

Thematic course: Antioxidant properties of aqueous media. Part 2.

Cluster characteristics of waters in terms of their total antioxidant activity

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Abstract

The article presents the results of a biochemical study of aqueous media in terms of antioxidant activity, which was studied by coulometric analysis using electrogenerated bromine, the samples were analyzed on the coulometer "Expert-006" (LLC "Econix-Expert", Russia) by a certified method. Modern ideas about the properties of water are based on its cluster structure, which is devoted to a significant number of theoretical and experimental works. They indicate that the structure of water is formed by clusters that are constructed from water molecules held by hydrogen bonds. The 9 clusters of water differing in a set of characteristics are allocated. It is shown that oligotrophic waters with low organic matter content and aligned and simplified community structure of aquatic organisms characterized by a complex cluster structure of water and the lowest values of antioxidant activity and water production characteristics differ by a stable, simplified cluster structure with high values of antioxidant activity of the water. Following the research it is revealed that, water has various cluster structure. The most complex in terms of cluster composition is spring water (5 clusters) and artesian water (4 clusters). The most simple composition was the water of the seas and fisheries ponds-1-2 clusters. It was discovered, that oligotrophic waters with low organic matter content and aligned or simplified community structure of aquatic organisms characterized by a complex cluster structure of water and the lowest values of antioxidant activity and water production characteristics differ by a stable, simplified cluster structure with high values of antioxidant activity of the water.

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