



## Salinity effect on strontium and magnesium incorporation in clam, *Ruditapes philippinarum*, shells.

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Mg/Ca and Sr/Ca ratio in calcitic and aragonitic biominerals have been used as proxies of seawater temperature. However some species-specific and ontogenetic discrepancies have revealed the involvement of metabolic effects in these signals and the need for more studies. In our work, Mg and Sr signals were studied in the euryhalin clam, *Ruditapes philippinarum*, from two locations along a salinity gradient in the Auray river (Brittany). For the two sites, the temperature levels and seasonal variations were nearly equal, whereas the salinity showed large differences. The downstream site encountered oceanic conditions, while at the upstream site the salinity level varied with seasons, lunar cycles and tidal cycles.

Mg/Ca and Sr/Ca ratios in aragonite of two individuals living downstream showed seasonal variations, positively correlated with the shell  $\delta^{18}\text{O}$ . These ratios do not fluctuate with the seasons in the carbonate deposits of two individuals living upstream. Several hypothesis may be proposed to explain such differences : i) the different levels of concentration of trace elements in water between the two sites, ii) a biological effect through physiological adjustment mediated by water osmolarity differences. These results emphasized the need for a more acute knowledge of transfer and incorporation processes to improve the use of these proxies.