

Lovette, I. J., and E. Bermingham. 2000. *C-mos* variation in songbirds: Molecular evolution, phylogenetic implications, and comparisons with mitochondrial differentiation. *Molecular Biology and Evolution* 17, 1569-1577.

Abstract: Nucleotide sequences from the *c-mos* proto-oncogene have previously been used to reconstruct the phylogenetic relationships between distantly related vertebrate taxa. To explore *c-mos* variation at shallower levels of avian divergence, we compared *c-mos* sequences from representative passerine taxa that span a range of evolutionary differentiation, from basal passerine lineages to closely allied genera. Phylogenetic reconstructions based on these *c-mos* sequences recovered topologies congruent with previous DNA-DNA hybridization-based reconstructions, with many nodes receiving high support, as indicated by bootstrap and reliability values. One exception was the relationship of *Acanthisitta* to the remaining passerines, where the *c-mos*-based searches indicated a three-way polytomy involving the *Acanthisitta* lineage and the suboscine and oscine passerine clades. We also compared levels of *c-mos* and mitochondrial differentiation across eight oscine passerine taxa and found that *c-mos* nucleotide substitutions accumulate at a rate similar to that of transversion substitutions in mitochondrial protein-coding genes. These comparisons suggest that nuclear-encoded loci such as *c-mos* provide a temporal window of phylogenetic resolution that overlaps the temporal range where mitochondrial protein-coding sequences have their greatest utility and that *c-mos* substitutions and mtDNA transversions can serve as complementary, informative, and independent phylogenetic markers for the study of avian relationships.