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of TBT induces GluR2 decrease and neurons become susceptible to glutamate toxicity.

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P307-022
Correlation between trace elements in blood and urine and human reproductive indicators

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The great concern with exposure to metals and their effects on human health has been expressed in research related to occupational health. However, few studies have been developed to correlate such exposure and reproductive health. It is well known that a long term exposure to metals such as lead (Pb) and cadmium (Cd) is correlated to adverse effects in the reproduction of many mammalian species. Thus the development of studies with fertile and infertile population is mandatory. The aim of this work was to investigate the correlation between metal levels and fertility in the general population using blood, urine, follicular fluid (FF) and seminal liquid (SL). The concentrations of those metals in biological fluids from 25 infertile couples under IVF were determined by electrothermal atomic absorption spectrometry. Results presented are preliminary since only 16 individuals were involved and categorized by gender. Among men, medians were Pb-B = 3.8 $\mu g\,dL^{-1}$, Cd-B = 1.05 $\mu g\,L^{-1}$ and Cd-U = 0.28 $\mu g\,L^{-1}$, while the results found for Pb-SL and Cd-SL were 0.78 $\mu g\,L^{-1}$ and 0.10 $\mu g\,L^{-1}$, respectively. In this category, just the relationship between Cd-S and Cd-U showed a mild correlation (Spearman's coefficient = 0.647) statistically significant (90%, $p = 0.08$). Regarding to women, the medians were Pb-B = 3.2 $\mu g\,dL^{-1}$, Cd-B = 1.05 $\mu g\,L^{-1}$ and Cd-U = 0.28 $\mu g\,L^{-1}$, while the results found for Pb and Cd in FF were 1.25 $\mu g\,L^{-1}$ and 0.76 $\mu g\,L^{-1}$, respectively. There was only a mild to strong correlation ($r = 0.745$) with statistical significance (95%, $p = 0.05$), between Pb-FF and Cd-FF. As men group showed an inverse correlation ($r = -0.240$) with no statistical significance ($p = 0.568$) for Pb-SL and Cd-SL, it may be that the statistically significant correlation for Pb-FF and Cd-FF is a characteristic of the gender. Nevertheless the results were not conclusive since the sample size was still small.

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P307-023
Important role of antioxidant enzymes in the Saccharomyces cerevisiae survival to the toxicity of vanadium pentoxide

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Vanadium pentoxide, V_2O_5 (V^{5+}) behaves as powerful oxidizing agent which participates in free radicals generation. Although some biological studies reveals that vanadium compounds have mutagenic and genotoxic effects, other authors reveal that vanadium exerts antitumoral effects by activating signaling pathways leading to apoptosis or inducing xenobiotic metabolizing enzymes which degrade active carcinogens. In other hand, several industrial processes contributes to increase the vanadium concentration in the environment, making it a pollutant. Following from the above, the main objective of this work was to evaluate the survival and enzymatic antioxidant response to V_2O_5, by Saccharomyces cerevisiae: UE-ME3, a wild-type strain; Red Fruit, a wine commercial strain and a BY4741 strain. Cells at mid-exponential phase were inoculated in YEPD medium with 2% (w/v) glucose and incubated during 72 h in a water bath with orbital stirring, at 28 °C, in the absence or in the presence of 2 mM V_2O_5. Samples from each treatment were used to obtain growth curves and to determine mitochondrial, microsomal and cytosolic fractions, used for determination of NADH cit c reductase, (NADHred), NADPH(P450) reductase, (NADPH(P450)red), glutathione peroxidase (GPx), glucose-6-phosphate dehydrogenase (G6PD) and catalase T (CAT T) activities. The results show that V_2O_5 inhibited cell growth of any yeast strains in study, although drastically pronounced in the case of BY4741 strain. Inhibition of the respiratory chain at the NADHred activity, as well as the activation of the microsomal electrons transport, via microsomal NADPH(P450)red, by vanadium appear to be important sources of ROS and toxicity for studied strains. However higher levels of CAT T in native and wine commercial strains are vital to significantly prevent cell death by V_2O_5, since GPx decrease significantly.

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P307-024
Ascorbate prevents pro-oxidant effects of vanadium pentoxide on wild-type Saccharomyces cerevisiae UE-ME3

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Vanadium pentoxide, V_2O_5, (V^{5+}) the most toxic compound of vanadium behaves as an amphoteric oxide and a powerful oxidizing agent which may be an oxidative stress inducer. The vanadium (V^{5+}) is generally reduced by living cells to vanadium (V^{4+}), less toxic, using enzymes which mobilize the reducing equivalents of NADPH, or non-enzymatically using ascorbate. Nevertheless, species generated by vanadium (V^{4+}) from H_2O_2 and lipid peroxidation, via Fenton reaction can have a significant role in the metabolism of vanadium and induce cell damage in physiological conditions. Although vanadium is an element with ubiquitous environmental distribution, combustion of fossil fuels represents an important source of vanadium in the environment. Biological studies to evaluate the influence of vanadium on living organisms has shown that is mutagenic and genotoxic. Having in account that toxicity mechanisms of vanadium on eukaryotic cells are not entirely clear, the main objectives of this work was to evaluate the synergistic effects of 0.025 mM ascorbate vs 2 mM V_2O_5 on cell survival, alkaline phosphatase (ALP), catalases A and T (CAT A, T) and glutathione reductase (GR) activities of Saccharomyces cerevisiae UE-ME3. Cells at mid-exponential phase were inoculated in YEPD medium with 2% (w/v) glucose and incubated during 72 h in a water bath with orbital stirring, at 28 °C, in the absence or in presence of 2 mM V_2O_5, or 0.025 mM ascorbate plus 2 mM V_2O_5. Samples from each treatment were used to obtain growth curves and to prepare post-12,000 g supernatant, used for enzymatic activities determination. The results shown that ascorbate counteracted growth inhibition, the decrease of ALP and CAT activities, as well as