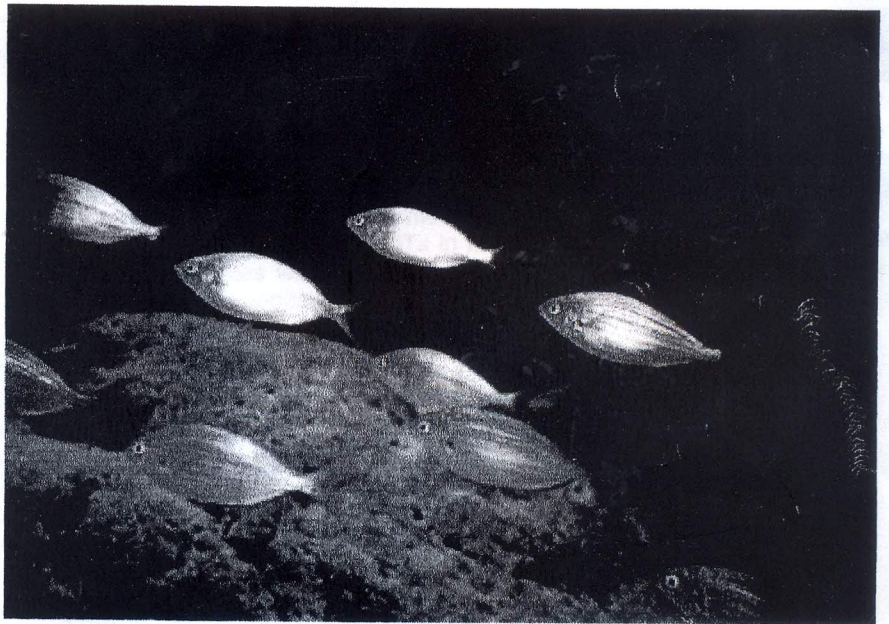


UNIVERSITY OF MONTENEGRO - INSTITUTE OF MARINE
BIOLOGY, KOTOR
UNIVERSITY S.YU. VITTE, MOSSCOV

**I INTERNATIONAL SCIENTIFIC CONFERENCE
INTEGRATED COASTAL ZONE MANAGEMENT IN THE ADRIATIC SEA**
Institute of Marine Biology, Kotor, Montenegro
September 29 – October 1, 2014

Book of Abstracts



**SPECIES-SPECIFIC EXPRESSION OF METALLOTHIONEIN IN THE
HEPATOPANCREAS OF SEAWATER FISH FROM THE MONETENGRIN
ADRIATIC COASTLINE**

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Abstract

Metallothioneins (MTs) constitute a family of low-molecular weight, cysteine-rich and heat stable proteins involved in the binding and regulation of essential metals, such as copper and zinc, and in the detoxification of these and other non-essential metals, such as cadmium and mercury. Previously we showed that the induction of MTs in *Merluccius merluccius* and *Mullus barbatus* correlated with elevated concentrations of Cu and Pb, determined by chemical analysis of the seawater from Bar and Valdanos. In the present study we studied protein expression of MTs in the hepatopancreas of several seawater fish species: Red mullet (*Mullus barbatus*), European hake (*Merluccius merluccius*), Tub gurnard (*Trigla lucerna*) and Thinlip mullet (*Liza ramada*), from the Monetengrin Adriatic coastline. Western blot analysis revealed the highest induction of MTs in the hepatopancreas in the following order: *Merluccius merluccius*, *Trigla lucerna*, *Mullus barbatus* and *Liza ramada*. Considering that MTs play a role in the metabolism of essential metals, they are constitutively expressed. The presence of elevated concentrations of both essential and toxic metals provokes the induction of MTs. These results are in correlation with literature data showing that fish species differ in their detoxification capacities and amounts of accumulated metals. We conclude that the level of induction of MTs in the hepatopancreas of the examined fish species correlates with the level of their reliability as bioindicator species in heavy metal biomonitoring.