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## Isolation and Characterisation of Urease-producing Bacteria from Tropical Peat

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### Abstract

Urease were known to catalyze the conversion of urea to ammonia and carbon dioxide. Microbial urease has demonstrated its benefits in wide biotechnological, agricultural, medicinal and engineering application. There are number of diverse microbial species contribute to urease activity in different natural habitats like soil, ocean and in various geological formation. For this study, urease bacteria were screened and isolate from acidic peat in Sarawak, Malaysia. Five distinct and diverse bacterial strains that were able to produce urease constitutively were selected to be characterized with respect to morphology, biochemical test, growth conditions and urease activity. The selected strain showed their capability to precipitate calcium carbonate ( $\text{CaCO}_3$ ). Hence, the isolates could be potential source of acid ureases that can be use in various industrial utilizations. 16S rRNA sequencing and phylogenetic analysis found that the selected isolates belong to the genus of *Bacillus*.

Keywords: Urease; Bacteria; Peat; 16 rRNA sequencing

### Highlights

- Urease producing bacteria were isolated from tropical peat in Sarawak, Malaysia
- Urease activity varies between isolated strain in acidic and alkaline pH
- Isolated strains capable of calcium carbonate precipitation
- 16s RNA sequencing and phylogenetic analysis of selected isolates

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