

Morphological and Molecular Investigation of *Sargassum vulgare* and *Sargassum fallax* (Fucales, Sargassaceae) from the Coasts of Bushehr Nuclear Power Plant, Persian Gulf

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Abstract

In this research, morphological and molecular identification of dominant brown algae species from Bushehr Nuclear Power Plant coastal areas were investigated. Sampling of marine algae was carried out during autumn and winter 2014 from intertidal areas. Detailed morphological observations were done using valid identification keys and microscope. To undertake molecular identification, marine algae genome was extracted first using modified CTAB method followed by amplification of gene fragments using nuclear ribosomal ITS-2 primer. Genetic analysis was undertaken. The results of Blast in GeneBank and phylogenetic analysis confirmed identification of two species of dominant brown algae as *Sargassum vulgare* and *Sargassum fallax* with 100% bootstrap. Hence, despite taxonomic uncertainty of *sargassum* genus, integrating the results of morphological observations and ITS-2 gene fragment confirmed identification of both sargassum species with 100% bootstrap.

Keywords: *Brown algae*, *Sargassum vulgare*, *Sargassum fallax*, *ITS-2*, *Bushehr Nuclear Power Plant*, *Persian Gulf*.
