شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائـــــــق الاصليـــــة تالفـــة

بالرسالة صفحات لم ترد بالاصل

615, 1

ANALYTICAL STUDY ON SOME ANTIDIABETIC DRUGS

Thesis presented by

Amal Bochra Megalli

M.Pharm.Science-Cairo University

Submitted For the Degree
of
Doctor of Philosophy
in
Pharmaceutical Sciences
"Analytical Chemistry"

Under the Supervision of

Prof.Dr.Badr A.El-Zeany
Professor of Analytical Chemistry
Faculty of Pharmacy
Cairo University

Prof.Dr.Lories I.Bebawy
Professor of Analytical Chemistry
National Organization
for Drug Control and Research
(NODCAR)

Assoc.Prof Dr.Yasser S. ElSaharty
Associate Professor of Analytical Chemistry
Faculty of Pharmacy
Cairo University

Department of Analytical Chemistry
Faculty of Pharmacy
Cairo University

2006

APPROVAL SHEET

This Thesis has been approved on 10 /6/2006 , by the Committee in charge:

Prof Dr. Saed Fathalla Belal
Prof of Analytical Chemistry
Alexandria University

Prof Dr. Soheir Abd El-Fattah Ahmed
Prof of Analytical Chemistry
Cairo University

Prof Dr. Badr ElDin Abd Halim El-Zeany
Prof of Analytical Chemistry
Cairo University

Prof Dr. Lories Ibrahim Bebawy
Prof of Analytical Chemistry
National Organization for Drug control and Research

DEDICATION

To my beloved husband

To my dear daughters and sons

To my sweet grand-children
Monica and Mark

To my parents in heaven whose prayers are
following me always

ACKNOWLEDGEMENT

First of all, thanks to God, my Lord, the kindest and most merciful for all his graces and for completing this thesis.

I would like to express my sincere appreciation and great respect to Prof. Dr. Badr A. El-Zeany, Professor of Analytical Chemistry, Faculty of Pharmacy, Cairo University, for his support, kind help and encouragement during this thesis.

All my thanks and sincere gratitude to Prof. Dr. Lories I. Bebawy, Professor of Analytical Chemistry, National Organization for Drug Control and Research (NODCAR), for her kind supervision, careful guidance and continuous encouragement during the whole thesis.

Also, I would like to express my thanks to Assoc. Prof. Dr. Yasser S. El-Saharty, Associate Professor of Analytical Chemistry, Faculty of Pharmacy, Cairo University, for his benefecial discussions and instructive supervision during my work.

Finally, I would like to express my thanks and appreciation to my collegues in the National Organization for Drug Control and Research (NODCAR), for their cooperation and help.

Amal Bochra Megalli

LIST OF ABBREVIATIONS

A	Absorbance
ΔA	Absorbance difference
A (1%, 1 cm)	Absorbance of a 1% w/v solution in a 1cm cell path
ACN	Acetonitrile
AUP	Area under the peak
BP	British Pharmacopoeia
cm	Centimeter
(D_1)	First derivative spectrum
(D_2)	Second derivative spectrum
(DD_1)	First derivative of ratio spectrum
F-test	Variance ratio test
GC	Gas chromatography
HPLC	High performance liquid chromatography
HPTLC	High performance thin layer chromatography
IR	Infrared
LC	Liquid chromatography
LOD	Lower limit of detection
LOQ	Lower limit of quantitation
M S	Mass spectroscopy
Metformin HCl	Metformin hydrochloride
MEKC	Micellar electro-kinetic chromatography
mg	Milligram
ml	Millilitre
min	Minute
M	Molar concentration

mM	Millimole concentration
mm	Millimetre
µg	Microgram
µl	Microlitre
N	Number of samples
nm	Nanometre
NMR	Nuclear magnetic resonance
OADs	Oral antidiabetics
Ph. Europ	European pharmacopoeia
P = 0.05	The probability of results in 95%
RP-HPLC	Reversed-phase,high-performance-liquid chromatography
R_f	Ratio of distance the drug travels/distance the solvent travels from the origin
RSD	Relative standard deviation
SD	Standard deviation
SPE	Solid phase extraction
t-test	Student's t test
TLC	Thin layer chromatography
t_R	Retention time
USP	United States pharmacopoeia
UV	Ultraviolet
v/v	Volume per volume
w/v	Weight per volume
λ_{max}	Wave length of maximum absorption in nms.

CONTENTS