

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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

**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

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قال الله تعالى :

يَرْفَعُ اللَّهُ الَّذِينَ آمَنُوا

مِنْكُمْ وَالَّذِينَ

أَوْتُوا الْعِلْمَ

دَرَجَاتٍ

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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”.

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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, marjoram, 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/day) 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 (malondialdehyde) 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.

