

Table 1: Summary of constrained analyses.

Constraint	MPTs	Tree length	Tree length increase	Templeton test
(1) <i>Diplocynodon</i> monophyletic	3	8282.499	100.643	insignificant
(2) <i>Eocaiman</i> forced into Caimaninae	3	8190.625	8.769	insignificant
(3) <i>Eocaiman</i> forced into clade of South American caimanines	3	8254.124	72.269	insignificant
(4) Extant Jacareans (sensu Norell, 1988) monophyletic, with the following floating taxa: <i>Caiman wannlangstoni</i> , <i>Caiman brevirostris</i> , UCMP 39978, <i>Acresuchus pachytemporalis</i> , <i>Purussaurus</i> , and <i>Necrosuchus</i>	3	8182.617	0.761	insignificant
(5) Force <i>Portugalosuchus</i> out of Crocodylia, ‘thoracosaur’ float	9	8829.43595	47.58	insignificant
(6) Force “Brevirostres”, i.e. Alligatorioidea + “Crocodyloidea”	3	8187.359	5.503	significant
(7) ‘Thoracosaur’ forced out of Crocodylia. <i>Portugalosuchus</i> , planocraniids, and <i>Borealosuchus</i> float	3	8373.965	192.110	significant
(8) ‘Thoracosaur’ forced out of Gavialidae (<i>Gavialis</i> + <i>Tomistoma</i>), all non-thoracosaurine gavialoids float	3	8184.082	2.226	insignificant
(9) ‘Thoracosaur’ forced out of Crocodylia (<i>Argochampsa</i> , <i>Eogavialis</i> , <i>Portugalosuchus</i> , planocraniids, <i>Borealosuchus</i> float)	9	8286.94	105.085	significant
(10) <i>Asiatosuchus germanicus</i> , <i>Asiatosuchus depressifrons</i> , and ‘ <i>Crocodylus</i> ’ <i>affinis</i> forced out of Longirostres, <i>Jiangxisuchus</i> floats	3	8188.548	6.692	insignificant
(11) Monophyletic mekosuchinae forced outside of Longirostres, <i>Quinkana</i> , <i>Australosuchus</i> and <i>Asiatosuchus nanlingensis</i> float in Mekosuchinae and Crocodyloidea	3	8198.052	16.196	insignificant
(12) Force <i>Asiatosuchus nanlingensis</i> forced out of Mekosuchinae. <i>Australosuchus</i> and <i>Quinkana</i> float	3	8202.683	20.827	insignificant
(13) <i>Quinkana</i> and <i>Australosuchus</i> forced in Mekosuchinae, <i>Asiatosuchus nanlingensis</i> floats	3	8204.086	22.230	significant
(14) <i>Mecistops</i> forced into monophyletic Osteolaeminae	3	8201.109	19.254	insignificant