

Sensitivity of Liver Mitochondrial Functions to Various Levels of Ethanol Intake in the Rat

Quintanilla, María Elena

Tampier, Lutske

Mitochondrial function appears to be an early target for ethanol toxicity, however it is not clear to what extent the effects of ethanol, which occur at levels of intake lower than those already reported in the literature, can induce an alteration of it. To produce different levels of ethanol intake, the spontaneous consumption of ethanol by genetically low (UChA) and genetically high (UChB) rats, as well as the forced intake obtained by offering 10% v/v ethanol solution as the only source of drinking fluid, were employed. The O₂ uptake by liver mitochondria of rats submitted to these conditions in the presence of glutamate + malate, succinate or ascorbate + TMPD, was measured polarographically with a Clark electrode at 25°C. Results indicate that alterations of the hepatic mitochondrial function can be detected at levels of ethanol intake much lower than those previously reported. Whereas, a level of a daily ethanol intake of 2.3 g/kg body weight in UChA rats under free choice was ins