Unveiling the mystery: assessing the evolutionary trajectory of the Apaporis caiman population (*Caiman crocodilus apaporiensis*, Medem 1955) via mitochondrial molecular makers

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Abstract: The Apaporis caiman (*Caiman crocodilus apaporiensis*) has been of particular interest due to its highly differentiated morphology. However, no molecular research has been done to clarify its taxonomy. We characterized the genetic variation within *C. crocodilus* by assessing the evolutionary trajectory of Apaporis caiman populations using mitochondrial molecular markers. We collected ten Apaporis caiman samples from the middle basin of the Apaporis River, Colombia, sequenced two mitochondrial genes [cytochrome oxidase I (*COI*) and cytochrome B (*CytB*)], and analyzed them together with all available sequences from homologous gene fragments at GenBank for the species. Phylogenetic reconstructions revealed three main clades clearly differentiated across the *C. crocodilus* complex. These clades matched genetically and geographically with three of the four morphologically recognized subspecies (*C. c. chiapasius*, C. c. fuscus and *C. c. crocodilus*). However, we found low to almost non-existent genetic differentiation between *C. c. crocodilus* and the until-now morphologically recognized *C. c. apaporiensis*, suggesting that the latter is part of the genetic spectrum present within *C. c. crocodilus*. We reject the hypothesis of an expected elevated level of genetic variation due to isolation (supported by morphological differentiation) and support the idea of Apaporis caiman populations as a *C. crocodilus* ecomorph.

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