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An unsuspected biomineralization process in the green algae class Chlorodendrophyceae

Inés Segovia Campos¹, Agathe Martignier¹, Montserrat Filella², and Daniel Ariztegui¹

¹University of Geneva, Department of Earth Sciences, Geneva, Switzerland (ines.segoviacampos@unige.ch)

²University of Geneva, Department F.-A. Forel, Geneva, Switzerland

Chlorodendrophyceae are a class of unicellular green algae widespread in the aquatic environment (seawater, brackish water, and freshwater) that have recently been discovered to form intracellular carbonates. These mineral inclusions, called *micropearls*, are mainly composed of hydrated amorphous calcium carbonates (ACC) in which strontium can also accumulate at high concentrations. Under natural and culture conditions, the Sr/Ca ratio of micropearls can be 200 times higher than in their environment, suggesting that Chlorodendrophyceae species may be considered as potential candidates for new bioremediation methods regarding radioactive ⁹⁰Sr water contamination. Because very little is known about this phenomenon, ongoing experiments with laboratory cultures are providing essential information about the cellular mechanisms involved in this newly discovered biomineralization process and its impact on the geochemical cycles of Ca and Sr.