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## Bioaccumulation of heavy metals in ascidians from Palk Bay region, southeast coast of India

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### Abstract

Ascidians can serve as marine pollution indicators for monitoring the release of industrial and anthropogenic wastes into the marine environment. The aim of this study was to analyze the heavy metals accumulation in ascidians, water and sediments. Selected ascidian specimens, water and sediments were collected by employing SCUBA diving in the Palk Bay region, Southeast coast of India. All these samples were analyzed by Inductive coupled plasma system (ICP) (Optical Emission Spectrophotometer by using the instrument Optima 2100DV and quantified against a known standards) for the determination of heavy metals (Fe, Zn, Cd and Pb). The heavy metals concentrations (Cd, Fe, Pb and Zn) in water, sediment and ascidians tissue, showed a distinct seasonal variation with higher values during monsoon season and low during summer season. The heavy metals concentrations in the different species of ascidians (*Polyclinum madrasensis*, *Polyclinum indicum*, *Herdmania pallida*, *Microcosmus squamiger* and *Microcosmus exasperatus*) were found to be the order: Iron > zinc > lead > cadmium. This might be due to the difference in the bioavailability of the individual metal and their role in metabolism of different species and accumulation efficiency by the species. Our results suggest that ascidians could be effectively used as biological indicator to monitor the environmental pollution. This will help a great deal while preparing plans to conserve or protect the marine ecosystem.

**Key words:** Ascidians, bio indicator, heavy metals, pollution, ecosystem