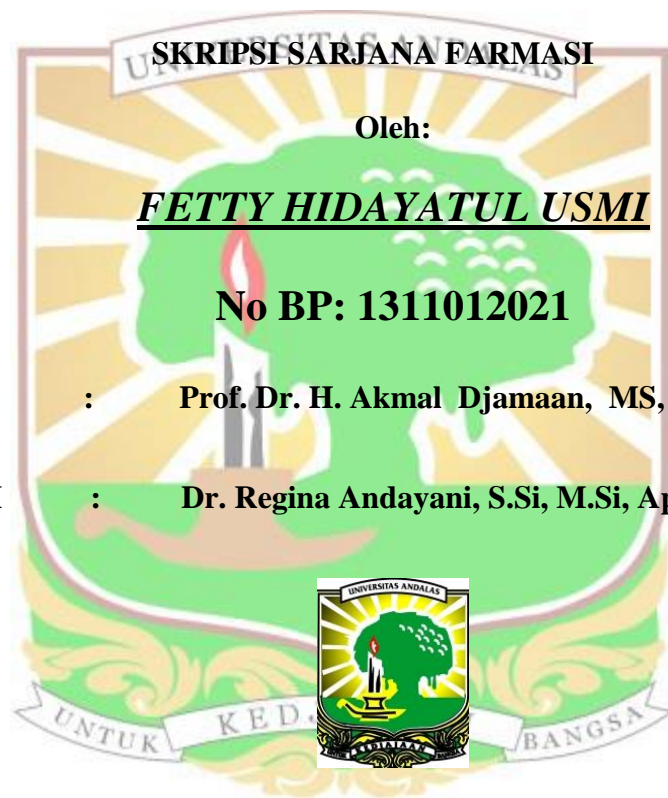


**ISOLASI DAN KARAKTERISASI BAKTERI
PENGHASIL BIOPLASTIK
POLI(3-HIDROKSIBUTIRAT)
DARI SAMPEL TANAH
SUNGAI KAMPAR RIAU**



Pembimbing I : Prof. Dr. H. Akmal Djamaan, MS, Apt.

Pembimbing II : Dr. Regina Andayani, S.Si, M.Si, Apt.

**FAKULTAS FARMASI
UNIVERSITAS ANDALAS
PADANG**

2018

ISOLASI DAN KARAKTERISASI BAKTERI PENGHASIL BIOPLASTIK POLI(3-HIDROKSIBUTIRAT) DARI SAMPEL TANAH SUNGAI KAMPAR RIAU

ABSTRAK

Permasalahan plastik sintetis dapat diatasi dengan memproduksi bioplastik yang ramah lingkungan. Tujuan dari penelitian ini untuk mengisolasi bakteri penghasil P(3HB) yang potensial dari sampel tanah Sungai Kampar Riau, dan mengetahui karakteristik isolat bakteri penghasil P(3HB) dengan uji biokimia. Metode yang digunakan dalam penelitian ini terdiri dari pengambilan sampel dengan *purposive sampling method*, isolasi bakteri menggunakan metode TPC (*Total Plate Count*). Selanjutnya isolat bakteri tunggal diuji secara kualitatif dengan *nile blue A* 1 % dan diamati dibawah sinar UV λ 365 nm. Kemudian isolat bakteri difermentasi dan diuji secara kualitatif dan kuantitatif dengan GC-MS (*Gas Chromatography-Mass Spectrometry*). Hasil dari isolasi bakteri tanah didapatkan 29 isolat bakteri penghasil PHA(Polihidroksialkanoat). Hasil uji kualitatif dan kuantitatif GC-MS didapatkan 22 isolat bakteri mengandung P(3HB) dengan kisaran persentase 0,1-74,2% dari 20 mg berat sel kering bakteri dimana persentase (P3HB) tertinggi pada kode isolat TSKRP34. Hasil identifikasi uji biokimia bakteri diketahui 2 genus bakteri terdiri dari 25 isolat bakteri termasuk genus *Bacillus* (*Bacillus sp. 1, sp. 2, sp. 3, sp. 4, sp. 5, sp. 6, sp.7, sp. 8*) dan 4 isolat termasuk genus *Alcaligenes* (*Alcaligenes sp.1, sp.2, sp.3*).

Kata Kunci : P(3HB), Bakteri, Tanah Sungai Kampar, GC-MS



ISOLATION AND CHARACTERIZATION OF BIOPLASTIC PRODUCING BACTERIA POLY(3-HYDROXYBUTYRATE FROM SOIL SAMPLES OF RIAU KAMPAR RIVER

ABSTRACT

The synthetic plastics issue can be resolved by producing biodegradable bioplastics. The objectives of this study were to isolate the potential of P(3HB) producing bacteria from soil samples of Kampar Riau River and to determine the characteristics of bioplastic producing bacteria P(3HB) by biochemical test. Samples were collected by using purposive sampling method, bacterial isolation were done by TPC (Total Plate Count) method. Furthermore, bacterial strains were tested by qualitative test with Nile blue A 1% and observed under UV light λ 365 nm. Then the bacterial strains were fermented and tested qualitatively and quantitatively with GC-MS (Gas Chromatograph-Mass Spectrometry). Results showed that the isolation of soil bacteria was found 29 strains of polyhydroxyalkanoate (PHA) producing bacteria. Result showed that qualitative and quantitative GC-MS test was obtained 22 bacterial strains containing P (3HB) with the level range of 0.1-74.2% weight of bacterial dry cell where the highest percentage (P3HB) in TSKRP34 bacteria strain code. Result showed that the identification of biochemical test of bacteria were known 2 genus of bacterial consist of 25 bacterial strains including *Bacillus* (*Bacillus sp. 1, sp. 2, sp. 3, sp. 4, sp. 5, sp. 6, sp.7, and sp. 8*) and 4 bacterial strains *Alcaligenes* (*Alcaligenes sp.1, sp. 2, and sp.3*).

Keywords: P (3HB), Bacteria, Soil of Kampar River, GC-MS

