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ISOLATION OF MODERATELY HALOPHILIC LIPASE PRODUCING BACTERIA FROM SPONGES IN PAHANG COASTAL WATER, MALAYSIA

By: [Hamid, THTA](#) (Hamid, Tengku Haziya Amin Tengku Abdul)^[1]; [Hamid, AAA](#) (Hamid, Azzmer Azzar Abdul)^[1]; [Padzil, NH](#) (Padzil, Nurul Husna)^[1]

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Abstract

Sponges (Porifera) harbour diverse microorganisms which can be the potential source for microbial enzymes such as lipase. In this study, moderately halophilic lipase producing bacteria were isolated from sponges tissues collected near Balok, at Pahang coastal water. Out of 70 isolates that grew on tributyrin agar plate, only 7 isolates had produced clear zones surrounding their colonies. Out of these, 5 isolates appeared to be gram-positive rod; meanwhile, the other 2 isolates were gram-negative rod in morphologies. These isolates were subjected to several biochemical tests i.e., oxidase, gelatin hydrolysis, lactose fermentation, citrate and motility test, and 16S rRNA gene amplification and sequencing. The results from 16S rRNA sequencing showed that 2 isolates (NHTH 6B and NHTH 28A) were highly similar (> 97%) with *Paenibacillus illinoisensis*; isolate NHTH 26A with *Stenotrophomonas pavanii*; and isolate NHTH 29A with *Enterobacter aerogenes*. Phylogenetic analysis on selected isolates (NHTH 6B, NHTH 26A, NHTH 28A and NHTH 29A) with other species from the database showed high bootstrap values of above 50%. This showed that diverse phyla of lipase producing bacteria were isolated from the sponge collected from Pahang coastal water. In the isolation of industrial important species, the presence of pathogenic group of microorganism in this sponge could indicate issues on water quality and safety in this area.

Keywords

Author Keywords: [Halophilic bacterium](#); [lipase producer](#); [sponges](#)

Author Information

Reprint Address: Hamid, THTA (reprint author)

+ Int Islamic Univ Malaysia, Kulliyah Sci, Dept Biotechnol, Bandar Indera Mahkota, Kuantan 25200, Malaysia.

Addresses:

+ [1] Int Islamic Univ Malaysia, Kulliyah Sci, Dept Biotechnol, Bandar Indera Mahkota, Kuantan 25200, Malaysia

E-mail Addresses: haziyaamin@iium.edu.my

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