

ANTIOXIDATIVE ACTIVITY AND B-CAROTENE SYNTHESIS IN BIOMASS OF GREEN ALGAE *DUNALIELLA SALINA*

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Dunaliella salina is a microalgae appreciated primarily for the ability to synthesize β -carotene – pigment with high antioxidant properties. Quantitative ratio of components with antioxidant action, as well as the intensity of their synthesis in biomass, essentially changes during the development cycle of the culture.

Dunaliella salina was grown on mineral medium Ben-Amotz, containing 120 g/l NaCl at 27–29°C, pH 8.0–8.5. The duration of cultivation was 10 days. We determined values of β -carotene content and antioxidant activity during the cultivation period.

ABTS test values for the ethanol extract ranges between 31.9% and 69.6% of inhibition. The maximal antioxidant activity of 69.9% inhibition was determined at day 4 of the cultivation cycle. Fluctuating values of the ABTS test results for ethanol extracts repeat the dynamics of oscillating values of β -carotene content in this extract.

It was determined the correlation between ABTS assay values for ethanol extracts from *Dunaliella salina* biomass collected during the life cycle and β -carotene content in these extracts.

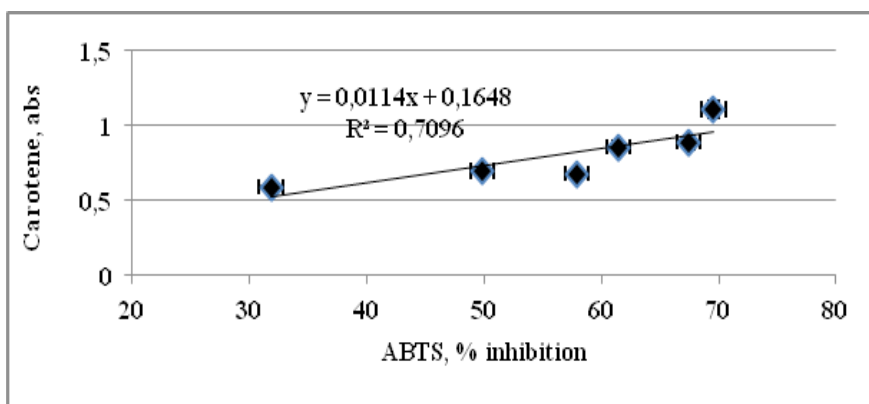


Figure. Correlation between ABTS test values and β -carotene content in ethanol extracts obtained from *Dunaliella salina* biomass during cultivation cycle.

The antioxidant activity, expressed as inhibition capacity of non-biological ABTS radical, has a close correlation with β -carotene content; the determination coefficient is equal to 0.7096. This could be confirmed by the correlation coefficient of 0.8424, which, in case of biological processes denotes a very close proportional relationship. This was predictable, because the major component of the ethanol extract from *Dunaliella salina* is presented by photosynthetic pigments.