Faculty of Women
For Arts, Science and Education
Ain Shams University

Antimicrobial activity of *Moringa oleifera* extracts on selected bacterial pathogens and its application

Thesis Submitted As
A Partial Fulfillment of the Requirements of
Master Degree in Botany (Microbiology)

By
Doaa Abd ELrazyk Shehata Ali
B.Sc., Microbiology and chemistry (2007)

To
Botany Department
Faculty of Women
For Arts, Science and Education
Ain Shams University
(2019)

Faculty of Women
For Arts, Science and Education
Ain Shams University

Antimicrobial activity of *Moringa oleifera* extracts on selected bacterial pathogens and its applications

Thesis Submitted As
A Partial Fulfillment of the Requirements of
Master Degree in Botany (Microbiology)

By
Doaa Abd ELrazyk Shehata Ali
B.Sc., in microbiology and Chemistry (2007)
Faculty of Women for Arts, Science and Education

Supervisions

Dr. Zeinab Mohamed Hassan Kheiralla
Professor of Microbiology
Botany Department, Faculty of women for Arts, Science and Education;Ain Shams University

Dr. EL-Mewafy Abdou EL-Mewafy EL-Ghadban
Professor of Medicinal and aromatic plants, horticultural research institute, National Gene Bank, agricultural research center

Dr. Hala Abd ELmonem Ahmed
Lecturer of Microbiology Botany Departmen, Faculty of women for Arts, Science and Education; Ain Shams University

Approval sheet

Name of student: **Doaa Abd ELrazyk Shehata Ali**

Thesis Title: **Antimicrobial activity of *Moringa oleifera* extracts on selected bacterial pathogens and its applications**

Supervisors

Dr. Zeinab Mohamed Hassan Kheiralla
Professor of Microbiology Botany Department, Faculty of Women for Arts, Science and Education, Ain Shams University

……

Dr.EL Mewafy Abdou EL-Mewafy EL-Ghadban
Professor of Medicinal and aromatic plants, horticultural research institute, national Gene Bank, agricultural research center.

……

Dr. Hala Abd ELmonem Ahmed
Lecturer of Microbiology Botany Department, Faculty of women for Arts, Science and Education; Ain Shams University.

……


قَالُوا سُبْحَانَكَ
لاَ عِلْمَ لَنَا
إِلاَّ مَا عَلَّمْتَنَا
إِنَّكَ أَنتَ
الْعَلِيمُ الْحَكِيمُ
صدق الله العظيم
الآية سورة البقرة
(٣٢)

This Thesis has not

been

Submitted for a degree

at this

Or any other university

كلية البنات للآداب والعلوم والتربية
جامعة عين شمس

رسالة ماجستير فى الميكروبيولوجي

مقدمة من

اسم الطالبة : دعاء عبد الرازق شحاته على

عنوان الرسالة: تاثير مستخلص نبات المورينجا اوليفيرا ضد بعض الميكروبات الممرضه وتطبيقاتها

اسم الدرجة : ماجستير فى الميكروبيولوجي

لجنة الإشراف

الاسم: أ.د. زينب محمد حسن خيرالله

أستاذ الميكروبيولوجي– قسم النبات– كلية البنات للعلوم والآداب والتربية – جامعة عين شمس

الاسم: أ.د.الموافى عبده الموافى الغضبان

استاذ ورئيس البساتين والنبتات الطبيه والعطريه والبريه بالبنك القومى للجينات والموارد الوراثيه– مركز البحوث الزراعيه

الاسم:د.هاله عبد المنعم أحمد

مدرس الميكروبيولوجي– قسم النبات– كلية البنات للعلوم والآداب والتربية – جامعة عين شمس

تاريخ البحث: / / ٢٠١٣

الدراسات العليا

ختم الإجازة أجيزت الرسالة بتاريخ: / / ٢٠١٩

موافقة مجلس الكلية موافقة مجلس الجامعة

/ / ٢٠١٩ / / ٢٠١٩

كلية البنات للآداب والعلوم والتربية

جامعة عين شمس

تاثير مستخلص نبات المورينجا اوليفيرا ضد بعض الميكروبات الممرضه وتطبيقاتها

رسالة مقدمة

للحصول على درجة الماجستير فى العلوم(ميكروبيولوجي)

من الطالبه

دعاء عبد الرازق شحاته على

تحت إشراف

أ.د. زينب محمد حسن خيرالله

أستاذلا الميكروبيولوجي– قسم النبات– كلية البنات للعلوم والآداب والتربية – جامعة عين شمس

أ.د.الموافى عبده الموافى الغضبان

استاذ ورئيس البساتين والنبتات الطبيه والعطريه والبريه بالبنك القومى للجينات والموارد الوراثيه– مركز البحوث الزراعيه

د.هاله عبد المنعم أحمد

مدرس الميكروبيولوجي– قسم النبات– كلية البنات للعلوم والآداب والتربية – جامعة عين شمس

بكالوريوس الميكروبيولوجي والكيمياء ٢٠٠٧

قسم النبات والميكروبيولوجى

كلية البنات للآداب والعلوم والتربية

جامعة عين شمس

2019

Dedication

To my mother spirit, My Father , my husband, my lovely sister HOda, I dedicate this thesis, also to my family, who gave me an appreciation of learning and taught me the value of perseverance and resolve, especially to my lovely babies Zeyad &Aya

Acknowledgements

All praises to the merciful Allah and beneficent for giving the strength and blessings for helping me to complete this work.

I am deeply indebted to a number of people with whom I have worked and from whom I have learnt so much and have helped me in my task. I wish most particularly to express my greatest gratitude to my supervisors; I would like to present my profound gratitude to. ***Dr. Zeinab Mohamed Hassan Kheiralla*** *Professor of Microbiology, Botany Department, Faculty of Women for Arts, Science and Education, Ain Shams University for her supervision and for her guidance, invaluable criticisms, suggestions the topic of this work and also for the great support demonstrated while seeing this thesis to its completion.*

I would like to present my profound gratitude to.

Dr. El-Mewafy Abdo El-mewafy El-gadban *professor of Medicinal and aromatic plants, horticultural research institute, National Gene Bank, agricultural research center.*

Also, I wish to express my deep gratitude and my great thanks to ***Dr/ Hala Abd Elmonem Ahmed*** *lecturer of Microbiology, Botany Department and Faculty of Women for Arts, Science and Education, Ain Shams University for her kindly care and advices to help me by all means to finish my work.*

Special thanks are also to ***Dr. Abeer Rushdy****., the head of Botany Department, Faculty of Women for Arts, Science and Education, Ain Shams University for her great support.*

Sincere thanks valuable help and sincere cooperation to my Colleagues in Botany Department, Faculty for women of Arts, Science and Education, Ain Shams University.

Finally my deep thanks are extended to my Friends for their valuable help and sincere cooperation.

Aim of the work

Aim of the work

The aim of present study is focused on answering the following question:

1- Does an antimicrobial activity of *Moringa oelifera* plant parts extracts have an effect on the clinical bacterial pathogens?

2- Does the combination between the most potent *Moringa oleifera* extracts and certain known clinical antibiotics change the pathogenicity of the tested multi drug resistant bacteria?

3- Can we develop an eco-friendly method for synthesis of Ag nanoparticles to enhance the antimicrobial activity of *Moringa oleifera* leaves extract?

Contents