

**METALLOTHIONEINS ROLE AGAINST CADMIUM TOXICITY IN ZINC AND CALCIUM SUPPLEMENTED *OREOCHROMIS MOSSAMBICUS* (TILAPIA)****OBAIAH JAMAKALA* AND A. USHA RANI***Division of Animal Biotechnology and Environmental Toxicology, Sri Venkateswara University, Tirupati – 517502, Andhra Pradesh, India***ABSTRACT**

Present study is carried out to know the role of Metallothioneins (MT) in detoxification of cadmium (Cd) toxicity in fresh water teleost, *Oreochromis mossambicus* before and after supplementation with trace elements such as zinc (Zn) and calcium (Ca). After specific time periods, the fish were sacrificed and tissues like liver, kidney, gill, brain and muscle were isolated and used for metallothionein purification and quantification. Purified MT protein containing samples was subjected to SDS-PAGE. Clear visible bands were observed in the test tissues approximately at 6.5 KDa against a standard low range molecular weight protein marker. Further, MT protein levels were significantly elevated in the test tissues during Cd exposure and also after supplementation with Zn and / or Ca. Maximum MT protein synthesis was observed in 30d fish kidney under combined supplementation of both Zn and Ca. Thus, tissues that contain an excess amount of MT are resistant to Cd toxicity.

KEY WORDS: Cadmium, Trace elements, Metallothionein, *Tilapia***OBAIAH JAMAKALA**

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