



**Isolation and purification of a causative red tide former species;  
*Leptocylindrus danicus* (Bacillariophyceae), from the northern part of  
Oman Sea**

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**Abstract:**

Diatoms is one of the main components of primary producers and is one of the most successful eukaryotic organisms in all saline, fresh and brackish waters. The aim of this study is to provide pure isolation from diatoms with the potential to form blooms and to identify them from the waters of the Oman Sea for further study. For this purpose, sea water sample was taken and immediately transferred to the laboratory. In the laboratory, various methods for purification were performed, including single cell and dilution. A diatom species was finally isolated using single-celled method and cultured in F<sub>2</sub>S culture medium and studied and identified. It was kept in an Erlene under 12L: 12D and 2000 lux, and a temperature of 25±1°C. Purified diatom species was preserved after ensuring the proliferation of stable species in the culture medium and having an applied potential. In this study, the *Leptocylindrus danicus* species of the Bacillariophyceae class was purified and identified based on morphological features. These diatoms are cylindrical in shape and have a large number of chloroplasts that are green in color and have the ability to form chains and multiply in a short time. In winter and spring, it has the ability to form blooms and is well adapted to tropical climates because it can withstand light and extreme temperature as well as the ability to live in the surface layer and increase the number of cells by increasing temperature and salinity, its density increases sharply. This diatom species is environmentally valuable and has the potential to cause red tide. Therefore, it is very important to accurately identify it and examine the environmental factors on its uni-algal strain in the laboratory in order to understand the mechanism of its bloom formation.

**Keywords:** Diatoms, *Leptocylindrus danicus*, Oman Sea, Bloom