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Oxidative Stress During Toluene Exposure Cultures of *Pseudomonas putida* 106

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We have previously studied about the toluene responsible gene in toluene tolerance bacterial *P. putida* with 10% toluene at mRNA level. Several genes were exhibited differential display pattern in toluene treatment at 0.5 hr to 4 hr. One of the responsible genes, antioxidant proteins was carried out enzyme activity in order to stimulation of the expression in protein level. Gene expression of the antioxidant enzyme, superoxide dismutase (SOD) and catalase (CAT) was investigated in stationary phase *Pseudomonas putida* 106 during toluene - induced oxidative stress. Both *sod* mRNA levels increased at 8h exposure to 10% toluene. The *cat* mRNA induction was no significantly than *sod*. However these mRNA levels did not result in increased protein levels and activities of these enzymes. At 8hr exposure sample show 8 fold and 15fold increased than no treatment time each of SOD and CAT activity. Comparison of toluene exposure time course and revealed increased activity of antioxidant enzyme, decreased generation of reactive oxygen species assessed by 2',7'-dichlorofluorescein oxidation.