



	20	30	40	50	60	70	80	90	100																						
CD47_HUMAN	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VPTD	S	SAKTEV	Q	LLK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT				
Northern_greater_galago	CN	ETIS	CFV	NME	EN	T	EVV	V	KFKGKD	T	TF	Q	SD	NR	S	HDSA	K	TSG	KI	E	LLK	DA	T	MHQ	SNAV	..	PGNY	CEVTELT			
Coquerels_sifaka	CN	ETVVI	CFV	NIE	EN	L	NEV	V	KFKGKD	T	TF	Q	QV	NR	S	TYSG	N	SAKTEV	P	E	LLK	DA	S	KMDK	SDAV	..	LGNY	CEVTELT			
Common_marmoset	CN	ETVVI	CFV	NME	EN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VPSG	N	SAKTEV	R	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Black-capped_squirrel_monkey	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	F	LP	SD	K	TAKI	E	V	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT
Panamanian_white-faced_capuchin	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	LP	SG	N	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT		
Nancy_Mas_night_monkey	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VPSG	N	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Black_snub-nosed_monkey	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VSTN	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Golden_snub-nosed_monkey	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VSTN	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Angolan_Colobus	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VSTN	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Rhesus_macaque	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VSTN	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Green_monkey	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VSTN	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Sooty_mangabey	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VSTN	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Olive_baboon	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VSTN	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Crab-eating_macaque	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VSTN	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Southern_pig-tailed_macaque	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VSTN	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Drill	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VSTN	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Northern_white-cheeked_gibbon	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VPTD	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Sumatran_orangutan	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VPTD	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Western_gorilla	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VPTD	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Chimpanzee	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VPTD	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
Bonobo	CN	ETVVI	CFV	NME	AQN	T	EVV	V	KFKGRD	T	TF	Q	AL	NR	S	VPTD	S	SAKTEV	Q	L	LK	DA	S	KMDK	SDAV	SHT	GNY	CEVTELT			
African_elephant	CN	ETLVI	CFV	NVE	TKL	E	LVY	V	KFKGRD	T	TF	Q	SR	NR	S	PSSN	H	SAE	TP	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT		
Golden_hamster	CN	ETVVI	CFV	NVE	AS	T	EMV	V	KLNKTY	I	Y	Q	SK	NR	S	VETN	S	SAKISL	D	L	LK	DA	S	KMDK	QAV	..	PGNY	CEVTELT			
Mouse	CN	ETVVI	CFV	NVE	AS	T	EMV	V	KLNKSY	I	Y	Q	SK	NS	T	TD	QN	H	SAKISV	D	L	LK	DA	S	KMDK	RDAM	..	PGNY	CEVTELT		
Rat	CN	ETVVI	CFV	NVE	AS	T	EMV	V	KLNKSY	I	Y	Q	SK	NS	T	RE	QN	H	SAKISV	D	L	LK	DA	S	KMDK	RDAM	..	PGNY	CEVTELT		
Guinea_pig	CN	KTIVV	CFV	NVE	AS	T	EMV	V	KLNKTY	I	Y	Q	SK	NR	S	AKNK	S	SAKTEV	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT			
Naked_mole_rat	CN	KTIVV	CFV	NVE	AS	T	EMV	V	KLNKTY	I	Y	Q	SK	NR	S	ANLN	S	SAKTEV	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT			
American_beaver	CN	ETVVI	CFV	NVE	AS	T	EMV	V	KLNKTY	I	Y	Q	SK	NR	S	ADKN	S	SAKTEV	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT			
Ords_kangaroo_rat	CN	ETVVI	CFV	NVE	AS	T	EMV	V	KLNKTY	I	Y	Q	SK	NR	S	ADSN	S	SAKTEV	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT			
Horse	CN	KTIVV	CFV	NVE	AS	T	EMV	V	KLNKTY	I	Y	Q	SK	NR	S	ADSN	S	SAKTEV	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT			
Western_European_hedgehog	CN	KTIVV	CFV	NVE	AS	T	EMV	V	KLNKTY	I	Y	Q	SK	NR	S	ADSN	S	SAKTEV	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT			
Cat	CN	KTIVV	CFV	NVE	AS	T	EMV	V	KLNKTY	I	Y	Q	SK	NR	S	ADSN	S	SAKTEV	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT			
Weddell_seal	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
Dog	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
Red_fox	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
Hawaiian_monk_seal	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
American_black_bear	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
Grizzly_bear	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
Northern_fur_seal	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
Pacific_walrus	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
Giant_panda	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
Polar_bear	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
European_domestic_ferret	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
Sea_otter	CN	ESVVI	CFV	NVE	AT	N	I	EMV	V	KFKGKD	T	TF	Q	AL	NR	S	RDNK	K	STKI	IP	K	L	LK	DA	S	KMDK	EDVK	..	PGNY	CEVTELT	
Little_brown_bat	CN	KTIVV	CFV	NVE	AS	T	EMV	V	KLNKTY	I	Y	Q	SK	NR	S	PNSN	S	SAF	TP	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT		
Hybrid_cattle	CN	OTVVI	CFV	NVE	TKN	I	ELV	V	KFKGEN	I	FF	Q	SR	NR	S	PSSN	S	SAE	AP	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT		
Cow	CN	OTVVI	CFV	NVE	TKN	I	ELV	V	KFKGEN	I	FF	Q	SR	NR	S	PSSN	S	SAE	AP	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT		
Sheep	CN	OTVVI	CFV	NVE	TKN	I	ELV	V	KFKGEN	I	FF	Q	SR	NR	S	PSSN	S	SAE	AP	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT		
Goat	CN	OTVVI	CFV	NVE	TKN	I	ELV	V	KFKGEN	I	FF	Q	SR	NR	S	PSSN	S	SAE	AP	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT		
Pig	CN	OTVVI	CFV	NVE	TKN	I	ELV	V	KFKGEN	I	FF	Q	SR	NR	S	PSSN	S	SAE	AP	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT		
Atlantic_bottle-nosed_dolphin	CN	ETVVI	CFV	NIE	AKS	I	ELV	V	KFKGKD	T	TF	Q	AL	NR	S	SSDI	H	SAKISL	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT			
Yangtze_finless_porpoise	CN	ETVVI	CFV	NIE	AKS	I	ELV	V	KFKGKD	T	TF	Q	AL	NR	S	SSDI	H	SAKISL	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT			
Yangtze_river_dolphin	CN	ETVVI	CFV	NIE	AKS	I	ELV	V	KFKGKD	T	TF	Q	AL	NR	S	SSDI	H	SAKISL	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT			
Beluga_whale	CN	ETVVI	CFV	NIE	AKS	I	ELV	V	KFKGKD	T	TF	Q	AL	NR	S	SSDI	H	SAKISL	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT			
North_pacific_minke_whale	CN	ETVVI	CFV	NIE	AKS	I	ELV	V	KFKGKD	T	TF	Q	AL	NR	S	SSDI	H	SAKISL	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT			
Sperm_whale	CN	ETVVI	CFV	NIE	AKS	I	ELV	V	KFKGKD	T	TF	Q	AL	NR	S	SSDI	H	SAKISL	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT			
Duckbill	CN	HSVLI	CFV	NIE	AKS	I	ELV	V	KFKGKD	T	TF	Q	AL	NR	S	SSDI	H	SAKISL	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT			
Common	CN	ETVVI	CFV	NIE	AKS	I	ELV	V	KFKGKD	T	TF	Q	AL	NR	S	SSDI	H	SAKISL	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT			
Tasmanian	CN	ETVVI	CFV	NIE	AKS	I	ELV	V	KFKGKD	T	TF	Q	AL	NR	S	SSDI	H	SAKISL	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT			
Indian_muntjac	CN	OTVVI	CFV	NVE	TKN	I	ELV	V	KFKGEN	I	FF	Q	SR	NR	S	PSSN	S	SAE	AP	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT		
Reeves_muntjac	CN	OTVVI	CFV	NVE	TKN	I	ELV	V	KFKGEN	I	FF	Q	SR	NR	S	PSSN	S	SAE	AP	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT		
Domestic_yak	CN	OTVVI	CFV	NVE	TKN	I	ELV	V	KFKGEN	I	FF	Q	SR	NR	S	PSSN	S	SAE	AP	E	L	LK	DA	S	KMDK	SDAV	..	PGNY	CEVTELT		
Spotted_hyena	CN	ETVVI	CFV	NIE	AKS	I	ELV	V	KFKGKD	T	TF																				

	110	120	130	140	150	160
CD47_HUMAN	REGETIELKRYV	VSWSFSPN	ELIVIP	FALIFWGFG	KTKYRS	GGMDKTIALLVAGLV
Northern_greater_galago	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GRMDKTIALLVAGLL
Coquerels_sifaka	REGETIEVKYRI	VPWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	SHMDKTIALLVAGLV
Common_marmoset	REGETIEVKYRI	GTLGDRWKSCHLTNKERKEIEGIVQ	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLT
Black-capped_squirrel_monkey	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLT
Panamanian_white-faced_capuchin	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLT
Nancy_Mas_night_monkey	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLT
Black_snub-nosed_monkey	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Golden_snub-nosed_monkey	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Angolan_Colobus	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Rhesus_macaque	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Green_monkey	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Sooty_mangabey	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Olive_baboon	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Crab-eating_macaque	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Southern_pig-tailed_macaque	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Drill	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Northern_white-cheeked_gibbon	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Sumatran_orangutan	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLI
Western_gorilla	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Chimpanzee	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
Bonobo	REGETIEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	KTKYRS	GGMDKTIALLVAGLM
African_elephant	REGETTQLKYRV	VSWSFQK	ELIVIP	FALLIFWGFG	LLNSK	SRMNQETISLVLAGLF
Golden_hamster	REGKTVEIKYRI	ASWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	TRTNKRIALLVAGLV
Mouse	REGKTVEIKNRT	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SHTNKRIALLVAGLV
Rat	REGKTVEIKNRP	VSWSFTN	ELIVIP	FALLIFWGFG	LTKYRS	SHTNKRIALLVAGLA
Guinea_pig	REGETVVEVKYRM	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NCTNMKIIALLVAGLL
Naked_mole_rat	REGETVVEVKYRM	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NCTSTKIIALLVAGLL
American_beaver	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NRTNKRIALLVAGLV
Ords_kangaroo_rat	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NRTNKRIALLVAGLV
Horse	REGETVVEVKYRV	VSWSFK	ELIVIP	FALLIFWGFG	LTKYRS	SDTKKRIALLVAGLV
Western_European_hedgehog	REGETVVEVKYRT	VPWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NQTKKRIALLVAGLL
Cat	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLMKKRIALLVAGLV
Weddell_seal	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLMKKRIALLVAGLV
Dog	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SIMKKRIALLVAGLV
Red_fox	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SIMKKRIALLVAGLV
Hawaiian_monk_seal	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLVKKRIALLVAGLV
American_black_bear	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLVKKRIALLVAGLV
Grizzly_bear	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLVKKRIALLVAGLV
Northern_fur_seal	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLVKKRIALLVAGLV
Pacific_walrus	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLVKKRIALLVAGLV
Giant_panda	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLVKKRIALLVAGLV
Polar_bear	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLVKKRIALLVAGLV
European_domestic_ferret	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLVKKRIALLVAGLV
Sea_otter	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLVKKRIALLVAGLV
Little_brown_bat	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NASVTKKRIALLVAGLV
Hybrid_cattle	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NYTKKRIALLVAGLV
Cow	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NYTKKRIALLVAGLV
Sheep	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NYTKKRIALLVAGLV
Goat	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NYTKKRIALLVAGLV
Pig	REGETVVEVKRRF	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLM
Atlantic_bottle-nosed_dolphin	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Yangtze_finless_porpoise	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Yangtze_river_dolphin	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Beluga_whale	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
North_pacific_minke_whale	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Sperm_whale	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Duckbill	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Common	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Tasmanian	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Indian_muntjac	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Reeves_muntjac	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Domestic_yak	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SYTKKRIALLVAGLV
Spotted_hyena	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLMKKRIALLVAGLV
Iberian_lynx	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLMKKRIALLVAGLV
Meerkat	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLMKKRIALLVAGLV
Canada_lynx	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLMKKRIALLVAGLV
Greater_horseshoe_bat	REGDTVVEVKYRL	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SIMKKRIALLVAGLV
Groundhog	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NCTNMKIIALLVAGLV
West_Indian_manatee	REGETVVEVKYRV	VSWSFK	ELIVIP	FALLIFWGFG	LTKYRS	DPMKGGKRIALLVAGLV
American_mink	REGETVVEVKYRI	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	SLVKKRIALLVAGLV
European_rabbit	REGETVVEVKYRV	VSWSFSPN	ELIVIP	FALLIFWGFG	LTKYRS	NRTNKRIALLVAGLV
consensus>70	REGETVVEVKYRV	vsWfSpnEnILi!	Fpi.AiLL.WGqFGi	tlky.s	....	ekti.l.v.gl

	170	180	190	200	210	220	230	240	250
CD47_HUMAN	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Northern_greater_galago	VTIIIVGAILFVPPGEYS	VKNA	TGGL	YTS	G	LI	LI	LI	LI
Coquerels_sifaka	TAVIIVGAILFVPPGEYS	VKNA	TGGL	YTS	G	LI	LI	LI	LI
Common_marmoset	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Black-capped_squirrel_monkey	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Panamanian_white-faced_capuchin	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Nancy_Mas_night_monkey	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Black_snub-nosed_monkey	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Golden_snub-nosed_monkey	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Angolan_Colobus	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Rhesus_macaque	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Green_monkey	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Sooty_mangabey	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Olive_baboon	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Crab-eating_macaque	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Southern_pig-tailed_macaque	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Drill	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Northern_white-cheeked_gibbon	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Sumatran_orangutan	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Western_gorilla	ITVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Chimpanzee	VTVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Bonobo	VTVIVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
African_elephant	LTVMVIVGAILFVPPGEYS	LKNA	TGGL	YTS	G	LI	LI	LI	LI
Golden_hamster	LTAVIVVGAAILLIPG	NPV	KSA	ISIG	G	LI	LI	LI	LI
Mouse	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Rat	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Guinea_pig	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Naked_mole_rat	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
American_beaver	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Ords_kangaroo_rat	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Horse	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Western_European_hedgehog	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Cat	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Weddell_seal	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Dog	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Red_fox	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Hawaiian_monk_seal	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
American_black_bear	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Grizzly_bear	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Northern_fur_seal	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Pacific_walrus	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Giant_panda	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Polar_bear	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
European_domestic_ferret	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Sea_otter	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Little_brown_bat	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Hybrid_cattle	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Cow	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Sheep	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Goat	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Pig	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Atlantic_bottle-nosed_dolphin	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Yangtze_finless_porpoise	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Yangtze_river_dolphin	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Beluga_whale	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
North_pacific_minke_whale	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Sperm_whale	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Duckbill	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Common	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Tasmanian	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Indian_muntjac	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Reeves_muntjac	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Domestic_yak	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Spotted_hyena	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Iberian_lynx	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Meerkat	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Canada_lynx	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Greater_horseshoe_bat	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
Groundhog	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
West_Indian_manatee	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
American_mink	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
European_rabbit	LTAVIVVGAAILLIPG	KPV	KNA	ISIG	G	LI	LI	LI	LI
consensus>70	.tiivivgailfvppgeys	.kna	.GLGLi	.v	.t	.iLiLiL	.Y	.vf	. . . . . gm . f . !aLi.Qv1.yv1.vvG1sLCv . . C.p.hGPl\$I



CD47_HUMAN	DE
Northern_greater_galago	DE
Coquerels_sifaka	DE
Common_marmoset	DE
Black-capped_squirrel_monkey	DE
Panamanian_white-faced_capuchin	DE
Nancy_Mas_night_monkey	DE
Black_snub-nosed_monkey	DGKYKLHLIIIDQLKHGH
Golden_snub-nosed_monkey	DE
Angolan_Colobus	DE
Rhesus_macaque	S
Green_monkey	DE
Sooty_mangabey	E
Olive_baboon	DE
Crab-eating_macaque	DE
Southern_pig-tailed_macaque	DE
Drill	DE
Northern_white-cheeked_gibbon	DE
Sumatran_orangutan	DE
Western_gorilla	DE
Chimpanzee	DE
Bonobo	DE
African_elephant	K
Golden_hamster	DE
Mouse	R
Rat	N
Guinea_pig	EE
Naked_mole_rat	EE
American_beaver	DE
Ords_kangaroo_rat	DE
Horse	DAARCSRCVCLSN
Western_European_hedgehog	DE
Cat	N
Weddell_seal	L
Dog	DE
Red_fox	DE
Hawaiian_monk_seal	E
American_black_bear	DE
Grizzly_bear	DE
Northern_fur_seal	DE
Pacific_walrus	DE
Giant_panda	DG
Polar_bear	DE
European_domestic_ferret	DE
Sea_otter	DE
Little_brown_bat	DE
Hybrid_cattle	N
Cow	N
Sheep	DE
Goat	DE
Pig	DE
Atlantic_bottle-nosed_dolphin	DE
Yangtze_finless_porpoise	E
Yangtze_river_dolphin	DE
Beluga_whale	DGKYKMHQL
North_pacific_minke_whale	DE
Sperm_whale	DE
Duckbill	DG
Common	DE
Tasmanian	DG
Indian_muntjac	DE
Reeves_muntjac	DE
Domestic_yak	N
Spotted_hyena	DE
Iberian lynx	S
Meerkat	DE
Canada lynx	DE
Greater_horseshoe_bat	DE
Groundhog	DE
West_Indian_manatee	DGKYTMYLQ F
American_mink	DE
European_rabbit	DE
consensus>70	DE