



Kinetic Investigation for the Production of a Significant Antibiotic Bacitracin by *Bacillus licheniformis*

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Background:

Bacitracin is a potent polypeptide antibiotic used in various combination with other antibiotics for tropical application. Also being a growth ingredient in livestock, it became a very prominent to investigate.

Objective:

The purpose of this study was to evaluate the physical parameters for the optimum microbial production of antibiotic.

The evaluated fermentation media found foremost good for bacitracin activity. Study of kinetics in fermenter revealed that specific growth rate in stirred fermenter was 0.248 for initial twelve hours and 0.157 for shake flask. The number of generation and the generation time found for stirred fermenter were 4.3 and 3.0 h during the exponential growth phase whereas number of generation and generation time for shake flask were 4.05 and 4.4 h. Substrate consumption rate for fermenter and shake flask were 1.617 g/dm³/hour and 1.192 g/dm³/hour for 12 and 18 hours of fermentation, respectively. Another imperative and comparable parameter was specific uptake rate, which was found 0.413 g g⁻¹ h⁻¹ and 0.232 g g⁻¹ h⁻¹ for fermenter and the shake flasks.

Conclusion:

Combination of effective parameters find out in this study for maximum production of Bacitracin antibiotic at large scale production.

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4. <http://doi.org/10.1128/aac.43.6.1317>