Ain Shams University
Faculty of Science
Department of Microbiology

Studies on *Aspergillus flavus* Isolated from Keratitis Patients with a Special Reference to Aflatoxin-Producing Ability

A thesis

Submitted for the Degree of Doctor of Philosophy (Ph.D.) in Microbiology

By

Asmaa Awad Mahmoud Awad

(B.Sc. Chemistry & Microbiology, 2004; M.Sc. Microbiology, 2010)

Under Supervision of

Prof. Dr.

Adel Ahmed El-Mehallawy

Professor of Mycology and Physiology of Microorganisms, Department of Microbiology, Faculty of Science, Ain Shams University

Prof. Dr.

Ahmed Abd El-Rahman Ismaiel

Professor of Mycotoxins, Department of Botany and Microbiology, Faculty of Science, Zagazig University

Dr.

Basma Hamdy Amein

Associate professor of Microbiology, The Regional Center of Mycology and Biotechnology, Al-Azhar University

Dr.

Nevin Ahmed Ibrahim

Lecturer of Microbiology Department of Microbiology, Faculty of Science, Ain-Shams University

Faculty of Science
Ain Shams University, Egypt
2019

Faculty of Science
Microbiology department

Approval Sheet

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Thesis supervisors

Prof. Dr: Adel Ahmed El-Mehallawy
Professor of Mycology , Faculty of Science, Ain Shams University

Prof. Dr: Ahmed Abd El-Rahman Ismaiel
Professor of Mycotoxins, Faculty of Science, zagazig university

Dr: Basma Hamdy Amein
Associate Professor of Microbiology, Regional Center of Mycology and Biotecnology , Al-Azhar university

Dr: Nevin Ahmed Ibrahim
Lecturer of Microbiology, Faculty of Science, Ain Shams University

Examination committee

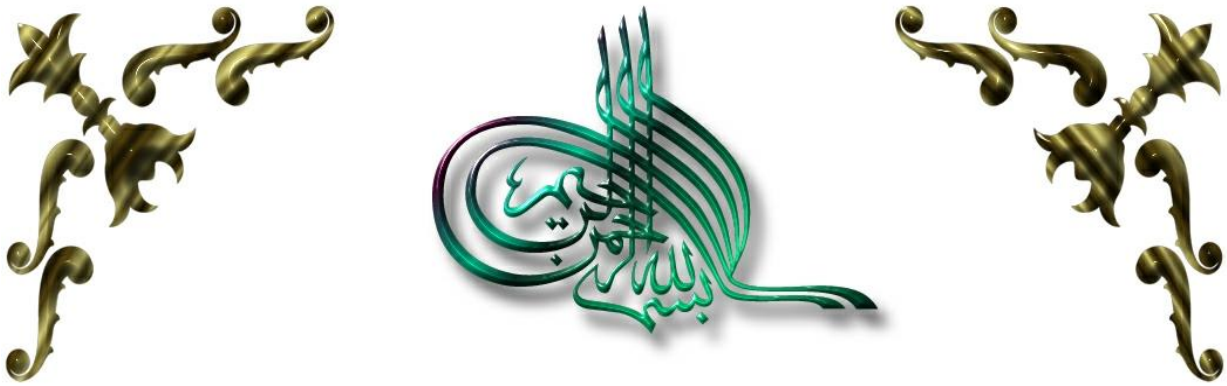
Prof. Dr: Hussein Hosny El-Sheikh
Professor of Microbiology, Faculty of Science, Al-Azhar University

Prof. Dr: Omkalthoum Hassan Elsayed
Professor of Microbiology, Faculty of Science, Hilwan University

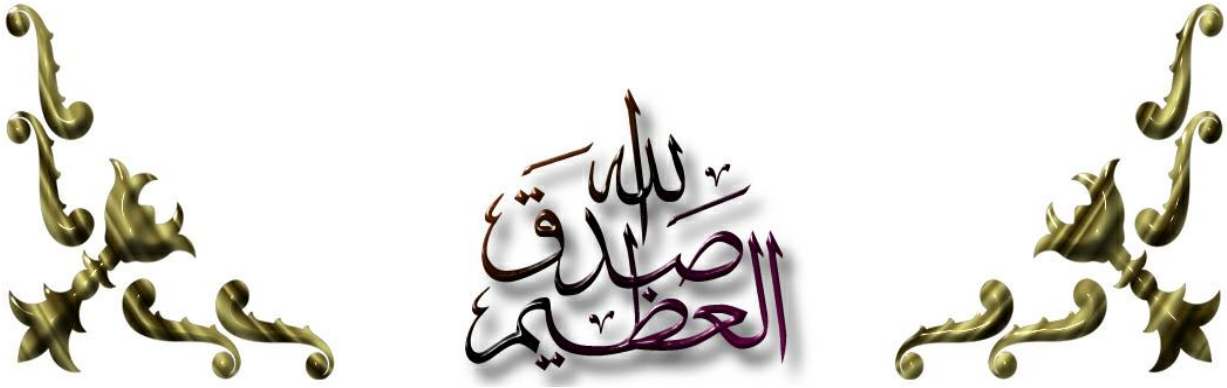
Prof. Dr: Adel Ahmed El-Mehallawy
Professor of Mycology , Faculty of Science, Ain Shams University

Prof. Dr: Ahmed Abd El-Rahman Ismaiel
Professor of Mycotoxins, Faculty of Science, zagazig university

Date of Examination: 2 / 11 / 2019



وَقُلِ اعْمَلُوا فَسَيَرَى اللَّهُ
عَمَلَكُمْ وَرَسُولُهُ وَالْمُؤْمِنُونَ



صدق الله العظيم

First of all thanks to

ALLAH

For helping me to achieve this work without whose mercy and guidance, this work would never have been started nor completed. I praise him (almighty) as much as the heavens and earth and what in between or behind.

Acknowledgment

My sincere thanks and gratitude to ***Prof. Dr. Adel Ahmed El-Mehallawy,*** *Professor of Mycology and physiology of microorganisms, Microbiology Department, Faculty of Science, Ain-Shams University for his help, support, valuable suggestions, precious guidance and valuable advice during the experimental work and facilities needed for the present work, continuous help during the course of this investigation and the revision of manuscript. His valuable guidance helped me in all the time of research and writing of this thesis*

I am greatly indebted to ***Prof. Dr. Ahmed Abd El-Rhman Ismaiel,*** *Professor of Mycology and Mycotoxins, Department of Botany and Microbiology, Faculty of Science, Zagazig University for suggesting the point of research, planning the program of the study, valuable advice, constructive criticism, kind care during the progress of this work and continuous encouragement during his supervision for achievement of this work. His effort in revising the manuscript of this thesis is greatly appreciated.*

All my deep thanks to ***Dr. Basma Hamdy Amein,*** *Associated professor of Microbiology, The Regional Center of Mycology and Biotechnology (RCMB) , Al-Azhar University*

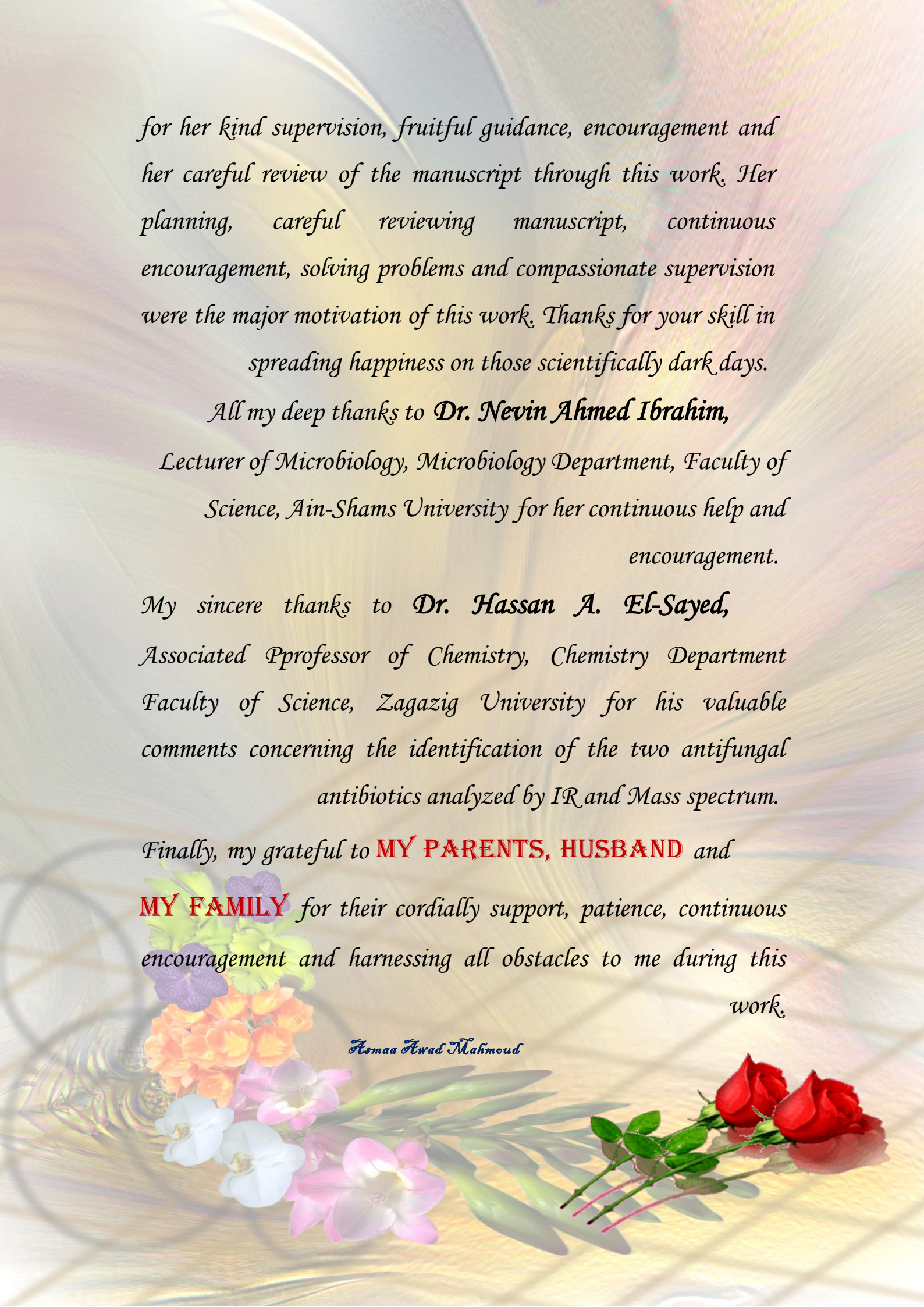
for her kind supervision, fruitful guidance, encouragement and her careful review of the manuscript through this work. Her planning, careful reviewing manuscript, continuous encouragement, solving problems and compassionate supervision were the major motivation of this work. Thanks for your skill in spreading happiness on those scientifically dark days.

All my deep thanks to ***Dr. Nevin Ahmed Ibrahim,*** *Lecturer of Microbiology, Microbiology Department, Faculty of Science, Ain-Shams University for her continuous help and encouragement.*

My sincere thanks to ***Dr. Hassan A. El-Sayed,*** *Associated Pprofessor of Chemistry, Chemistry Department Faculty of Science, Zagazig University for his valuable comments concerning the identification of the two antifungal antibiotics analyzed by IR and Mass spectrum.*

Finally, my grateful to **MY PARENTS, HUSBAND** *and* **MY FAMILY** *for their cordially support, patience, continuous encouragement and harnessing all obstacles to me during this work.*

Asmaa Awad Mahmoud



DEDICATION

TO...

My Parents,

My Husband,

My Brothers, Sisters, Sons

and Parents of my husband

Abstract

This study on *Aspergillus flavus* isolated from keratitis patients and from soil; suggests that AFB1 production occurs significantly and more frequently in clinical strains than it does in environmental strains. This observation has therapeutic applications, since it may be necessary to treat keratitis patients with molecules or substance extracted from natural, local, valuable and cheep origin such as the tested probiotics that suppress the growth of opportunistic fungi and it is clear that its medicinal value is comparable to the present day antibiotics. Because of the advantages of its antifungal activity; probiotics appears to have economic, clinical and public health importance, efficacy in inhibiting AFB1 production, easily preparation, low cost and availability as natural substance; these are a novel antifungal compounds which are identified and their chemical structure was elucidated from their IR and mass spectra; these compounds were dihydroindole derivative extracted from *Lactobacillus bulgaricus* and 2,6-dibutyl-9-arylacridine extracted from *Saccharomyces cerevisiae*. Also this study revealed that butanol is the proper solvent in the antifungal extraction from both *S. cerevisiae* and *L. bulgaricus.* This study showed the availability of using dihydroindole derivative and 2,6-dibutyl-9-arylacridine as antifungal antibiotics against *Aspergillus flavus* and *A. parasiticus* causing ocular ulcers. Moreover they found to have an efficacy in inhibiting their aflatoxin toxicity.

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