

JOINT EVENT

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Isolation and characterization of phenol-degrading yeasts from industrial effluentAtena Alirezaei Dizicheh¹, Mansour Bayat¹, Mahmood Alimohmmadi¹ and Mohammad Ghayyomi Jazeh²¹Islamic Azad University, Tehran, Iran²Islamic Azad University, Tonekabon, Iran

Now-a-days environmental pollutants are one of the problems the industrial world is facing. Among these compounds, phenolic compounds are toxic pollutants to which chlorophenols belongs are known as xenobiotic chemicals. 4-chlorophenol (4-CP) is one of the chlorophenols with a high solubility in water, so that it is most detected in waste water and also can accumulate in their bodies biologically. In present study 13 strains of bacteria and 6 strains of yeast and mold phenol degradation was purified from Shahid Tondgooyan Petrochemical wastewater treatment unit was first carried out within 15 days. Then capability of the isolated microorganisms in biodegradation of 100 ppm 4-chlorophenol in presence of 2 g/l glucose as a growth substrate was examined. Two microorganisms, selected as superior species. The strains were designated as TY1 and TY2 and strains were identified by molecular method using amplification of ITS gene region. The phenol degradation was determined by the spectrophotometric method 4-amino antipyrine. The results showed that 100% removal of 100 ppm 4-chlorophenol by TY1 in 45 hrs, TY2 in 21 hrs and mixed culture of TY1TY2:50/50 in presence of 2 gr/l glucose within 18 hrs. Percentage of pure cultures in mixed culture had no significant effect on 4-CP removal efficiency. Furthermore, the results of the sequencing showed that the isolates with the genus *Trichosporon* sp. The significance and impact of the study is the utilization of native yeast strains isolated from the wastewater itself having potential for environmental bioremediation in petroleum refinery and petrochemical industries.

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