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Solvent-tolerance and trehalose accumulation by expression of *otsA* and *otsB* homologs in the response to toluene of *Pseudomonas savastanoi* BCNU 106 isolated from waste water

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Pseudomonas savastanoi BCNU 106 was isolated from waste water. The strain is a solvent-tolerant strain able to grow in a culture medium containing more than 50% (v/v) toluene. In this study, the strain was examined the trehalose contribution in 10% (v/v) toluene concentration and accumulated approximately 4.12 mM trehalose at 12 hr probably arising by the action of trehalose-6-phosphate synthase (PsTPS) and trehalose-phosphate phosphatase (PsTPP). PsTPS and PsTPP were isolated from *Pseudomonas savastanoi* BCNU 106 strain. The mRNA expression levels were detected after 10% (v/v) toluene treatments for 24 hrs. Furthermore, trehalase activity was decreased at 12 hr compared with that of the non-treated cell lines. These results support an important role of trehalose by expressions of PsTPS and PsTPP in the mechanism of acquired solvent-tolerance in *Pseudomonas savastanoi* BCNU 106. [This work was supported by the research grant from the Institute of Genetic Engineering, Changwon National University funded by the Korea Research Foundation in Korea]