



Supplementary Figure 1. The tree of 36 mammal species analyzed in this study.

The trees with fossil calibrations for MCMCTree:

Calibration Strategy 1:

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(P001_Platypus,((P002_Opossum,P003_Wallaby),((P004_Tenrec,(P005_Rock_hyrax,P006_Elephant)),(P007_Armadillo,P008_Sloth)),((P009_Hedgehog,P010_Common_shrew),(((P011_Dolphin,P012_Cow),P013_Pig),P014_Alpac),((P015_Horse,(P016_Dog,P017_Cat)),(P018_Megabat,P019_Microbat))))),((P020_Rabbit,P021_Pika),(P022_Squirrel,(P023_Guinea_pig,(P024_Kangaroo_rat,(P025_Mouse,P026_Rat))))),P027_Tree_shrew,((P028_Bushbaby,P029_Mouse_lemur),(P030_Tarsier,(P031_Marmoset,(P032_Rhesus,(P033_Orangutan,(P034_Gorilla,(P035_Chimp,P036_Human)))))))))'S2N(0.698,65,3.65,-3400,65.02,13.75,11409)')'B(162.9,191.1)';
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Calibration Strategy 2:

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(P001_Platypus,((P002_Opossum,P003_Wallaby)'L(64.85,0.1,1.0,0.001)',((P004_Tenrec,(P005_Rock_hyrax,P006_Elephant)'L(61.8,0.1,1.0,0.001)')'L(64.85,0.1,1.0,0.001)',(P007_Armadillo,P008_Sloth)'L(58.3,0.1,1.0,0.001)'),((P009_Hedgehog,P010_Common_shrew)'L(58.3,0.1,1.0,0.001)',((P011_Dolphin,P012_Cow),P013_Pig),P014_Alpac),((P015_Horse,(P016_Dog,P017_Cat)'L(43.3,0.1,1.0,0.001)'),(P018_Megabat,P019_Microbat)'L(55.5,0.1,1.0,0.001)'))'L(64.85,0.1,1.0,0.001)',((P020_Rabbit,P021_Pika)'L(53,0.1,1.0,0.001)',(P022_Squirrel,(P023_Guinea_pig,(P024_Kangaroo_rat,(P025_Mouse,P026_Rat))))'L(56.8,0.1,1.0,0.001)')'L(63.4,0.1,1.0,0.001)',(P027_Tree_shrew,((P028_Bushbaby,P029_Mouse_lemur),(P030_Tarsier,(P031_Marmoset,(P032_Rhesus,(P033_Orangutan,(P034_Gorilla,(P035_Chimp,P036_Human)))))))))'S2N(0.698,65,3.65,-3400,65.02,13.75,11409)')'L(64.85,0.1,1.0,0.001)')'L(64.85,0.1,1.0,0.001)')'L(64.85,0.1,1.0,0.001)')'L(64.85,0.1,1.0,0.001)')'L(127.5,0.1,1.0,0.001)')'B(166.2,191.1)';
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Sequence alignment:

Sequences for 14,632 orthologous genes for the 36 mammal species were downloaded from the ENSEMBL database. The sequences were aligned and edited as explained in dos Reis et al. 2012. Proc. Roy. Soc. B. **279**: 3491-3500. The large sequence alignment (21 Mbp) used in this study is available from <http://abacus.gene.ucl.ac.uk/zieng/data.html>.