Faculty of science
Microbiology Department

Microbiological and biochemical studies on calcium lactobionate production by some bacteria

Thesis

Submitted in partial fulfillment of the requirement for M.Sc. Degree in Microbiology

By

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Faculty of Science
Ain shams university

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بسم الله الرحمن الرحيم

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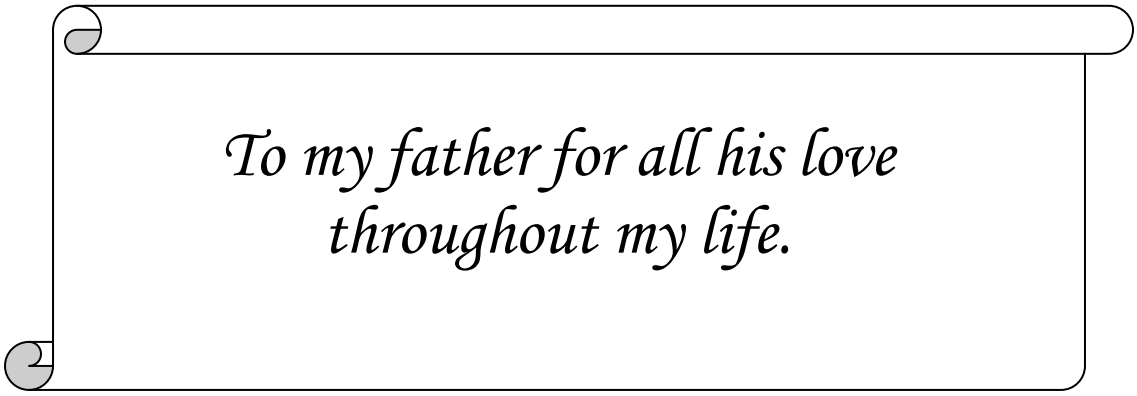

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Declaration

This thesis has not previously been submitted for any other university. The references were being checked whenever possible; show the extant to which I have availed myself of the work of other authors.

Naiera Mohamed Helmy Mohamed Abd El-Salam

ABSTRACT

Naiera Mohamed Helmy Mohamed Abd El-salam. Microbiological and biochemical studies on calcium lactobionate production by some bacteria. M.Sc. Ain Shams University, Faculty of Science, Microbiology Department, 2010.

Studies were made on 12 different bacterial isolates. ***Bacillus subtilis*** **E** was found to be the most potent calcium lactobionate producer.

The conditions of cultivation as well as the conditions of calcium lactobionate production by ***B. subtilis*** **E** were investigated.

The highest calcium lactobionate yield (90%) was obtained using production medium composed of (g/100ml) : lactose ,5; KH_2PO_4,0.06 ; $MgSO_4.7H_2O$, 0.025; corn steep liquor ,0.75 ml ; 1 drop of soybean oil ; 1.5 ml of 20% urea and $CaCO_3$, 2.5 gm added during inoculation.

The medium (100ml) was inoculated with 3ml inoculum and incubated at 30˚C for 7 days under shaking condition 200 r.p.m.

Calcium alginate, agar-agar and chitosan were used as natural and synthetic carriers for immobilization of ***B. subtilis*** **E**. The production of calcium lactobionate is performed efficiently by adsorption of cells on chitosan sheets.

Key Words: Microbial lactose conversion, calcium lactobionate, Physiological factors and immobilization.

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