

THE HORMONAL AND HISTOPATHOLOGICAL EFFECTS OF *PERSIA AMERICANA* PULPS EXTRACT ON REPRODUCTIVE SYSTEM OF FEMALE RATS TREATED WITH CYCLOPHOSPHAMIDE

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ABSTRACT : The study was intended to revision *Persea americana* extract influence on hormonal and histopathological of female rats handled with cyclophosphamide (C.P.). *Persea americana* was extracted with 70% ethanol. A total of fifteen female rats were dispersed equally into five groups, group one (T₁) was control, group two (T₂) was handled with C.P. (2mg/kg) and distilled water, group three (T₃) was handled with extract (100mg/kg) and C.P, group four (T₄) was handled with plant extract (200 mg/kg) and C.P, group five (T₅) was handled with extract (300 mg/kg) and C.P. T₂ and T₃ revealed significant reduction in estrogen, progesterone, fertility index, embryos numbers, ovary diameter and primary follicles number with significant increase in LH, FSH and atresia follicles as likened with T₁, T₄ and T₅. Estrogen of T₄ and T₅ displayed significantly decreased as likened with T₁. The T₄ and T₅ showed no significant change in LH, FSH and progesterone, ovary diameter, numbers of primary, secondary and atresia follicles as likened with T₁. Endometrial diameters, endometrium and myometrium thickness in T₂, T₃, T₄ and T₅ displayed significantly decreased as compared with T₁. The T₂ revealed corpus luteum hemorrhage and severe endometrium vacuolar degeneration, T₃ showed ovarian vascular congestion and mild hyperplasia in uterine epithelia gland. In T₄ the number of atretic follicles started to reduce and mild edema in lamina propria. T₅ showed number of healed follicles and mild uterus vacular degeneration. From this study concluded that *Persea americana* extracts in doses (200mg/kg, 300mg/kg) have more protection effect on fertility than extract in dose (100mg/kg) against toxic effect of cyclophosphamide.

Key words : *Persea americana*, cyclophosphamide, hormones and histopathological.

INTRODUCTION

The reproductive system is an important to maintain and improve breeding in addition to increase the performance of species alive, to reduce the side effect of drugs and the medical herbal plant were used for this purpose (Hanefi and Hatem, 2004). *Persea americana* is one of the most an important foods that increase fertility in animals and its reflected as a comprehensive food whereby it had more than twenty five vital nutrients, such as mineral constituents (potassium, phosphorus, magnesium, copper and iron), hydro's and lipo-soluble vitamins (Honarbakhsh and Schachter, 2009). *Persea americana* is improved fertility by lowering inflammation in the body and cervical cancers, in addition to *Persea americana* has large amount of folic acid that protected the female fertility in natural and assisted reproduction, vitamin B6 and potassium of *Persea americana* played important roles in sex hormone production, in addition to have vitamin C is necessary to support the body to produce sex hormones lead to hormonal balance and

ovulation (Mark and Adrienne, 2013). Chemotherapy is used to treat cancers and autoimmune diseases, but these chemotherapy caused female infertility enhancement (Reh *et al*, 2011). Cyclophosphamide is chemotherapy alkylating agents are broad spectrum of animal's cancers and various autoimmune disorders and it possessed the ability to destruction rested cell also accordingly divided the cells and are generally related with ovarian destruction due to they lowered the total of ova and caused stroma fibrosis with a reduction in follicles development (Hensley and Reichman, 1998). The aim of this study was included to study the beneficial effect of different doses of *Persea americana* fruit extract on hormonal and histopathological changes of female rats treated with cyclophosphamide drug.

MATERIALS AND METHODS

Extraction of *Persea americana*

Persea americana fruit were purchased from the region of AL-Baiyaa in Baghdad and certificated by agriculture ministry state broad in Abu Graib, Baghdad.