



بسم الله الرحمن الرحيم

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Ain Shams University
Faculty of Science
Microbiology
Department



Evaluation of the Antifungal Activities of Some Essential Oils Against Some Clinically Important Filamentous Fungi

A Thesis

**Submitted for the degree of Ph.D. in Microbiology
Faculty of Science- Ain Shams University**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

سببنا انك لا تعلم لنا
إلا ما علمتنا إنك أنت
العليم العظيم

صدق الله العظيم

سورة البقرة الآية: ٣٢

DECLARATION

*This thesis has not previously
submitted for any other
universities*



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List of Abbreviations

List of Abbreviations & Symbols	
%	Percent
°C	Celsius
µg	Microgram
µl	Microlitre
<i>A. flavus</i>	<i>Aspergillus flavus</i>
<i>A. fumigatus</i>	<i>Aspergillus fumigatus</i>
<i>A. niger</i>	<i>Aspergillus niger</i>
<i>A. terreus</i>	<i>Aspergillus terreus</i>
<i>Alt. alternata</i>	<i>Alternaria alternata</i>
ATCC	American Type Culture Collection
BAL	Broncho alveolar lavage
CLSI	Clinical and Laboratory Standards Institution
CNS	Central Nervous System
COPD	Chronic Obstructive Pulmonary Disease
CT	Computed tomography
CW	Cell wall
EDG	Electron Dense Granules
EOs	Essential Oils
FDA	Food and Drug Administration
g	gram
GC-Mass	Gas Chromatography–Mass Spectrometry
GRAS	Generally Recognized as Safe
hrs	hours
IA	Invasive Aspergillosis
IAFIs	Intra Abdominal Fungal Infections
IC	Invasive Candidiasis
IFIs	Invasive Fungal Infections
IPA	Invasive Pulmonary Aspergillosis
LB	Lipid bodies
M	Mitochondria
MIC	Minimum inhibitory concentration
mm	milli meter

List of Abbreviations & Symbols	
N	Nucleous
<i>P. chrysogenum</i>	<i>P. chrysogenum</i>
PM	Plasma membrane
SDA	Sabouraud's dextrose media
TEM	Transmission electron microscopic
TLC	Thin Layer Chromatography
V	Vacuole

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