



Isolation and Identification of Polyhydroxybutyrate(PHB) Producing *Bacillus cereus* BB613-A Novel Isolate.

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Abstract : Poly-3-hydroxy butyrate (PHB) is a copolymer of polyhydroxyalkonate family. It accumulates in the intracellular granules of bacteria under nitrogen limiting environment. The PHB producing bacteria was isolated from farm soil by serial dilution method. The Sudan Black B staining and Nile Blue A staining were carried out to confirm that the isolated strain was capable of producing PHB. Further, it was subjected to morphological, biochemical and molecular characterization. The 16S rRNA sequencing and phylogenetic analysis confirmed the organism was *Bacillus cereus* BB613 with accession number LN613102. The growth parameter and usage of low cost substrate for production was optimized. The maximum PHB accumulation was found at 30°C and pH 7.0 after 48h incubation. For the production of PHB, 1% sucrose was used as carbon source. Sucrose was then substituted by low cost substrates such as mosambi peel, orange peel, banana peel and molasses which gave yields 35.2%, 26.7%, 32.1% and 33.9% respectively.

Key words: Poly-3-hydroxybutyrate, 16Sr RNA sequencing, Phylogenetic analysis, Mosambi peel.

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