Carbon isotope in tooth enamel of pleistocenic megamammals from Alagoas, Brazil

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Stable isotopes in tooth enamel are an important tool in the investigation of the paleoecology of extinct organisms and are applied as proxies for different environmental parameters (e.g, diet, temperature, trophic level) that assist in reconstitutions of past environments. $\delta^{13}C$ in bioapatite of mammals is related to diet and is widely used to reconstruct food preferences and food resources availability based on the fact that plants that served as their food performed photosynthesis by different metabolic pathways that produce different $\delta^{13}C$ values. So animals who feed on C_3 type of vegetation present $\delta^{13}C$ values less than -10 ‰, whereas values of $\delta^{13}C$ higher than -1 ‰ represent the diet based on C_4 grasses. Values of $\delta^{13}C$ between -10 ‰ and ‰ -1 indicate a mixed diet of C_3 and C_4 plants.

Ten teeth enamel samples of Pleistocenic mega-mammals from the semiarid of Alagoas State in Brazil, on latitude 9° S, had $\delta^{13}C$ analyzed to infer their paleodiet and ecological parameters that allow a reconstruction of past environment. Five samples of *Toxodon sp*., three samples of *Eremotherium laurillardi* and two of *Notiomastodon platensis* were analyzed.

Our data indicate that *N. platensis* was a grazer (-1.04‰ to -0.24‰), fed on C_4 plants, while *E. laurillardi* and Toxodon (-9.69‰ to -5.11‰ and -5.55‰ to -0.23‰ respectively) had a mixed diet of C_3 and C_4 plants in this region. These results indicate an environment with predominance of C_4 plants, which are typical of arid environments with low water availability in the soil, suggesting that the area at the time was similar to the current in more arid and open areas of the scrub savannah.