

Change of Thyroid Hormone Levels in *Mesopotamichthys sharpeyi* Exposed to Sub Lethal Concentrations of Cadmium

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Abstract

Pollution of the aquatic ecosystems by heavy metals is posing serious threats to the survival of aquatic organisms including fish. Cadmium is a metal which is accumulated in high concentrations by a range of living organisms and which has unknown biological function. It enters aquatic environments especially via industrial wastes. Thyroid hormones have important roles in growth, development, metamorphosis, osmoregulation and reproduction in fishes. In the present study, the 96 hours LC50 of Cadmium on Binnei (*Mesopotamichthys sharpeyi*) was determined as 37.56 mg/l. The plasma thyroid hormones of Binnei through different sub lethal concentration of cadmium (1, 3, 6, 9 and 12 ppm) were assayed in order to determine the endocrine response of Binnei. Fish were exposed to different concentrations of cadmium as an endocrine disrupter during 2 weeks. Plasma thyroxine (T4) and triiodothyronine (T3) concentrations were determined using Radioimmunoassay method. In opposite manner, Plasma T3 was significantly decreased at days 7 and 14 by all doses of cadmium. Plasma T4 in treated fishes was increased in comparison to the control group in dose dependent manner. In conclusion, results of the current study indicated that the encounter of Binnei fish with Cadmium led to thyroid disruption of the fish which may have treated for growth and fish health.

Keywords: *Cadmium*, *Biomarker*, *Thyroxin*, *Triiodothyronine*, *Mesopotamichthys sharpeyi*.
