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## Statistical analysis of growth conditions of newly isolate bacillus sp. producing l-asparaginase (Article) [\(Open Access\)](#)

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### Abstract

The concentrations of nutrient elements together with several physical parameters were screened to find out the significant factors for the production of Lasparaginase from newly isolated strain, Bacillus sp. from Sg Klah, Hot Spring, Perak. Then, the significant factors were optimized for enhancing L-asparaginase production from the bacterium strain. Two statistical designs, Two Level Factorial Design and Face Centered Composite Design (FCCD), Design expert @version 8.0 were employed in screening and optimization of the process variables, respectively. The results for all experiment runs were analyzed by analysis of variance (ANOVA). Peptone (nitrogen source) concentration and temperature were found as significant factors, positively influenced the production of Lasparaginase. The two factors were then optimized to increase the desired enzyme production. The optimum peptone concentration and the temperature were found at 1.4 g/L and 30C, respectively. The L-asparaginase production under optimized conditions increased from 0.15±0.023 U/mL to 0.19 ± 0.03 U/mL. The kinetic studies showed that the biomass production dropped after 24 hours while L-asparaginase activity is active and positively increased until the fermentation period ended. © 2020, International Islamic University Malaysia-IIUM.

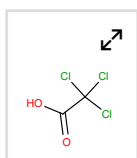
### SciVal Topic Prominence ⓘ

Topic: Asparaginase | Glutaminase | Erwinia Chrysanthemi

Prominence percentile: 92.954 ⓘ

### Chemistry database information ⓘ

#### Substances



### Author keywords

[Bacillus sp.](#) [L-asparaginase activity](#) [Optimization](#) [Peptone](#) [Screening](#) [Temperature](#)

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