

BI549 – First Day Quiz

African Lungfish
American Alligator
Chinook Salmon
Coelacanth

Duck-billed Platypus
Frisled Lizard
Mako Shark
Mandarin Duck

Mountain Gorilla
Painted Turtle
Rattlesnake
Red-billed Firefinch

Rock Wallaby
Spadefoot Toad
Tiger Salamander
White-tailed Deer
Yellow-striped Caecilian

Draw a phylogenetic tree for the above taxa and name each group in the tree:

Recent molecular analyses of higher-level relationships among vertebrates:

- Blair, J. E., and S. B. Hedges. 2005. Molecular phylogeny and divergence times of deuterostome animals. *Molecular Biology and Evolution* 22:2275-2284.
- Brinkmann, H; Denk, A; Zitzler, J; et al. 2004. Complete mitochondrial genome sequences of the South American and the Australian lungfish: Testing of the phylogenetic performance of mitochondrial data sets for phylogenetic problems in tetrapod relationships. *Journal of Molecular Evolution* 59: 834-848.
- Cotton, JA; Page, RDM 2002. Going nuclear: gene family evolution and vertebrate phylogeny reconciled. *Proceedings of the Royal Society of London B* 269: 1555-1561.
- Iwabe, N; Hara, Y; Kumazawa, Y; et al. 2005. Sister group relationship of turtles to the bird-crocodylian clade revealed by nuclear DNA-coded proteins. *Molecular Biology and Evolution* 22: 810-813.
- Mallatt, J., and C. J. Winchell. 2007. Ribosomal RNA genes and deuterostome phylogeny revisited: More cyclostomes, elasmobranchs, reptiles, and a brittle star. *Molecular Phylogenetics and Evolution* 43:1005-1022.
- Meyer, A; Zardoya, R. 2003. Recent advances in the (molecular) phylogeny of vertebrates. *Annual Review of Ecology, Evolution and Systematics* 34: 311-338.
- Noonan, J. P., J. Grimwood, J. Danke, J. Schmutz, M. Dickson, C. T. Amemiya, and R. M. Myers. 2004. Coelacanth genome sequence reveals the evolutionary history of vertebrate genes. *Genome Research* 14:2397-2405.
- Stuart, GW; Moffett, K; Leader, JJ. 2002. A comprehensive vertebrate phylogeny using vector representations of protein sequences from whole genomes. *Molecular Biology and Evolution* 19: 554-562.
- Takezaki, N; Figueroa, F; Zaleska-Rutczynska, Z; et al. 2004. The phylogenetic relationship of tetrapod, coelacanth, and lungfish revealed by the sequences of forty-four nuclear genes. *Molecular Biology and Evolution* 21: 1512-1524.