

Communication abstract – Online SEMINAR, 24 June 2024, University of Relizane, Algeria

Evaluation of Hepatotoxicity: Nickel on an Indicator Model of Pollution (*Oryctolagus cuniculus*)

Toualbia Nadjiba^{1,*}

¹Department of Applied Biology, Larbi Tebessi University, Tebessa. 12000, Algeria

*Correspondence: Toualbia Nadjiba - E. mail: nanatoualbia@yahoo.com

Published: 15 July 2024

Abstract

Heavy metals are pollutants generated by human activity that have a strong toxicological impact on animals, plants, everyday consumer products, and humans. Nickel, a toxic metal, is involved in several human diseases related to oxidative stress. This experimental study focuses on the toxicity of nickel. The aim was to study the effects of heavy metals, specifically nickel, on a biological model, *Oryctolagus cuniculus* (rabbits). Nickel chloride (NiCl₂) was administered orally to rabbits for three months. We evaluated the effects of oxidative stress on the liver by monitoring the activity of enzymatic biomarkers (GST, GPx, and Catalase), levels of reduced Glutathione (GSH) and total proteins, and Malondialdehyde (MDA), a biomarker of lipid peroxidation. The results showed that rabbits exposed to two concentrations of NiCl₂ had a decrease in hepatic GSH levels and an increase in GST, GPx, and CAT activity. Nickel exposure also caused a disturbance in MDA levels and an increase in hepatic protein levels. These findings highlight the toxicological effects of nickel, inducing oxidative stress and altering enzymatic activities and protein levels, with significant health implications for organisms exposed to this metal.

Keywords: *Nickel, enzymatic, protein, oxidative stress*