

BIODIVERSITY OF RED ALGAE (RHODOPHYTA) OF SÃO PAULO STATE, BRAZIL (RHODO-SP)

Theme: Biodiversity conservation indicators

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Studies on the biodiversity of red algae of São Paulo have been carried out since 1950, however, this knowledge is based only on morphological data and only sporadically supplemented with molecular data. Taxonomic identification of red algae is notoriously difficult due to: a relatively simple morphology and anatomy, which are convergent in many species; phenotypic plasticity; and complex life-cycles sometimes with heteromorphic stages. In this project we are screening the Rhodophyta biodiversity for the State of São Paulo, which includes more than 50% of the red algal diversity known from Brazil (approximately 190 species). To accomplish this goal, the DNA barcoding technique (partial sequence for mitochondrial COI gene: *cox1*) is being applied, supplemented with sequences from other molecular markers (*rbcL*, SSU rDNA), and also morphological characterization and geographic distribution. Results obtained in this project are being integrated into a databank. Around 1000 specimens have been collected of 150 species. More than 400 *cox1* and 120 *rbcL* sequences were obtained for different red algae species. Our results indicate that the *cox1* region can be used to aid in identification and delimitation of species of red algae, and is helping to uncover cryptic diversity, corroborating its use for DNA barcoding.

Key words: *cox1*, DNA barcoding, *rbcL*, Rhodophyta,