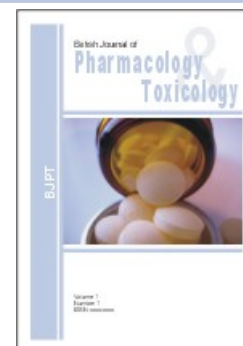


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Abstract

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Toxicity Evaluation of the Liver and *in vitro* Metabolism in Wistar Rat on Exposure to N-Nitrosamine Precursors

Usunobun Usunomena, Josiah J. Sunday, Nwangwu Spencer, Uhunmwagho S. Esosa, Omege Kingsley and Maduagwu N. Emmanuel

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Abstract:

The aim of this study is to evaluate liver toxicity on exposure to n-nitrosamine precursors as well as the effect of ultraviolet light on n-nitrosamines and its precursors. Toxicological evaluation of the liver following single dose treatment of wistar rat with 8.2125 mg NaNO₂/adult rat and in rats given a combined dose of 50 mgDMA-HCl and 8.2125 mg NaNO₂/adult rat showed a steady elevation of the liver function enzymes. Histopathological analysis of the liver showed hepatic necrosis in the chemical induced rats. Following UV exposure after *in vitro* incubation of rat liver microsomal plus soluble fraction with NaNO₂ and NaNO₂ plus DMA-HCl, nitrite concentration in the NaNO₂ incubation medium was 19.5 and 2.2 µg/mL before and after UV exposure respectively while the nitrite concentration in the NaNO₂ plus DMA-HCl incubation medium was 23.5 and 2.5 µg/mL, respectively. Nitrite loss was significant (p<0.05) between before and after UV exposure in all groups. UV exposure, thus degraded the nitrosamine precursors, nitrite and DMA-HCl, thereby inhibiting possible nitrosation. The high values of the activities of serum transaminases (AST and ALT), alkaline phosphatases (ALP) and gamma-glutamyltransferses (γ-GT), relative to control values are indicative of severe intrahepatic cell damage.

Abstract	PDF	HTML
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