



## **New insight into Biomineralisation Mechanisms of Colonial Cold-Water Scleractinians based on Species Interaction**

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The scleractinian cold-water coral species *Lophelia pertusa* has been subject of many biomineralisation reconstruction attempts in order to decipher environmental signals potentially recorded within its skeletal structures. Even though understanding the mechanisms of carbonate precipitation is a prerequisite to interpret variations in geochemical signals along coral growth axis and evaluate the effects of potential kinetic fractionation, results of research into this area are still largely inconclusive. A close look at similar calcification patterns in microstructure and in the geochemistry of *Lophelia pertusa* and *Madrepora oculata* coral branches along the contact with polychaete tubes provides in our view additional information that may be relevant to understanding the biomineralisation mechanisms of colonial corals. Our analysis suggests a common precipitation mechanism and its origin is most likely found in the aspect of the extracytoplasmic calcifying medium. Based on prior research and own results we suggest mucus as part of, or even the main medium controlling calcification mechanics