Allodaposuchidae, a recently described clade of basal eusuchians from the Late Cretaceous of Europe

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Abstract: Allodaposuchidae is a clade of basal eusuchians comprised of Campanian-Maastrichtian (Late Cretaceous) European crocodyliforms. The type species, Allodaposuchus precedens, was initially described based on fragmentary remains from Romania by Nopcsa in 1928, but it was not until the first years of the 21st century that studies of this material were resumed. Several authors discussed the taxonomical position of the species and finally an emended diagnosis was proposed based on information from other referred specimens from the Late Cretaceous of Romania, Iberian Peninsula and southern France. The first phylogenetic hypotheses including Al. precedens placed this species as a basal member of Eusuchia. Knowledge on taxa phylogenetically close to Al. precedens has increased significantly in recent years through the description of new forms from the Late Cretaceous of western Europe. Several new genus and species have been defined, allowing the definition of the new clade. Thus, many characters previously considered as autopomorphic for Allodaposuchus or Al. precedens are now recognized as having a broader distribution within Allodaposuchidae. Some recent hypotheses considered these forms now included in the new clade as closely related to Hylaeochampsidae, constituting basal forms within Eusuchia. However, other analyses has reinterpreted Allodaposuchidae as the sister group of Crocodylia. On the other hand, the abundant material included in Allodaposuchidae, as well as its optimal preservation, have allowed both cranial and postcranial morphological studies, ontogenetic analyses and paleoneuroanatomical reconstructions, opening new ways for understanding the origin of modern crocodyliforms.

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