

## Analyzing the toxicity produced by heavy metals in fibroblasts and yeast cells

Riger, C.J.<sup>1</sup>; Moura, D.J.<sup>2</sup>; Rosa, R.M.<sup>2</sup>; Henriques, J.A.P.<sup>2</sup>; Panek, A.D.<sup>1</sup>; Eleutherio, E.C.A.<sup>1</sup>

<sup>1</sup>IQ, UFRJ, Rio de Janeiro; <sup>2</sup>Departamento de Biofísica, UFRGS, Porto Alegre

Nowadays, metals have found a number of uses in industry, agriculture, and medicine, a fact which has greatly contributed in raising environmental pollution. These activities have increased exposure not only for metal-related occupational workers but also for consumers of the various products. Particular attention has been given to the toxicity of cadmium, zinc, copper, chromium and other trace elements. The goal of this study was to analyze the toxicity levels of  $\text{Cu}^{+2}$ ,  $\text{Cr}^{+3}$ ,  $\text{Cd}^{+2}$ ,  $\text{Ni}^{+2}$  and  $\text{Zn}^{+2}$  ions in two different eukaryotic models, the microorganism *Saccharomyces cerevisiae*, a usual model in studies of stress response, and mammalian cells. Exposure to 10 ppm  $\text{Cd}^{+2}$  for 24 hours produced a high inhibition in yeast growth and high levels of lipid peroxidation, measured by the TBARS method. However, higher concentrations of zinc, copper, nickel and chromium (1000 ppm) were necessary to guarantee the same inhibition and lipid oxidation. Corroborating the results obtained with yeast, chinese hamster fibroblasts (V79 cells) showed to be more sensible to cadmium exposure, indicating that there is a similarity in the response to heavy metals between these different eukaryotic organisms.