

Study the effect of alcoholic extract raw *salvia officinalis* on some sex hormones in femle mice white

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FRAH RAZZAQ KBYEH

Qadisiya University
College of Pharmacy
frahrazak@yahoo.com

Abstract:

Thirty female mice white used in the experiment for the purpose of knowing the effect of alcoholic extract raw *salvia officinalis* leaves on the level of sex hormones which were divided animals into three groups experimental rate of ten mice per group dosage group B and C oral daily dose of the extract amount 500 mg / kg of body weight the first group , respectively, in the 1000 mg/ Kg of body weight, respectively, either the first set group A treated the same way time and himself as 0.1 ml / g body weight of physiological solution compared to the mindset lasted 30 days dosing was weight when you stop recording the dosage and then kill her blood was collected through a stab heart for the purpose of studies of hormonal (estrogen, progesterone ,luteinizing hormone ,follicle stimulating hormone and prolactin)

extract reflected the impact of the variables studied and related to fertility in the following results compared with the control group

1-low body weight was in the doses and the effect of the dose of 1000 mg / kg of body weight was significantly larger dose of 500 mg / kg of body weight at a level significantly 5% $P_0 \leq 0.05$

2 - significant increase in the level of hormones (progesterone, estrogen, luteinizing hormone, follicle-stimulating hormone) in the doses and the effect of the dose of 1000 mg / kg of body weight was significantly larger dose of 500 mg / kg of body weight at a level significantly 5% $P_0 \leq 0.05$

3 - significant decrease in the level of the hormone prolactin in the doses and the effect of the dose of 1000 mg / kg of body weight was significantly larger dose of 500 mg / kg of body weight at a level significantly 5% $P_0 \leq 0.05$

Key word:- sex hormones, *salvia officinalis*, pituitary gland

Biology Classification QP1 (981)

Introduction:-

The history of herbal and medicinal plants in our country to civilizations sumerian, babylonian , where they ditch the plants used in the form of extracts or in the form of syrup or ointment and pastes grease places pain and placements ills occupie medicinal plants at the present time a privileged position in the agricultural and industrial production as a source of staple prescription drugs plant , which is the source of the active substances involved in the preparation of many medicines and treatments in the form of extracts used as a raw material for the production of certain chemical compounds that represent the core of the synthesis of the chemical for some generic drug steroids, methotrexate and sex hormones and substitute blood plasma and the other two boys , the study of medicinal plants in terms of worth foods and pharmaceutical dat great economic importance to take advantage of them and their role statement table and pharmaceuticals[1]. is a reproduction of one of the features of the task of living my father through which restores the organism itself to the kind my father belongs to either the importance of the other lies in maintaining the viability of the kind and prevent it from extinction by inheritance life from one generation to another boy has used many of the medicinal plants to improve fertility and reproduction in animals among the dell plant leaf salvia officinalis my father great interest by scientists nutrition and medicine leopards plant is a herbaceous plant salvia officinalis small her sweat rise slightly from the ground up to 30 cm on average branching including twigs , and leaves a length of more than one display , the length of the paper between two to four centimeters (2.4 cm) and displayed within a half cm , green bough colored silky texture that becomes dark red whenever progress age[2] . aplatoon of oral , which includes basil , mint, basil , thyme, of salvia officinalis months and older plants that are used in medicine, ancient and modern and is famous for its countries of the mediterranean basin in places in the

mountainous land fallow , particularly in the areas bounded by the mountainous terrain and mountain ranges in places called locally (aremeian) and called in other places shrub[3]. and there throughout the year and thrive in the spring and early summer , and the color of the flower turns pink and then to the fruit the size of a cherry , and becomes the color white. *Salvia officinalis* has been an important herbal medicinal product since very early times and is still in wide use today an infusion of dried *Salvia officinalis* leaves with boiling water (*Salvia officinalis* tea) is the most typical form of preparation[4]. although well-established traditional uses of *Salvia officinalis* include symptomatic treatment of mild dyspeptic complaints, the treatment of inflammations in the mouth and the throat, and relief of excessive sweating and minor skin inflammations, only a few clinical trials thus far have been conducted to corroborate these uses[5]. animal experiments and *in vitro* studies have substantiated that *Salvia officinalis* extracts may significantly decrease serum glucose in diabetic rats and positively affect the antioxidant status of the liver[6]. may *Salvia officinalis* also inhibit pro-oxidant-induced lipid peroxidation in rat brain and liver homogenates[7]. further *in vitro* models showed *Salvia officinalis* as possibly being antiangiogenic, antimutagenic, antidiabetic, and gastroprotective [8],[9]. although the underlying mechanisms of action are unknown, polyphenols such as carnosol, carnosic acid, rosmanol, apigenin, hispidulin, caffeic acid, and ursolic acid have been discussed as active compounds for these pharmacological effects[10]. an excellent review on salvia officinalis polyphenols was provided by[11]. in the case of drought [12]. he told the world about Gerrard in the seventh century two tenths sage strengthen weak memory and bring them back in a short time , has confirmed researcher England where this argument proved to be discarded landing the enzyme responsible for breaking down acetylcholine brain that causes alzheimer's[13]

it also features discarded materials antioxidant is the most important vehicle mission in sage essential oil , which contains a compound (thujone) , but must be wary of the use of a large amount of this compound where he cause some spasms , and contain salvia officinalis essential oils and flavonoids and phenolic acids and materials afsip article effective dating back to the compounds volatile oil and to identify the extent of the role of the salvia officinalis plant in the organization of female hormones and the scarcity of information in this field has been designed dell experience to get to know the extent of the influence of alcoholic extract raw salvia officinalis leaves on hormonal regulation as the index is optimized for the breeding process and to explain the rules of engagement have been studied the effect of that abstract the sex hormones (luteinizing hormone(LH) ,follicle stimulating hormone (FSH) ,estrogen , progesterone and prolactin)

Materials and methods

Preparation of alcoholic extract crude

after getting salvia officinalis leaves cleaned and then left to dry in the shade temperature of 25 ° C after that isolated securities and milled using electric grinder put 50 grams of powder securities in thambel which put his role in a soxhlet after the addition of 250 ml of alcohol ethanolic absolute 95% leave the mixture for 8 hours and then nominated extracted using filter paper whatman no.1 was steaming alcohol put rotary evaporator until a thick liquid obtained remember that resulting in a clean glass bottle and sterilized at a temperature (- 4° C) to use while [14],[15]

Animals used

research was conducted at the college of veterinary medicine / university of Qadisiyah using 30 female mice of the swiss albino mice white type mus musculus obtained from the animal house of the faculty

of education / university of Qadisiyah average body weight of the animals ranged rut between 25-30 g the rate reached 9 -year-old weeks and put the mice in a private room in the house the animal after distribution by experimental groups on the cages , plastic dat dimensions of 12 × 15 × 29 cm covered with sheets of metal lattice and dat floor furnished sawdust soft (by five mice of the cage one) left the animals for two weeks opacity preliminary before starting experience during which exclude mice sick and abnormal experience undergone cages for washing and sterilization alcoholic replacement brush sawdust per week for the duration of the experiment either environmental conditions that are available for animals ventilation and good lighting appropriate 12 light / 12 dark under temperature ranging between 20-28 degrees bush mice and water gives animals are free for the duration of the experiment

Dosage

animals were divided randomly into three experimental groups at 10 for a mouse treated as follows :

GroupA: dosage was to 0.1 ml / g of body weight per day from the solution as a physiological control

GroupB: dosage was 500 mg / kg of body weight per day of crude alcoholic extract of the leaves of *Salvia officinalis*

GroupC: dosage was 1000 mg / kg of body weight per day of crude alcoholic extract of the leaves of *Salvia officinalis*

dell has continued the process of dosage for 30 consecutive days and has to give a dose of the extract solution and Physiological orally using absorbent minute and that to ensure that the full dose to the animal

Most viewed collection

after the expiration of the dosage was recorded live body weight for all animals and which had recorded at the beginning of the experiment as well and that using the balance of electronic sensor type sertorius after that been anesthetized animals and killing and that by placing them in baker glass contains a piece of cloth saturated in ether was then open the chest cavity of the animal to pull blood directly from the heart and then put sample blood in the pipeline , especially eppendorf tubes free of anticoagulant leave the blood to coagulate before separation of the serum by expelling sample central to a centrifugal your under 3000 r / min for 15 minutes, put the serum in the pipeline private and deposited in a frozen under a degree -20° until use concentration level of sex hormones five (estrogen ,progesterone

,LH ,stimulating hormone follicles and prolactin) measured in serum using a kit for each of them and supplied from bio meriux french and dependent basic principle in technical analysis radio immunotherapy and competition between molecules of the hormone teacher iodine saturated to link to the hormone antibodies that are specific for each hormone concentrations

Statistical Analysis

Was the expression of the results on average ± standard error by analyzing the results statistically using the statistical analysis ready spss [16] the averages analyzing statistically using a test anova test for analysis of variance either moral in the differences between the rates and tested using a selection of Duncan test at the level of probability $p \leq 0, 05$

Results and Discussion

Table (1): average ± standard error of body weight (g) of female mice white dosage extraction alcoholic raw *Salvia officinalis* leaves

	Group Name
A 30.4 ± 1.266	Control group (A)
B 22.3 ± 0.538	Group(B)
C 16.6 ± 0.99	Group (C)

- ❖ the figures represent rates ± the standard error
- ❖ different large letters indicate significant differences between groups $P \leq 0.05$
- ❖ weights measured in grams

we note from table (1) for a reduction in the body weight of the two groups(B,C) compared with the control group(A) at the level of moral $P \leq 0.05$ was lower weights in the group's C biggest morale at the level of moral $P \leq 0.05$ of the group B has been this indicates that the greater the concentration of the substance in the extract increased its impact in reducing weight as shown in table 1.

it seems that the negative effect of the extract on body weight and my which is attributable to contain alcoholic extract raw *Salvia officinalis* leaves on some of the volatile oils including alfetalajdz and its derivatives , which have an effect on the secretion of althairoxin of the thyroid gland and which as it is known directly affects the metabolism is known directly affects the metabolism [17] has concluded that the extraction alcoholic raw *Salvia officinalis* leaves is characterized as containing a series of

amino acids that have the effectiveness of reducing the concentrations of several derivatives of fat in the blood through the inhibition of the effectiveness of an enzyme of hepatic triacylglycerol lipase either compare the results of dell experience with reach mechanism which attributed the reason the effect of flavonoids in inhibiting *Salvia officinalis* leaves to form fatty tissue were compatible[18]. may have the effect of reducing the extract directly on the appetite to eat animal feed, leading to the above that has a negative effect on the metabolism of food through its effect on the thyroid gland secretions thyroxine current results of the experiment indicated that the dosage female mice white dosage extraction alcoholic raw *Salvia officinalis* leaves led to stimulation of both estrogen and hormone LH,FSH , progesterone and lowers serum prolactin in the blood of animals and pit as shown in table (2)

Table (2) shows the average \pm standard error mlu / ml concentration FSH, LH ,estrogen , progesterone and prolactin in the blood serum of female mice white dosage extraction alcoholic raw *Salvia officinalis* leaves

Prolactin	FSH	LH	Progesterone	Estrogen	Group Name
C 12.12 \pm 0.70	C 4.180 \pm 0.88	C 5.24 \pm 0.96	C 5.04 \pm 0.96	C 81.50 \pm 9.82	Control group(A)
B 3.73 \pm 0.94	B 19.10 \pm 1.91	B 14.25 \pm 2.561	B 38.80 \pm 6.63	B 388.6 \pm 24.15	Group(B)
A 0.91 \pm 0.29	A 39.30 \pm 2.75	A 24.10 \pm 14.04	A 68.10 \pm 12.09	A 507.7 \pm 12.43	Group(C)

- ❖ the figures represent rates \pm the standard error
- ❖ the unit of measure hormone levels listed in the table mlu / ml
- ❖ different large letters indicate significant differences between groups $P \leq 0.05$
- ❖ group A (control group) represents a group that treated a dose 0.1 ml / g body weight of physiological solution
- ❖ group B represents a group that treated a dose of 500 mg / kg of body weight of *Salvia officinalis* leaves
- ❖ group C represents a group that treated a dose of 1000 mg / kg of body weight of *Salvia officinalis* leaves

table (2) shows the high concentration of both the hormones estrogen and progesterone and LH, FSH in group B compared with the group

A under the moral level $P \leq 0.05$ and also note the lack of focus in the hormone prolactin in

the group B, compared with group A level significantly below $P \leq 0.05$

shows the high concentration of both the hormones estrogen and progesterone and LH, FSH in group C compared with the group A under the moral level $P \leq 0.05$ and also note the lack of focus in the hormone prolactin in the group C, compared with group A level significantly below $P \leq 0.05$

shows the high concentration of both the hormones estrogen and progesterone and LH, FSH in group C compared with the group B under the moral level $P \leq 0.05$ and also note the lack of focus in the hormone prolactin in the group C, compared with group B level significantly below $P \leq 0.05$ evidenced that rut increase is directly proportional to the concentration of the administered dose albeit significant believed to be the reason why is to contain the extract concentrations of certain estrogens and plant alkionarinat that stimulate the production of FSH, LH came that belief in accordance with what brought him [19] of the alcoholic extract *Salvia officinalis* raw leaves contain active ingredients biologically affect the hypothalamus and motivated to release hormones liberated gonodotrophic gnrh which in turn stimulates the pituitary to secrete the hormone FSH, LH organization for the secretion of hormones steriod of the gonads that contain alcoholic extract raw *Salvia officinalis* leaves on a high proportion of estrogens plant [20],[21] may explain the significant increase in the concentration of steroids in the female dosage compared to control as that of the high concentration of hormones gondatrophic the impact directly on

the manufacture and secretion of estrogen and progesterone by increasing the number of ovarian follicles and thus lutea is believed to be the compound positive influenced significantly stimulate estrogen in female mice the decrease moral of the hormone prolactin in groups C, B and teams moral $P \leq 0.05$ where the effect of the dose 1000 mg / kg of body weight greater moral of the dose of 500 mg / kg of body weight due to the concentration of extract dosage in group C higher than the concentration of extract dosage in group A this decrease was due to the height of each of the hormones FSH, LH, as shown in the tables above, where he works prolactin inhibition of two hormones necessary for ovulation hormone follicle stimulating hormone, a heron follicle-stimulating or stimulating hormone follicles of the ovaries, and hormone gonadotropin releasing hormone releasing hormone gonadotropin [22]. when high levels of prolactin in the blood (a situation called hyperprolactinemia), ovulation will not occur, and thus lead to infertility [10]. the absence of ovulation, could also cause irregular menstrual periods. in this study, increased levels of hormones FSH, LH and consequently led to lower prolactin and thus recommend using *Salvia officinalis* leaves as an effective treatment to reduce the concentration of the hormone prolactin, and this is the *Salvia officinalis* leaves plants effective for the treatment of infertility in females because the high level of the hormone prolactin is one of the causes of infertility in women, in addition to high efficiency increase in the levels of sex hormones important in ovulation and pregnancy and childbearing (estrogen ,progesterone ,FSH and LH)

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**دراسة تأثير المستخلص الكحولي الخام لاوراق المريمية على بعض الهرمونات الجنسية في اناث
الفئران البيض**

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فرح رزاق كبيح
جامعة القادسية \ كلية الصيدلة
frahrazak@yahoo.com

الخلاصة

ثلاثون انثى من الفئران البيض استعملت في التجربة لغرض معرفة تأثير المستخلص الكحولي الخام لاوراق المريمية على مستوى الهرمونات الجنسية فيها حيث قسمت الحيوانات الى ثلاث مجاميع تجريبية بواقع عشرة فئران لكل مجموعة جرعت المجموعة الثانية والثالثة فمويًا بجرعة يومية من المستخلص مقدارها 500 و 1000 ملغم/كغم من وزن الجسم على التوالي اما المجموعة الاولى فعولت بنفس الطريقة وبالوقت نفسه ب 0.1 ملغم/كغم من وزن الجسم من المحلول الفسيولوجي على اعتبارها مجموعة مقارنة استمر التجريب 30 يوما تم تسجيل الوزن عند توقف التجريب ومن ثم قتلها تم جمع الدم عن طريق طعنة القلب لغرض الدراسات الهرمونية (الاستروجين والبروجسترون والهرمون اللوتيني والهرمون المحفز للجريبات والبرولاكتين)

انعكس تأثير المستخلص على المتغيرات المدروسة وذات العلاقة في الخصوبة في النتائج التالية بالمقارنة مع مجموعة السيطرة

1- انخفاض وزن الجسم ولكلا الجرعتين وكان تأثير الجرعة 1000 ملغم/كغم من وزن الجسم اكبر معنويًا من الجرعة 500 ملغم /كغم من وزن الجسم عند مستوى معنوي 5% $P \leq 0.05$

2- ارتفاع معنوي في مستوى الهرمونات (البروجسترون ،الاستروجين ،الهرمون اللوتيني ، الهرمون المحفز للجريب وفي الجرعتين وكان تأثير الجرعة (1000ملغم/كغم) من وزن الجسم اكثر معنويًا من الجرعة 500 ملغم/كغم من وزن الجسم عند مستوى معنوي 5% $P \leq 0.05$

3- انخفاض معنوي في مستوى هرمون البرولاكتين وفي الجرعتين وكان تأثير الجرعة (1000 ملغم/كغم) من وزن الجسم اكثر معنويًا من الجرعة 500 ملغم/كغم من وزن الجسم عند مستوى معنوي 5% $P \leq 0.05$

الكلمات المفتاحية: sex hormones, salvia officinalis, Pituitary gland