

ABSTRACT
ISOLATION AND SCREENING OF THERMOPHILIC BACTERIA
PRODUCING LIPASE ENZYME IN GEOTHERMAL AREAS OF
SIPOHOLON TARUTUNG, NORTH SUMATRA

UNDERGRADUATED THESIS

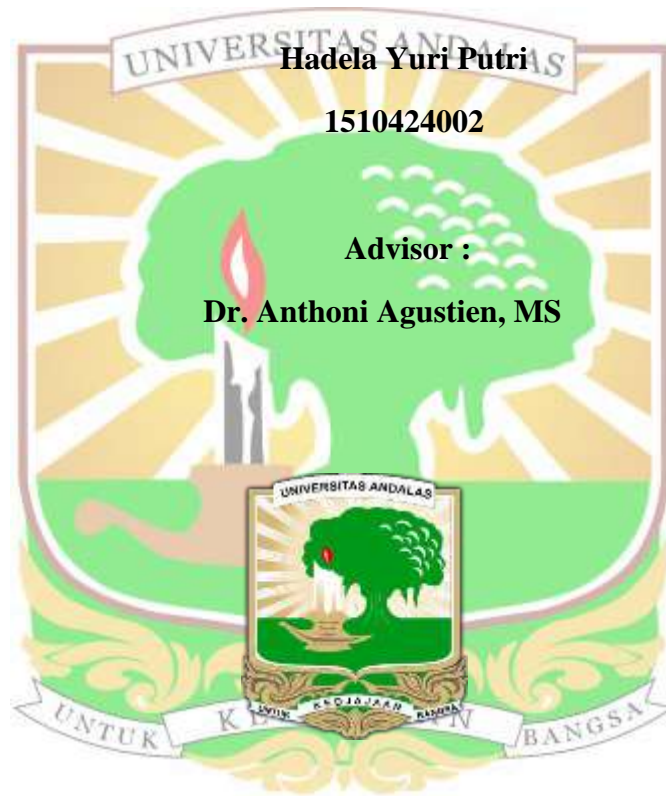
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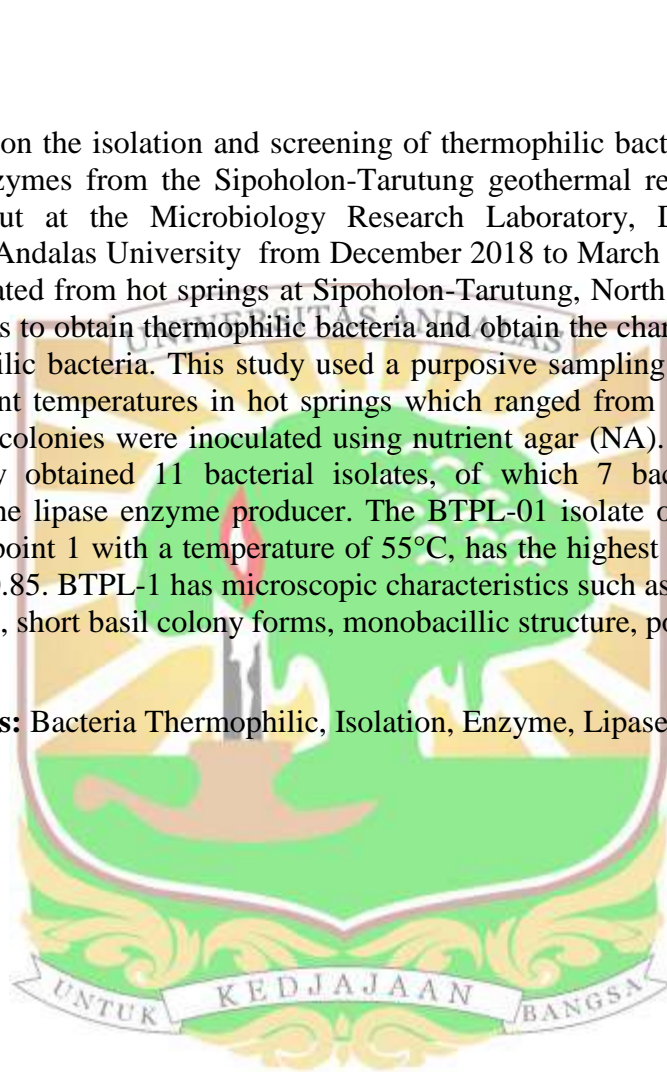


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ABSTRACT

Research on the isolation and screening of thermophilic bacteria producing lipase enzymes from the Sipoholon-Tarutung geothermal region has been carried out at the Microbiology Research Laboratory, Department of Biology, Andalas University from December 2018 to March 2019. Bacteria were isolated from hot springs at Sipoholon-Tarutung, North Sumatra. This study aims to obtain thermophilic bacteria and obtain the characterization of thermophilic bacteria. This study used a purposive sampling method based on gradient temperatures in hot springs which ranged from 50°C to 60°C. Bacterial colonies were inoculated using nutrient agar (NA). The results of this study obtained 11 bacterial isolates, of which 7 bacterial isolates showed the lipase enzyme producer. The BTPL-01 isolate originates from pond VI point 1 with a temperature of 55°C, has the highest lipolytic index value of 0.85. BTPL-1 has microscopic characteristics such as gram-positive properties, short basil colony forms, monobacillic structure, positive catalase test.

Keywords: Bacteria Thermophilic, Isolation, Enzyme, Lipase, Lipolytic



ABSTRACT

Penelitian tentang isolasi dan penapisan bakteri termofilik penghasil enzim lipase dari kawasan geotermal Sipoholon-Tarutung telah dilakukan di Laboratorium Riset Mikrobiologi, Jurusan Biologi, Universitas Andalas dari Desember 2018 hingga Maret 2019. Bakteri diisolasi dari sumber air panas di Sipoholon-Tarutung, Sumatera Utara. Penelitian ini bertujuan untuk mendapatkan bakteri termofilik dan memperoleh karakterisasi bakteri termofilik. Penelitian ini menggunakan metode *purposive sampling* berdasarkan suhu gradien pada sumber air panas yang berkisar antara 50°C hingga 60°C. Koloni bakteri diinokulasi menggunakan *nutrient agar* (NA). Hasil penelitian ini diperoleh 11 isolat bakteri, dimana 7 isolat bakteri menunjukkan penghasil enzim lipase. Isolat BTPL-01 berasal dari kolam 4 titik 1 yang bersuhu 55°C, memiliki nilai indeks lipolitik tertinggi yaitu 0,85. BTPL-1 memiliki ciri mikroskopis seperti sifat gram positif, bentuk koloni basil pendek, susunannya monobasil, uji katalase positif.

Kata Kunci: Bakteri Termofilik, Isolasi, Enzim Lipase, Lipolitik.

