

## **Systematic Review of Genetic Diversity of *Symbiodinium* spp. associated to Cnidaria**

<sup>1,3</sup>Júlia da Luz Bueno\*, <sup>1,2</sup>Layla Poubel Tunalá, <sup>1,2,3</sup>Ricardo Coutinho

[1] Programa de Pós-graduação em Biotecnologia Marinha, IEAPM/UFF, Arraial do Cabo, RJ Brasil. [2]

Programa de Pós-graduação em Dinâmica dos Oceanos e da Terra, UFF, Arraial do Cabo, RJ Brasil. [3]

Instituto de Estudos do Mar Almirante Paulo Moreira, Arraial do Cabo, Rio de Janeiro, Brasil.

\* [bueno.jdl@gmail.com](mailto:bueno.jdl@gmail.com)

*Symbiodinium*, popularly known as zooxanthelae, forms symbiotic association with marine invertebrates. They are responsible for primary productivity and regulate the health of coralline environments. In this work it was made a systematic review aiming to collect information about the state of art of the diversity and distribution of *Symbiodinium* for a further study. Systematic reviews uses a methodology of search, facilitating the synthesis of the conclusion on a given topic and allowing reproducibility. The guiding question was: "How are *Symbiodinium* distributed around the world?". It was used 3 groups of key-words with four words. The first three words of each group were the same: "Symbiodinium", "molecular tools" and "host". They were chosen in order to direct the search to molecular analysis of *Symbiodinium* and their connection to their hosts. The fourth word varied as follows: "distribution", "diversity" and "clade". The search was done on the database Scimedirect.com. The survey resulted in 54 book chapters, 98 review articles, 91 original articles, 18 results for encyclopedia and 42 for others. Inclusion criteria were: complete original papers using molecular biology methods with genetic evaluation of symbiotic *Symbiodinium*. Articles were selected by title, abstract and keywords. We excluded studies focused on phylogenetics of the hosts, related to physiology of hosts or papers about natural products. After the survey it was selected 17 papers. It was observed that distribution of *Symbiodinium* have been poorly explored. There is scarce information about the different clades they form. Studies about this issue are mostly a secondary analysis of studies focused on their hosts. Besides that, among all the content found, most papers were reviews (32%), while original papers represented only 30% of the total. These data evidences the lack of information about these symbionts and the need of a specific studies about their distribution around the world.