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التأثيرات النسيجية المرضية للكاديوم على أسماك البطّي

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Abstract : The effect of Cadmium Ions on the longevity of Tilapia fish, *Tilapia zillii* was determined. Three sub-lethal concentrations of Cadmium were tested (40, 30 and 20 ppm Cd.). The LT50 for each concentration was determined and found as follow: 33, 103 and 127 hours respectively. Fish specimens were affected by the three concentrations. The mortality rate was in proportion to the exposure time and concentration in solutions. Cadmium accumulation in four organs (Gills, Intestines, Liver and Muscles) of *Tilapia zillii* was tested. It was found to be accumulated in all four organs to high concentrations in proportion to exposure time and concentration in tested solution, with the highest accumulation in the intestines. Zinc content in the four studied organs was tested in relation to cadmium exposure, it was found that Zinc level was reduced as a result of fish exposure to cadmium, which may have resulted from cadmium replacement. Histopathological changes, in relation to exposure time and surrounding concentration of cadmium, were observed in all four organs of *Tilapia zillii*. All organs were affected, With the Gills showing engorged and shrunked branchial lamellae, disintegrating of epithelial cells, branchial lamellae and gill filaments increased mucus, causing sticking gill filaments. Intestinal folds were damaged with the release of increased lymphatic cells to the lumen. Disintegrating of *Tudca propria* and mucosal epithelium. Liver was clearly affected showing irregular Hepatic strands with disintegration of Hepatic cells. The central part of the liver was more damaged with Bleeding and Black precipitation. Pancreatic cells were disintegrated and lost its shape. Muscles disintegrated Myofibrillae, Muscle fibres and perimysium, irregular or absent dark and light bands. These changes may explain the behavioural differences which were observed in response to cadmium.

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