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Abstract Title (max 200 char):

Cytotoxic and genotoxic assessment of potentially contaminated sediments from the Sado Estuary

Abstract text (max 1500 char):

Previous studies have shown that the river Sado Estuary (W Portugal) is highly susceptible to contamination due to anthropogenic activity. In fact, sizable concentrations of metals, pesticides and polycyclic aromatic hydrocarbons have been measured in sediments from various points of the estuary. Those compounds may be absorbed by aquatic species, making it a public health issue when entering the human food chain. The purpose of this study was to assess the cytotoxic and genotoxic potential of sediment extracts in a human cell line, through the neutral red uptake assay and the alkaline comet assay, respectively. Three sediment samples were collected: two in potentially contaminated sites (samples C and F, Sado Estuary) and one in a putative control station (sample M, Mira Estuary). The overall contaminants were extracted from the three samples. HepG2 cells were exposed for 48h to serial dilutions of each extract (ranging from 0.01 to 2µl). A dose-related decrease in cell viability was observed for samples F and M (from 0.1 and 0.5µl, respectively, up to 2µl), indicating a toxic effect caused by the complex contaminants mixtures. However, no genotoxicity could be observed for any sample in the experimental conditions used. Further studies are underway with different exposure times and different endpoints for a more complete assessment of the extracts' genotoxic properties. This work was supported by the Foundation for Science and Technology (PTDC/SAU-ESA/100107/2008).

Presentation Preference

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