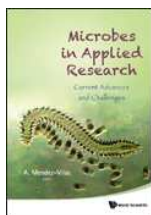


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Growth temperature determines titanium dioxide nanoparticles response by *Saccharomyces cerevisiae* UE-ME₃

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The environmental levels of titanium dioxide nanoparticles (TiO₂-NP), a new material described as ROS generator, has increased in several regions of the earth due its massive industrial use. Thus, the main purpose of this work was to determine the influence of temperature on response to TiO₂-NP by *S. cerevisiae* UE-ME₃. The results show that cells grown at 28 °C show dry weight, protein and glutathione contents higher than cells grown at 40 °C. In addition GSH content increased in cells exposed to nanoparticles at 28 °C. The GSH/GSSG ratio is greater in cells grown at 40°C, probably due a sharp decrease of GSSG and GPx activity, more evident in TiO₂-NP exposed cells. Furthermore, an increase of MDA level detected in *S. cerevisiae* growing in presence of 1µg/mL TiO₂-NP at 28 °C, related with an increase of LOX and GPx activities as well as ROS contents, points TiO₂-NP as inducer of oxidative stress and cell death.

Keywords: *S. cerevisiae*; titanium dioxide nanoparticles; oxidative stress

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