

Abstract

Isolation of phenol degradable microorganisms from six possible phenol contaminated sites was performed. Soil samples were collected around the drainage pipes of factories in Chiangmai, Chiangrai, Lamphoon, Samutprakarn, Samutsakorn as well as the drainage pipe of Klong San Sab in Srinakarinwirot University. The total of 243 bacterial strains was isolated by loop dilution technique. Five bacterial strains were obtained that are gram negative with about 0.5-1.0 μm in cell diameter. Comparison of biochemical and physiological properties of the strains, W1 and W22 are determined as *Acinetobacter sp.* and W53, W99 and W108 as *Alcaligenes sp.* or *Ralstonia sp.* The *Ralstonia sp.* W108 was further mutated by ultraviolet light and found to be able to grow well on minimal medium (CMM; carbon free minimal medium) containing 30 mM phenol as a sole carbon and energy source as indicated by OD_{660} of 1.741, after 4 days incubation at 200 rpm, 30 $^{\circ}\text{C}$. In addition, the selected mutant is able to produce Tyrosinase about 0.822 unit/ml which is approximately two times higher than the parental strain.