



## Histological Alterations in the Gills of Crab, *Paratelphusa jacquemontii* after Chronic Exposure to Silver Nanoparticles (AgNP)

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**Abstract:** Histological changes in gills are used to evaluate the effects of chronic exposure to AgNP in freshwater crab, *Paratelphusa jacquemontii*. The acute toxicity study was carried out for 96 hours LC<sub>50</sub> value and showed 0.71 mg/l. The LC<sub>50</sub> is a measure of concentration of the toxin, which killed 50% of population in given time. The crabs were exposed to sub lethal concentration of LC<sub>0</sub> and LC<sub>50</sub> of AgNP for 15 and 30 days. The most common morphological abnormalities observed in the gills morphology during the study were irregular structure of lamellae, fusion, hypertrophy, mucus secretion and necrosis, distorted central axis with an accumulation of haemocyte, circulatory disturbances, deformed lamella, and epithelial hyperplasia. The results showed that the AgNP could cause foremost histomorphological changes in the gills exposed with declining its gas exchange capacity. Moreover, our the finding indicates that the toxic effects increased with the concentration and time period of exposure.

**Key Words:** AgNP, Crab, Gills, Histology, Toxicity

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