

**A NON-FURILEUSURIAN CAUDAL VERTEBRA FROM THE BAJO DE LA CARPA
FORMATION (UPPER CRETACEOUS, SANTONIAN) AND MORPHOLOGICAL VARIATION
IN THE TAIL OF ABELISAUROIDAE**

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Supplementary Information I

Phylogenetic analysis

Modifications to the datasets of Gianechini *et al.* (2021)

The character 274 was excluded and the states of the original characters 270, 286, 289, 290, and 291 were modified as follows:

Ch. 270. Anterior caudal vertebrae, centrodiapophyseal lamina: absent (0), or present (1). Modified from Rauhut *et al.* (2003); Canale *et al.* (2009); Ezcurra *et al.* (2010); Méndez (2010); Pol and Rauhut (2012); Farke and Sertich (2013); Tortosa *et al.* (2014).

Ch. 286 (285 after the exclusion of ch. 274). Mid-caudal vertebrae, morphology of neural spines: posteriorly inclined (0), or vertically directed (1). Modified from Rauhut (2003); Allain *et al.* (2007); Xu *et al.* (2009); Pol and Rauhut (2012); Farke and Sertich (2013); Tortosa *et al.* (2014).

Ch. 289 (288 after the exclusion of ch. 274). Mid-caudal vertebrae, proximodistal axis of the transverse processes with respect to the longitudinal axis of the centrum: perpendicularly oriented (0), or laterodistally oriented (1).

Ch. 290 (289 after the exclusion of ch. 274). Anterior and middle caudals: shape of external margin of transverse processes: straight (0), concave (1), or convex (2).

Modified from Méndez (2010).

Ch. 291 (290 after the exclusion of ch. 274). Mid caudals, prezygapophyses: not elongated (0), slightly elongated (1), or strongly elongated (2). Modified from Méndez (2010).

New characters:

Ch. 418. Mid-caudal vertebrae, length of transverse processes: less than 1.1 times centrum length (0), between 1.1 and 1.3 (1), or more than 1.3 times centrum length (2). (Ordered character). Modified from Rauhut *et al.* (2003); Canale *et al.* (2009); Ezcurra *et al.* (2010); Méndez (2010); Pol and Rauhut (2012); Farke and Sertich (2013); Tortosa *et al.* (2014).

Ch. 419. Mid-caudal vertebrae, ventral surface: smooth (0), with a ventral keel (1), or with a ventral groove (2).

Ch. 420. Anterior and mid-caudal vertebrae, development of a dorsal crest (or bony ridge) in front of the neural spine: no dorsal ridge (0), with a slight ridge (1), or with a well-developed crest (2). Modified from Rauhut (2003).

Ch. 421. Caudal vertebrae, accessory tubercle projected anteriorly to the anterior margin of the articular facet of the prezygapophyses: absent (0), or present (1).

Ch. 422. Caudal vertebrae, accessory tubercle projected posteriorly to the posterior margin of the articular facet of the postzygapophyses: absent (0), or present (1).

The following characters are treated as additive: 5, 7, 16, 20, 24–27, 44, 49, 57, 59–61, 64, 73, 77, 80, 88, 89, 97–99, 102, 103, 125, 127, 128, 133, 155, 164, 175, 180, 184, 199, 202, 203, 207, 208, 226, 238, 246, 249, 257, 262, 269, 273, 282, 293, 297, 314, 319, 329, 370–372, 376, 378, 382, 387, 394, 399, 407, 412, 419.

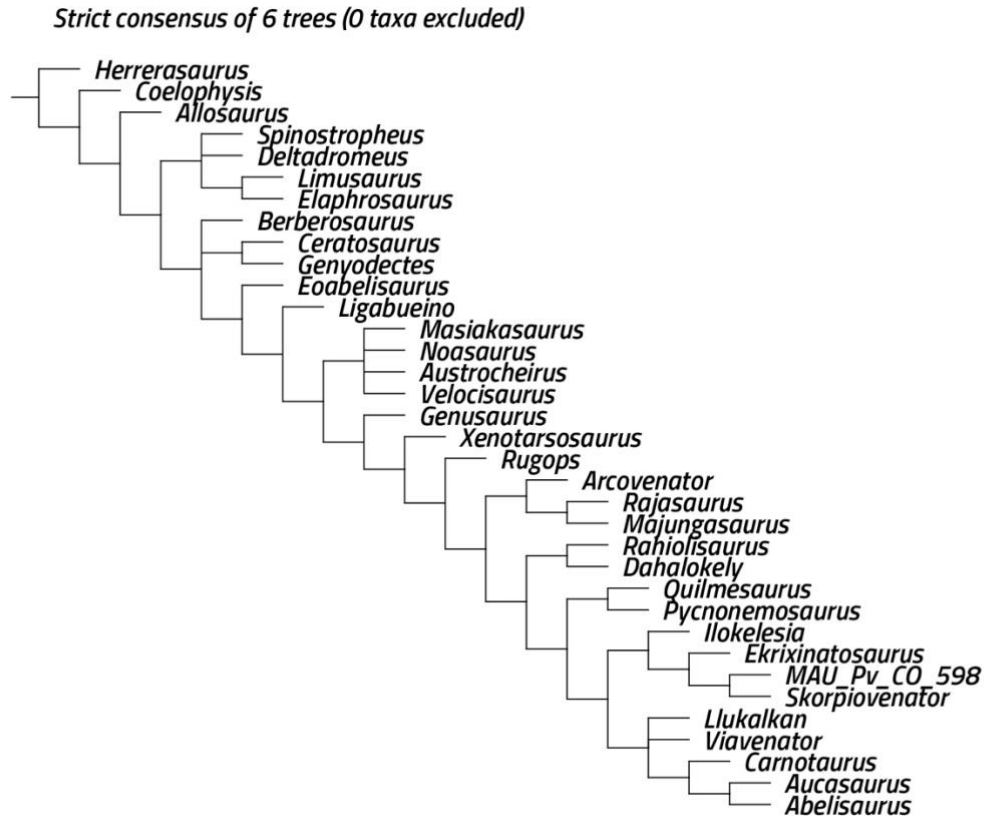


Figure S1. Strict consensus of the most parsimonious trees obtained from the phylogenetic analysis (parameters: random seed 10, replications 1000, trees to save per replication 10).

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