



Num	Node to be calibrated	Fossils	Minimum	Soft Maximum	Source
1	Choanata	† <i>Youngolepis</i>	408	427	Benton et al. (2015)
2	Tetrapoda	† <i>Lethiscus stocki</i>	337	351	Benton et al. (2015)
3	Amniota	† <i>Hylonomus lyelli</i>	318	332.9	Benton et al. (2015)
4	Crocodile and birds	† <i>Ctenosaurus koeneri</i>	247.1	260.2	Benton et al. (2015)
5	Amphibia (Liss-)	† <i>Gerobatrachus hottoni</i>	270.6	337	Anderson (2008)
6	Batrachia	† <i>Triadobatrachus massinoti</i>	252	272.8	Cannatella (2015); Benton et al. 2015
7	Cryptobranchoidea	† <i>Chunerpeton tianyiensis</i>	161.2	252	Gao and Shubin (2003)
8	Anura	† <i>Liaobatrachus zhaoi</i>	129.7	252	Chang et al. (2009)
9	Alytoidea	† <i>Iberobatrachus angelae</i>	125	252	Gomez et al. (2016)
10	Pipanura	† <i>Rhadinosteus parvus</i>	148.1	252	Cannatella (2015)
11	Pipoidea	† <i>Neusibatrachus wilferti</i>	127.2	252	Gomez et al. (2016)
12	Pipidae	† <i>Pachycentra taqueti</i>	83.6	148.1	Cannatella (2015)
13	Pelobatoidea	† <i>Elkobatrachus brocki</i>	46.1	148.1	Henrici and Haynes (2006)
14	Pelodytes + (Pelobatidae + Megophryidae)	† <i>Miopelodytes gilmorei</i>	38.9	148.1	Henrici and Haynes (2006)
15	Pelobatidae + Megophryidae	† <i>Macropelobates osborni</i>	28.1	148.1	Cohen et al. (2013)
16	Acosmanura	† <i>Eurycephalella alcinae</i>	113	252	Baez (2009)
17	Neobatrachia	† <i>Beelzebufo ampinga</i>	66	148.1	Rogers et al. (2013)
18	Myobatrachoidea	† <i>Calyptocephalella pichileufensis</i>	47.5	148.1	Gomez et al. (2011)
19	Ranoidea	† <i>Thamastosaurus gezei</i>	33.9	148.1	Rage and Rocek (2007)
20	Node between Ptychadena + Phrynobatrachus	Ptychadenidae fossil	25	148.1	Blackburn et al. (2015)

## References

- Anderson JS (2008) Focal review: the origin (s) of modern amphibians. *Evolutionary Biology*, 35, 231–247.
- Báez AM, Moura GJB, Gómez RO (2009) Anurans from the Lower Cretaceous Crato Formation of northeastern Brazil: implications for the early divergence of neobatrachians. *Cretaceous Research*, 30, 829–846.
- Benton MJ, Donoghue PCJ, Asher RJ *et al.* (2015) Constraints on the timescale of animal evolutionary history. *Paleontologica Electronica*, 18.1.1FC, 1–106.
- Blackburn DC, Roberts EM, Stevens NJ (2015) The earliest record of the endemic African frog family Ptychadenidae from the Oligocene Nsungwe Formation of Tanzania. *Journal of Vertebrate Paleontology*, 35, e907174.
- Cannatella D (2015) Xenopus in space and time: fossils, node calibrations, tip-dating, and paleobiogeography. *Cytogenetic and Genome Research*, 145, 283–301.
- Chang S, Zhang H, Renne PR, Fang Y (2009) High-precision  $^{40}\text{Ar}/^{39}\text{Ar}$  age for the Jehol Biota. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 280, 94–104.
- Cohen KM, Finney SC, Gibbard PL, Fan JX (2013) The ICS international chronostratigraphic chart. *Episodes*, 36, 199–204.
- Gao K-Q, Shubin NH (2003) Earliest known crown-group salamanders. *Nature*, 422, 424–428.
- Gómez RO, Turazzini GF (2016) An overview of the ilium of anurans (Lissamphibia, Salientia), with a critical appraisal of the terminology and primary homology of main ilial features. 1. *Journal of Vertebrate Paleontology*, 36, e1030023.
- Henrici AC, Haynes SR (2006) *Elkobatrachus brocki*, a new pelobatid (Amphibia: Anura) from the Eocene Elko Formation of Nevada. *Annals of Carnegie Museum*, 75, 247–257.
- Rage J-C, Roček Z (2007) A new species of *Thaumastosaurus* (Amphibia : Anura) from the Eocene of Europe. *Journal of Vertebrate Paleontology*, 27, 329–336.
- Rogers RR, Krause DW, Kast SC *et al.* (2013) A new, richly fossiliferous member comprised of tidal deposits in the Upper Cretaceous Maevarano Formation, northwestern Madagascar. *Cretaceous Research*, 44, 12–29.