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

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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.

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