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Study of oxidative stress in *Staphylococcus aureus* bacterial culture affected by extract of grape seeds

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Infectious diseases caused by microbial contaminants present to human population's current health and socio-economic risks. Antimicrobial effect of natural compounds directly linked with the increase of oxidative stress in microorganisms. Study of the antibacterial effect of extract of grape seeds on microorganisms (*Staphylococcus aureus* bacterial culture) was focused. The effect of eight concentrations of extract was studied. We were focused on the study of oxidative stress, the resulting effect of this extracts. Three principally different methods (namely DPPH, ABTS, and FRAP method) for antioxidant activity and changes in activities of specific enzymes (Superoxide dismutase, Glutathione-S-Transferase and Catalase) establishment were used to determine the oxidative stress. Have also been studied the growth curves and the number of microorganisms in the monitored culture. Obtained results were mathematically evaluated. Highly significant changes have been detected in the metabolism of microorganism. Correlation between individual analytical techniques was found-increased antioxidant activity was well evident with increasing concentration of applied extract of grape seeds. Obtained results indicate the possibility of the application of above-mentioned analytical techniques in microbiology in determination of oxidative stress in bacterial cultures.

Biography

Jiri Sochoris completed his PhD studies in September 2011 from the Mendel University. He focuses on study of antioxidant mechanisms and substances contained in plants. Other orientations are clinical biochemistry in relation to cancer, especially focusing on oxidative stress. He has received 367 cites and his "h index" is 13. He is the director of Labs of Microbiology and Tissue culture in Mendel University.

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