

Udział katalazy w mózgowym i pozamózgowym utlenianiu etanolu

Role of catalase in brain and peripheral oxidation of ethanol

Ewa Czech¹, Joanna Lewin-Kowalik², Marek Hartleb³

¹Zakład Radiodiagnostyki i Medycyny Nuklearnej
Katedra Radiologii i Medycyny Nuklearnej Śląskiej AM w Katowicach

²Katedra i Zakład Fizjologii Śląskiej AM w Katowicach,

³Katedra i Klinika Gastroenterologii Śląskiej AM w Katowicach

Abstract – Principal physiological role of catalase is to prevent H₂O₂ toxicity. Genetic polymorphisms of catalase may be either the source of pathological events or by contrast, yield a protective cellular effect. Another function of catalase is participation in oxidative metabolism of ethanol (EtOH), however, in comparison with main enzymatic systems operating within the liver, a role of catalase seems to be marginal. On the other hand, in central nervous system the catalase is first-line EtOH metabolizing enzyme, which has an important influence on alcohol-related psychopharmacological and behavioral effects. Pharmacological manipulation of enzymatic activity opens a way to alleviation or enforcement of brain effects of EtOH.

Key words: catalase, polymorphisms, ethanol, acetaldehyde