

STEM CELL ACTIVITY AND OXIDATIVE STRESS AS RESPONSE TO CADMIUM AND HEXAVALENT CHROMIUM IN *M. LIGNANO*

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Cadmium and hexavalent chromium are toxic elements and environmental pollutants. At the cellular level they can indirectly and directly result in the production of reactive oxygen species (ROS). As a consequence, increased lipid peroxidation, DNA damage and protein oxidation can occur. Contaminants are continuously released into the aquatic environment from commercial, industrial, and environmental sources, representing a potential risk to the biota. Free-living flatworms are the simplest animals that are bilaterally symmetrical and triploblastic. Detailed knowledge about the flatworm mechanisms of oxidative stress can provide insight into the mechanisms of higher organisms. The flatworm *Macrostomum lignano* was used to evaluate the effects of cadmium and hexavalent chromium on the anti-oxidative gene expression.