

بسم الله الرحمن الرحيم



-Call 4000





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم





جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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



يجب أن

تحفظ هذه الأقراص المدمجة يعبدا عن الغبار







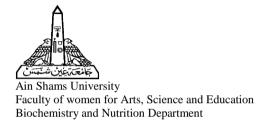






بالرسالة صفحات لم ترد بالأصل





A comparative study between the effect of licorice roots, marjoram and date palm pollen aqueous extracts and metformin on poly cystic ovary syndrome in rats.

Thesis

Submitted for partial fulfillment of the Master Science Degree

In Biochemistry and Nutrition

By

Doaa Khalaf Mahmoud Mohamed

B.Sc. in Biochemistry and Nutrition (2013)

Biochemistry and Nutrition Department

Faculty of women for Arts, Science and Education Ain Shams University

Supervisors

Prof.Dr. Zakia Mostafa Abd El Kader

Professor of food science and technology

Biochemistry and Nutrition Department

Faculty of women for Arts, Science and Education Ain Shams University

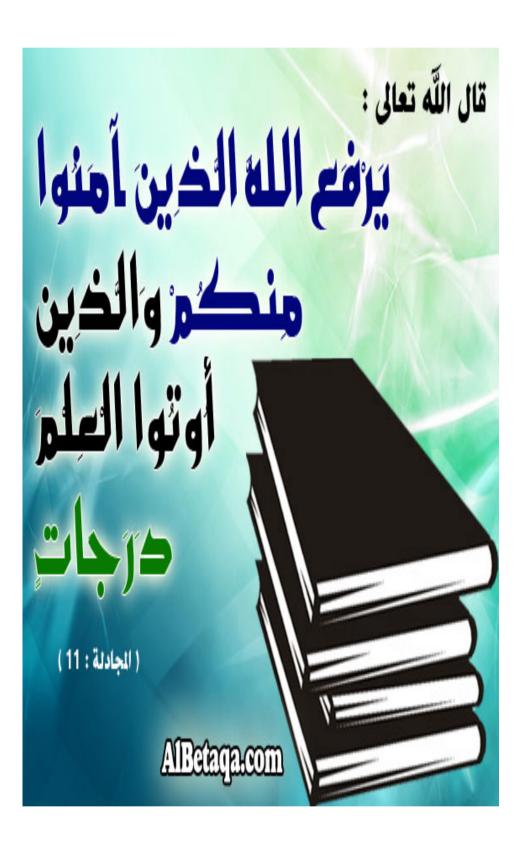
Dr. Mai El-sayed Abd El Kawi

Lecturer of Biochemistry and Nutrition

Biochemistry and Nutrition Department

Faculty of women for Arts, Science and Education Ain Shams University

2020



Acknowledgment

In the name of **Allah**, the most gracious and the most merciful, all praises and glory to **Allah** for giving me strength, capability and opportunity to complete this work. "O Allah! There is easy except what you make easy.

First and foremost, I offer my sincerest gratitude to **Prof. Dr. Zakia**Moustafa Abdel-Kader, prof. of Food Science, Department of Biochemistry& Nutrition, Faculty of women for Arts, Science and Education, Ain Shams University, whose excellent guidance and dedicated efforts made me think upon and understand a number of problems and solve them sincerely. I have learned many things since I became **Dr. Zakia's** student. She consistently allowed this thesis to be my own work, but steered me in the right the direction whenever she thought I needed it.

I would like to express my sincere gratitude to **Co-supervisor Dr.**Mai El-Sayed Abd El-Kawi, Lecturer of Biochemistry and Nutrition,
Biochemistry and Nutrition Department, Faculty of women for Arts, Science
and Education, Ain Shams University, for the continuous support of my
master study and related research, for her patience, motivation, and immense
knowledge.

I am thankful to **Dr. Kawkab Ahmed**, professor of pathology, faculty of veterinary medicine, Cairo University for the help that she offered in the histopathological examination carried out in this study.

I am particularly grateful for the staff members of Biochemistry& Nutrition Department, Faculty of women for Arts, Science and Education, Ain Shams University, for their help and support.

Sincere thanks to all my friends who helped and supported me all the time of research.

Doaa Khalaf Mahmoud

Dedication

I take this opportunity to express my profound gratitude towards my family and a special feeling of gratitude to my loving parents whose words of encouragement and push for tenacity ring in my ears.

Lovingly, I dedicate this work to my husband, mother in law and my daughters "yasmine", "Malak" and "Nour".

My dear husband "Sameh", thank you for your support, love and for being close to me.

Last but not least, this thesis is dedicated to my respective family who helped me and supports me throughout the work.

Abstract

A comparative study between the effect of licorice roots, marjoram and date palm pollen aqueous extracts and metformin on poly cystic ovary syndrome in rats. Doaa Khalaf Mahmoud Mohamed, M.SC. Biochemistry and Nutrition Department, Faculty of Women for Arts, Science and Education, Ain Shams University.

The present study was designed to compare the effect of licorice roots, marioram, date palm pollen (DPP) aqueous extracts and metformin on polycystic ovary syndrome (PCOS) in reproductive-aged female rats. PCOS was induced by oral administration of letrozole given daily in a dose 1mg/kg b. wt. for 21days, After PCOS induction, the experimental groups were classified as follow; G1: Healthy control, G2: PCOS control rats, G3: PCOS+ Licorice roots, G4: PCOS+ Marjoram, G5: PCOS+DPP, G6: PCOS+ Mixture of herbs by a ratio (1:1:1). Herbal extracts were administrated orally in a dose of (300mg/kg b.wt./day) for 30 days. G7: PCOS+ Metformin (200mg/kg b.wt/dav) for 30 days. Estrous cycle phases were measured every day to follow up. The present results revealed that PCOS caused disturbances in estrous cycle, serum sex steroid profile (luteinizing hormone, follicle stimulating hormone, estrogen, progesterone, and testosterone), lipid profile, glucose homeostasis, antioxidant status (erythrocyte and ovarian reduced glutathione level and serum catalase activity), lipid peroxidation (malondialdhyde) and caspase-3 protein (apoptosis marker). On the other hand, oral administration of aqueous extracts of licorice roots, marjoram, DPP and their mixture as well as metformin significantly restoring parameters and had ameliorative effects as compared to PCOS control group. Meanwhile, herbal administration showed better ameliorative effects as compared to metformin. These results were confirmed by ovarian microscopic examination which showed partial disappearance and reduction of ovarian cysts. In conclusion, the current results suggested that aqueous extracts of licorice roots, marjoram, DPP and their mixture were hypolipidemic, antioxidant, anti-apoptotic and have hormonal regulatory effects on PCOS .Generally, the most ameliorative effect was observed in mixture administered group. This may be due to the possible synergistic action between the complexes mixtures of phytochemicals present in herbs.