PHENOL BIODEGRADATION BY *PSEUDOMONAS PUTIDA* PCM2153

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Abstract: Phenol degradation efficiency of *Pseudomonas putida* PCM2153 free cells was experimentally studied. Bacterial cells were acclimatized to phenol what relied on gradually increasing the phenol concentration in the medium. The highest phenol degradation rate was calculated as approximately 15.2 $mg \cdot dm^{-3} \cdot h^{-1}$. Investigated strain degraded the phenol at the concentration of 400 $mg \cdot dm^{-3}$ in 24 h. The result of toxicity analysis showed that acclimatized cells of *P. putida* PCM2153 are able to survive even at as high concentration of phenol as 3000 $mg \cdot dm^{-3}$. The obtained result suggests that the analyzed strain can be used for effective treating of high strength phenolic wastewater. Due to resistance of the strain to high phenol concentration it may be applied in bioremediation of exceedingly contaminated sites, especially where dilution of pollutants cannot be implemented.