

	10	20	30	40	50	60	70	80	90	100	110	120		
														
				*	*		*				*			
Nicotiana	----	MPFGRSL	LQKKSLLRVSGEERS	PGIIL	IFHSSGLTSNQWR	----	KLKNLWFP	----	GRTLFRPSCFG	----	TGKKKR	----	FFAQLAHSAGPTCILYLAE-EASDR	89
Petunia	----	PFGKSL	LQKKSLLRVSGEERS	PEIIL	IFHSSGLTSNQWR	----	KLKNLWFP	----	GRTLFRPSSFG	----	TGKKKR	----	FFAQLAHSAGPTCILYLAE-KASDR	88
Citrus	----	MPFGRNL	LQRESLYRVSGEERS	PEIIL	IFHSSGLTSNQWR	----	KLKNLWFP	----	GRTLFRPSCCG	----	TGKKKR	----	FFAQLAHSAGPTCILYLAE-EASDR	89
Vitis	----	MPFGRSL	LQRESLLRVSGEERS	PEIIL	IFHSSGLTSNQWR	----	KLKNLWFP	----	GRTLFRPSCCG	----	TGKKKR	----	FFAQLAHSAGPTCILYLAE-EASDR	89
Aristolochia	----	---	LQRETLLRVSGEERS	PEIIL	IFHSSGLTSNQWR	----	KLKNLWKT	----	GRTLFRPSS-G	----	TGKKKR	----	FFAQLAHSAGPTCILYLAE-EASDR	81
Picea	----	---	IGKRSP	PEIIL	IFHSSGLTSNQWR	----	KLKNLWFP	----	GRTLFRPSCRTDDGELMDRKEKQGW	----	FFAQLAHSAGPTCILYLAE-KAPGNI	81		
Ginkgo	----	---	KISPE	PEIIL	IFHSSGLTSNQWR	----	KLKNLWFP	----	GRTLFRPSCRTDDGELMDRKEKQGW	----	FFAQLAHSAGPTCILYLAE-KAPGNI	79		
Cycas	----	mqPFGRS	ILRSKT---	QDIEKMS	PEIIL	IFHSSGLTSNQWR	----	KLKNLWFP	----	GRTLFRPSCRTDDGELMDRKKKQGW	----	FFAQLAHSAGPTCILYLAE-EAPGNI	95	
Megaceros	----	mqVRK	IFLKKKA---	QEINKQSPYIL	LFHRSGLTSEQWR	----	KLKNLCAIH	----	GGTIFWPSRNR	----	KQAHENKQNSFLAQHASKAGPTCILYLAE-KTPDDT	92		
Physcomitrella	----	MLIQ	QIVIRKKA---	QEIEKSPYIL	LFHCSGLTSRQWR	----	QLKNLCAFR	----	GRTLFPQNYKG	----	KLPHKNQGGTIEQLAYSAGPTCILYLAE-EAPDNT	92		
Marchantia	MQRK	FLRKKALS	LSRALCPQEIKKQY	PYIL	LFHCSGLTSRQWR	----	QTKNILCTIK	----	GKTLFKPKEKK	----	QNILPNNQGDWIAQLASSAGPTCILYLAE-EAPNNT	100		
Chara	----	MKIRK	TLIQKKT---	QHIEKRFPYTI	LFHCSGLTSQQR	----	QLKNLLYVTH	----	GOTLFPQSA	----	FSSTLHDSAGPTCILYLAE-SCEPPGT	81		
Reclinomonas	----	MRKHK	KLIVSEEEY---	VHIFDTFPFVI	VFHYNTTVVDSFSL	----	KKKQELQQFIENACIQKNIKQIPFINFKVIKKN	----	LMKSSLEKSRVKNINLFS	----	SGPTCILYLAE-ANSFIC	107		
Rickettsia	----	MLRSE	KPVAVEDIV---	NIYKESPSVI	ITHYHGLTVSQVS	----	SLREELKS	----	KEAGFKVKVNT	----	LAKIAAKQTGLDSITNLFAGPTCILYLAE-PVEM	89		
Escherichia	----	MALNL	QDKQAIVAEVS---	EVAKGALSAV	VADSRGVTVDKMT	----	ELRKAGRE	----	AGVYMRVRNT	----	LLRRAVEGTFECLKDFAVGP	92		
Thermotoga	----	LTRQ	KELIVKEMS---	EIRKKTSLIL	FADFLGFTVADLT	----	ELRSRLREKYG	----	DGARFRVVKNT	----	LLNLALKNAE	94		

	130	140	150	160	170	180	190	200	210	220	230	
												
Nicotiana	----	LEFLPSWDSM	----	DQDLILLYGQYRSTLVDHMDVEKAS	NLD	----	EIETSLFHFYLPSSYL	CFVCS	WEEFDL	----	GIPPK	159
Petunia	----	LEFLPSWDSM	----	DQDLILLYGQYRSTLVDHMDVEKAS	NLD	----	EIETSLFHFYLPSSYL	CFVCS	WEEFDL	----	GIPPK	158
Citrus	----	LKLLPSWDSM	----	DQDLILLYGQYRSTLVDHMDVEKAS	DFD	----	ELETSLFHFYLPSSYL	CFVCS	QEEFDL	FNLMG	PSK	162
Vitis	----	LEFLPSWDSM	----	DQDLILLYGQYRSTLVDHMDVEKAS	FHFD	----	ELETSLFHFDLP	PSYLCFVCS	REELQSR	DDT	----	158
Aristolochia	----	LEFLPNWDSM	----	DQDLILLYGQYRSSLDHMDVEKAS	DFE	----	KLETSLFHFDLP	PSYLCFVCS	REEFDL	----	----	146
Picea	----	WSEFLPSRDSM	----	SRNIIILYGQYQYTLVDHMDVEKAS	LDL	----	NESELETFLFHFLPSSYL	CFVCS	PI	----	----	146
Ginkgo	----	WSEFLPSRDSV	----	NRNIIILYGQYQSTLVDHMDVEKAS	LDL	----	NESELETSLFHFLPSSYL	CFVCS	PI	----	----	144
Cycas	KRW	HYVSI	----	YMEFLPSWDSM	----	NQNLLILYGQYQSTLVDHMDVEKAS	LDL	----	NESGLETFIFHFLPSSYL	CFVCS	PI	168
Megaceros	----	WSQLPSA-SY	----	NQNLLILYGLGSLTLNLYMDI	YEAADLE	----	ITSVFKESEFWLLFHPSY	ELCLCFN	QPTK	----	----	158
Physcomitrella	----	WSQLPSA-SY	----	NQNLLILYGLQSLTLNLMMDIKKA	ANLE	----	ITSVFQQLFELIFYPYNSLCFC	INKPIDASPTIQEKTQGGPKAEDTHCRNL	GPHFAN	----	----	187
Marchantia	----	WSQLPSA-SY	----	SONLVLLYGQDRSTVENHMDIKKAT	TLE	----	TTSVFQQLFGFMFLPGACFLFLVEQ	ANGRK	----	----	----	168
Chara	KCS	NSDISAELLDTKWPKLQNV	----	SYLESQKNLVLLYGQYQYTLNLMMDIKKST	TLE	----	KVSISQOFFFYMLYPHSL	CGCIN	QLT	----	----	165
Reclinomonas	----	DKII-EWKKK	----	NKNELILGGKYETNLVSVADLE	ITKI	----	SLNKEDEIVKNISFINSSVQL	TQSLSONQVSI	LNLLQVLSQKEDSKKIL	----	----	193
Rickettsia	----	ARLVNFANS	----	NDNLKITGGIVDNHLLDAYSIKELSKLP	----	SLHELRGKIVGLLQAPATKVVGVLQATSSSIARVIAHA	AIKH	----	----	----	----	169
Escherichia	----	ARLF	EVKAFAKA---	NPASQIDRLATLP-TYEEA	IARLMATMK	----	----	----	EASAGKLVRTLA	AVRDAKEAA	----	165
Thermotoga	----	VKI	LYNFYDKDK	----	ADLSRLKGGFLEGKKFTAE	VENIAKLP	----	SKEELYAMLVGRVKAPITGLV	FALS	GILRN	LVVYLNAIKEKKSE	178