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CURRENT RESEARCH TOPICS IN APPLIED MICROBIOLOGY AND MICROBIAL BIOTECHNOLOGY
Proceedings of the II International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld2007)

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Table of Contents (265k)
Introduction (193k)
Chapter 1: Anti-oxidative stress enzymes in *Pleurotus ostreatus* (498k)

This book contains a compilation of papers presented at the II International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld2007) held in Seville, Spain on 28 November – 1 December 2007, where over 550 researchers from about 60 countries attended and presented their cutting-edge research. The main goals of this book are to: (1) identify new approaches and research opportunities in applied microbiology, presenting works that link microbiology with research areas usually related to other scientific and engineering disciplines; and (2) communicate current research priorities and progress in the field. The contents of this book mirror this focus.

Microbiologists interested in environmental, industrial and applied microbiology and, in general, scientists whose research fields are related to applied microbiology can find an overview of the current state of the art in the topic. In addition to the more general topic, some chapters are devoted to specific branches of microbiology research, such as bioremediation; biosurfactants; microbial factories; biotechnologically relevant enzymes and proteins; microbial physiology, metabolism and gene expression; and future bioindustries.

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Evidence of a bimodal effect on *Saccharomyces cerevisiae* UE-ME₃ by vanadium (V) stress – a dual response to different V₂O₅ medium concentration detected in the rate growth, GSH/GSSG, G6PD, CAT T and GR enzymatic activities

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The aim of this work was to evaluate the effects of five V₂O₅ medium concentrations ranging from 0.5 to 2.0 mM on cell viability, redox status and antioxidants enzymes of wine yeast *S. cerevisiae* UE-ME₃. A slightly decrease of yeast cells growth rate for 0.5 and 1.0 mM, and a significantly decrease for 1.5 and 2.0 mM were observed. Conversely, a significantly increase of G6PD activity and GSH/GSSG ratio for 0.5 mM V₂O₅, and a significantly decrease of GR and CAT T activities for 0.5 and 1.0 mM also occurs. Furthermore, for V₂O₅, ranging between 1.0 and 2.0 mM, we observed a significantly decrease of G6PD and GSH/GSSG ratio, occurring, at the same conditions a reverse effect on GR and CAT T activities, with a significant increase of GR for 1.5 and 2.0 mM. We suppose that bimodal response of *S. cerevisiae* to vanadium pentoxide, eventually mediated by NADPH and GSH level, rule cell death.

Keywords *S. cerevisiae*; oxidative stress; vanadium

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