

Degradation pathway of phenol through ortho-cleavage by *Candida tropicalis* RETL-Cr1

ABSTRACT

Phenols and its derivatives are environmental pollutant commonly found in many industrial effluents. Despite being toxic, phenol can be utilized by microbes as carbon and energy sources. The strain utilized up to 3mM phenol as a sole source of carbon and energy. Phenol catabolism was confirmed through the detection of the intermediary products namely catechol and cis,cis-muconic acid. Catechol was formed at the earlier stage of the reaction mixture while cis,cis-muconic acid was formed at the later stage of the biodegradation process. The maximum concentration of catechol was 20.4 mg L after 7 h incubation. The HPLC chromatography detected muconic acid and enzymatic assays performed were found to be negative for catechol 2,3 dioxygenase activity. Hence, these results showed that this indigenous phenol-degrading yeast, *Candida. tropicalis* RETL-Cr1 (AY725426) seemed to metabolize phenol via ortho-cleavage pathway