	CLGQLSNVHR	TEAIERARLH	IGKGVQLECK
gi_116256078_sp	CPIVTVDGYV	D-PSGGD-RF	CLGQLSNVHR	TEAIERARLH	IGKGVQLECK
gi_13959540_sp	DQAVSI--FY	DLPQGSG--F	CLGQLNLEQR	SESVRRTRSK	IGFGILLSKE
gi_115502451_sp	DQAVSI--FY	DLPQGSG--F	CLGQLNLEQR	SESVRRTRSK	IGFGILLSKE
gi_13959573_sp	EQSVSI--FY	DLPQGNG--F	CLGQLNLENR	SETVRRTRSK	IGYGILLSKE
gi_13959541_sp	EPSLDI--FY	DLPQGNG--F	CLGQLNSDNK	SQLVQKVRSK	IGCGIQLTRE
gi_13959529_sp	EPSLDI--FY	DLPQGNG--F	CLGQLNSDNK	SQLVQKVRSK	IGCGIQLTRE
gi_13959538_sp	EPSLDI--FY	DLPQGNG--F	CLGQLNSDNK	SQLVQKVRSK	IGCGIQLTRE

			460	470	480	490	500		
gi_13633932_sp	G	-	GEVYAECL	SDSSIFVQSR	NCNYHHGFGHP	T	TVCKIPSG	CSLKIFN	---
gi_118573879_sp	G	-	GEVYAECL	SDSSIFVQSR	NCNYHHGFGHP	T	TVCKIPSG	CSLKIFN	---
gi_13633915_sp	G	-	GEVYAECL	SDSSIFVQSR	NCNYHHGFGHP	T	TVCKIPSG	CSLKIFN	---
gi_341942042_sp	G	-	GEVYAECL	SDSSIFVQSR	NCNYHHGFGHP	T	TVCKIPSG	CSLKIFN	---
gi_13633872_sp	G	-	GEVYAECL	SDSSIFVQSR	NCNYHHGFGHP	T	TVCKIPSG	CSLKIFN	---
gi_13959533_sp	G	-	GEVYAECL	SDSSIFVQSR	NCNFHHGFGHP	T	TVCKIPSS	CSLKIFN	---
gi_13959566_sp	G	-	GEVYAECL	SDSSIFVQSR	NCNFHHGFGHP	T	TVCKIPSS	CSLKIFN	---
gi_13959559_sp	G	-	GEVYAECL	SDSSIFVQSR	NCNFHHGFGHP	T	TVCKIPSS	CSLKIFN	---
gi_82121811_sp	G	-	GEVYAECL	SDSSIFVQSR	NCNYHHGFGHP	T	TVCKIPSG	CSLKIFN	---
gi_21264062_sp	G	-	GEVYAECL	SDTSIFVQSR	NCNYHHGFGHP	T	TVCKIPSG	CSLKIFN	---
gi_21264049_sp	G	-	GEVYAECL	SDSSIFVQSR	NCNYHHGFGHP	T	TVCKIPSR	CSLKIFN	---
gi_13959539_sp	G	-	GEVYAE CV	SDSSIFVQSR	NCNYQHGFHP	A	TVCKIPSG	CSLKVFN	---
gi_66774168_sp	G	-	GEVYAE CV	SDSSIFVQSR	NCNYQHGFHP	A	TVCKIPSG	CSLKVFN	---
gi_13959527_sp	G	-	GEVYAE CV	SDSSIFVQSR	NCNYQHGFHP	A	TVCKIPSG	CSLKVFN	---
gi_51338669_sp	G	-	GEVFAECL	SDSAIFVQSP	NCNQRYGWHP	A	TVCKIPPG	CNLKIFN	---
gi_60414603_sp	G	-	GEVFAECL	SDSAIFVQSP	NCNQRYGWHP	A	TVCKIPPG	CNLKIFN	---
gi_117949830_sp	G	-	GEVFAECL	SDSAIFVQSP	NCNQRYGWHP	A	TVCKIPPG	CNLKIFN	---
gi_13633871_sp	G	-	GEVFAECL	SDSAIFVQSP	NCNQRYGWHP	A	TVCKIPPG	CNLKIFN	---
gi_13633914_sp	G	-	GEVFAECL	SDSAIFVQSP	NCNQRYGWHP	A	TVCKIPPG	CNLKIFN	---
gi_75041393_sp	G	-	GEVFAECL	SDSAIFVQSP	NCNQRYGWHP	A	TVCKIPPG	CNLKIFN	---
gi_110826300_sp	G	-	GEVFAECL	SDSAIFVQSP	NCNQRYGWHP	A	TVCKIPPG	CNLKIFN	---
gi_21264050_sp	G	-	GEVFAECL	SDSAIFVQSP	NCNQRYGWHP	A	TVCKIPPG	CNLKIFN	---
gi_341942043_sp	GE	GD	VWVRCL	SDHAVFVQSY	YLDREAGRAP	GD	AVHKIYPS	AYIKVFD	LRQ
gi_13959528_sp	GE	GD	VWVRCL	SDHAVFVQSY	YLDREAGRAP	GD	AVHKIYPS	AYIKVFD	LRQ
gi_13959561_sp	GE	GD	VWVRCL	SDHAVFVQSY	YLDREAGRAP	GD	AVHKIYPS	AYIKVFD	LRQ
gi_13959531_sp	GE	GD	VWVRCL	SDHAVFVQSY	YLDREAGRAP	GD	AVHKIYPS	AYIKVFD	LRQ
gi_116256078_sp	GE	GD	VWVRCL	SDHAVFVQSY	YLDREAGRAP	GD	AVHKIYPS	AYIKVFD	LRQ
gi_13959540_sp	PD	G	-	VWAYNR	GEHPIFVNSP	TL	DAPGGR	--	ALVVRKVP
gi_115502451_sp	PD	G	-	VWAYNR	GEHPIFVNSP	TL	DAPGGR	--	ALVVRKVP
gi_13959573_sp	PD	G	-	VWAYNR	SEHPIFVNSP	TL	DIPNCR	--	TLIVRKVM
gi_13959541_sp	VD	G	-	VWVYNR	SSYPIFIKSA	TL	DNPD	SR	--
gi_13959529_sp	VD	G	-	VWVYNR	SSYPIFIKSA	TL	DNPD	SR	--
gi_13959538_sp	VD	G	-	VWVYNR	SSYPIFIKSA	TL	DNPD	SR	--

	510				520				530				540				550			
gi_13633932_sp_	N	Q	E	F	A	Q	L	L	A	Q	S	V	N	H	G	F	E	T	V	
gi_118573879_sp_	N	Q	E	F	A	Q	L	L	A	Q	S	V	N	H	G	F	E	T	V	
gi_13633915_sp_	N	Q	E	F	A	Q	L	L	A	Q	S	V	N	H	G	F	E	T	V	
gi_341942042_sp_	N	Q	E	F	A	Q	L	L	A	Q	S	V	N	H	G	F	E	T	V	
gi_13633872_sp_	N	Q	E	F	A	Q	L	L	A	Q	S	V	N	H	G	F	E	T	E	
gi_13959533_sp_	N	Q	E	F	A	Q	L	L	A	Q	S	V	N	H	G	F	E	A	V	
gi_13959566_sp_	N	Q	E	F	A	Q	L	L	A	Q	S	V	N	H	G	F	E	A	V	
gi_13959559_sp_	N	Q	E	F	A	Q	L	L	A	Q	S	V	N	H	G	F	E	A	V	
gi_82121811_sp_	N	Q	E	F	A	Q	L	L	A	Q	S	V	N	H	G	F	E	A	V	
gi_21264062_sp_	N	Q	E	F	A	Q	L	L	A	Q	S	V	N	H	G	F	E	A	V	
gi_21264049_sp_	N	Q	E	F	A	E	L	L	A	Q	S	V	N	H	G	F	E	A	V	
gi_13959539_sp_	N	Q	L	F	A	Q	L	L	A	Q	S	V	H	H	G	F	E	V	V	
qi_66774168_sp	N	Q	L	F	A	Q	L	L	A	Q	S	V	H	H	G	F	E	V	V	

gi_13959527_sp_	----	NQLFA	QLLAQLLAQS	V----	H----	----	HGFE	----	----	VV
gi_51338669_sp_	----	NQEF	---	AALLAQS	V----	N----	QGFE	----	----	AV
gi_60414603_sp_	----	NQEF	---	AALLAQS	V----	N----	QGFE	----	----	AV
gi_117949830_sp	----	NQEF	---	AALLAQS	V----	N----	QGFE	----	----	AV
gi_13633871_sp_	----	NQEF	---	AALLAQS	V----	N----	QGFE	----	----	AV
gi_13633914_sp_	----	NQEF	---	AALLAQS	V----	N----	QGFE	----	----	AV
gi_75041393_sp_	----	NQEF	---	AALLAQS	V----	N----	QGFE	----	----	AV
gi_110826300_sp	----	NQGF	---	AALLAQS	V----	N----	QGFE	----	----	AV
gi_21264050_sp_	----	NQEF	---	AALLAQS	V----	N----	QGFE	----	----	AV
gi_341942043_sp	CHROM	QQQAA	TAQAAAAQA	AAVAGNIPGP	GSVGGIAPAI	SLSAAAGIGV				
gi_13959528_sp	CHROM	QQQAA	TAQAAAAQA	AAVAGNIPGP	GSVGGIAPAI	SLSAAAGIGV				
gi_13959561_sp	CHROM	QQQAA	TAQAAAAQA	AAVAGNIPGP	GSVGGIAPAI	SLSAAAGIGV				
gi_13959531_sp	CHROM	QQQAA	TAQAAAAQA	AAVAGNIPGP	GSVGGIAPAI	SLSAAAGIGV				
gi_116256078_sp	CHROM	QQQAA	TAQAAAAQA	AAVAGNIPGP	GSVGGIAPAI	SLSAAAGIGV				
gi_13959540_sp_	----	FER	--	SGLLQHA	-----	----	D	----	----	AA
gi_115502451_sp	----	FER	--	SG-LQHA	-----	----	PEPD	----	----	AA
gi_13959573_sp_	----	YEK	--	SCLLQHT	-----	----	AELD	----	----	YA
gi_13959541_sp_	----	YEK	--	AYSLQRP	-----	----	NDHE	----	----	FM
gi_13959529_sp_	----	YEK	--	AYSLQRP	-----	----	NDHE	----	----	FM
gi_13959538_sp	----	YEK	--	AYSLQRP	-----	----	NDHE	----	----	FM

	560	570	580	590	600
gi_13633932_sp	YELTKMCTLR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_118573879_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_13633915_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_341942042_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_13633872_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_13959533_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_13959566_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_13959559_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_82121811_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_21264062_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEVHLHGP	LQWLDKVLTO
gi_21264049_sp	YELTKMCTIR	MSFVKGWGAK	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_13959539_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_66774168_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_13959527_sp	YELTKMCTIR	MSFVKGWGAE	YHRQDVTSTP	CWIEIHLHGP	LQWLDKVLTO
gi_51338669_sp	YQLTRMCTIR	MSFVKGWGAE	YRRQTVTSTP	CWIELHLNGP	LQWLDKVLTO
gi_60414603_sp	YQLTRMCTIR	MSFVKGWGAE	YRRQTVTSTP	CWIELHLNGP	LQWLDKVLTO
gi_117949830_sp	YQLTRMCTIR	MSFVKGWGAE	YRRQTVTSTP	CWIELHLNGP	LQWLDKVLTO
gi_13633871_sp	YQLTRMCTIR	MSFVKGWGAE	YRRQTVTSTP	CWIELHLNGP	LQWLDKVLTO
gi_13633914_sp	YQLTRMCTIR	MSFVKGWGAE	YRRQTVTSTP	CWIELHLNGP	LQWLDKVLTO
gi_75041393_sp	YQLTRMCTIR	MSFVKGWGAE	YRRQTVTSTP	CWIELHLNGP	LQWLDKVLTO
gi_110826300_sp	YQLTRMCTIR	MSFVKGWGAE	YRRQTVTSTP	CWIELHLNGP	LQWLDKVLTO
gi_21264050_sp	YQLTRMCTIR	MSFVKGWGAE	YRRQTVTSTP	CWIELHLNGP	LQWLDKVLTO
gi_341942043_sp	DDLRRLCILR	MSFVKGWGPD	YPRQSIKETP	CWIEIHLHRA	LQLLDEVLHT
gi_13959528_sp	DDLRRLCILR	MSFVKGWGPD	YPRQSIKETP	CWIEIHLHRA	LQLLDEVLHT
gi_13959561_sp	DDLRRLCILR	MSFVKGWGPD	YPRQSIKETP	CWIEIHLHRA	LQLLDEVLHT
gi_13959531_sp	DDLRRLCILR	MSFVKGWGPD	YPRQSIKETP	CWIEIHLHRA	LQLLDEVLHT
gi_116256078_sp	DDLRRLCILR	MSFVKGWGPD	YPRQSIKETP	CWIEIHLHRA	LQLLDEVLHT
gi_13959540_sp	HGPYDPHSVR	ISFAKGWGPC	YSRQFITSCP	CWLEILLNNH	R-----
gi_115502451_sp	DGPYDPNSVR	ISFAKGWGPC	YSRQFITSCP	CWLEILLNNP	R-----
gi_13959573_sp	DGPYDPNSVR	ISFAKGWGPC	YSRQFITSCP	CWLEILLSNH	R-----
gi_13959541_sp	QQPWTGFTVQ	ISFVKGWGQC	YTRQFISSCP	CWLEVIFNSR	-----
gi_13959529_sp	QQPWTGFTVQ	ISFVKGWGQC	YTRQFISSCP	CWLEVIFNSR	-----
gi_13959538_sp	QQPWTGFTVQ	ISFVKGWGQC	YTRQFISSCP	CWLEVIFNSR	-----

610..
gi_13633932_sp	MGSPHNPISSVS
gi_118573879_sp	MGSPHNPISSVS
gi_13633915_sp	MGSPHNPISSVS
gi_341942042_sp	MGSPHNPISSVS
gi_13633872_sp	MGSPHNPISSVS
gi_13959533_sp	MGSPLNPISSVS
gi_13959566_sp	MGSPLNPISSVS
gi_13959559_sp	MGSPLNPISSVS
gi_82121811_sp	MGSPLNPISSVS
gi_21264062_sp	MGSPLNPISSVS
gi_21264049_sp	MGSPHNPISSVS
gi_13959539_sp	MGSPHNPISSVS
gi_66774168_sp	MGSPHNPISSVS
gi_13959527_sp	MGSPHNPISSVS
gi_51338669_sp	MGSPSIRCSSVS
gi_60414603_sp	MGSPSIRCSSVS
gi_117949830_sp	MGSPSVRCSSMS
gi_13633871_sp	MGSPSVRCSSMS

gi_13633914_sp_	M	G	S	P	S	V	R	C	S	S	M	S
gi_75041393_sp_	M	G	S	P	S	V	R	C	S	S	M	S
gi_110826300_sp_	M	G	S	P	S	V	R	C	S	S	M	S
gi_21264050_sp_	M	G	S	P	S	V	R	C	S	S	M	S
gi_341942043_sp_	M	--	P	I	A	D	P	Q	P		L	D
gi_13959528_sp_	M	--	P	I	A	D	P	Q	P		L	D
gi_13959561_sp_	M	--	P	I	A	D	P	Q	P		L	D
gi_13959531_sp_	M	--	P	I	A	D	P	Q	P		L	D
gi_116256078_sp_	M	--	P	I	A	D	P	Q	P		L	D
gi_13959540_sp_	--	--	--	--	--	--	--	--	--	--	--	--
gi_115502451_sp_	--	--	--	--	--	--	--	--	--	--	--	--
gi_13959573_sp_	--	--	--	--	--	--	--	--	--	--	--	--
gi_13959541_sp_	--	--	--	--	--	--	--	--	--	--	--	--
gi_13959529_sp_	--	--	--	--	--	--	--	--	--	--	--	--
gi_13959538_sp_	--	--	--	--	--	--	--	--	--	--	--	--