

Название публикации:

Preparation and Characterization of Alphitobius diaperinus Melanin

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Аннотация:

Melanin with a high antioxidant and sorption activity comparable to that of synthetic dioxyphenylalanine (DOPA)-melanin was isolated from the biomass of the darkling beetle *Alphitobius diaperinus*. The pigment was extracted with a solution of potassium hydroxide, followed by precipitation with concentrated hydrochloric acid and hydrolysis of the resulting precipitate with the same acid. The electron paramagnetic resonance (EPR) signal of melanin was characteristic of eumelanins with a spin concentration of 4.9×10^{17} spin per 1 g of dry weight. The melanin concentration that induced 50% inhibition of peroxidation was 9.2 $\mu\text{g/mL}$ (the analogous concentration of DOPA-melanin was 8.0 $\mu\text{g/mL}$). The maximum of methylene-blue binding to the beetle melanin was 700 mg of dye per 1 g of dry weight of the preparation. The lipid-free melanin preparation exhibited antiradical activity.

Ключевые слова:

Alphitobius diaperinus, antioxidant activity, EPR signal, extraction, melanin, sorption capacity