

	10	20	30	40	50	60
Human	MADPEVCGFITKILCAHGGRMALDALLQEIALSEPOQICEVL	LOVAGPDRFV	VLE	TGGEAGI		
Chimp	MADPEVCGFITKILCAHGGRMALDALLQEIALSEROIC	CEVLQVAGPDRFV	VLE	TGGEAGI		
Bonobo	MADPEVCGFITKILCAHGGRMALDALLQEIALSEROIC	CEVLQVAGPDRFV	VLE	TGGEAGI		
Gorilla	MADPEVCGFITKILCAHGGRMALDALLQEIALSEROIC	CEVLQVAGPDRFV	VLE	TGGEAGI		
Orangutan	MADPEVCGFITKILCAHGGRMALDALLQEIVLPEPOQICEVL	QVAGPDRFV	VLE	TGGEAGI		
Gibbon	MADPEVCGFITKILCAHGGRMALDALLQEIALSEROIC	CEVLQVAGPDRFV	VLE	TGGEAGI		
Patas monkey	MADPEVCGFITKILCAHGGRMALDALLQEIALSEROIC	REVLQVAGPDRFV	VLE	TSSEAGI		
African green monkey	MADPEVCGFITKILCAHGGRMALDALLQEIALSEROIC	REVLQVAGPDRFV	VLE	TSGEAGI		
Rhesus macaque	MADPEVCGFITKILCAHGGRMALDALLQEIALSEROIC	CEVLQVAGPDRFV	VLE	TSGEAGI		
Titi monkey	MADPEVCGFITKILCAHGRGRMAMDDLLQEIKLSEAOIQHEV	LQVAGPDRFV	VLE	TCGVAGV		
Tamarin	MADPEVCGFITKILCAHGRGRMAMDDLLQEIKLSEAOIQCEV	LQVAGPDRFV	VLE	TGGVAGV		
Spider monkey	MADPEVCGFITKILCAHGRGRMAMDDLLQEIKLSEAOIQCEV	LQVAGPDRFV	VLE	TRGVAGV		
Woolly monkey	MADPEVCGFITKILCAHGRGRMAMDDLLQEIKLSEAOIQCEV	LQVAGPDRFV	VLE	TGGVAGV		
Galago	MADPEVCGFITKILCAHGRGRMSDEELLREIALPEAQI	LE	EQAGPDRFV	VLE	TGSRAGV	
Rat	MADPGVCGFITKILCAHGRGRMLTEELLGEIRLPEAOIQYEL	LE	ETAGPDRFV	VLE	TGGQAGI	
Mouse	MTDPPEVCGFITKILCAHGRGRMLTEELLGEISLPEAOIQYEL	LKAA	AGPDRFV	VLE	TGDQAGI	
Squirrel	MADPGVCGFITKILCAHGRGRMSDEALLDKIALSEAOIQCEV	LEAAAGPDRFV	VLE	TGSRAGV		
Sheep	MADPGVCGFITKILCAHGRGRMALELLREMOLSEAOIQCEV	LE	EAGPDRFV	VLE	MGGKEGV	
Pig	MADPGVCGFITKILCAHGRGRMALELLQKVLSSEAQI	CEVLTTAGPDRFV	VLE	TGGKAGV		
Dog	MADPEVCGFITKILCAHGRGRMALDALLQEIALSEAQIREV	LEAAGPDRFV	VLE	TGDRAGV		
	70 NLS.	80	90	100	110	120
Human	TRSVVAATRARVCRKYQCRPCDNLHLCKLNLLGRCN	YSQS	ERNLCKYSHE	VLS	EENFKV	
Chimp	TRSVVAATRARVCRKYQCRSCDNLHLCKLNLLGRCN	YSKS	ERNSCKYSHE	VLS	EENFEV	
Bonobo	TRSVVAATRARVCRKYQCRPCDNLHLCKLNLLGRCN	YSKS	ERNSCKYSHE	VLS	EENFEV	
Gorilla	TRSVVAATRARVCRKYQCRPCDNLHLCKLNLLGRCN	YSQS	ERNLCKYSHE	VLS	EENFRV	
Orangutan	TRSVVAATRARVCRKYQCRPCDNLHLCKLNLLGRCN	YSQS	ERNLCKYSHE	VLS	EENFRV	
Gibbon	TRSVVAATRARVCRKYQCRPCDNLHLCKLNLLGRCN	YSQS	ERNLCKYSHE	VLS	EENFRV	
Patas monkey	TRSVVAATRARVCRKYQCRPCDNLHLCKLNLLGRCN	YSQS	ERNLCKYSHE	VLS	EENFRV	
African green monkey	TRSVVAATRARVCRKYQCRPCDNLHLCKLNLLGRCN	YSQS	ERNLCKYSHE	VLS	EENFRV	
Rhesus macaque	TRSVVAATRARVCRKYQCRPCDNLHLCKLNLLGRCN	YSQS	ERNLCKYSHE	VLS	EENFRV	
Titi monkey	TRSVVAATRARVCRKYCRSPCDNLHLCKLNLLGRCN	YSQS	DRNLCKYSHE	VLS	EDNFRV	
Tamarin	TRSVVAATRARVCRKYCRSPCDNLHLCKLNLLGRCN	YSQS	DRNLCKYSHE	VLS	EDNFRV	
Spider monkey	TRSVVAATRARVCRKYCRSPCDNLHLCKLNLLGRCN	YSQS	DRNLCKYSHE	VLS	EDNFRV	
Woolly monkey	TRSVVAATRARVCRKYCRSPCDNLHLCKLNLLGRCN	YSQS	DRNLCKYSHE	VLS	EDNFRV	
Galago	TRSVVAATRARVCRKYCRSPCDNLHLCKLNLLGRCN	YSQS	ERNLCKYSHE	VLS	EEENRNI	
Rat	TRSVVAATRARVCRKYCRSPCDNLHLCKLNLLGRCN	HYAQS	QRNLCKYSHE	VLS	EQNFQI	
Mouse	TRSVVAATRARVCRKYCRSPCDNLHLCKLNLLGRCN	HYAQS	QRNLCKYSHE	VLS	EQNFQV	
Squirrel	TRSVVAATRARVCRKYCRSPAGEDNLHLCKLNLLGRCN	HYQS	SERNLCKYSHE	VLS	EKNFQV	
Sheep	TRSVVAATRARVCRKYCNPKCGNLHLCKLNLLGRCN	HYQS	SERNLCKYSHE	VLS	EDNFRV	
Pig	TRSVVAATRARVCRKYCNPKCGNLHLCKLNLLGRCN	HYQS	SERNLCKYSHE	VLS	EDNFRV	
Dog	TRA VVAATRARVCRKFCQCRPCEDLHLCKLNLLGRCN	HYSQAE	ERNLCKYSHE	VLS	EEENFKV	
	130	140	150	160	170	180
Human	LKNHESGLNKKEELAVLQLSDPFFMPEICKSYKGEGRQQI	CNQOPPC	CSRLH	I	CDHFTRG	
Chimp	LKOHESGLNKKEELAVLQLSDPFFMPEICKSYKGEGRQQI	CNQOPPC	CSRLH	I	CDHFTRG	
Bonobo	LKHESGLNKKEELAVLQLSDPFFMPEICKSYKGEGRQQI	CNQOPPC	CSRLH	I	CDHFTRG	
Gorilla	LKNHESGLNKKEELAVLQLSDPFFMPEICKSYKGEGRQQI	CNQOPPC	CSRLH	I	CDHFTRG	
Orangutan	LKNHESGLNKKEELAVLQLSDPFFMPEICKSYKGEGRQQI	CNQOPPC	CSRLH	I	CDHFTRG	
Gibbon	LKNHESGLNKKEELAVLQLSDPFFMPEICKSYKGEGRQQI	CNQOPPC	CSRLH	I	CDHFTRG	
Patas monkey	LKNHESGLNKKEELAVLQLSDPFFMPEICKSYKGEGRQQI	CNQOPPC	CSRLH	I	CDHFTRG	
African green monkey	LKNHESGLNKKEELAVLQLSDPFFMPEICKSYKGEGRQQI	CNQOPPC	CSRLH	I	CDHFTRG	
Rhesus macaque	LKNHESGLNKKEELAVLQLSDPFFMPEICKSYKGEGRQQI	CNQOPPC	CSRLH	I	CDHFTRG	
Titi monkey	LKIHELSGLNQEELKVLLVQSDPFFMPEICKSYKGEGRQQI	CSQOPPC	CARLH	I	CEHFTRG	
Tamarin	LKIHELSGLNQEELKVLLVQSDPFFMPEICKSYKGEGRQQI	CSQOPPC	CARLH	I	CEHFTRG	
Spider monkey	LKNHESGLNQEELAVLQLSDPFFMPEICKSYKGEGRQQI	CSQOPPC	GRLH	I	CDHFTRG	
Woolly monkey	LKNHESGLNQEELAVLQLSDPFFMPEICKSYKGEGRQQI	CSQOPPC	GRLH	I	CDHFTRG	
Galago	LKLHESGLNQEELAVLQLSDPFFMPEICKSYKGEGRQQI	CSQOPQCD	DLRH	I	CDHFTRG	
Rat	LKNHESGLNQEELACLQLQSDPFFMPEICKSYKGEGRQQT	CGQPQPC	ERLH	I	CEHFTRG	
Mouse	LKNHESGLNQEELAVLQLQSDPFFMPEICKSYKGEGRQQT	CGQPQPC	ERLH	I	CEHFTRG	
Squirrel	LKNHESGLNQEELAVLQLQSDPFFMPEICKSYKGEGRQQT	CGQPQPC	ERLH	I	CEHFTRG	
Sheep	LTNHGSLGNEELAVLQLQSDPFFMPEICKSYKGEGRQQT	CGQPQPC	ERLHV	C	CEHFTRG	
Pig	LNSHESGLNKEELAVLQLQSDPFFMPEICKSYKGEGRQQT	CGQPQPC	ERLHV	C	CEHFTRG	
Dog	LKNHESGLNKEELAVLQLQSDPFFLPEICKSYKGEGRQTV	CDKYPOC	ERLH	I	CEHFTRG	
	190	200	210	220	230	
Human	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Chimp	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Bonobo	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Gorilla	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Orangutan	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Gibbon	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Patas monkey	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
African green monkey	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Rhesus macaque	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Titi monkey	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Tamarin	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Spider monkey	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Woolly monkey	NCRFPNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Galago	NCSYPLNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Rat	NCSYPLNCDRSHNLMDRKVLA1MREHGLNPDVVQNIQDI	NSKHMQKN	PPGPR			
Mouse	NCSYPLNCDRSHNLMDRKVLA1MREHGLSSDVVQNIQDI	NSKHMQKN	PPGPR			
Squirrel	NCSYPLNCDRSHNLMDRKVLA1MREHGLSSDVVQNIQDI	NSKHMQKN	PPGPR			
Sheep	NCGYANCERSHNLMDRRVLA1MREHGLSSSVVQNIQDI	NSRHRKKPSAWK				
Pig	NCSYPLNCDRSHNLMDRKVLA1MREHGLSSSVVQNIQDI	NSRHRRNKPSCAR				
Dog	NCGYANCERSHNLMDRRVLA1MREHGLSPSVVQNIQDI	FNKHSRKHKSGYR				

Kerns et al Supplementary Figure 2