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Changes in antioxidant responses in *Pseudomonas putida* BCNU 106 by toluene treatment

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Pseudomonas putida BCNU 106 was used to examine the links between the toluene exposure, reactive oxygen species generation and oxidative stress response. Treatment of *Pseudomonas putida* BCNU 106 with 10% toluene revealed decreased generation of reactive oxygen species assessed by 2′7′-dichlorofluorescine oxidation. Antioxidative defence systems were investigated by measuring the activity of superoxide dismutase, glutathione peroxidase, glutathione reductase, glutathione S-transferase and catalase. Increased activity of superoxide dismutase, glutathione peroxidase, glutathione reductase, glutathione S-transferase and catalase were perceived after the treatment with 10% toluene. The results indicate that the tolerance of *Pseudomonas putida* BCNU 106 to different organic solvents was correlated with the reactive oxygen species generation in the cells and with the efficiency of antioxidant defence systems.