Poly hydroxy butyrate production by nitrate ion monitoring using *Methylosinus trichosporium* OB3b by batch culture

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Bio-plastics are produced using microorganisms and are characterized by high biodegradability. Poly hydroxyl butyrate (PHB) is a biopolymer that is already commercialized as a bioplastic. *Methylosnius trichosporium* OB3b is a type 2 methanotroph that can use methane as a carbon source, and various studies on PHB production were conducted using this strain. In methanotrophs, PHB production occurs when certain nutrients or media components are depleted, especially nitrate depletion has been found to play a major role. Because depletion of certain ingredients are essential to increase PHB production, previous studies did not conducted high cell density cultivation in PHB production studies. In this study, the nitrate concentration was monitored to keep low and maintain the minimum concentration required for the production of PHB and high cell growth. All cultures were carried out with a working volume of 3L in a 5L fermenter, and the production of PHB production was confirmed using gas chromatography.