

## Oxygen isotope composition in extant shark teeth as a proxy to temperature reconstructions

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Oxygen isotopes are widely used as a climatic and oceanographic proxy, since the discoveries of vertebrate bioapatite's ability to record oxygen isotope composition of ambient seawater [1]. However, some "vital effects" on the  $\delta^{18}\text{O}_p$  composition of the aquatic vertebrate apatite have been reported previously [2, 3]. The purpose of our work is to explore any such impacts via detailed evaluation of stable oxygen isotope ratios ( $^{18}\text{O}/^{16}\text{O}$ ) in the teeth of several species of extant sharks.

We have analysed  $\delta^{18}\text{O}$  compositions *in-situ*, the teeth sections were prepared in the Laboratory of Isotope Geology at the Natural History Museum of Stockholm (Sweden). The  $\delta^{18}\text{O}$  ratios were measured at the NordSIM facility, using secondary ionization mass spectrometry (SIMS). Data treatment was followed by statistical analysis.

Results show significant  $\delta^{18}\text{O}$  differences at inter-tissue level, as well as the impact of chemical pre-treatment on the final  $\delta^{18}\text{O}$  values. No significant inter-taxon variability was observed among the studied shark species.

[1] Kolodny *et al.* (1983) *Earth Planet. Sci. Lett.* 64, 398-404.

[2] Pucéat *et al.* (2010) *Earth Planet. Sci. Lett.* 298, 135-142 [3]

Žigaitė & Whitehouse (2014) *GFF* 136, 337-340.