

Accepted Manuscript

Polyhydroxybutyrate production from marine source and its application

Ganapathy Kavitha, Ramasamy Rengasamy, Dhinakaranamy Inbakandan



PII: S0141-8130(17)32593-X

DOI: <https://doi.org/10.1016/j.ijbiomac.2017.12.155>

Reference: BIOMAC 8817

To appear in:

Received date: 17 July 2017

Revised date: 18 October 2017

Accepted date: 28 December 2017

Please cite this article as: Ganapathy Kavitha, Ramasamy Rengasamy, Dhinakaranamy Inbakandan, Polyhydroxybutyrate production from marine source and its application. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Biomac(2017), <https://doi.org/10.1016/j.ijbiomac.2017.12.155>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Polyhydroxybutyrate production from marine source and its application

Ganapathy Kavitha^{ab*}, Ramasamy Rengasamy^b and Dhinakaranamy Inbakandan^a,

^aCentre for Ocean Research, Sathyabama University, Chennai 600 119, India.

^bCentre for Advanced Studies in Botany, University of Madras, Chennai, India

Corresponding author

Dr. Kavitha Ganapathy

Centre for Ocean Research, Sathyabama University, Chennai 600 119, India

Abstract

The increasing significance of non-degradable plastic wastes is an emerging concern. As a substitute, researches are being endeavoured from existing reserve to yield bioplastics based on their properties of biodegradability. Owing to their cost, now the experts are quest for a substitute source like bacteria, microalgae, actinomycetes, cyanobacteria and plants. PHB is biodegradable, environmental friendly and biocompatible thermoplastics. Varying in toughness and flexibility, depending on their formulation, they are used in various ways similar to many non-biodegradable petrochemical plastics currently in use. Promising strategies contain genetic engineering of microorganisms to introduce production pathways examined for the past two decades. Such kind of researches focusing on the use of unconventional substrates, novel extraction methods, and genetically enhanced species with assessment to make PHB from marine microbes are commercially attractive field. Hence, this biopolymer synthesis may displayed as one of the survival mechanisms of endosymbiotic, macroalgae, or sponge-associated bacteria, which exist in a highly competitive and stressful marine microenvironment. This review throws light on the promising and growing awareness of using marine microbes as PHB source, along with their applications in different fields of aquaculture, medicine, antifouling and tissue engineering.

Keywords: PHB, Marine microbes, Biopolymer, Thermoplastics

Download English Version:

<https://daneshyari.com/en/article/8327742>

Download Persian Version:

<https://daneshyari.com/article/8327742>

[Daneshyari.com](https://daneshyari.com)