عنوان مقاله:

Conservation and Biodiversity Analysis of the Microalga Dunaliella in Shrinking Highly Saline Urmia Lake Based on Intron-sizing Method

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نویسندگان:

M. A. Hejazi - *Department of Food Biotechnology, Branch for Northwest and West Region, Agricultural Biotechnology Research Institute of Iran, Agricultural Research, Education and Extension Organization (AREEO), Tabriz, Islamic Republic of Iran.*

R. Khoshrouy - *Department of Food Biotechnology, Branch for Northwest and West Region, Agricultural Biotechnology Research Institute of Iran, Agricultural Research, Education and Extension Organization (AREEO), Tabriz, Islamic Republic of Iran.*

N. Hosseinzadeh Gharajeh - *Department of Food Biotechnology, Branch for Northwest and West Region, Agricultural Biotechnology Research Institute of Iran, Agricultural Research, Education and Extension Organization (AREEO), Tabriz, Islamic Republic of Iran.*

M. R. Etemadi - *Department of Food Biotechnology, Branch for Northwest and West Region, Agricultural Biotechnology Research Institute of Iran, Agricultural Research, Education and Extension Organization (AREEO), Tabriz, Islamic Republic of Iran.*

L. Madayen - *Department of Food Biotechnology, Branch for Northwest and West Region, Agricultural Biotechnology Research Institute of Iran, Agricultural Research, Education and Extension Organization (AREEO), Tabriz, Islamic Republic of Iran.*

A. Javanmard - *Department of Food Biotechnology, Branch for Northwest and West Region, Agricultural Biotechnology Research Institute of Iran, Agricultural Research, Education and Extension Organization (AREEO), Tabriz, Islamic Republic of Iran.*

خلاصه مقاله:

As the world’s second saltiest lake, Urmia Lake is the main source of halotolerant unicellular microalga, Dunaliella, in Iran. Recently, this lake and, consequently, its biodiversity are being threatened environmentally. Hence collecting, preserving, and identification of indigenous microorganisms of the lake are of great importance. The objective of the present study was the molecular screening of Dunaliella isolates in Urmia Lake. For this purpose, ۳۲ samples were taken from different geographical regions of the lake. Then, their molecular pattern was examined based on ۱۸S rDNA gene and intron-sizing method. Results based on conserved and species-specific primers of ۱۸S rDNA illustrated that, depending on the various parts of the lake, the genetic variation of Dunaliella population differs. The amplified pattern for individual isolates was similar to that previously described for D. tertiolecta, D. bardawil and Dunaliella sp. ARIINW-M۱/۲. Also,۱۸S rDNA sequencing and phylogenetic analysis of five index isolates showed that the isolates Dunaliella

sp. ABRIINW-Ch۵, -Sh۶.۳ and -U۱/۱ were grouped with different intron lacking species of Dunaliella, ABRIINW-Ch۳.۱ was clustered with Dunaliella sp. ABRIINW-M۱/۲, while the isolate Dunaliella sp. ABRIINW-S۱.۵ was clustered with intron-harboring species of D. bardawil, D. parva, and D. viridis. The results indicated that Urmia Lake is composed of isolates with different ۱۸S rDNA profiles with various intron arrangement.

کلمات کلیدی:
۱۸S rDNA, Halotolerant unicellular microalga, Molecular screening