



RECOMMENDATION

New results and challenges in Sr/Ca studies on Jurassic coccolithophorids

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Based on reviews by:
Kenneth De Baets and an anonymous reviewer

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A recommendation of

Suchéras-Marx B, Giraud F, Simionovici A, Tucoulou R, and Daniel I (2020). Evidence of high Sr/Ca in a Middle Jurassic murolith coccolith species. *PaleorXiv*, dcfuq, version 7, peer-reviewed by PCI Paleo. DOI: 10.31233/osf.io/dcfuq

This interesting publication by [Suchéras-Marx et al. \(2020\)](#) highlights peculiar aspects of geochemistry in nannofossils, specifically coccolithophorids. One of the main application of geochemistry on fossil shells is to get hints on the physiology of such extinct taxa. Here, the authors try to get information on the calcification mechanism and processes in Jurassic coccoliths. Coccoliths build a test made of calcium carbonate and one of the most common geochemical proxies used for this fossil group is the Sr/Ca ratio. This isotopic ratio has good chances to be successfully used as a robust proxy for paleoenvironmental reconstruction, but, concerning Jurassic coccoliths things seem to be not straightforward.

The authors managed to compare the isotopic value of Sr/Ca measured on Jurassic coccoliths from different taxonomic groups: the murolith *Crepidolithus crassus* and the placoliths *Watznaueria contracta* and *Discorhabdus striatus*. The results they got clearly show that the Sr/Ca ratio cannot be used as a universal proxy because these species exhibit very different values despite coming from the same stratigraphic level and having undergone minimal diagenetic modification. Data seem to point to a Sr/Ca ratio up to 10 times higher in the murolith species than in the placolith taxa ([Suchéras-Marx et al., 2020](#)). One of the explanation given here takes advantage of modern coccolith data and hints to specific polysaccharides that would control the growth of the long R unit in the murolith species. As always, there is plenty of space for additional research, possibly on modern taxa, to sort out the scientific questions that arise from this work.

References

Suchéras-Marx B, Giraud F, Simionovici A, Tucoulou R, and Daniel I (2020). Evidence of high Sr/Ca in a Middle Jurassic murolith coccolith species. *PaleorXiv*, dcfuq, version 7, peer-reviewed by PCI Paleo. DOI: 10.31233/osf.io/dcfuq.

Appendix

Reviews by Kenneth De Baets and an anonymous reviewer, DOI: [10.24072/pci.paleo.100006](https://doi.org/10.24072/pci.paleo.100006).