

127, 17 27, 17 (20) 77, 17 (20









جامعة عين شمس

التوثيق الالكتروني والميكروفيلم



نقسم بللله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأفلام قد اعدت دون آية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15-20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of 15 – 25c and relative humidity 20-40 %



ثبكة المعلومات الجامعية





Information Netw. " Shams Children Sha شبكة المعلومات الجامعية @ ASUNET بالرسالة صفحات لم ترد بالأص

STUDIES ON CEPHALOSPORINASE ENZYMES OF β-LACTAM ANTIBIOTIC-RESISTANT BACTERIA

THESIS

SUBMITTED

BY

Ahmad Eltyieb Mohamad Noor El-dien

B.Sc. (Botany) "1983" & M.Sc. (Microbiology) "1993"

For

The requirements of Ph. D. Degree

In

(Microbiology)

To

Microbiology department
Faculty of science
Ain Shams University

1999

B 0 < 72



STUDIES ON CEPHALOSPORINASE ENZYMES OF β-LACTAM ANTIBIOTIC-RESISTANT BACTERIA

PH.D. THESIS

By

Ahmad Eltyieb Mohamad Noor El-dien

Under the Supervision

 \mathbf{of}

Prof. Dr. Mohamad Ramadan Abu-Shady

Professor and Head of Microbiology Department
Faculty of science
Ain Shams University

Prof. Dr. Mohamad Kamal Abdel Fatah

Professor and Head of Microbiology Department of National Organization for Drug Control and Research

Assist. Prof. Dr. Mohamad Khaled Ibrahim

Assist. Prof. Dr. of Microbiology dept. Faculty of Science. Ain-Shams University

1999



Approval Sheet

Title of thesis: Studies on cephalosporinase enzymes of β - lactameters			
antibiotic- resistant bacteria.			
Degree: Ph.D. in microbiology.			
Name of student : Ahmad Eltyieb Mohamad Noor El-dien			
This thesis for: Ph. D. Degree has been approved by:			

1)

2)

3)

Date: / / 199



ACKNOWLEDGEMENTS

It is really difficult for me to find how I could express my deepest thanks and sincere gratitude to Prof. Dr. Mohamad Ramadan Abu Shady; Prof. and Head of Microbiology Department Faculty of Science - Ain Shams University, Prof. Dr. Mohamad Kamal Abd El-Fatah; Prof. and Head of Microbiology Department-National Organization. For Drug Control and Research and Assistant Prof. Dr. Mohamad Khaled Ibrahim, assistant Prof of Microbiology Department-Faculty of Science-Ain Shams University, for their precious help and for giving me a great deal of their time, knowledge, experience and the privilege of doing this work under their supervision.

Special acknowledgement must be made to all the staff members and technicians in the Department of Microbiology who have helped me and for their sincere encouragement.

Deep thanks are also due to the Head of the Naitonal Organization for Drug Control and Research and to the staff members of the Microbiology Deprtment (NODCAR, CAIRO) for the facilities offered and encouragement.



CONTENTS

Serial No.	Title	Page No.
1	List of tables.	
2	List of figures	
3.	English abstract	
4	Preface	1-4
5	Review of literature.	
5a	The occurrence of antibiotic-resistant bacteria	5-6
5b	Susceptibility of resistant bacteria to β -lactam antibiotics.	9-10
5c	β-lactamase induction	10-12
5d	Classification of R-Plasmid-mediated β-lactamase.	12-20
5e	Purfication of β-lactamase.	20-27
5f	Properties of β-lactamase.	27-32
6	Material and methods.	33-50
7	Results.	51-117
8	Discussion.	118-131
9	English summary.	132-137
10	References.	138-169
11	Arabic summary.	7-5
12	Arabic abstract	Y-1

