

Table S2 Radiocarbon dates for specimens successfully screened for MS/MS (see Table 1) a, b

UCIAMS #	Museum Acc. #	Taxon	$\delta^{13}\text{C}$ (‰)	±	fraction modern	±	D^{14}C (‰)	±	^{14}C age (BP)	±
209019	UMAG ah 5854	<i>Myiodon</i>	-21,1	0,1	0,1971	0,0009	-802,9	0,9	13045	40
209020	MAPBAR 3965	<i>Megatherium</i>	-19,1	0,1	0,0934	0,0009	-906,6	0,9	19050	80
209021	UF 171347	<i>Neocnus</i>	-21,6	0,1	0,2280	0,0009	-772,0	0,9	11875	35
209022	UF 75526	<i>Parocnus</i>	-20,4	0,1	0,2724	0,0009	-727,6	0,9	10445	30
209023	USNM 244372	<i>Nothrotheriops</i>	-16,4	0,1	0,0285	0,0009	-971,5	0,9	28580	270
209024	MMP 5672	<i>Doedicurus</i>	-20,1	0,1	0,0425	0,0009	-957,5	0,9	25370	180
209025	UF 76385	<i>Acratocnus</i>	-20,8	0,1	0,3718	0,0009	-628,2	0,9	7950	20
209026	USNM 3000	<i>Paramylodon</i>	-20,9	0,1	0,0307	0,0009	-969,3	0,9	27980	250
209027	UF 76796 A	<i>Acratocnus</i>	-22,4	0,1	0,4737	0,0009	-526,3	0,9	6000	20
210691	NYSM VP-46	<i>Megalonyx</i>	-20,6	0,1	0,2463	0,0007	-753,7	0,7	11255	25

a Samples from the following specimens gave no yield of ultrafiltered collagen and could not be measured for dating purposes: *Megalocnus* (UF 169931), *Scelidodon* (MUSM 1386), *Glyptodon* (MACN 7), *Glossotherium* (MACN 2652), and *Scelidothorium* (MACN 1791).

b Radiocarbon concentrations are given as fractions of the modern standard, D^{14}C , and conventional radiocarbon age, following the conventions of Stuiver and Polach (1977; *Radiocarbon*, v. 19, p.355).

Sample preparation backgrounds have been subtracted, based on measurements of ^{14}C -free bone.

All results have been corrected for isotopic fractionation according to the conventions of Stuiver and Polach (1977), with $\delta^{13}\text{C}$ values measured on prepared graphite using AMS. Samples were decalcified in 1N HCl, gelatinized at 60°C and pH 2, and ultrafiltered to select a high molecular wt fraction (>30kDa).

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