

COMPARISON OF VALUABLE ACTIVE COMPOUNDS FROM RED YEAST AND CONVENTIONAL SOURCES

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Red yeasts belong to kingdom Fungi (mycota) and are capable of production and accumulation of significant amount of lipid content up to 85% (w/w). Moreover, they synthesize carotenoid, yellow to red colorants, with antioxidant properties and some having a provitamin A activity as well. Due to their bioactivity, carotenoids are often employed in many food, cosmetic and pharmaceutical products. Red yeasts do not compete with plant for growth space and can be cultivated at a large industrial scale. Additionally red yeasts can be cultivated on various substrates as well as on wastes of vegetable oil production, volatile fatty acids, and animal rest materials.

The aim of this work was to cultivate red yeasts and obtain extracts of valuable active compounds and compare them to extracts from vegetable and animal sources. Characterization of prepared extracts was carried out with regards to total and individual carotenoids, coenzyme Q₁₀ and α -tocopherol acetate by HPLC, antioxidant activity by TEAC assay and fatty acids profile using GC. Chosen extracts were packed into liposomal particles to prolong their activity. Particle size and colloidal stability was measured at the day of preparation and in one month horizon. Antioxidant activity was chosen as parameter to assess long term stability of extracted active compounds in solution and protected in liposomes.

Presented work shows that red yeast can compete with plant and animal sources of valuable active compounds mainly carotenoids and fatty acids. Encapsulation into liposomes is a good way to protect compounds like carotenoids from degradation. To conclude, red yeasts are interesting alternative to conventional sources of active compounds and are suitable for further research and within a reach of industrial application.

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