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Purification and Production of Lipopeptide Biosurfactant Produced by *Bacillus sp.* GBM 3309

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A strain producing biosurfactant, GBM 3309 was isolated from the soil sample of Kyebang Mountain by the antifungal and emulsification assessment. From 16s rDNA analysis, strain GBM 3309 was related to *Bacillus subtilis*. The growth, surface tension, emulsifying activity and stability of the isolate were investigated by physical and chemical tests. The emulsifying stability reached a highest degree when tributyrin was used as a substrate, suggesting that its function was similar to Tween 20 and Tween 40, compared with a variety of synthetic surfactant. The high emulsifying activity was also obtained when soybean oil and crude oil were used as the substrate. The biosurfactant substance from *Bacillus subtilis*. GBM 3309 were also analyzed by ESI-MS, GC-MS and MALDI-TOF mass spectra, respectively.

Key words: *Bacillus subtilis,* ESI-MS, GC-MS, MALDI-TOF mass spectra

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Analysis and Identification of Bacteria with Antifungal Activity

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The aim of this study was to identify antifungal active bacteria with purify the strong biological active compounds. The identification of isolated bacteria was carried out by 16s ribosomal DNA sequence analysis. Strain 320 showed most active for Rhizoctonia solani, Botrytis cinerea and Fusarium oxysporium. Ethyl Acetate fraction of culture broth was confirmed the inhibitory zone by plate assay the compound of Rf = 0.4 by silicagel thin layer chromato graphy (TLC, n-Hexane : Ethyl Acetate (5 : 1, v/v)) represented high antifungal activity against at broad range of plant pathogenic fungi.

Key words: Antifungal activity, strain 320