

عنوان مقاله:

Physiological effects of copper oxide nanoparticles on tobacco cell culture

محل انتشار:

بیستمین کنگره ملی و هشتمین کنگره بین‌المللی زیست‌شناسی ایران (سال: 1397)

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خلاصه مقاله:

Copper oxide nanoparticles (CuO NPs) appear to be promising agents for application in the agriculture and food industries, but information concerning the response of plants to interaction with nanomaterial is limited. Accordingly, a cell biology approach was applied to evaluate the physiological responses of tobacco cell cultures to CuO NPs. The cells were found to increase the activity of antioxidant enzymes (catalase, peroxidase, and superoxide dismutase) after 48 hours of exposure to different concentrations of CuO NPs (0, 10, 25, 75, and 100 mg L⁻¹). The production of reactive oxygen species and malondialdehyde in a dose-dependent manner was also observed. Further, a significant reduction in total phenol and flavonoid contents was evident. The overall results suggest that exposure to CuO NPs caused significant physiological and biochemical level changes and oxidative stress in tobacco cells

کلمات کلیدی:

Copper oxide nanoparticles, Physiological response, Tobacco cells, Toxicity

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