

Genetic Phylogenetic Analysis of Iguanid Lizards Using 12s and 16s Ribosomal Loci

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The purpose of this investigation is to construct an updated phylogenetic tree for eight genera of iguanid lizards and two out-groups. The genes of interest are the 12s and 16s ribosomal loci, two relatively conserved sequences in the iguanid mitochondrial genome. Changes that occur within the sequences track evolutionary divergence. Degrees of divergence give information about relative divergence time between genera and species. The current alternative hypotheses disagree on the placement of the genus *Cyclura*. Protein coding mtDNA loci (ND4 and Cytochrome b) support an *Iguana-Sauromalus* sister relationship while morphological data and existing 12s/16s data support an *Iguana-Cyclura* sister relationship. Also, the iguana *Ctenosaura defensor* has been incorrectly identified as nested within the genus *Ctenosaura* based on morphological data while mtDNA data place it outside the genus *Ctenosaura* and explain its spiny-tailed characteristics by means of convergent evolution with other spiny-tailed iguanas. By completing this investigation the conflict between morphological trees and current genetic trees can be resolved.