

Zinc isotopic ratios ($\delta^{66}\text{Zn}$) in modern marine mammals from the French Atlantic Coast

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Zinc (Zn) stable isotope ratios ($^{66}\text{Zn}/^{64}\text{Zn}$; $\delta^{66}\text{Zn}$) can be used as a tracer of trophic level in modern and archaeological specimens that lack organic preservation. To date the majority of $\delta^{66}\text{Zn}$ research has been conducted on terrestrial food webs, with only a few studies that measured $\delta^{66}\text{Zn}$ values in marine mammals from archaeological contexts of the Arctic of Canada published [1,2]. Here we present the first $\delta^{66}\text{Zn}$ results for modern marine mammals (n=35) from the Atlantic Coast of France to better understand the natural zinc isotopic variability and trophic spacing in marine food webs. In particular, $\delta^{66}\text{Zn}$ values in teeth from six species were measured: Long Finned Pilot Whale (*Globicephala melas*), Harbor Porpoise (*Phocoena phocoena*), Harbor Seal, (*Phoca vitulina*), Grey Seal (*Halichoerus grypus*), Common Dolphin (*Delphinus delphis*) and Bottlenose Dolphin (*Tursiops truncatus*). Further, $\delta^{66}\text{Zn}$ results from both enamel and dentine are presented in order to determine the isotopic spacing between these two tissues. The results of this work will serve as an important environmental baseline for Zn research in marine ecosystems and will be useful for modern as well as ancient dietary reconstruction studies.

[1]Jaouen, Szpak, Richards (2016), Zinc PLoS ONE 11, e0152299

[2]McCormack, Szpak, Bourgon *et al.* (2021), *Commun Biol* 4, 683