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DEPARTMENT OF BIOTECHNOLOGY

A Project Report On

"STUDY ON GROWTH CHARACTERISTICS OF PSEUDOMONAS AND BACIILUS SPECIES FOR THE ISOLATION OF MEDICALLY IMPORTANT ENZYMES"

A dissertation submitted to the Department of Biotechnology of Visvesvaraya Technological University in partial fulfillment for the award of the Degree of
Bachelor's of Engineering.

Under the guidance of
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ABSTRACT

Growth may be defined as the orderly increasing in all cellular constituents that results from the biosynthetic and energy generating processes. Growth culture were made to grow on nutrient broth at optimum temperature. characteristics of pseudomonas aeruginosa and bacillus species reveled that pseudomonas aeruginosa does not have stationary phase in its growth cycle.

Enzyme is a substance produced by a living organism that acts as a catalyst to bring about a specific biochemical reaction. L-Asparaginase is an anti-neoplastic agents used in the lymphoblastic leukaemia chemotherapy. L-Asparaginase is hydrolytic enzyme produced by a large number of microorganisms. Three microorganisms pseudomonas aeruginosa, bacillus cereus, bacillus thuringiensis were used for the production of L-Asparaginase by using submerged fermentation. Out of three microorganisms, pseudomonas aeruginosa gave the best yield. The production of L-Asparaginase enzyme was carried out by L-Asparagine as substrate the enzyme was purified by heating at optimum temperature, salt precipitation and dialysis. The optimum temperature is recorded as 55°c and pH as 10. The molecular weight of the isolated enzyme is130 KDa which was determined by SDS-PAGE.