

## Organic components of the skeleton of scleractinian corals: evidence from in situ acridine orange staining

Pascale Gautret, Jean-Pierre Cuif, and Jarosław Stolarski


*Acta Palaeontologica Polonica* 45 (2), 2000: 107-118

Scleractinian skeleton is composed of mineral and organic phases. Using staining techniques (acridine orange dye) Johnston's (1980) pioneering observations of intraskeletal organic envelopes in *Pocillopora damicornis* coralla can be extended to two other coral reef genera i.e., *Acropora* and *Favia*. The concept of biologically mediated growth of coral skeleton stands in opposition to the purely mineralogic concept of fiber growth of Bryan and Hill (1941) widely applied until recently in geological and paleontological literature. Presence of active mineralizing organic components within the skeleton explains various patterns of microstructural organization more accurately than the mineralogic concept of "crystal growth competition" of Barnes (1970) alone. Biochemical degradation of intraskeletal organic matrices is considered to be involved in the initial diagenesis of coral skeleton, and may explain selective silicification of the late Cretaceous *Coelosmilia* sp. from Poland.

**Key words:** Biomineralization, diagenesis, skeletal matrices, acridine orange, staining techniques, Scleractinia.

Pascale Gautret [[gautret@geophy.geol.u-psud.fr](mailto:gautret@geophy.geol.u-psud.fr)] and Jean-Pierre Cuif [[cuif@geophy.geol.u-psud.fr](mailto:cuif@geophy.geol.u-psud.fr)], Laboratoire de paléontologie, bât. 504, Université Paris XI-Orsay, F-91405 Orsay cedex, France. Jarosław Stolarski [[stolacy@twarda.pan.pl](mailto:stolacy@twarda.pan.pl)], Instytut Paleobiologii PAN, ul. Twarda 51/55, PL-00-818 Warszawa, Poland.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see [creativecommons.org](https://creativecommons.org)), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(1,004.0 kB\)](#)