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# Broiler welfare is preserved by long-term low-dose oral exposure to zinc oxide nanoparticles: preliminary study

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## Abstract:

The potential public health risk through utilizing of zinc oxide nanoparticles (ZnO NPs) in food constitutes the major obstacle to the expansion of nanoparticle (NP) in food industry. Liver histology, bone marrow and liver genotoxicity, immunity, and oxidant status were investigated upon long-term ZnO NPs feed supplementation. One hundred and sixty male IR (Indian River) chicks were randomly allocated to one of the four dietary treatments: control, ZnO NPs at 10, 20, or 40 mg/kg for 42 days. This study revealed non-significant hepatic histopathological alterations and DNA damage and the treatment had no influence on body and organ weights, liver enzymes, lipid peroxidation (MDA), IgG, IgM, and interferon gamma (IFN- $\gamma$ ). This study suggests that low-dose (

## Keywords:

Dietary health risk; comet assay; oxidative stress; liver enzyme; immunotoxicity

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