Abstract

Synthetic colors are mainly used by food, cosmetic and textile industries which are costly and have side effects. Natural pigments are produced by different plants, vegetables and micro-organisms. Carotenoids are molecules having wide range of pigments like beta-carotene. The main goal of the study was to extract β-carotene from carrots. β-carotene was extracted through fermentation from fungi isolated from oranges under optimized conditions and to examine its anti-microbial and antioxidant activity. Extraction of β-carotene was confirmed by using detection techniques (spectrophotometry and TLC), while structural and quantitative analysis was confirmed by FT-IR and HPLC respectively. Extracted β-carotene showed zone of inhibition against *E.coli, Salmonella* and *Staphylococcus spp.* DPPH scavenging activity was observed by β-carotene and carrots respectively. β-carotene also showed positive results when used as a dye on a cotton cloth. As β-carotene from fungi can be available throughout year and is cost effective so, being precursor of vitamin-A β-carotene can be used in food industry because of its antibacterial and antioxidant activity. It can be used as a substitute in textile industry.