



Stable isotope signature ($\delta^{13}\text{C}$, $\delta^{18}\text{O}$) of marine ostracods from the Danian/Selandian boundary (Paleocene, Tunisia)

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For the early Paleogene greenhouse episode several short-termed hyperthermal events have been proposed. Based on studies in Egypt, the middle Paleocene Danian/Selandian (D/S) boundary (60.9 Ma) was suggested to be the earliest one of these hyperthermals (Speijer, 2003), the most prominent one being the Palaeocene-Eocene Thermal Maximum (PETM; 55 Ma). We present detailed stable isotope ($\delta^{13}\text{C}$, $\delta^{18}\text{O}$) records from the Sidi Nasseur sections (NSF, NSC) across the D/S boundary from Tunisia. Measurements were performed on the primary calcite of well preserved marine ostracod shells. The aims of this study were to test whether monospecific isotope measurements on Paleocene ostracods can be used to reconstruct paleoenvironmental conditions and to gain information on the interspecific variability and ecology of the studied ostracod taxa. Our results show a large offset between reticulated-sculptured ostracods and those consisting of a smooth carapace with respect to carbon isotopes and to a lesser extent to oxygen isotopes. This is probably caused by a major difference in the metabolic control on isotope fractionation. Oxygen isotope data for both smooth and reticulated-sculptured taxa display similar trends and a shift to lighter values across the Danian/Selandian boundary has been observed. This decrease suggests a warming of bottom water temperatures or an increase in freshwater input. By contrast, no clear trend for $\delta^{13}\text{C}$ through time has been observed.

Reference: Speijer, R.P., 2003. Danian-Selandian sea-level change and biotic excur-

sion on the southern Tethyan margin (Egypt). GSA Spec. Paper, 369, 275-290.