Research in Pharmaceutical Sciences, 2012;7(5)
School of Pharmacy and Pharmaceutical Sciences
Isfahan University of Medical Sciences

Study of carotenoid production by *Marinobacter sp.* TBZ126 isolated from Urmia lake in north-western of Iran

M. Hamidi[1,*], S. Hassanzadeh[1], D. Naziri[2], M. Hejazi[3], H. Nazemyieh[4], M. Hejazi[5]

[1]Department of Pharmaceutical Biotechnology, Faculty of Pharmacy, Tabriz University of Medical Sciences, Tabriz, Iran
[3]Department of Agricultural Biotechnology, Faculty of Agriculture, Zanjan University, Zanjan, Iran
[4]West and Northwest Agricultural Biotechnology Research Institute of Iran (ABRII)
[5]Department of Pharmacognosy, Faculty of Pharmacy, Tabriz University of Medical Sciences, Tabriz, Iran

Background and Aims: Carotenoids are of great interest in many scientific disciplines because of their wide distribution, diverse functions and interesting properties. Halophilic bacteria are extremophile microorganisms that growth optimally in media containing salts and often are pigmented. Many of them contain high concentrations of carotenoids. The present study aimed to study potential of Marinobacter sp. TBZ126, isolated from Urmia Lake, in production of carotenoid compounds.
Methods: Marinobacter sp. TBZ126, an extremely halophilic bacterium, isolated from Urmia lack were cultivated in culture media (MGM Agar & Marine Agar) and incubated at appropriate conditions. Then single clonies were cultivated in broth media. 16S rDNA sequence showed that the isolated bacterium belongs to marinobacter genus and represents a new type strain. Phenotypic characteristics of the bacterium were carried out using various bacteriological and biochemical reactions. After that the cells were collected and carotenoids were extracted with methanol. Qualitative carotenoid determination was carried out using spectrophotometric method, thin layer chromatography (TLC) and HPLC respectively.
Results: 16S rDNA sequence and phenotypic characteristics revealed that the isolated bacterium belongs to Marinobacter genus introducing a new type strain. According to the obtained results, highly produced carotenoid from Marinobacter sp. TBZ126 seems to be g-carotene.
Conclusions: Marinobacter sp. TBZ126, isolated from Urmia lack have high capacity in the production of carotenoids. This extremely halophilic bacterium could be considered as a bacterial candidate for carotenoid production source for future studies.

Keywords: Carotenoid production; Halophilic