

DETERMINATION AND CONCENTRATION OF *OLEA EUROPAEA* LEAVES INGREDIENTS AND ITS EFFECT ON GLUCOSE INDUCED DIABETES AND SOME BLOOD BIOCHEMICAL STANDARDS IN MALE RATS

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ABSTRACT : This study was conducted in the Animal House, Laboratories of Biology Department, College of Education for Women, Tikrit University and Ministry of Science and Technology and Laboratory. The study aimed to Determine kind and Concentration of *Olea europaea* ingredients by HPLC technique and effects extract in glucose and some blood serum biochemical properties in male rats, the treatment were control, treatment with alloxane, treatment with alloxane + 1ml extract of the leaves of the olive treatment alloxane +2ml of the olive leaf extract. The results showed there were four ingredients on the plant leaves: Ferulic acid, Oleuropein, Tyrosol and Hydroxy-Tyrosol by 7.43%, 67.14, 15.72% and 9.70% respectively. Also significant increasing on the concentrations of blood glucose and cholesterol on the treatment with alloxane, while the concentrations of blood sugar and cholesterol were significantly reduced by the treatment with olive leaves extract on compare with the alloxane treat. The concentrations of high density lipoprotein cholesterol (HDL-C), low density lipoprotein cholesterol (LDL-C) and very low density lipoprotein- cholesterol (VLDL-C) in the male rats group injected with alloxan were significantly increased ($p \leq 0.05$), while the (HDL-C and VLDL-C) increased significantly in the the treatment with plant extract and the rats with high of olive leaf extract, while LDL-C reduced with (alloxan + plant extract).

Key words : Medicinal plants, olive extract, diabetes cholesterol lipoproteins.

INTRODUCTION

Plant kingdom considered wonderful kingdom, human were used more of them as food and some other as medicine and so the human searched and get acquainted on more of plants characteristics and so he recognizes on what is useful and harmful from wild plant (Bennett and Plum, 2004) and most of this plant used for treatment Cases of diarrhea, gas repellent, treatment of diabetes, cough and other diseases. And as a result of the resulting damage of using industrial medical drugs and its side effect this push human to attention on natural plants as natural drug. In terms of their use as a naturally hand -made drug and thus reducing the damage on human life and be in more effective than laboratory prepared materials and its available cheaper than industrial drugs where many patients faces frequent costs in most poor countries (Abo-Zaid, 1986), many studies appeared positive effect of many extracts of medicinal plants and herbs on reducing blood sugar levels on tested animals (Chakrabarti *et al*, 2003).

Studies have shown that olive tree has great economic

benefits and to her leaves several medicinal effects (Panizzi, 2010) and at the beginning of the twentieth century extract the most important compound from olive leaves is oleuropein and then through studies appeared this compound lead to reduce blood pressure (Zarzuela, 1999). Leaves extract is one of the best treatments which used for reducing sugar level on blood and maintain its level within the normal range after eating and this extract is not allowed using with diabetes drugs where olive leaves contain oleuropein compound, which turns to calcium nulate and responsible for reducing the spread of germs and viruses, also it prevent cholesterol oxidation process type (LDL) (Rose and Lynn, 2001) and the scientists refer to role of olive compounds on treat blood pressure cases, cholesterol diabetes and as antioxidant (Samuelsson, 2011).

Diabetes is disorder process of hormones and lack of balance on sugars, lipids and proteins metabolism and rise sugar level of blood as a result Insulin deficiency or a bug in the insulin process or on both (Jayasri *et al*, 2008; Tenpe and Yeole, 2009). The infection by diabetes due to many causes as partially difficult on insulin hormone