

表 7. 长寿物种中受到正选择的基因（branch-site方法）。

Ensembl ID	Symbol	P value	Information of Positively Selected Sites in longevitv species (P>95%)
ENSG00000158445	KCNB1	6.75E-20	A7T(Microcebus murinus);A7P(Heterocephalus glaber);L40R(Cebus capucinus);L40P(Saimiri boliviensis);L40P(Microcebus murinus);P40R(Heterocephalus glaber);L40P(Rousettus aegyptiacus);L151P(Microcebus murinus);L151P(Heterocephalus glaber);P166R(Microcebus murinus);R166L(Heterocephalus glaber);H200P(Cebus capucinus);H200R(Microcebus murinus);H200R(Heterocephalus glaber);H200R(Rousettus aegyptiacus);H211R(Cebus capucinus);H211R(Nomascus leucogenys);H211R(Heterocephalus glaber);R229K(Saimiri boliviensis);R229K(Heterocephalus glaber);A233G(Microcebus murinus);A233V(Eptesicus fuscus);A233V(Rousettus aegyptiacus);H250R(Cebus capucinus);H250R(Microcebus murinus);S275F(Cebus capucinus);S275F(Heterocephalus glaber);L316P(Microcebus murinus);L316R(Myotis lucifugus);L316R(Rousettus aegyptiacus);S327Y(Nomascus leucogenys);S327F(Heterocephalus glaber);L338S(Nomascus leucogenys);L338S(Microcebus murinus);Q339R(Nomascus leucogenys);Q339R(Microcebus murinus);N480S(Cebus capucinus);N480S(Microcebus murinus);G516A(Cebus capucinus);G516E(Eptesicus fuscus);R524Q(Homo sapiens);R524Q(Myotis brandtii);R524Q(Rousettus aegyptiacus);D644G(Microcebus murinus);D644G(Eptesicus fuscus);T769M(Saimiri boliviensis);M769T(Microcebus murinus);T769M(Myotis lucifugus);M769R(Rousettus aegyptiacus);E780A(Saimiri boliviensis);E780A(Microcebus murinus);G783R(Microcebus murinus);E783A(Rousettus aegyptiacus);R460S(Saimiri boliviensis);R460S(Nomascus leucogenys)
ENSG00000100813	ACIN1	2.23E-06	R460S(Saimiri boliviensis);R460S(Nomascus leucogenys)
ENSG00000172803	SNX32	2.73E-05	H68Y(Cebus capucinus);H68N(Microcebus murinus);P176S(Microcebus murinus);R176C(Rousettus aegyptiacus);Q362R(Nomascus leucogenys);Q362R(Rousettus aegyptiacus);S381W(Cebus capucinus)
ENSG00000140798	ABCC12	3.82E-05	I274V(Eptesicus fuscus);P275C(Heterocephalus glaber);I398V(Nomascus leucogenys);V398I(Heterocephalus glaber)
ENSG00000007866	TEAD3	0.00019	V202T(Heterocephalus glaber);V202A(Eptesicus fuscus)
ENSG00000174485	DENND4A	0.00019	E507C(Saimiri boliviensis)
ENSG00000135090	TAOK3	0.00020	N7S(Homo sapiens);N7S(Eptesicus fuscus)
ENSG00000151838	CCDC175	0.00059	
ENSG00000090061	CCNK	0.00060	S292R(Saimiri boliviensis);S292H(Heterocephalus glaber);R292H(Myotis brandtii);P435R(Saimiri boliviensis);P435L(Nomascus leucogenys);P435R(Heterocephalus glaber);P435R(Rousettus aegyptiacus)
ENSG00000180035	ZNF48	0.00074	A201E(Microcebus murinus);A201T(Heterocephalus glaber);R507C(Nomascus leucogenys);C507H(Heterocephalus glaber);C507R(Eptesicus fuscus);C507R(Rousettus aegyptiacus)
ENSG00000176945	MUC20	0.00159	G428S(Homo sapiens);G428S(Nomascus leucogenys)
ENSG00000074755	ZZEF1	0.00203	T127L(Saimiri boliviensis);C281K(Saimiri boliviensis);S282H(Saimiri boliviensis);T2385L(Microcebus murinus)
ENSG00000076382	SPAG5	0.00253	
ENSG00000135077	HAVCR2	0.00278	T166A(Eptesicus fuscus);S166V(Rousettus aegyptiacus)
ENSG00000121741	ZMYM2	0.00402	
ENSG00000184434	LRRC19	0.00775	
ENSG00000168297	PXK	0.00808	S143D(Myotis lucifugus);W144Q(Myotis lucifugus);V351I(Saimiri boliviensis);V351A(Microcebus murinus);V351T(Heterocephalus glaber);I390V(Heterocephalus glaber);I390V(Myotis lucifugus)
ENSG00000135253	KCP	0.01407	E137S(Eptesicus fuscus);E137D(Myotis lucifugus);E145N(Eptesicus fuscus);E145V(Myotis brandtii);P155H(Cebus capucinus);P155A(Eptesicus fuscus);P170A(Homo sapiens);P170G(Eptesicus fuscus);P177R(Microcebus murinus);P177N(Eptesicus fuscus);V182Y(Eptesicus fuscus);T1099Y(Nomascus leucogenys)
ENSG00000114270	COL7A1	0.02145	E865D(Microcebus murinus);E865A(Heterocephalus glaber);E865A(Rousettus aegyptiacus);E1737D(Cebus capucinus);E1737R(Heterocephalus glaber)
ENSG00000198056	PRIM1	0.02230	N62S(Cebus capucinus);N62S(Microcebus murinus);N62S(Heterocephalus glaber)
ENSG00000162367	TALI	0.02688	A257S(Nomascus leucogenys);A257G(Microcebus murinus);A257G(Heterocephalus glaber);G261A(Microcebus murinus);G261S(Eptesicus fuscus)
ENSG00000130305	NSUN5	0.02709	R74E(Myotis lucifugus);Q75K(Heterocephalus glaber);Q75T(Myotis lucifugus);L99S(Microcebus murinus);L99Q(Rousettus aegyptiacus)
ENSG00000162849	KIF26B	0.02984	N397S(Saimiri boliviensis);N397S(Eptesicus fuscus);N397K(Myotis brandtii)
ENSG00000153002	CPB1	0.03011	G260P(Eptesicus fuscus);C271A(Eptesicus fuscus);K296W(Eptesicus fuscus)
ENSG00000159082	SYNJ1	0.04536	G410R(Cebus capucinus);G410T(Heterocephalus glaber);M718C(Nomascus leucogenys);L719C(Nomascus leucogenys)
ENSG00000145907	G3BP1	0.04560	S170G(Eptesicus fuscus);S170P(Rousettus aegyptiacus)
ENSG00000186395	KRT10	0.04805	G53M(Saimiri boliviensis);G53R(Heterocephalus glaber);L377G(Rousettus aegyptiacus)
ENSG00000123444	KBTBD4	0.04933	