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"Biosynthesis and Evaluation of Some Biosurfactants Potentially Active in Remediation of Petroleum Pollution"

Presented by

HUDA SALEH EL-SHESHTAWY KHALID

A Thesis Submitted

To

Faculty of Science

**In Partial Fulfilment of the
Requirements for
the Degree of
Ph.D. of Science
(Microbiology)**

**Botany Department
Faculty of Science
Cairo University**

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HUDA SALEH

DEDICATION

I dedicate this work to

The memory of my parents and brother

Sisters and sister's sons

Husband

Spiritual father and sister

Friends

ABSTRACT

Student Name: Huda Saleh El-Sheshtawy Khalid

Title of the thesis: Biosynthesis and Evaluation of Some Biosurfactants Potentially Active in Remediation of Petroleum Pollution

Degree: Ph.D. of Science (Microbiology)

Biosurfactants are generally microbial metabolites with the typical amphiphilic structure of a chemical surfactant. The biosurfactant may enhance biodegradation of the hydrophobic petroleum oil either by emulsification or solubilization or both. In the present study the main target was to synthesize biosurfactants by utilizing some microbial strains. The study of the different growth conditions of the microbial culture for attaining optimum surface properties was also an essential target. The produced biosurfactants were aimed to make progress in biodegradation of crude petroleum oil contaminating sea water in a locality at Suez, Egypt. The bacterial isolate BP1 isolated from sea water contaminated with petroleum oil was able to degrade petroleum hydrocarbons by formed biosurfactants. The biodegradation percentage was 27.9 %, including the degradation ratio of total paraffins and cycloparaffins; aromatics and polyaromatics with 14.8 and 13.1 % respectively.

Keywords: Biosurfactants, Bioremediation, Petroleum hydrocarbons.

Supervisors:

1- Prof. Dr. Doreya Ali Zaki

2- Prof. Dr. Mohamed Fouad Abdel-Aziz Salama

3- Prof. Dr. Mamdouh Mohammed El-Sayed Doheim

4- Dr. Nagwa Mohamed Morsi

Signature:

د. ديرة علي زكي

M. Salama

M. Doheim

ن. م. م. م. م.

Prof. Dr. Maimona Abdel Aziz Kord
Chairman of Botany Department
Faculty of Science- Cairo University

م. م. م. م.

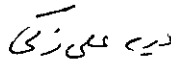
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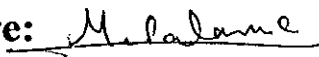
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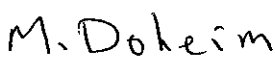
1- Prof. Dr. Doreya Ali Zaki

Signature: 

2- Prof. Dr. Mohamed Fouad Abdel-Aziz Salama

Signature: 

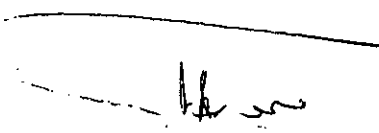
3- Prof. Dr. Mamdouh Mohammed El-Sayed Doheim

Signature: 

4- Dr. Nagwa Mohamed Morsi

Signature: 

Prof. Dr. Maimona Abdel Aziz Kord


**Chairman of Botany Department
Faculty of Science- Cairo University**

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