Role of the 3-aminothiazolo[3.2a]benzimidazole-2-carbonitrile in the protection of hepatic and renal tissues against nitrosomorpholine toxicity in adult rats

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Abstract:

NMOR can be formed endogenously from nitrite and morpholine. Oxidative damage may represent an important step in the toxicity of NMOR. This study was designed to evaluate the biological activity of 3-aminothiazolo[3.2a]benzimidazole-2-carbonitrile in the protection of hepatic and renal tissues against oxidative stress that is induced by administration of nitrite and morpholine as food additives in drinking water for 15 weeks. Conclusions: Nitrite plus morpholine administration to rats results in oxidative damage in hepatic and renal tissues. This damage may return to the increased production of ROS and changes in the levels of antioxidants. This oxidative damage was ameliorated by DMSO and 3-aminothiazolo[3.2a]benzimidazole-2-carbonitrile co-treatment.

Keywords:

Benzimidazole derivatives, nitrite, morpholine nitromorpholine, iNOS, oxidative stress

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