

ZINC SPECIATION IN THE ELEFSIS GULF AND PIRAEUS. THE ROLE OF THE GREEN ALGAE *Ulva Rigida*

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ABSTRACT

A speciation study of dissolved zinc was carried out on coastal areas of the Gulf of Elefsis and in Piraeus with the use of analytical methodology which includes direct measurements with Differential Pulse Anodic Stripping Voltammetry (DPASV), preconcentration on chelex-100 columns, batch treatments and acid digestion of samples. Application of the speciation procedure in coastal seawater samples has shown that zinc predominantly exists in relatively labile forms.

The contribution of the green algae *Ulva rigida*, particularly in areas with increased biomass of this species, to the speciation of dissolved zinc is significant, since part of the labile fractions of dissolved zinc is removed from the dissolved phase. This is due to the absorption in the green algae tissues and/or to adsorption in biogenic suspended particulate matter, which is released mainly during algae decomposition. A partial complexation of the relatively chemically inert forms with organic ligands deriving from metabolic products and the decomposition of the green algae is also possible.

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