

# المتابعة البيولوجية والفصل الكروماتوجرافي للمواد الفعالة لنبات الليمون شاي (العوسج), العائلة الباذنجانية, الذي ينمو في مصر

رسالة مقدمة من  
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للحصول علي درجة الماجستير في العلوم الصيدلانية  
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٢٠١٥



**Bio-Guided Chromatographic Fractionation of *Lycium shawii* Roem & Schult, Family Solanaceae, Growing in Egypt**

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In the partial fulfillments for the requirements of  
Master Degree in Pharmaceutical Sciences  
(Pharmacognosy)

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**2015**

# *Dedication*

*" Success or Failure is own decision"*

*To my parents,*

*The reason of what I become today, thanks for great support and continuous care.*

*To my wife,*

*You have been a gift from the beginning, you have always been my strength and hand in hand we finished this work.*

*To dear Dr. Dalia Rasheed and Dr. Ayat Emad,*

*I am really grateful to both of you, thank you for your continuous support. Thank you for being my friends.*

### *Acknowledgment*

*First of all, I thank God, the source of all knowledge, for helping me through with this work.*

*My great appreciation and deepest gratitude are addressed to Dr. **ABD EL-NASSER SINGAB**, Professor of Pharmacognosy and Dean of Faculty of Pharmacy, Ain Shams University, for his supervision of this thesis, valuable instructions and continuous encouragement throughout the course of the work.*

*My deepest thanks, and everlasting appreciation to Dr. **Hala El Hefnawy**, Assistant Professor of Phytochemistry, Faculty of Pharmacy, Cairo University, for her valuable scientific guidance, infinite support and patience, throughout the development of this thesis.*

*My heartily appreciation and sincere indebtedness to Dr. **Samir Osman**, Lecturer of Pharmacognosy, Faculty of Pharmacy, October 6 University, to whom I am greatly indebted for his instructive supervision, continuous encouragement ,unlimited help, and sincere suggestions throughout the development of this work.*

*I am very grateful to Dr. **Mahmoud Koheil**, Dean of Faculty of Pharmacymy, October 6 University, for his infinite support. I am forever indebted to him and wish him all the best in the world.*

*Appreciation is expressed to all my faculty staff in the Department of Pharmacognosy, Faculty of Pharmacy, October 6 University, especially **Dr. Sherifa Fahmy**, **Dr. Alaa El-Haddad**, **Dr. Amr Saad El- Din** and all my friends.*

*I am also very grateful to Dr. **Muhammed El-Raïy**, lecturer of pharmacognosy at National Research Institute.*

*Finally, a special debt of gratitude is acknowledged to all my department members for their persistent help, true sympathy, honest prayers and real sacrifices throughout the course of the thesis.*

***Ahmed Gaweesh***

## List of Abbreviations

%AA	Percentage of antioxidant activity.
AAPH	2,2'-Azobis(2-amidinopropane) dihydrochloride.
ALT	Alanine transaminase.
ANOVA	Analysis of Variance.
AST	Aspartate transaminase.
BMD	Bone mineral density.
CAT	Catalase.
<sup>13</sup> C NMR	<sup>13</sup> Carbon nuclear magnetic resonance.
COX	Cyclooxygenase.
DPPH	2,2-diphenyl-1-picrylhydrazyl.
DTT	Dithiothreitol.
dw	Dry weight.
ePSP	Extracellular polysaccharopeptide.
EPTT	End point titration technique.
FA	Fatty acids.
FAME	Fatty acids methyl esters.
GLC	Gas liquid chromatography.
GSH-Px	Glutathione peroxidase.
HCT116	Human colorectal carcinoma cell line.
HEPG2	Human hepatocellular carcinoma cell line.
HF	High fat.
<sup>1</sup> H NMR	<sup>1</sup> Proton nuclear magnetic resonance.
HPLC	High performance liquid chromatography.
IC <sub>50</sub>	Inhibitory concentration 50.
iNOS	Inducible nitric oxide synthase.
LBCE	<i>Lycium barbarum</i> carotinoide extract.
LBP	<i>Lycium barbarum</i> polysaccharide.
LBP <sub>3P</sub>	<i>Lycium barbarum</i> polysaccharide-protein complex.
LBPF4	<i>Lycium barbarum</i> polysaccharide-protein complex fraction 4.
LBPF5	<i>Lycium barbarum</i> polysaccharide-water soluble complex.
LD <sub>50</sub>	Lethal dose 50.
LDH	Lactate dehydrogenase.
LDL	Low density lipoprotein.

LFE	<i>Lycium chinense</i> fruit extract.
LFWE	<i>Lycium</i> fruit water extract.
LS	<i>Lycium shawii</i> .
M.P	Melting point.
MCF7	Breast adenocarcinoma cell line.
MDA	Malondialdehyde.
MS	Mass spectrometer.
NCI	National Cancer Institute.
NO	Nitric oxide.
NODCAR	National Organization for Drug Control and Research.
OD	Optical density.
P.O	Per oral.
PERK	Phosphorylated endoplasmic reticulum kinase.
PG	Prostaglandin.
PYE	Pyrogallol equivalent.
QUE	Quercetin equivalent.
RAW264.7	Mouse macrophage cell line.
R <sub>f</sub>	Retention factor.
ROS	Reactive oxygen species.
RUE	Rutin equivalent.
SE	Standard error.
SEM	Standard error of mean.
SOD	Superoxide dismutase.
SRB	Sulforhodamine B.
TAG	Triacyl glycerol.
TBARS	Thiobarbituric acid reactive substances
TC	Total cholesterol.
TCA	Trichloroacetic acid.
TLC	Thin layer chromatography.
TNF	Tumor necrosis factor.
USM	Unsaponifiable matter.
UV	Ultra violet.
VSV	Vesicular stomatitis virus.

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