

Isolation and Identification of Poly-(Lactic Acid) degrading bacteria using thin film based cultivation

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Recently many reports highlighted about biodegradable plastic such as poly-lactic acid (PLA), however only few bacterial strains were reported as PLA degrading bacteria. In this study, we tried to isolate and identify the PLA degrading bacteria from mixed culture (sludge) using thin PLA film based cultivation. Batch experiment was conducted anaerobically in nutrient media including PLA granule using sludge for 40 days. All flasks were replaced with fresh media every 10 days for isolation of PLA degrading bacteria. Methane and carbon dioxide production was measured for identification of PLA degradation. SEM image illustrated that microbe considered as PLA degrading bacteria was attached on PLA surface. The enrichment mixed culture were transferred to thin PLA film on agar plate. Microbe attached on PLA film was identified using 16s rRNA pyrosequencing. As a result *Pseudomonas* sp. MYK1, *Bacillus* sp. MYK2 were identified. PLA degradation mechanisms in these bacteria could be determined in further study.