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D-methionine in preventing noise-induced hearing loss

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ABSTRACT

Oxidative stress in the cochlea is considered to play an important role in noise-induced hearing loss. The purpose of this study is to understand the mechanism underlying the noise induced increase in reactive oxygen species (ROS) in the inner ear. The changes in superoxide dismutase (SOD), catalase, lipid peroxidation (LPO) in the cochlea and the auditory brainstem response (ABR) were measured 1, 7 and 14 days after noise exposure (4 kHz octave band at the intensity of 118 dB SPL for 8 hours) in C57BL/6 mice. In addition we also investigated the role of an antioxidant D-methionine (D-met) in preventing the noise-induced oxidative stress and hearing loss.

The findings of this study indicate that the time dependent alterations in scavenging enzymes facilitate the production of free radicals and D-met drug is effective in attenuating the noise-induced oxidative stress and associated functional loss in mice cochlea.

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