عنوان مقاله:

Histopathological evaluation of zebrafish (Danio rerio) larvae following embryonic exposure to MgO nanoparticles

محل انتشار:

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خلاصه مقاله:

The aim of this study was to investigate the histopathological changes in zebrafish larvae following embryonic exposure to nanoparticles of magnesium oxide (MgONPs). The toxicity of metal oxide nanoparticles is attracting increasing attention. Among these nanomaterials, MgONPs are particularly interesting as a low cost and environmentally-friendly material. Histological investigations are used as a highly sensitive method for detecting the morphological features of disease and abnormal gene function. We evaluated the histopathological changes in zebrafish larval tissues following embryonic exposure to MgONPs for a period of ۴-۹۶ h post fertilization (hpf). To this end; fixation, tissue processing, sectioning and general staining of the whole-larvae were performed. Histopathological evaluations showed some changes including psoriasis-like epithelial hyperproliferation, muscle cell degeneration, neurodegeneration in the spinal cord, swelling and edematous changes in pericardium, swelling and edematous changes in yolk sac, severe edema within the eyes, smaller retina, disruption of retinal lamination and impaired retinal differentiation. In summary, the results of this study enhance our understanding about the potential hazards of .MgONPs to the environment

کلمات کلیدی:

Zebrafish, MgO nanoparticles, Histopathology, Embryo