Isolation of Three Native Antioxidant-Producing Bacteria with Ability of Beam Protection

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Background & Objectives: With increasing harmful ion and non-ion generator radiations and their harmful effects, especially the production of free radicals, using antioxidant as a protective substances in order to prevent their destructive effects are taken into consideration. This study aimed to isolate native strains, in order to achieve productive strains of antioxidant compounds and then evaluate the protective effect of these compounds was produced.

Methods: After collecting samples of mineral water springs, during the initial screening of compounds, carotenoid-producing strains were isolated. The carotenoid compounds were extracted with the help of organic solvents (including ethanol and methanol) and carotenoid was assayed with using espectroscopy apparatus in the wavelength of 600-450 nm. Following to compare the antioxidant properties of samples obtained, the level of their activity was measured using DPPH.

Results: Among the samples cultured, 10 colonies were isolated with a color spectrum from yellow to orange. After screening, IranLA.1 , IranLA.4 and IRLA.3 strains were selected due to high-level production of carotenoids and more strong antioxidant activity.

Conclution: Nowadays in industry the addition of antioxidant to foods in order to reduce the deleterious effects of free radicals helps the deduction of these factors. As a result of optimizing growth and production of antioxidants in selected strains they can be used for industrial production of antioxidant such as Carotenoids .

Keywords: Isolation; Free Radicals; DPPH; Selection; Antioxidant