

THE INFLUENCE OF TREHALOSE IN THE OXIDATIVE STRESS INDUCED BY CADMIUM

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Cadmium is a non-essential metal and causes damage to human beings and to the environment. This metal is recognized as an inductor of oxidative stress in yeast. Our goal in this research was to study the influence of trehalose in the oxidative stress caused by cadmium. It is known that in yeast the accumulation of disaccharide trehalose is important so that the cells resist many stress conditions. We used 3 yeast strains *Saccharomyces cerevisiae* W303-WT (wild type), *Saccharomyces cerevisiae nth1* (neutral trehalase gene deleted, this strain accumulate trehalose up the WT strains) and *Saccharomyces cerevisiae tps1* (trehalose 6 phosphate synthase gene deleted, this strain doesn't synthetase trehalose). The evaluation of trehalose role was made by comparison with these 3 strains. The oxidative stress triggered by cadmium can be evaluated by several biochemical markers. In this research we used the following markers: lipid peroxidation, protein carbonylation and total sulfhydryl content. It was observed the trehalose influences in the incorporation of cadmium, in the resistance and in the growth of yeast strains. High concentrations of cadmium (50 ppm and 800 ppm) significantly alter the levels of protein carbonylation, the total sulfhydryl content and increases the lipid peroxidation.

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