

	First 23 amino acids removed from dataset					A39P	F53Y K51R	V65M K66E	V83L	V93I T94I	M97L	R119W		
human	MDPYIQMSS	KGNLPSILDV	HVN	VGRSSV	PGKMKGRKAR	WSVRPSDMAK	KTFNPIRAIV	DNMKVKPNPN	KTMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGFLSSRE	[120]
mouse	MDSYVIQTNV	NDSLPSVLVD	RVNI	I GGRSSV	QGRAKGRKAR	WNVRPSDMSN	KTFNPIRAIV	DNMKVKPNPN	KTVISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
rat	MDSYVIQTDV	DDSLSSVLVD	HVN	I GGRNSV	QGRKKGRKAR	WDVRPSDMSN	KTFNPIRAIV	DNMKVKPNPN	KTVISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
cow	MDPYVIQMQD	HGSLPSVLVD	HVN	VAGRSSV	LGVKSRKAR	WSVRPSDMSN	KTFNPIRAIV	DNMKVKPNPN	KTMIALSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
dog	MDPYVIEMNS	NSNLPSVLVD	HVN	I GGRSSL	PGKMKGRKAR	WSVRPSDMSN	KTFNPIRAIV	DSMKVKPNPN	KATISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
pig	MDPYVIQMHG	HGSLPSVLVD	HVN	IAGRIPV	PGKMKGRKAR	WSVRPSDMSN	KTCNPIRAIV	DSMKVKPNPN	KTIIISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
panda	MDPYVIQMNS	NSNLPSVLVD	HVN	I GGRSSL	PGKMKGRKAR	WSVKPSDMSN	KTFNPIRAIV	DSMKVKPNPN	KTMIALSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
horse	MDPYVIQMTG	SGNLPSVLDM	HVN	I SGRSSA	PGKMKGRKAR	WSVRPSDMSN	KTFNPIRAIV	DNMKVKPNPN	KTMIALSIGD	PTVFGNLTPT	PEVTQALKDA	VDSGKYNGYA	PTIGYLSRE	[120]
<i>Cynopterus sphinx</i>	MD-----S	NGDLPSILGV	HMH	INGRSSA	PEKVKGKRPR	WSVKPSDMAN	RTYNPIRAIV	DSMKMEPNPD	KTITISLSIGD	PTLSGNLTPT	PEIIQALKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Rousettus leschenaultii</i>	MD-----S	GDGLPFLLDV	HVS	VGRSSV	PEKVGKROPG	WSVRPSDMAN	RTYNPIRAIV	DNMKLEPNPD	KPMISLSIGD	PTLFGNLTPT	PEIIQALKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Eonycteris spelaea</i>	MD-----S	SSDLPFLLDV	HVS	VSGRSPV	PEKVKGKRTE	WSVRPSDMAN	RTYNPIRAIV	DSMKMEPNPD	KTMIALSIGD	PTLFGNLTPT	PEIIQALKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Pteropus vampyrus</i>	MD-----S	KGDLPSVLVD	HIN	INGRSSV	SEKVKGKRPR	WSVRPSDMAN	RTYNPIRAIV	DSMKMEPNPD	KTIPLSIGD	PTLCGNLTPT	PEIIKALKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Rhinolophus ferrumequinum</i>	MDPYVIQMNG	NSNLPSVLVD	HVN	I GGKNSK	QEKGGKGRKAR	WSVRPSDMAN	NTFNPIRTIV	DNMKVKPNPH	KTMIALSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Rhinolophus pusillus</i>	MDPYMIQMNG	NGNLPSVLVD	HVN	I GGKNSK	QEKVKGRKAR	WSVKPSDMSN	KTFNPIRTIV	DNMKVKPNPN	KAMIALSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Hipposideros armiger</i>	MDPYVIQMNS	NGNFPVLVD	HVN	I GGKNSK	QGVKGRKAR	WSVKPSEMSN	KTFNPIRTIV	DGMKVKPNPN	KTMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Hipposideros pratti</i>	MDPYVIQMNS	NGNFPVLVD	HVN	I GGKNSK	QGVKGRKAR	WSVKPSEMSN	KTFNPIRTIV	DGMKVKPNPN	KTMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Megaderma lyra</i>	MDPYVIQMN--	-GTLPSVLVD	HVN	I GGRSSM	PGKVGRKAR	WSVKPSDMSN	KTFNPIRTIV	DSMKVKPNPD	KAMIALSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Megaderma spasma</i>	MDPYVIQMN--	-GTLPSVLVD	HVN	I DGRSSM	PGKARGRKAR	WSVKPSDMSN	NTFNPIRTIV	DSMKVKPNPD	KAMIALSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Myotis ricketti</i>	MDPYVIEMND	SGDLPSVLVD	HVN	VGRSSST	PGKARGRKAR	WSVKPSDMAN	KTFNPIRAIV	DSMKVKPNPD	KTMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Pipistrellus abramus</i>	MDPYVIEMNG	SGD-----	HVS	VGRSSST	LGAKGRKAR	WSVKPSDMAN	KTFNPIRAIV	DSMKVKPNPD	KTMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGFLSSRE	[120]
<i>Scotophilus kuhlii</i>	MDPYMIETNG	SGDLPSVLVD	H--	VGRSSST	PGKGRGRKAR	WSVKPSDMSN	KTFNPIRAIV	DSMKVKPNPD	KAMIALSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Miniopterus fuliginosus</i>	MDPYVIQMNG	SGNLPSVVDV	HVN	I GGRSSM	PGKAGRGRKAR	WSVKPSDMSN	KTFNPIRAIV	ESMKVKPNPD	KTMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Tadarida plicata</i>	MDPYVIQMNG	KSLPSVLVD	PVN	I GGRSSM	PGKAGRGRKAR	WSVKPSEMSK	KTFNPIRAIV	DSMKVKPNPD	KTMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Mormoops megalophylla</i>	MDLYVIQMNG	KGSLPPVLVD	HVN	I GGKNSL	PGKGKGRKAR	WSVKPSDMSN	KTFNPIRAIV	DSMKVKPNPD	KPMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Pteronotus parnellii</i>	MDPYLLIQMNG	MGNLPSVLVD	HVN	VGRNST	LGVKGRKAR	WSVKPSDMSN	KTFNPIRAIV	DSMKVKPNPD	KTMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Desmodus rotundus</i>	MDPYVIQMNG	KGSLPSLLDM	HVN	VGGKNSK	PGKGKGRKAR	WSVKPSDMAN	NTFNPIRTIV	DGMKVKPNPA	KAMIALSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Leptoncycteris verbabuenae</i>	MDPYVIQMNR	KGSLPSLLDM	HVN	VGGKNSL	PGKGKGRKAR	WSVKPSDMAN	KTFNPIRAIV	DSMKVKPNPD	KTMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]
<i>Artibeus lituratus</i>	MDPYVIQMNR	KGSLPSLLNV	HVN	I GGKNSL	PGKGKGRKAR	WSVKPSAMAN	KTFNPIRAIV	DSMKVKPNPD	KTMISLSIGD	PTVFGNLTPT	PEVTQAMKDA	LDSGKYNGYA	PSIGYLSRE	[120]

					C1S1Y	V164A	L171P		L201R	P220S		K232D	
					*				*	*			
human	EIASYYHCPE	APLEAKDVIL	TSGCSQAIDL	CLAVLANPGQ	NILVPRPGFS	LYKTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LEYLIDEKTA	CLIVNNPSNP	CGSVFSKRHL	QKILAVAARQ	[240]
mouse	EVASYHCPE	APLEAKDVIL	TSGCSQAIDL	CLAVLANPGQ	NILIPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSKRHL	QKILAVAERQ	[240]
rat	EVASYHCHE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILIPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSKRHL	QKILAVAERQ	[240]
cow	EVASYYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKNWEIDLKQ	LESLLIDEKTV	CLIVNNPSNP	CGSVFSRRHL	QKILAVAARQ	[240]
dog	EIASYYHRPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSKSHL	QKILAVAARQ	[240]
pig	EVASYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFP	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKH	LESLLIDEKTA	CLIVNNPSNP	CGSVFSRRHL	QKILAVATRQ	[240]
panda	EIASYYHRPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSKSHL	QKILAVAARK	[240]
horse	EIASYYHHPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFA	LYRTLAESMG	IEVKCYNLLP	EKSWEIDLKQ	VESLVDEKTA	CLIVNNPSNP	CGSVFSKSHL	QKILAVAARQ	[240]
<i>Cynopterus sphinx</i>	EVASYFRCP	APLEAKDVIL	TSGCSQAVEL	CLAVLANPGQ	NILAPRPGFS	PYRTLAESMG	IKIKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSKSHL	QDILAVAARQ	[240]
<i>Rousettus leschenaultii</i>	EIASYYHHPK	APLEAKDVIL	TCGCSQAIEL	CLAVLANPGQ	NILAPRPGFS	PYRTHAESMG	IELKLYNLLP	EKSWEIDLKQ	MESLLIDEKTA	CLIVNNPSNP	CGSVFSKSHL	QDILAVAARK	[240]
<i>Eonycteris spelaea</i>	EVASYYHHPK	APLEAKDVIL	TCGCSQAIEL	CLTVLANPGQ	NILAPRPGFS	PYRTLAESLG	VEVKLYNLLP	EKYWEIDLEQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSKSHL	QDILAVAARK	[240]
<i>Pteropus vampyrus</i>	EIASYYHRPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILAPRPGFS	PYRTLAESLG	IEIKLYNLLP	EKSWEVDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSKSHL	QDILAVAARQ	[240]
<i>Rhinolophus ferrumequinum</i>	EIASYYHCPE	APLEANDVIL	TSGCCQAIEL	CLAVLANPGQ	NILLPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LKSLIDEKTA	CLIVNNPSNP	CGSVFSKNHL	QKILAVAARQ	[240]
<i>Rhinolophus pusillus</i>	EIASYYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILIPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSTNHL	QKILAVAARQ	[240]
<i>Hipposideros armiger</i>	EVASYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWKIDLKQ	LEALIDEKTA	CLIVNNPSNP	CGSVFSKSHL	QKILAVAARQ	[240]
<i>Hipposideros pratti</i>	EVASYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWKIDLKQ	LEALIDEKTA	CLIVNNPSNP	CGSVFSKSHL	QKILAVAARQ	[240]
<i>Megaderma lyra</i>	EIASYYHCPE	APLEAKDIII	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYKTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSKSHL	QKILAVAARQ	[240]
<i>Megaderma spasma</i>	EIASYYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYKTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSKSHL	QKILAVAARQ	[240]
<i>Myotis ricketti</i>	EVASYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEIKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSSRHL	QKILAVAARQ	[240]
<i>Pipistrellus abramus</i>	EVASYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSSRHL	QKILAVAARQ	[240]
<i>Scotophilus kuhlii</i>	EVASYHCPE	APLEAEDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSSRHL	QKILAVAARQ	[240]
<i>Miniopterus fuliginosus</i>	EIASYYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEIKLYNLLP	EKSWEADLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSSRHL	QKILAVAARQ	[240]
<i>Tadarida plicata</i>	EIASYYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEIKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSSRHL	QKILAVAARQ	[240]
<i>Mormoops megalophylla</i>	EIASYYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESLG	VEVRFYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFRRSHL	QKILAVAARQ	[240]
<i>Pteronotus parnellii</i>	EIASFYHCPE	APLEAKDVIL	TSGCSQAIEL	SLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEVDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSSRHL	QKILAVAARK	[240]
<i>Desmodus rotundus</i>	EIVSYHHHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLTESMG	IEIKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSSRHL	QKILAVAARQ	[240]
<i>Leptonycteris verbabuena</i>	DIASYYHCPE	APLEAKDVLL	TSGCSQAIEL	CLAVLANPGQ	NILVPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSSRHL	QKILAVAARQ	[240]
<i>Artibeus lituratus</i>	EIASYYHCPE	APLEAKDVIL	TSGCSQAIEL	CLAVLASPGQ	NILVPRPGFS	LYRTLAESMG	IEVKLYNLLP	EKSWEIDLKQ	LESLLIDEKTA	CLIVNNPSNP	CGSVFSSRHL	QKILTVAARQ	[240]

		S258T	L263I	S268R	L273P			D307N	L317M			G355E																																																																																														
human	CVPI	AD	EY	DMV	FSD	CKY	EPL	ATL	S	TDV	PIL	SCG	G	LAK	RWL	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	T	P	G	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]																
mouse	CVPI	AD	EY	DMV	FSD	CKY	EP	M	A	T	L	S	T	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	S	A	I	[360]		
rat	CVPI	AD	EY	DMV	FSD	CKY	EP	A	N	L	S	T	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	T	P	G	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]				
cow	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	K	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	M	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	T	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	T	P	R	V	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]			
dog	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]			
pig	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	T	N	A	D	L	C	Y	G	A	L	A	V	[360]			
panda	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]			
horse	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	N	I	L	R	R	T	P	Q	E	F	Y	H	N	T	L	S	L	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]				
Cynopterus sphinx	CVPI	AD	EY	DMV	FSD	TKF	EP	I	A	T	L	S	R	S	V	P	I	L	C	C	G	G	L	T	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	N	G	L	V	K	S	Q	R	I	M	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	S	A	D	L	C	Y	E	A	L	S	A	I	[360]	
Rousettus leschenaultii	YVPI	AD	EY	DMV	FSD	TKF	EP	I	A	T	L	S	R	N	V	P	I	L	T	C	G	G	L	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	N	G	L	V	K	S	Q	R	I	M	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	S	A	D	L	C	Y	E	A	L	S	A	I	[360]		
Eonycteris spalea	YVPI	AD	EY	DMV	FSD	TKF	VP	I	A	T	L	S	R	N	V	P	I	L	T	C	G	G	L	K	R	W	L	V	P	G	W	R	L	G	W	I	F	I	H	D	R	K	D	I	FG	N	E	I	R	N	G	L	V	K	S	Q	R	I	M	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	S	A	D	L	C	Y	E	A	L	S	A	I	[360]		
Pteropus vampyrus	CVPI	AD	EY	DM	M	FSD	TKF	EP	I	A	T	L	S	H	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	G	D	I	FG	N	E	I	P	N	G	L	V	K	S	Q	R	I	M	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	V	L	K	S	S	A	D	L	C	Y	E	A	L	S	A	I	[360]
Rhinolophus ferrumequinum	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	K	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]			
Rhinolophus pusillus	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	K	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]			
Hipposideros armeriger	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	N	L	S	T	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	N	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	N	I	L	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	S	A	I	[360]			
Hipposideros pratti	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	N	L	S	T	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	N	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	N	I	L	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	S	A	I	[360]			
Megaderma lyra	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]			
Megaderma spasma	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	H	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]			
Myotis ricketti	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	G	H	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]		
Pipistrellus abramus	CVPI	AD	EY	DMV	FSG	SKF	EPL	A	T	L	S	T	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	R	S	N	A	D	L	C	Y	G	A	L	A	I	[360]			
Scotophilus kuhlii	CVPI	AD	EY	DMV	FSG	SKF	EPL	A	T	L	S	S	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	R	D	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]			
Miniopterus fuliginosus	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I	L	I	H	D	R	K	G	I	FG	N	E	I	R	D	G	L	V	K	S	Q	R	I	L	G	P	C	T	I	V	Q	G	A	L	K	S	I	L	C	R	R	T	P	Q	E	F	Y	H	N	T	L	S	F	L	K	S	N	A	D	L	C	Y	G	A	L	A	I	[360]			
Tadarida plicata	CVPI	AD	EY	DMV	FSD	SKF	EPL	A	T	L	S	S	N	V	P	I	L	S	C	G	G	L	A	K	R	W	L	V	P	G	W	R	L	G	W	I																																																																						

	G362V*	R395Q	V397F	A398V	R433Q/W*						
human	PGLRPVRPSG	AMYLVMGIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFRVVI	TVPEVMMLEA	CSRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
mouse	PGLQPVRPSG	AMYLVMGIEI	EHFPEFENDV	EFTERLIAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
rat	PGLQPVPRPSG	AMYLVMGIEI	EHFPEFENDV	EFTERLIAEQ	AVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
cow	PGLRPIHPSG	AMYLVMGIEI	EHFPEFENDV	EFTEQLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
dog	PGLRPVPRPSG	AMYLVMGIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPKVMLEA	CSRIQEFCEL	HYHCAEGSQE	ECDK	[454]
pig	PGLRPIRPCG	AMYLVMGIEI	EQFPEFENDV	EFTERLVAEQ	SVHCLPGMCF	EYRNFVRVVI	TVPKVMLEA	CSRIQEFCEQ	HYQCAEGTQE	ECDK	[454]
panda	PGLQPVPRPSG	AMYLVMGIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPKVMLEA	CSRIQEFCEL	HYHCAEGSQE	ECDK	[454]
horse	PGLRPVRPSG	AMYLVMGIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPGTCF	EYLNFFRVVI	TVPKVMLEA	CSRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
<i>Cynopterus sphinx</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFENDV	EFTERLQFVEQ	SVHCLPAMCF	EYPNFFRVVI	AVPKVTILEA	CSRIQEFCEQ	HYHHAEGIQE	ECDK	[454]
<i>Rousettus leschenaultii</i>	PGLRPVRSSG	AMYIMVEIQM	EHFPEFENDV	EFTERLQFVEQ	SVQCLPAKCF	EYPNFFRVVI	TVPKVMLEA	CSRIQEFCEQ	HYHLAEGSQE	ECDK	[454]
<i>Eonycteris spallaea</i>	PGLRPVHSSG	AMYLMEIEI	EHFPEFENDV	EFTERLQFVEQ	SVQCLPAKCF	EYPNFFRVVI	TVPKVMLEA	CSRIQEFCEQ	HYHHAEGIQE	ECDK	[454]
<i>Pteropus vampyrus</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFENDV	EFTERLQFVEQ	SVLCLPAICF	EYPNFFRVVI	AVPKVMILEA	CSRIQEFCEQ	HYHHAEGIQE	ECDK	[454]
<i>Rhinolophus ferrumequinum</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEK	HYHCAEGSQE	ECDK	[454]
<i>Rhinolophus pusillus</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFKNDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEK	HYHCAEGSQE	ECDK	[454]
<i>Hipposideros armeriger</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CGRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
<i>Hipposideros pratti</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CGRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
<i>Megaderma lyra</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFKDDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEK	HYHGAEGSQE	ECDK	[454]
<i>Megaderma spasma</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFKDDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEK	HYHGAEGSQE	ECDK	[454]
<i>Myotis ricketti</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMILEA	CSRIQEFCEQ	HYHCAEGSPE	ECDK	[454]
<i>Pipistrellus abramus</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFENDV	EFTERLIAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEQ	HYHHAEGSPE	ECDK	[454]
<i>Scotophilus kuhlii</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEQ	HYHCAEGSPE	ECDK	[454]
<i>Miniopterus fuliginosus</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEQ	HYHSAEGSHE	ECDK	[454]
<i>Tadarida plicata</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
<i>Mormoops megalophylla</i>	PGLRPIRPLG	AMYLMEIEI	EHFPEFENDE	EFTERLIAEQ	SVQLLPAKCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
<i>Pteronotus parnellii</i>	PGLRPVRPSG	AMYLMEIQM	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMMLEA	CSRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
<i>Desmodus rotundus</i>	PGLRPVRPSG	AMYLMEIEI	EHFPEFGNDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPEVMILEA	CSRIQKFCQ	HYHSAEGGSQ	ECDK	[454]
<i>Leptonycteris yerbabuena</i>	PGLRPVRPSG	TMYLMEIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TVPKVMLEA	CSRIQEFCEQ	HYHCAEGSQE	ECDK	[454]
<i>Artibeus lituratus</i>	PGLWPVRPSG	AMYLVKIEI	EHFPEFENDV	EFTERLVAEQ	SVHCLPATCF	EYPNFFRVVI	TAPEVMMLEA	CSRIQEFCEQ	HYHCAAGSQE	ECDK	[454]