

Supplementary Table 1. Taxa examined.

Species	common name	Order	Data source (assembly version)
<i>Homo sapiens</i>	human	Primates	Genome sequence (hg18)
<i>Pan troglodytes</i>	chimp	Primates	Genome sequence (panTro2)
<i>Pongo pygmaeus</i>	orangutan	Primates	Trace archive
<i>Macaca mulatta</i>	rhesus macaque	Primates	Genome sequence (rheMac2)
<i>Callithrix jacchus</i>	marmoset	Primates	Trace archive
<i>Otolemur garnettii</i>	galago	Primates	Trace archive
<i>Cynocephalus volans</i>	flying lemur	Dermoptera	Genomic PCR
<i>Tupaia belangeri</i>	tree shrew	Scandentia	Trace archive
<i>Tupaia minor</i>	tree shrew	Scandentia	Genomic PCR
<i>Mus musculus</i>	mouse	Rodentia	Genome sequence (mm8)
<i>Rattus norvegicus</i>	rat	Rodentia	Genome sequence (m4)
<i>Spermophilus tridecemlineatus</i>	ground squirrel	Rodentia	Trace archive
<i>Tamias striatus</i>	chipmunk	Rodentia	Genomic PCR
<i>Cavia porcellus</i>	guinea pig	Rodentia	Trace archive
<i>Castor canadensis</i>	beaver	Rodentia	Genomic PCR
<i>Hydrochaeris hydrochaeris</i>	capybara	Rodentia	Genomic PCR
<i>Oryctolagus cuniculus</i>	rabbit	Lagomorpha	Trace archive
<i>Sylvilagus floridanus</i>	cottontail	Lagomorpha	Genomic PCR
<i>Ochotona hyperborea</i>	pika	Lagomorpha	Genomic PCR
<i>Canis familiaris</i>	dog	Carnivora	Genome sequence (canFam2)
<i>Felis catus</i>	cat	Carnivora	Trace archive/Genomic PCR
<i>Manis pentadactyla</i>	pangolin	Pholidota	Genomic PCR
<i>Erinaceus europaeus</i>	hedgehog	Eulipotyphla	Trace archive
<i>Sorex araneus</i>	shrew	Eulipotyphla	Trace archive
<i>Solenodon paradoxus</i>	solenodon	Eulipotyphla	Genomic PCR
<i>Lama glama</i>	llama	Cetartiodactyla	Genomic PCR
<i>Megaptera novaeangliae</i>	humpback whale	Cetartiodactyla	Genomic PCR
<i>Tursiops truncatus</i>	bottlenose dolphin	Cetartiodactyla	Trace archive
<i>Sus scrofa</i>	pig	Cetartiodactyla	Trace archive/EST database
<i>Bos taurus</i>	cow	Cetartiodactyla	Genome sequence (bosTau2)
<i>Tapirus indicus</i>	tapir	Perissodactyla	Genomic PCR
<i>Equus caballus</i>	horse	Perissodactyla	Trace archive/Genomic PCR
<i>Myotis lucifugus</i>	little brown bat	Chiroptera	Trace archive
<i>Artibeus jamaicensis</i>	Jamaican fruit bat	Chiroptera	Genomic PCR
<i>Rousettus lanosus</i>	long-haired megabat	Chiroptera	Genomic PCR
<i>Pteropus vampyrus</i>	large flying fox	Chiroptera	Trace archive
<i>Dasypus novemcinctus</i>	nine-banded armadillo	Xenarthra	Genome sequence(dasNov1),Genomic PCR
<i>Euphractus sexcinctus</i>	six-banded armadillo	Xenarthra	Genomic PCR
<i>Chaetophractus villosus</i>	hairy armadillo	Xenarthra	Genomic PCR
<i>Choloepus hoffmanni</i>	Hoffmann's sloth	Xenarthra	Trace archive/Genomic PCR
<i>Choloepus didactylus</i>	Linne's sloth	Xenarthra	Genomic PCR
<i>Tamandua tetradactyla</i>	lesser anteater	Xenarthra	Genomic PCR
<i>Myrmecophaga tridactyla</i>	giant anteater	Xenarthra	Genomic PCR
<i>Macroscelides proboscideus</i>	l.e. elephant shrew	Macroscelidea	Genomic PCR
<i>Elephantulus rufescens</i>	s.e. elephant shrew	Macroscelidea	Genomic PCR
<i>Amblysomus hottentotus</i>	golden mole	Afrosoricida	Genomic PCR
<i>Echinops telfairi</i>	tenrec	Afrosoricida	Trace archive/Genomic PCR
<i>Loxodonta africana</i>	African elephant	Proboscidea	Genome sequence (loxAfr1)
<i>Elephas maximus</i>	Asian elephant	Proboscidea	Genomic PCR
<i>Trichechus manatus</i>	manatee	Sirenia	Genomic PCR
<i>Procavia capensis</i>	rock hyrax	Hyracoidea	Trace archive/Genomic PCR
<i>Orycteropus afer</i>	aardvark	Tubulidentata	Genomic PCR
<i>Didelphis virginiana</i>	Virginia opossum	Didelphimorpha	Genomic PCR
<i>Monodelphis domestica</i>	Laboratory opossum	Didelphimorpha	Genome sequence (monDom4)
<i>Dromiciops gliroides</i>	monito del monte	Microbiotheria	Genomic PCR
<i>Macropus eugenii</i>	Tammar wallaby	Diprotodontia	Trace archive/Genomic PCR
<i>Ornithorhynchus anatinus</i>	platypus	Monotremata	Trace archive
<i>Gallus gallus</i>	chicken	Galliformes	Genome sequence (galGal3)
<i>Taeniopygia guttata</i>	zebra finch	Passeriformes	Trace archive

Supplementary Table 2. Output of divtime analysis using 12 fossil constraints and mean prior for the root=105 Mya (Springer et al. 2003), and the dataset of Roca et al. (2004).

Hyracoidea/Sirenia	= 61.08658 (Std. Dev. = 4.26751) (53.10816, 69.82365)
Paenungulata	= 64.16585 (Std. Dev. = 4.22200) (56.24808, 72.70387)
<i>Elephantulus/Macroselides</i>	= 19.06347 (Std. Dev. = 2.57481) (14.44662, 24.57021)
Afrosoricida	= 65.36858 (Std. Dev. = 4.25574) (57.25837, 73.85271)
Afrosoricida/Macroselidea	= 73.04833 (Std. Dev. = 4.15842) (65.24510, 81.45820)
Tubulidentata/Afrosoric.+Macrosc.	= 75.12033 (Std. Dev. = 4.11806) (67.49510, 83.39509)
Afrotheria	= 77.80318 (Std. Dev. = 4.07028) (70.30235, 86.08913)
Pilosa (sloth/anteater)	= 63.89258 (Std. Dev. = 4.69424) (54.59723, 72.96604)
Xenarthra	= 72.87423 (Std. Dev. = 4.34200) (64.45228, 81.57580)
Atlantogenata	=103.29187 (Std. Dev. = 4.93819) (94.54893, 113.70992)
Primates	= 80.51227 (Std. Dev. = 3.75625) (73.47291, 88.13972)
Dermoptera/Scandentia	= 85.89301 (Std. Dev. = 3.78013) (78.96064, 93.70401)
Euarchonta	= 89.12064 (Std. Dev. = 3.72407) (82.36514, 96.91462)
Lagomorpha	= 53.14218 (Std. Dev. = 4.18355) (45.03849, 61.30227)
Hystricognathi	= 38.76464 (Std. Dev. = 3.90264) (31.36307, 46.48670)
mouse/rat	= 15.85071 (Std. Dev. = 2.01832) (12.47717, 20.23576)
mouse+rat/guinea pig	= 72.37611 (Std. Dev. = 3.78330) (65.24192, 80.05285)
Rodentia	= 76.49677 (Std. Dev. = 3.69741) (69.61856, 84.08297)
Glires	= 86.37629 (Std. Dev. = 3.69655) (79.68968, 94.11887)
Euarchontoglires	= 90.99808 (Std. Dev. = 3.74766) (84.24059, 98.90176)
Carnivora	= 57.45814 (Std. Dev. = 2.81603) (51.59989, 62.37880)
Carnivora/Pholidota	= 79.84195 (Std. Dev. = 2.35045) (75.49052, 84.66998)
Pteropodid bats	= 19.93774 (Std. Dev. = 2.53988) (15.19546, 25.07253)
Yangochiroptera	= 58.46957 (Std. Dev. = 1.37568) (54.89079, 59.95608)
Phyllostomid/Molossid bats	= 52.01855 (Std. Dev. = 2.37907) (46.88214, 56.29857)
Chiroptera	= 63.82802 (Std. Dev. = 1.51039) (60.55273, 66.52105)
rhino/tapir	= 48.36133 (Std. Dev. = 2.03560) (44.20866, 52.03843)
Perissodactyla	= 56.32328 (Std. Dev. = 1.10291) (54.19808, 57.93065)
Chiroptera/Perissodactyla	= 82.54788 (Std. Dev. = 2.39086) (78.15476, 87.42112)
Pegasoferae	= 84.16330 (Std. Dev. = 2.53103) (79.47664, 89.31881)
Cetacea	= 28.93725 (Std. Dev. = 2.20109) (24.56667, 33.12839)
Hippo/Cetacea	= 52.55681 (Std. Dev. = 0.50463) (52.01602, 53.89006)
Ruminantia/Hippo+Cetacea	= 55.36966 (Std. Dev. = 0.80031) (53.88561, 56.99223)
Pig/Ruminantia+(Hippo+Cetacea)	= 61.02075 (Std. Dev. = 0.88882) (59.19319, 62.66728)
Cetartiodactyla	= 63.94058 (Std. Dev. = 0.80187) (62.01577, 64.95988)
Cetartiodactyla/Pegasoferae	= 84.57309 (Std. Dev. = 2.56451) (79.81780, 89.79248)
hedgehog/shrew	= 67.91791 (Std. Dev. = 2.72456) (63.43436, 73.68598)
mole/shrew+hedgehog	= 76.00406 (Std. Dev. = 2.55926) (71.47008, 81.40418)
Solenodontidae	= 24.00073 (Std. Dev. = 4.28974) (16.14276, 33.01202)
Eulipotyphla	= 79.38944 (Std. Dev. = 2.56583) (74.81915, 84.74848)
Laurasiatheria	= 87.13878 (Std. Dev. = 2.91403) (81.83639, 93.21317)
Boreoeutheria	= 97.39213 (Std. Dev. = 4.03176) (90.09719, 105.91670)
Placentalia	=104.73118 (Std. Dev. = 4.94458) (95.94040, 115.26620)

Supplementary Table 3. PCR primers.**Exon indel/LIMB5 insertion**

PTPRB exon 9
C14orf121 exon 35
LAMC2 exon 13
ZNF367 exon 5
OTC intron
RABGAP1L intron

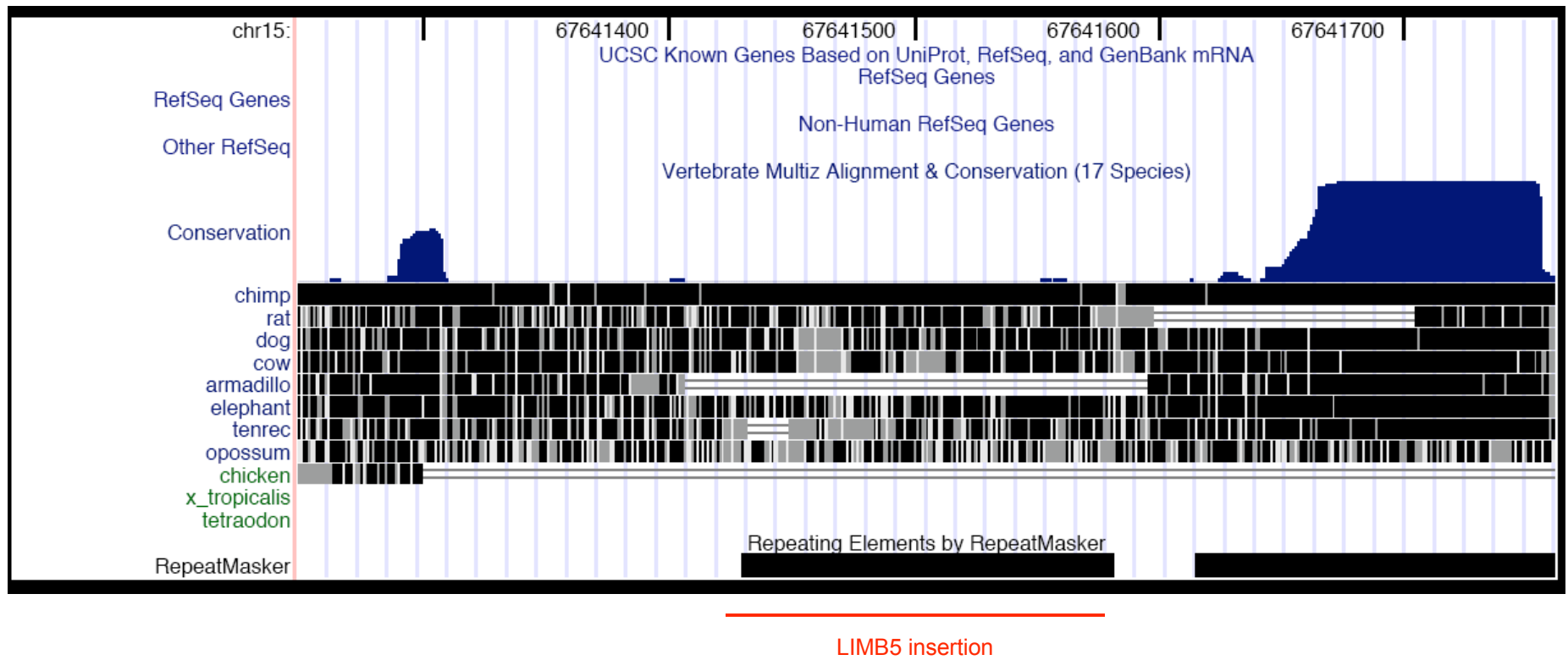
Forward primer

TTGDCTGAAGGARTGRTTTC
GGGCAYNGAGGGGKCRGA
GATGGAYCAGTTTAYGCAGCAG
GTCAGRTTGGCRAGCTCTAT
CACCTTCAGGCRGGCTACTC
TTTAATGGGAGRGATTGAATA

Reverse Primer

TGAYTACCTCAGCRTTTCCTG
ATCGAAGCTCCAACCCTTG
CTGCATCCTGCCTTCCAG
ATTGGGARACGAGAGAGCAG
AATGAAAGGCATCAGCCAAG
TGCAGCAGATCACTCATTATT/
TGCAGCAGATAARTRATTATT

Supplemental Figure 1. Screenshot of LIMB5 insertion 2b of Kriegs et al. (2006) purported to support the Epitheria hypothesis from the UCSC Genome Browser. The display shows the overview for the conservation track from multiple mammals. Note the putative insertion that is shared by all eutherians except armadillo (and other xenarthrans in Kriegs et al.) is also present in opossum. Though no repeat is detected by Repeatmasker in the opossum sequence, it is difficult to rule out the possibility that the original repeat has diverged to such an extent in the marsupial lineage (from accrued indels as well as base changes) that it is not recognized by Repeatmasker libraries, which are based primarily on known eutherian (primarily human as of November 2006) repeat elements. Therefore this repeat may have been lost in the xenarthran lineage.



Supplemental Figure 2. OTC genomic sequences, LIMB5 insertion analysis.

OTC sequences from 20 Boreoeutherian species in which no LIMB5 sequences were detected by Repeatmasker. Conserved left-flanking exons are shown in purple and intron sequences in green. A LIMB5 insertion (highlighted in dark red) is present in all 6 afrotherians and 3 xenarthrans examined.

>LIMB5_OTC_ *Homo sapiens*, human

AGGAACACTATAGCTCTCTGAAAGGTCTTACCCTCAGCTGGATCGGGGATGGGAACAATATCCTGCACTCCATCATGAT
GAGCGCAGCGAAATTCGGAATGCACCTTCAGGCAGCTACTCCAAAGGTAGGGAACTTTTTGCCTTGAAACTAACCCT
CTCTTAAATCATCCTCAGATGCAATTACCCAGTGACAAAAAAGCTCTCTTCCATTTAAGTATAGCACAGGTGAGGCCAC
AGAATTTAGGTTACGTTACCAGCCCTACTATTAAATAGCTATCTGGCCTCTTGAGAGTCCAATTTCCCATCTCTACAATAA
GAGATAGTCTTGGCTGATGCCTTTTATTCTATGAGTTAGTGTGTTAAAGCATGTCTGAATTATTCCTTTGAATACCCTGCTG
TAGGCCATTATGATGACTGGCATTGTGCATTACCACCACAAAGGCTGAAGAAAGCAATAAAATCCAGGCAGCATAGAAT
TCTCAACCCATGGGAATGATACTGTCAATTTTCTAACACTGCAATTTGGTAGAAAAATGTGAATCCAATGTGAGGATCAC
AGTGATGGCATCTACACCAGCTTAGTATTTCAAACCTCAACTCTGGGGACCTTTTGGCTTAGAAAAATTTGAGCCCCACAT
GGCTATGAAATGACCCCTGCATACTTCTACCTTGCT

>LIMB5_OTC_ *Macaca mulatta*, rhesus macaque

AGGAACACTATAGCTCTCTGAAAGGTCTTACCCTCAGCTGGATCGGGGATGGGAACAATATCCTGCACTCCATCATGAT
GAGCGCAGCGAAATTCGGGATGCACCTTCAGGCAGCTACTCCAAAGGTAGGGAACTTTTTGCCTTGAAACTAACCCT
TCTCTTAAATCATCCTCAGATGCAATTACCCAGTGACAAAAAAGCTTTCTTCTATTTAAGTATAGCACAGGTGAGGCCAC
AAAATCTAGGTTACGTTACTAGCCCTACTATTAAATAGCTATCTGGCCTCTTGAGAGTCCAATTTCCGATCTCTACAATAA
GAGATAGTCTTGGCTGATGCCTTTTATTCTATGAGTCAGTGTGAAAGCATGTCTGAATTATCCCTTTGAATACCCTGCT
GTAGGCCATTATGATGACTGACATCGTGCAATTACCACCACGAAGGCTGAAGAAAGCAATAAAATTCAGGCAGCATAGAT
TCTCAACCCATGGGAATGATACTGTCAATTTTCTAATACTGTAATTTGGTAGAAAAATGTAATTTCAATGTGAGGATCACA
GTGATGGCATCTACATCAGCTTAGTATTTCAAACCTCAACTCTGGGGGCTTTTGGCTTATAAAATTTGAGCCCCACATG
GC

>LIMB5_OTC_ *Otolemur garnetti*, galago (sites 213-321 contain a MIR element)

AGGAACACTATGGCTCTCTGAAAGGTCTTACTCTCAGCTGGATTGGGGATGGGAACAACATCTTGCACTCCATCATGAT
GAGTGCAGCGAAATTTGGGATGCATCTTCAGGCAGCTACTCCAAAGGTAGGGAACTTTCTGCATTGAAACTATCCCC
TCTTAAATCATCTCCAGATGCAATTACCCAGTGAAAACATAGCTCTCTTCCACTCAAGGAGAGCACAGGTGAGGCCACA
ACATTTAGTTTTATTTTACCAGCCCTACTATTAAATAGCTATCTGGCCTCTCCGGAGCCCAAGTTTCTCATCTCTACAATAA
AAGAGAGAGTCTTGCTGATGCTTTTCTTCTGTGAGTCTGTGTTAAAGCATGTCTGATTATCCCTTTGAATGCCCTGA
TACAGGCCATTATGATGACTGCTATCTTATGCAATTACCACCACAAAGGCTAAAGAAAGCAATGAAATCTAGACAGCATGG
AATTCCCACCGCATGCTGTCAATTTTCTAATACTGTGATTTGGTAGAAAAATGTCAATTTGATGTGAAGGTCACGGTGA
TGCCATCTGCACTAGCTTAGTGTTCAAAACCTCAACTTCAGGGGCCCTTTGGCTTTTAAATCTGAGTCCCACA

>LIMB5_OTC_ *Tupaia belangeri*, tree shrew

AGGAACACTATGGCTCTCTCAAAGGTCTTACCCTCAGCTGGATAGGGGATGGAAACAACATCCTGCACTCCATTATGAT
GAGCGCAGCAAAATTTGGAATGCATCTTCAGGCAGCTACTCCAAAGGTAGGCAAACTTTCTGCCTTGAAACTAACCCT
TCTTAAATCTCTCCAAATGCAGGGGCTGGCAAGTGGCATGTTAAGGTGCTGGATTACATATGTCCAACCTTGG
TCAAGGCTCTGGACCTGGTGGCTTGTCTTCTCACTCTCCCCCGCTCTCCATCTCTGTCTCTCTCTGCTCAAATGAATAC
TACTACTAATAGTAAAAAATGAAATTAATAAATTTTATAAAATGCTCTTTTCCATTTAAGAGAATACAGGCAAGGCCAC
AAAAAGTAGGTTTTGTTACCAGGCTTAGCCCTACTATTAAATAACTATGTGGACTCTTAAGAGCCCAATTTCCCATCTGC
ACAATAAGACATAGTCTTGGCTGATGTTTCTCATTCTCTGAGTCTGTGTTAAAGCATGTCTGGATTAGATAGCAGGCC
GCAACATAGTGTAGGTCTCTAAAACCTATGGGACTCTGTAAGAAGTGTGGCAAGCACCAACCTCACAAAGTTACACAG
TACAAAAAGGGC

>LIMB5_OTC_ *Mus musculus* (mouse)

AGGAACACTATGGCTCTCTCAAAGGTCTTACCCTCAGCTGGATAGGGGATGGGAACAATATCTTGCACTCTATCATGAT
GAGTGCTGCAAAATTCGGGATGCACCTTCAGGCAGCTACTCCAAAGGTAGGAACACTGTCTTGCTTGAAAAATATCTC
TGTTGATCAGAGGCTATTACCCAGTGAAACAAAGCTCCTGATGAAGGAGAGCATAGCTGAAGCCTTGTAATTTAGCCA
TATTACCAACTTTTCTGTTGAATCTAGTTTCTTAAGAGTGCAATTTTCCATTTTACAGTGGAACCTAGTCTTGGCTGATG
CCTTTTATTCCATGAGTCTGTGATAGCAGCACATCTGAATCTGCCTTTGGATGCCCTGATACTGGTCATTATGATGACT
GATATCTTTGTGCATAATCACCACACAGAAGAAAGCAGGCAGAAAGAAAGGAGTGCAAACAGACAATGTAAATCTTCA
GGGCATGGAATGGTGTGTAATCTCTCCAATGCAGCAATTTGCTTTAAAAAATTAAGGAAGAAAAATATCAATCCT
ATGTGAAGGACCCATTGCTACCATCCAGATTTAGATTTCAAACCTCATCACCAGGCTCTTTGGAGTTTAAATCTGAG
TCTCATGTGCTACAAAAACTACCACTACATGA

>LIMB5_OTC_ *Spermophilus tridecemlineatus* (ground squirrel)

AGGAACACTATGGCTCTCTCAAAGGTCTTACCCTCAGCTGGATAGGCGATGGCAACAACATCTTGCACTCCATCATGAT

GAGTGCCGCGAAATTCGGGATGCACCTTCAGGCGGCCACTCCAAAGGTAGGGAAATTTTCTACCTTGAAATGAACTCC
CACTTAAATCATATGCAATTACCTAGTGAAAATAAAGCTCTCTTCCATTCAAGGGCAGCATAGGTGAGGCCACAAAACCT
AGGTTATGTTACCAGCCCTACTATTAAATAGTTATCCGGCCTCTTAAGAGCCCCATTTCTATCTCTGCAATAAGAGCTA
ATCTTGGATGGTGCCTTTCATTCTGTGAGTCTGTGTTAAAAGCATGTCTGAATTATCCCTTTGAATGCCCTGATACCGGC
CATTATGATGACTGGCATCCTTGTGCATTACCATCACACAGGCTGCAGAAAGCAGCAAAATCCAGCCAGTGTAGAATTC
GCAACATATAGGAATGATGCTGTCAATTTTCTAATATTGCAATTTGGTTGAAAAATTTCAATCCAATATGAAGGTCACAGT
GATGGCATCTACACCAGCTTAGTGTTCAAACCTCAACTCCAGGGGTCCTTTGGCTT

>LIMB5_OTC_*Tamias striatus*, chipmunk

CACCTTCAGGCGGCTACTCCAAAGGTAGGGAAATTTGCTGCCTTGATATGAACCCCATTTAAATCACATGCAACTACCT
AGTGAAAACAAAGCTCTCTTCCATTCAAGGACAGCATAGGTGAGGCCACAAAACCTTAGGTTATGTTACCAGCCCTACTA
TTAAATACCTATCACGGCCCCCTTAAGAGCCCAATTTCTATCTCTGCAATAAAAGCTAGTCTTGCTGATGCCTTTCATTA

>LIMB5_OTC_*Cavia porcellus*, guinea pig

agGAACACTATGGCTCTCTCAAAGGACTTACCCTCAGCTGGATAGGGGATGGGAACAATATCCTTCACTCCATTATGATG
AGTGCAGCAAAATTCGGAATGCATCTTCAGGTAGCTACTCCAAAGGtATGCAAACTTTCTGCCTTAAAGATACACTTCCCA
CTTAAGTCAGATGCAATTACCCAGTGAAAACAAAGCTCTTTTCCATTCAAGGACAGCATAGGTAAGGTCATAGAAGTTAG
CTTATATTACCAGATCCAGTTGTAAATAGCTTTCTAGCCTATTAGGAGTCCAGTTTCCTATCTATATGATAAGCACTAGTC
TTGGTTGATGCCTTTCTTTTGTGTTAAAAGAATGTGTGCATTCCCTTTGAATGCCCGGATGCTGGTTTTTATGATGACTG
GCATCCTTTGTGCATTTCCAACATAGAGGGTGAAGAAAGCAATGAAATCAAAATAGGATAGACTCTTAGTGCATGGGAAT
TATACTTCAATTTTTTAATACTGCAATTTGGTTTTAAAAAATGTCAGTCCAATGGCAAGCTCACAGAGGCATCAATACTAG
TTCAGTGTTCAGGGCCCTTTTGGATTTTAAATCTGAATCCTACATAGTTATGCAG

>LIMB5_OTC_*Cynocephalus volans*, flying lemur

CTCACCTTCAGGCGGCTACTCCAAAGGTAAAGAACTTTCTGCCTTGAACTAACTCCCTCTTAAGTCATCCGTAGTTGC
AGTTACTCAGTGAAAACAAAGTTCTCTTCCATTCAAGGAGAGCACAGGTGAGGCCACAAAGTGATAGGTTATATTACCTG
CCCTATTATTGAATAGCTATCTGGCCTCTTGAGAGCCCAATTTCCCATCTTTACAATAAGAGAGAGTCTTGCTGATGCC
TTTCATT

>LIMB5_OTC_*Oryctolagus cuniculus*, rabbit

GAACACTATGGCTCTCTGAAAGGTCTTACCCTCAGCTGGATCGGGGATGGGAACAACATCCTGCACTCCATCATGATGA
GTGCAGCGAAATTCGGAATGCACCTTCAGGCAGTACTCCAAAGGTAGGAAAGCGTCCTGCCTCGACACTAACCCCT
CTTAAATCATACCCCAATGCAATTACCCACTGAAAACAGGGTTCTCTTCCATTCAAGGAGAGCACAGGTGAGACTGCAA
AATTTATGTTCTGTTATCAGCTCTCCTATTAAATAGCTGCCTGGCCCCCTCGCGAGCCCAATTTCCCATCTCCACAGTAGT
AGGTAATCTTGCCGATGCCTTTTATTGTGTGAGTCTGTGCTAAAAGTGTGTCTGAATCATGCCTTTGAATGTCTTGCTA
CCAGCCATTGTGATGACTGGCATCCTTGTGCAGAATCGCCACA

> LIMB5_OTC_*Sylvilagus floridanus*, cottontail (MIR element in red)

TCACCTTCAGGCGGGCTACTCCAAAGGTAGGAAAGCGTCCTGCCTCAAACTAACCCCTCTTAAATCATACCCAAATGA
ATTACCCAGTGAAAACAGGGTTCTCTTCCATTcaaggagagcacaggtgagactgcaaaatttatgttctgttatcagctctactattaaatagccgtctggc
cccttagagagcccaatttcccatctCACAGTAGTAGGGAATCTTGCTGATGCCTTTCATTA

>LIMB5_OTC_*Felis catus*, cat

AGGAACACTATGGCTCTCTGAAAGGCCTTACCCTCAGCTGGATTGGGGATGGGAACAACATTTTGCATTCTATCATGAT
GAGTGCTGCAAAATTCGGGATGCATCTTCAGGCAGTACTCCAAAGGTAGGGGAACTTCTGCTGAACTAAGCCC
CTCTTAAATCATCCCAGATGCAATTACCCAGTGAAAACAAACCTCTCTTCCATTCAAGGCAAGCACAGGTGAGGCCACGA
AATTTAGTTTACGTTACCAACCTTACTATTACAGCTATCTGGCCTCTTGAGTGCCCAATTTCCCATCTCTACCCTAAGAGA
TAATCTTGGCTGATGCCTTTCATCCTGTGAGTCTTTTTTAAAGCCTGTCTGAATTATCCCTTTGAATGCCCTAAAACAG
CCATTATGATGACTGGCATCCTTGTGCATTGCTACCACAAAGACTGAAGAAAGCAATGAAATCCAGACAGCATACAACCT
CCCAAGGCATGGAGAGGATGTTGTCATTTTCTAATACTGCAATTTAGTAGAAAAATGTCAATCTAATGTGAAGGGCACAA
TGATGGCATCTACATCAGTTTAGTGCTTCAAACCTCAACTCCAGGAGCCCTTAGCTTTTTAAATCTGAGTCCCTCATGGC
TGTGACAGTGCCCTCCATATACTTCTACCCTGCCGCTAATCTCACACAGAATGCAGGGGAAGCAT

>LIMB5_OTC_*Canis familiaris*, dog

AGGAACACTATGGCTCTCTGAAAGGCCTTACCCTCAGCTGGATTGGGGATGGGAACAACATTTCTGCATTCCATCATGAT
GAGTGCTGCAAAATTCGGGATGCATCTTCAGGCAGTACTCCAAAGGTAGGGGAACTTCTGCTGAACTAAGCCC
CTCTTAAATCATCCCAGTTGCAACCACCCAGTGAGAACAAACCTCTTTTCCATTCAAGGAAAGCACAGGTGAGACCACA
AAATTTAGGCTATGTTACTGACCTTACTATCACAGTTATGTGGCCTCTTGAGTGCCCAATTTCCCATCTATATGATAAGAG
ATAGTCTTGGCTAATGCCTTTTATCCATTAGTCTTTCTTAAAAACCTCCCTGAATTATCCCTTTGAATGCCCTGAAACCA
GCCATTATGATGACTAGCATCTTTGTGCTACCACAAAACTGAAGAAAGCAGTGAAATGCAGACAGCATAGAATTCCCA
AGGCATGGAAAGAATCTTATCATTTTTCTAATACTGCAATTTAGTAGGAAATGTCAATCTAATGTGAAGGTCACAGTGAA
GGCATCTCTATCAGCTTAATATTTCAAACCTCAATTCCAGGGGGCCCTTCAGCATTTTAAACTGAGTCCCATATGGCTGT

GAAAATGCT

>LIMB5_OTC_*Manis pentadactyla*, pangolin

CACCTTCAGGCGGGCTACTCCAAAGGTAGGGAACTTTCTGCCTTGAACTAACCCCTCTCAAATCATCCCTAGATGCAATTACCCAGTGAAAGCAAACCTGTTTCCATTCAAGGACAGCACAGGTGAGGTCTCAAACCTTTAGGTTTGTTACCAGCCTTACAGTTAAAGCTATCTAGCCTCTTGAGTGCCCAATTTCCCATCTCTATAACAGGAGATAGTCTTGCTGATGCCTTCATT

>LIMB5_OTC_*Sorex araneus*, shrew

AGGAACATTATGGCTCTCTTAAAGGCCTGACTCTCAGCTGGATTGGAGATGGAACAACATTCTGCACTCCATTATGATGAGTGCAGCAAAATTTGGGATGCATCTTCAGGCAGCTACACCAAAGGTGGGAACTTTCTTCCTTGAACTAACCCCTTATAAGGCCATCCCAGATTCAATAATCCAGTAAAAACAAACCTCTATTCAATTCACAGAGAGTATGTGTGGTCAACACAATTAGGGTATGTTACTAACCATGTTATTATAGCGATCTAGCTTCTTGTTGTGCCCATATTTTCATGGCTATGCTAAGATAGCTTTTGCTGATGCCTTTAAACCTGTGAGTTTATGCTAAAGGCATGTCTGAATGGCCCTTTTGAATACTCTGAACTAGCCATTATGTTGATTGGCATACTTGTACATTACCACAAAGACTGAAGGAACAATAAAATCCAGAAAGCGAAGAATTCCTCAATACATGGGGAGGATACTAACATCTTTTTTCTAATATGTTATTTGGTAGAAATATGTCAATCTAATGTGAAGGTCTTAGTGATGGTATATATGTCAGCTTAGTACTTCAAACACAACCTCCAGGGACTCTCCAGAACTTAACTATGAGGCCCAGAAGACTGGGATG

>LIMB5_OTC_*Erinaceus europaeus*, hedgehog

AGGAGCACTATGGCTCTCTGAAAGGCCTGACCTCAGCTGGATTGGAGATGGAACAATATTCTGCACTCCATCATGATGAGTGCAGCGAAATTCGGGATGCACCTGCAGGCTGCTACTCCAAAGGTAGGAACTTTCTGCCTCGAACTCACTTAAATGATCAGATTCAAACATCCAGTGAAACAAAACACCTCTTCATACACGGATGGATAGGCGAAGACATAGCCTTTGGGCTGGCTATGTGGCCAGCCCTGTTATTTTAGCTATCTGGCATTTCACACCCAAGCTCTCATCTCTACAGTAAGAGAGTGTTGATTGATGCCTTTTATCCTGTGAGACTGTGTAAGGAGCATGTTGGAATTGTCCCTTTGAATGCCCTGCAACCAGTCATTATGATGACTGGCATGCTTGTGCACTGCTCCACAAAGCTGGAAGAAAGCAATAAAATCCAGATAGTGTA

>LIMB5_OTC_*Myotis lucifugus*, little brown bat (pos. 486-639 C Tigger7)

AGGAACATTATGGCTCTCTGAAAGGCCTTACCCTTAGCTGGATTGGGGATGGGAACAACATCCTGCACTCCATAATGATGAGCGCAGCCAAATTCGGAATGCACATCCAGGCAGCTACTCCAAAGGTAGGGAACTTTCTGCCTGGAACTAACCCCTCACTTTAAGTCATCCCCGGATGTAATTACCCAGGAAAAACAAACCTCTATTCCATTCAAGAGCACAGGTGAGGCCATAAAATTTAGGTTATGTTAGCCCGTCTGTTATAGCTATTTGGTTTCTTGGGTGCCCAATTTGCCAACTCTATAATAAGAGATAGTCTTGGCGATGCCTTTCATCCTATTATCTCCTCGAATGCCCTGAAACCAGCCATACTGATGACTGGTATCCTTGTGCATTGCTACCACAAAGGATGAAGAAAGCAGTACAATTACAGACAGTGTAGAATTCACAAGGCATGGCTAGAATGCTATCATTTTTCTAATACTGTAGTTCTCCCTTATCTGTGGGAGATATGTTCCAAGATTCCCAGTGGATGCTTGGCACTACAGAAAGAACTGAATTCTTTAAACACTGTTTTCCCCCTGTACATACATACATACATACATATCTATGATAAAGTTTAATTTATCAATTAGTCT

>LIMB5_OTC_*Equus caballus*, horse

agGAACATTATGGTTCTCTGAAAGGCCTTACCCTCAGCTGGATTGGGGATGGGAACAACATCCTGCACTCCATCATGATGAGTGCAGCAAAAGTCGGAATGCACCTTCAGGTGGCTACTCCAAAGGTAGGGAACTTTCTGCCTTGAACTAACTCTCTTAAATCATCCCCACATGCAATTACCCAGTGAGAACAATCTTCTCTTCCATTCAAGAGAGCACAGGTGAAGCCAAAAAATTTAGGTTATGATACAAGCCCTACTATATAGCTGTCTGGCTATTCAAGTCCCAATTTCCACCTCTACAATAAGAGATAGTCTTGGCTGATGCCTTCATCCTGTGAGTCTGTGTTGAAGTAG

>LIMB5_OTC_*Bos taurus*, cow

AGGAACACTACGGCTCTCTGAAAGGCCTTACCCTCAGCTGGATTGGGGATGGGAATAACATCCTGCACTCCATCATGATGAGTGCAGGCTAAATTCGGGATGCACCTTCAGGTGGCTACCCCAAAGGTAGGGAACTTTCTGCCTTGAACTAACCCCTTTTGAAAGCATTCCCAGATACAATTACCTAGTGAAAAACAAACCTCTCTTCCATTCAAGGAGAGCACAGTTGAGGCTACAAAATTTAGGTTATGTTGCTATCCCTACTATTACAGCTATCCGGCCTCTTTTTTTTTTTTGTATCCGGCCTCTTGAGTGTCCAATTTCTCATCTCTACAAAAGAGATAATCTTGGCTGATGCCTTTCATCTTGTGAGTTTCTGTGTTAAAGCATGTCTGAATTATCCCTTTGAATGCCCTGAAACCAGCCATTATGATAACTGGCTTTCTTGTGATTGCTACCACAAAGGCTGAAGAATAATGAAATCCAGACAGCCTAGAAATCTCAATGCATGGGGAAGATGCTGTCTATTGTTGAATATTACAGTTTGGTGGAAAAAATTCAATCTAATGTGAAGGACACAGTGATGGCGTCTG

>LIMB5_OTC_*Megaptera novaeangliae*, humpback whale

CACCTTCAGGCGGCTACTCCAAAGGTAGGGAACTTTCTGCCTTGAACTAACCCCTTTTGAAATCATTCCCAGATGCAATTACCTAGTGAAAAACAAACGTCTCTTCCAATCAAGGAGAGGACAGGTGAGGCCACAAAATTTAGGTTATGTTACTAGCTCTACTATTATAGCTACCCGGCCTCTTGAGTTTCCAATTTCCCATCTCTACAAAAGAGAGAGTCTTGCTGATGCCTTCATT

AGGAACACTACGGCTCTCTAAAAGGCCTTACCCTCAGCTGGATTGGGGATGGGAACAACATCCTACACTCCATCATGAT
GAGTGCGGCAAAATTCGGCATGCACCTTCAGGCAGCTACTCCAAAGGTAAAGAAACGTTCTGCCATGAAATTATTCCCC
TATTTTTTTTTTGAGGTGAAATTCACATACACAAAACTTTTTTTTTAAGCATAATGACTTTAAAAACTGAGGTATGATATAG
AGTAAGATGACatatacataagataaaatcacaaagattaagtgtatatctcagtgaaatttacatatgtttatattcagataagtatggccagacaaaattatagaatatt
tcattaccccgagaaaaaaaactgtttgaagtgaacaatccattggcatttaccattcacaaatgttggtcaatcaccatctctatctagttccaaacttttcatcaacccaaaag
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GTGTGAACATACCACAAATTTGTTTATCCATTCTGTTGACAGCCATTTGGCCCATTTTCGACCTTTTGGCTATTGTGAAT
ATTGCTGCT

AGGAACACTATGGCTCTCTGAAAGGCCTTACCCTCAGCTGGATTGGGGATGGGAACAACATCCTACATTCCATCATGAT
GAGTGCAGCAAAATTTGGGATGCACCTTCAGGCAGCTACTCCAAAGGTAGGGGAAAATTTCTGCTATGAAGCTATCACCC
TCtttttatatgtgaattcacatacataaaactatcttaaagtgaaacaattcactggcattattattcacaattgtacaatcaccgtctctatcaagttccaaaacatttcatcacc
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acaatgtgttatcaattcgactgtaaatggagatt

CAAAGGTAGTGAAACTTTCTGCAATGAACTATTTCTGTCTTCTTTTTTtttaggtgaaattcaaatatglaaaatgattttaaagtgaacaatttatt
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GCTAACCCCTCTTTAATCACTCCAGATCCACTAACTCAGTGAAAAACAACTTCTCTCCTATTCAAGGAAAAACACAGTT
GGAGTAAAAAATTAGGTTGTGTTATCAGTTTCTCTGAAATAGCTAGCTGGACTCTTGAGAGCCCAATTTCTCATCTCT
GCAATAACTGAGAGAGT

AGGAACACTACGGCTCTCTGAAAGGCCTTACCCTCAGCTGGATTGGGGATGGGAACAACATCCTACACTCCATCATGAT
GAGTGCAGCGAAATTCGGGATGCACCTTCAGGCGGCTACTCCAAGGTAGCGAAACCTTCTGCCATGAAACAATCTCC
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acagtggtctgaccaaattacatctccatctgtgataatacaaaaggtccaatttctccacatTATCTAATCCCCTCTTAAATCACC^{cccc}CAGATGCTTTTAC
TCAGTGAAGAGCAAAGCTCTCTGTCCATCTATAGCACAGATTGGGCCAAAATTTAGGATATGTTGCCAGCCCTGCTACTAA
ATAGCTAACTGGCTTCTTGAGTGCCCAATTTTTCATCTCTACAATAAGAGAGATAGTCTTGCTGATGCCCTTTCATTCTGT
GAGTCTGTGTTAAAGAATGTCTGAATTATCCC

CAAAGGTAGCGAAACCTTCTGCCATGAACAGTCTCCCACTTA^{ttttactgaggtgaaattcacataacataaaataattttaagtgagcaattca}
gtggtatttggtacattcacaaatgtgtcaaccaccacctctatatagttccaaaatatttctatcgttcaaaatgaaaacctgtaccattaagcagtcactcacgttcccttttcttctc
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TTTTCATCAGTGAAGAACAGCTCTCTTCTCACTTATAGCACAGTATGGGCCAAAATTTAGGATATGTTGCCAGCCCTGC
TACTAAATAGCTAACTGGCTTCTTGAGTGCCCAATTTTTTTCATCTCTACAATAAGAGAGATAGT

CACCTTCAGGCAGGCTACTCCAAAGGTAGAGAAAGCTTCTGCCATGAAACAATCCCCCACTTAtttttattgaggtgaaattcacataa
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attaaacagtcactcccattcccttctctccagccccgtgcaaccaccaatttactctgtctctatggatttaccttctgtgctattcatataaattggaatcatacaatgtggtctt
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ccacatTATCTAATCCCCCTCTTAATGATCATCCGAGCATGTCATTTACTAGTGAAGAAACAAACCTCTCTTCACATCAAGGCGCAG
ATTGGGCCAAATTTTAGGATGTGTTACCAGCCCTGTTATTAAATAGCTAACTGGCTTCTTCAGCGCCCAATTTTAAATCT

CTACAATAAGAGAGATAGTCTTGGCTGATGCCTTTTCATT

>LIMB5_OTC_*Procavia capensis*, hyrax

AGGAACACTATGGCTCTCTGAAGGGCCTCACCCCTCAGCTGGATCGGGGACGGGAATAACATCCTACATTCCATCATGATGAGTGCAGCGAAATGCGGGATGCACCTTCAGGTGGCGACTCCAAAGGTAGGGAAACTTCTGCTGTGAAAAATACCCCATTTAATTTATCGAGGTGAAATCCACATAACATCAAATTAATCATTAAAGTGAGCTTTCTGGGGCATTGGTACACTGACAGTGTGTGCAACCATCACCTCTAAATACTCCAACATAATTCATCATCCAAAACAAAACCTGTACCCATTAAGTAGTCATTCCATTCTCTCCTCCAGCCCTGGCAGCCGTGAGCTTTATCTGTCTGTGAGATTACCTATTCTGGATATTTTCATAAATGGTATCATAAATATGTGGCCTCTGTCATCTGGCGTTTTTCATTAGCATAGTGTGGAGGTTCATCCATGTATAGCATGCGTCAGTACTTCATGCCTTATGACTAATTCATTGCTGTATATGTCATAATTTGCTTATAACATTATCTGTGATGGACATTTGGGCTCTCTCTATCTTTGGCTATTGTGAATAGAGCACCATGAACATGTATACATGCTGTTCAGAACCTAGTTCCATTCTAGGGTATATCTGGGAGTGGAAATGAGTATTACAGGGTAATCTATGTTAACTTTATGAGGAACCTGGCAAATGTTTCCACAGTGGCTGTACCATTTACATCTACCAGTGTATCAAAGCCTCAATTTCTCCACATGTGCTAATCCCTCTTAGATCACTCTCAGATGCATTTACTCAGTGAAAACAAATCTTTTTTATATTCAAAAAGGGTACAGATTGGACAAAAAATTTTATGTTACCAGCCCTGCTATTAAATAGATAACTGGCTTCTTGACTGCCAGTTTTTTCATCCCTACAATAAGAGAGATAGTCTTGGCTGATGCCTTTTCATT

>LIMB5_OTC_*Echinops telfairi*, tenrec

AGGAACACTATGGCTCTCTAAAAGGACTCACTCTCAGTTGGATTGGGGATGGGAACAACATCCTGCACTCCATCATGATGAGTGCAGCAAAATTTGGGATGCATCTTCAGGCAGTACTCCAAAGGTAGGGAAACATTCTACCATGACACAATCCCCATTAATTTTATTGCGTTGAAATTCACATATCATAAATTAATCATTCAAAGGTAACAACCTCAGTGAATTAAGTACAATCATAATGCTATGCATCTACCATAATCCAAATCTCCCTCCATCCAAATGGAACTGTACTCATTATGGTTGCCCGAGGCAACCGCAATTTACTCTAATCTGTGGCAAATACCTATTCATCAATAGAATAATACAATATGTGACGTCTTTGCGCTCTCTTCACTTAGCATAATCGTTAAGGTTCATCTATGTTAGAGCATGCATCAGTACTTCATCCCTTTATGTTAAAGAAAATCCACGGTATGCATATACCATTATTTGCTCAAGCATTCATTACCAATGGGCAATTTGAACCTTTTACCTTTGCTATTGTGAATAGTGTACAAAGAACAAGTATACAATTTGAGTACCTGTCTCATTCTTAAGGGTATACCTAGAAGTGAATTCAGTATTATCTCTATTTATCTATTTAACTATTGATAACCCAGAAAACCTGTTCCACCATATCTGTACCATTTATCTCTACGGGTAATGAACAAAGTTATCAATTTCTGAATATCTATAATCCCTCTTAAATTACCCCCAGGTGC

>LIMB5_OTC_*Amblysomus hottentotus*, golden mole (nested AfroSINE insertion, in purple)

TTTTTATTGCGGTGAAATTCATATAAAATAAAATTAGTAATTTAAGGTTATATAAGgttctcagacatttcactctccaaaatggaaacctgtaccactaagcagtcattctcattctctctcccccagcccctgatcaccacattttattctgtctctctggattacctgttctagacattccataaaatgaaatcatacaatgtgtagtctctgtgtctggcggttttctacttagcataatgtttcaagggtcatccatgttatagcatgcattagtaatccattccttttatgggaaaatgatattccattgtgcataataccacaattgcttatacattcatctgtatggaaattgaactgtttatataattcgccattgtgaacagtgctactaggaacatatgtacatatgcttgccctgagtatctttATAAGGAGCTCTGGTAGCGTAGTGGTTATGAATCGGGCtgcaaatcgcaagggtcagcagttcgaaactaccagctattccgcaggagaaagatgaggctttctgctcctgtaagatttacagcctcggaatcctgttcagggtcgctatgagtcggaacgggactgacggcaCACAAACAACAATCatgtttaacttttttaggaaccagcaaacgttttccacagtgggccacaccattttacattctaccatgtaaactgggtacagcctttccatgaagtgaaggtccaatttctccacatcGCCTAACTCCCTCTTGAATTA CCCGCAGATACATTTACCCAGTGAAAACAAACCTCTCTTCTGCTCAAAGGGAACACCAATTGGGCCACAAATTTAGGATATGTTACAGCCCTGCTATTAAATAGCTAACTGGTCTCTTGAGTGGC

>L1MB5_RABGAP1L_ *Echinops telfairi*, tenrec, scaffold_304079:40497-41729
TAGCAGAGCTAGTTTAACTTTAAATACTTTACTTGGCTTCCTATTGGGTTTGTGTCAGCTACATTAAATAAAGTATAATTA
TTGATTTAAGTGATACCTCTTTATAAAATATAGAGCCATACAATTATAGTAATCAGCTGAAATATTGTTCCACAACAGTATA
GATTGAAGTGACCATTGTATAATTTAATTTGAATCATAATGCTTTTTCTAATATTTTATTAGAGAAAGTGCTTTCTGATAAA
AGAGGTTACTGCTTTTAAATTAATAGGAGGGATTGAATAAATACAGAGAGATTAAGACCATTGTTCCACTGGGTTAATA
ATCAGATGGTATAATGTTTGTGGGAGGATGAAATAAATCTAACCTCTACTTATGAAATATTTTTTGTCAAAGAAAAATT
GGATTTATTAATAATTGAAACATTCAAGAatcctggaataagtaactccatgttacagaaagcaggctctgttaggagagatggtacagggaggaggagc
ggtggacaataggtagtgcccactaatgtacatagggattatlttgaaagtgtgaacataltttagaataaataaggatgatggttacagagcatagtgaatgtactaaatgccactg
aattgtataccttaaaatgggtattgagtagtttggtaigtgaattttacctcaatttaaaaaaAATACAAGTATGTAGCGTAGTTTTTATACTGATAATAAAT
GATCTGTTGCATATTTTTTAAGAGTTCAACTGATCACTGTCTTCAAATTACATGTCATACATTACTTTAGTATTTTCTAGATT
TACAGAGTATTTGTGGTTATTTCCATACCACTTTTCTAGATGCTTGACTTCATAAACACAGCTCTCTCCCTGGAGGTGCCTG
AATGAACCTAGTTTGAATGGCAGCGTTTATAAAACATGATGTTCTTTTACTCTTAGCTCTACCTAACCAACCAATTTGGC
TAACAGTGTGGAGCTCCTACTTACGTCCTTGAATCCAACCCATAGTGACGAGGCCCTTTGGTGTGGAATGGTAGGTTGCC

GGCATCAAAAGAGACCCAGAGGATGTAGTCTGGAGTAGTGCCTTGAGGGGACCCTATGGAGAATAAAGCAGGCCTTTC
TATTTCCCTGCGCTGCTTTTTCTCCCTGGAGTTCTGGCATGCTTCCTGAATGAATTTAGCCCTCTGAGGAGGCTGC
TGAAGAAACCTTGAACCACTGG

>L1MB5_RABGAP1L_*Procavia capensis*, rock hyrax, trace sequences (cannot be right extended with traces)

AAAATTTTAAGAAAAATGACTTTCTGCATTTCCGTTCTCAGCATGGATGTAGGGTGCATAAGGTTGTTGCAGCTCAGCA
TTGCTAAAATTCTAAGTGTTTTTAAATCCCTAAAAATAAATTTTGTATACACTGTTTACCAGTTAATTCTAAGTCAGGT
ATCAGCCCTGTCTCTCAATACCAGAGCTATAAAGGGGTTTATTTCCACTTTAAAGACTTTATTTGGCTTCTGTTGTTATG
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AATCAGTCCTAATAATAAGCTAAAATATTGTTTACACACAGTGTAGATTGAAGTGATCTTTGGTGCAGTTTAATTCGAAGCA
TATTATGTTTTCTGATTTTATGATCACAGCAACTACTTTCTGAAAAAGAGGCTACTGCTGTGAATTTAATGGGAGGGATTG
AACACGTTGTGGAGATACCAATACCTTTGTCTGGTATAATAATTTGATAGTATAATGGTTTGTGGGAGGACAGAAATAAA
CTTAACCTCTATTTTATTAATACTTTTTGTCAAAAAAGATTAGACTTCTTATTAACCTGCAGTATTTCAAAAACTGagaat
aagtaaatccagaagacagaagtagactggtggtgctgggatttgggacacgtaggatgggataaggcagataataggagggtaccgcttagtgcataatggagtgatgaa
aacatcttgaactaggtagatgatggtgcaacaaaatgaatgtaccaaatgccactgaatagtgcacctaataaggactggtgatGAACCTAAGTACCCCTG

>L1MB5_RABGAP1L_*Trichechus manatus*, manatee, PCR product

ATACCTTTGTTGGTCTGTGTTAATAATTCGATGGTATAATGGTTTCTGGGAGGACAAAAATAAACTTACCTCTATTTTAT
CAAATACTTTTTGTCAAAAGAAGATTGAATTTATTATTGAAAATGAAGtatttcaaacatccagaataagtaaatccagagggacagaaagtag
accagtgggtggtgaggacttgggacaggaagatgggcaaggtagacaatagggaataactgcttaatgtatatggagctcttttgaagtgtgaaatgtcttgaacta
gctagagatgatggtgacacacagtgactgaatggactaaatgccactgaattgtacaccttaaaaagggtgtgattaatttgtgtatgtgaatttacctaataaaaaAAC
ACTGACGCATTTCCGTTATTTTGGTACT

RABGAP1L sequences from Boreoeutherian species. Conserved left (uppercase, blue) and right (lowercase, green) flanking sequences are shown with respect to the LIMB5 insertion in xenarthrans and afrotherians (above).

>L1MB5_RABGAP1L_*Homo sapiens*, human chr1:172878002-172878201 lod 33 start

TGGATTAATAATTTGATAGCATAATGGTTTATAGGAGGACAAAAATAAACTTAACCCCTATTTTACCAAATATTTTATCAA
AAAGATTGGATTTATTATAAAAACTAGAGCAGTTAAAgattgttttgatactaatgatgagttatctgctgcataatttggagaatgcaataatcactgact
cttaaatgacat

>L1MB5_RABGAP1L_*Pan troglodytes*, chimpanzee

TGGATTAATAATTTGATAGCCTAATGGTTTATAGGAGGACAAAAATAAACTTAACCCCTATTTTACCAAATATTTTATCAA
AAAGATTGGATTTATTATAAAAACTAGAGCAGTTAAAgattgttttgatactaatgatgagttatctgctgcataatttggagaatgcaataatcactgact
cttaaatgacat

>L1MB5_RABGAP1L_*Pongo pygmaeus*, orangutan

TGAATTAATAATCTGATAGCATGATGGTTTATAGGAGGACAAAAATAAACTTAACCCCTATTTTACCAAATATTTTATCAA
AAAGATTGGATTTATTATAAAAAACAAGAGCAGTTAAAgattgttttgatactaatgatgagttatctgctgcataatttggagaatgcaaacagtcactgaa
tctacaatgacat

>L1MB5_RABGAP1L_*Macaca mulatta*, rhesus macaque

TGGATTAATAATTTGATAGCATAATGGTTTATAGGAGGACAAAAATAAACTTAACCCCTATTTTACCAAATATTTTATCAA
AAAGATTGTATTTATTATAAAAACTAGAGCATTAAAgattgttttgatactaatgatgagttatctgctgcataatttgaagaatgcaaacatcactgac
tctaaatgacat

>L1MB5_RABGAP1L_*Callithrix jacchus*, marmoset

TGGATTAATAATTTGATAGCATAATGGTTTATAGGAGGACAAAAATGAAGTTACCCCCATTTTACCAAATATTTTATCA
AAAAAGATTGGATTTATGATAAAATGAGAACATTTAAAGTATTgttatgatactaatgatgagttatccgctgcataatttgaagaatgcaataatc
actgcctcttaaatgccat

>L1MB5_RABGAP1L_*Otolemur garnetti*, galago

TAGATTAATAATTTTATAGTATAATGGTTTGTAGCAAGGACAAAAATAAACTTACCCCTGTGTTTATTAATATTTTATCA
AAAGGATTGAATTTATTATAAAGCCTGAAAATTTAAGgtgctattttgacactaatgagtgatctagagaattctgaagaatacaaatgattactacact
atgagatat

>L1MB5_RABGAP1L_*Cynocephalus volans*, flying lemur, PCR product

ATACCTTTGTTTCATCTGGGTTAATAATTTGATAGTATAATGGTTTGGGGAGGATAAAAAATAAACTTAACCCCTGTTCTAC
AAATATTTTGTCAAAACAAGATTGGATTTGCTATAAAAACTAAAGTATTTGAGgtattattttgatact

>L1MB5_RABGAP1L_ *Mus musculus*, mouse

TGGGTTAATAATTTGGTACTATAATGTATTGTGGAAAAACAAAAATAAATATAACCCCTATTATATTAAGTACTTCACATCA
AAACACTATTGGGTTTATTTTAAAGCTAGAGATTTAAGGTATTgttttgctattaacaaaacatacagtttttgagtaagattatgataatattgcatt
gttttctagacttgga

>L1MB5_RABGAP1L_ *Rattus norvegicus*, rat

TGTGTTAATAATTTGGTACTATAATGTATGGTGGAGAAACAAAAATAAATATAACCTATTATATTAAGTACTTTACATCAAA
ACACTAGTGGGCTTATTTTAAAGCTAGAACTTTTAAGGTATTTgtttgatattaacaatactacagtttgagaatgcaaacaataccaatatttg
aatgagatatgatattgtt

>L1MB5_RABGAP1L_ *Oryctolagus cuniculus*, rabbit

GGATACCTGGTTCGTGGGTGGACAAAAATAAACTTAGCACATGTCTTATCAATTATTTTTGTCAAAGAAAAATTGGATT
TTTAACAAAACTAGAGCATTTGAGggattattttagacttatgagtaattgcagtgtaattctgaagaatggaaatgatca

>L1MB5_RABGAP1L_ *Canis familiaris*, dog (U6 snRNA 31 bp seen by Repeatmasker in red)

TGGGTTAATAATTTGATCATATAATGGTTTGTGGAAGGATAAAAAATAAACTTAACCTTTGTGTTTTCAAATATTGTTCTCA
AAACAAGATTGAATAGTATAAGAATTAACATTTTCAGGTATTattttgataccaataatgagtgacctgctgcatgatttgaagagtgcaaaggctc
gctgactttgtaaagtagataattttagatatgtgctgctgcgaagcgagcactgtaaagtagat

>L1MB5_RABGAP1L_ *Felis catus*, cat (no trace extension of PCR product available)

ATACCTTTCCTCATCTAGGTAAATAATTTGATTGTATAATGGTTTGTGAAAGGACAAAAATAGACTTAACTTTAAATRAG
CTTGTTTTATCAAATATTGTTCTCAAACGAGATTGGATTTAATATAAGAACTGAAACATTTTCAGGTgttattttgatacc

>L1MB5_RABGAP1L_ *Sus scrofa*, pig trace frag

TGTTTCATCAGTTATTTTCTCAAATAATATGGGATTTAATGTAAGAACTAAAGCATTTAAGgatttatttggataccaaaataataagtg
atctgctgcatgatttgaagaatgcagatgatcactgactcttcgcaaatt

>L1MB5_RABGAP1L_ *Lama glama*, llama, PCR product

ATACCTTGTTCATCAGGGCTAATAATTTGATAGTATAATGGTTTGTGGAAGGACAAAAATAAACTTAACCCCTGTTTCAT
CAAATGTTTTCTTCAAAGCAAGATTGGATCTAATGTAAGGACTAAAGCATTTCCAAGTgttattttgtacc

>L1MB5_RABGAP1L_ *Bos taurus*, cow

TGGGTTAATAATTGGACAGTATAATGGTTTGTAGAAGGACAAAAATAAATGTAACCCCTGTTGCAGCAAATATTTTTCTAA
AAAATGAGGTTGTATTTAATGTAAGAACTAAAGCATTTTCAGgagttatttggataccaaaatgatgagtggtctgatacatgattttacagaatgcaaat
ggttactgactcttgga

>L1MB5_RABGAP1L_ *Megaptera novaeangeliae*, humpback whale, PCR product

ATACTTTTGTTCATCTGGGTAAATAATTTGATAGTATAATGGTTTGTAGAAGGACAAAAATAAACAACCCCTGTGCGAGCA
AATATTTTCTCAAACAAGATTGGATTTAATATAAGAACTAAAGCATTTTCAGGAgttatttggataccaa

>L1MB5_RABGAP1L_ *Monodelphis domestica*, opossum

TAGGTTAATAATTTGATTGTGCAAGGGTTTGAAAGAACAAAAATAAACCCACCTTTCTTTCTCTAAATATGTTCTTT
TAGCATACTATATTTAGTCTTTGCTACAAAGCTAAAgttgcatttctagcaatgacactgttgagtggtctcatgattctaaaatatgcaaatcaatattgg
tttt