Egyption Journal
For Specialized Studies
Quarterly Published by Faculty of Specific Education, Ain Shams University

Correspondence:
Editor in Chief
365 Ramses St- Ain Shams University,
Faculty of Specific Education
Tel: 02/26844594
Web Site :
https://ejos.journals.ekb.eg
Email :
egyjournal@sedu.asu.edu.eg

ISBN : 1687 - 6164
ISNN : 4353 - 2682

Evaluation (July 2024) : (7) Point
Arcif Analytics (Oct 2024) : (0.4167)
VOL (13) N (45) P (2)
January 2025

الصفحة الرئيسية

م	القطاع	اسم المجلة	اسم الجهه / الجامعة	ISSN-P	ISSN-O	السنه	نقاط المجله
1	Multidisciplinary عام	المجلة المصرية للدراسات المتخصصة	جامعة عين شمس، كلية التربية النوعية	1687-6164	2682-4353	2024	7

معامل التأثير والاستشهادات المرجعية العربي Arab Citation & Impact Factor
قاعدة البيانات العربية الرقمية Arab Online Database
معرفة e-MAREFA
Arcif Analytics

التاريخ: 2024/10/20

الرقم: L24/0228 ARCIF

سعادة أ. د. رئيس تحرير المجلة المصرية للدراسات المتخصصة المحترم

جامعة عين شمس، كلية التربية النوعية، القاهرة، مصر

تحية طيبة وبعد،،،

يسر **معامل التأثير والاستشهادات المرجعية للمجلات العلمية العربية (ارسيف – ARCIF)**، أحد مبادرات قاعدة بيانات **"معرفة"** للإنتاج والمحتوى العلمي، إعلامكم بأنه قد **أطلق التقرير السنوي التاسع للمجلات للعام 2024**.

ويسرنا تهنئتكم وإعلامكم بأن **المجلة المصرية للدراسات المتخصصة** الصادرة عن **جامعة عين شمس، كلية التربية النوعية، القاهرة، مصر، قد نجحت في تحقيق معايير اعتماد معامل "ارسيف Arcif"** المتوافقة مع المعايير العالمية، والتي يبلغ عددها **(32) معياراً**، وللاطلاع على هذه المعايير يمكنكم الدخول إلى الرابط التالي: http://e-marefa.net/arcif/criteria/

وكان **معامل "ارسيف Arcif " العام** لمجلتكم لسنة 2024 **(0.4167)**.

كما صُنفت مجلتكم في **تخصص العلوم التربوية** من **إجمالي عدد المجلات (127)** على المستوى العربي ضمن الفئة **(Q3)** وهي الفئة الوسطى ، مع العلم أن **متوسط معامل "ارسيف" لهذا التخصص** كان **(0.649)**.

وبإمكانكم الإعلان عن هذه النتيجة سواء على موقعكم الإلكتروني، أو على مواقع التواصل الاجتماعي، وكذلك الإشارة في النسخة الورقية لمجلتكم إلى معامل **"ارسيف Arcif"** الخاص بمجلتكم.

ختاماً، نرجو في حال رغبتكم الحصول على شهادة رسمية إلكترونية خاصة بنجاحكم في معامل " **ارسيف** "، التواصل معنا مشكورين.

وتفضلوا بقبول فائق الاحترام والتقدير

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محتويات العدد

الجزء الثانى :

أولاً : بحوث علمية محكمة باللغة العربية :

ثانياً : بحوث علمية محكمة باللغة الإنجليزية :

Effects of Regimax 120mg and Ficus carica L. (Moraceae) Leaf extract on plasma Lipid Profiles and body weight gain in albino rats

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Effects of Regimax 120mg and Ficus carica L. (Moraceae) Leaf extract on plasma Lipid Profiles and body weight gain in albino rats

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Abstract

The pharmaceutical industry is growing more interested in therapeutic plants as researchers uncover once more how plentiful plant life is for developing new pharmaceuticals. ; It was the objective of this study to investigate the preventive effects of a Ficus carica (FC) leaf extract on hyperlipidemia in high fat diet (HFD)-induced obese male rats and combined administration of regimax 120mg on weight loss and metabolic profiles. Male Sprague–Dawley rats (210 – 260 g) were fed with a regular diet, the experimental diet's with powder of cholesterol and high fat diet (HFD) or a HFD + oral treatment of either 150mg/kg and 250 mg/kg of FC pioglitazone for six weeks. The study also showed that fig (ficus carica) leaf extract (150 mg/kg) significantly $P< 0.05$ improved body weight loss, creatinine, urea, oxidative stress, cholesterol, LDL, triglyceride concentrations with high-fat diet.

Keywords: regimax 120mg, Ficus carica , Orlistat, Lipid Profiles

ملخص:

العنوان : تأثير مستخلص أوراق التين وحبوب الريجيماكس 120 ملجم على مستويات الدهون في البلازما وزيادة وزن الجسم في الفئران المصابة بالسمنة

المؤلفون : هالة محمد على وهبة .

يزداد أهتمام صناعة الأدوية بالنباتات العلاجية حيث يكتشف الباحثون وفرة الحياة النباتية لتطوير أدوية جديدة. أجريت هذه الدراسة لتقييم التأثير العلاجى لمستخلص أوراق التين وحبوب الريجيماكس 120 ملجم على وزن الجسم ، تركيز كوليستيرول الدم والدهون الثلاثية وكذا نشاط الانزيمات المضادة للأكسدة بنسيج الكليتين في الفئران المصابة بارتفاع دهون الدم. فتم توزيع عدد66 من فئران التجارب عشوائيا إلى 3 مجموعات رئيسيه كل منها 6 فئران وتقسم الى مجاميع فرعيه منها ليصبح عددها 11 مجموعة ، توصي الدراسة بأن تناول مستخلص اوراق التين بنسبة 150 ملجم / كجم قد يكون مفيدا للمرضى الذين يعانون من زيادة الوزن ودهون الدم بدل من المستحضرات الدوائية.

الكلمات الدالة : ريجيماكس 120 ملجم ، مستخلص اوراق التين ، الاورليستات، مستوى دهون الدم .

1. Introduction

Strong medications are increasingly being used to combat obesity, yet their side effects may restrict their overall benefit. Herbs with a long history of being used in conjunction with other natural compounds are less likely to cause toxicity and may be useful in lowering food intake and facilitating noticeable weight loss **(Ismail et al.,2021).**

Abnormal blood lipids and lipoproteins are a predisposing factor for cardiovascular illnesses; hyperlipidemia plays a major role in the incidence and severity of coronary artery disease and atherosclerosis. The use of herbal remedies to treat cardiovascular conditions has grown , since the first day of man's appearance on Earth, plants have been utilized by him to improve his quality of life. That research explores aspects of the importance of Ficus *carica L.* and Regimax 120 mg, an amazing and ancient source of weight reduction **(Abbasi, et al., 2013).**

Ficus carica was appreciated for its food and medicinal properties. The fig tree can be used to create novel, varied chemical scaffolds. F. *carica* provides an intriguing example of a nutritious food and bioproduct. According to a number of studies on the nutritional makeup of dried figs, They are a vital source of vitamins and minerals, having the greatest nutrient score of all the dried fruits**. (** Cavero and Akerreta , **2013).**

Research on the phytochemistry of fig fruits and leaves has revealed a high content of volatile chemicals, organic acids, and phenolics. Their diverse and abundant biological activity stems from the presence of these compounds, which have a host of biological activities including anti-inflammatory, antibacterial, anticancer, hepatoprotective, antidiabetic, antifungal, antiviral, antimutagenic, antipyretic, antituberculosis, anti-angiogenic, antiparisitic, hematostatis, anticonstipation, and antiwart characteristics **(Fayrouz and Moussa,2023)**.

Ficus *carica L.*major active constituents are volatile (oil phenolics, organic acids and volatile compounds). Thus, F. *carica* has been included in occidental Pharmacopoeias and in therapeutic guides of herbal medicines.

The active compounds in fig (*ficus carica*) leaf extract .

Active constituent	Mechanism of action
(-)-Epicatechin	Lipid-lowering effect by stimulation of mRNA level and CYP7A1 **(Fayrouz and Moussa,2023)**
Quercetin	-regulation of SR-BI expression and subsequent lipid (HDL-C) uptake -Decreases serum TC and TG levels by decreased HMGCR protein levels and catalytic activity (**Melisa *et al.*, 2014)** .
cyanidin 3-glucoside (Cy 3-gluc) (11%)	induces cholesterol efflux Activation
Chlorogenic acid	Inhibiting hepatic-hydroxy β-methylglutaryl-CoA (HMG-CoA) reductase activity **(Montserrat *et al.*, 2008**).
Pg 3-rutinoside	were usually the major pigments identified in the skin, **(Solomon *et al.*, 2006; del Caro and Piga, 2007**)

The active compounds in fig (*ficus carica)* leaf extract through previous studies were collected, it is clear that the compound (Chlorogenic acid) is the main compound in the therapeutic effect, followed by Epicatechin, Quercetin, cyanidin 3-glucoside and Pg3-rutinoside.

Orlistat help people to lose weight, because it inhibits intestinal lipase. During a hypocaloric diet, the reversible pancreatic and gastric lipase inhibitor orlistat, stops 30% of fat in food from being absorbed. It is a useful therapeutic adjuvant for treating obesity in addition to lifestyle changes. orlistat medication on potential alterations in plasma lipid and lipoprotein concentrations, as well as orlistat-induced *BW* changes(**Miah et al., 2022).**

Nuclear receptors (Peroxisome proliferator-activated receptor, PPAR) are implicated in metabolic syndrome, activates adipose triglyceride lipase, which then releases fatty acids as ligands for PPAR, indicating the interdependency of nuclear receptors and lipases. Here, molecular docking was performed

with selected phytochemical ligands that can bind with the phytochemicals dihydroxy coumarin, hydroquinone, genistein, esculin, daidzin, naringenin, and daidzein exhibited a reduced binding affinity when used as dual agonists. **(Sahebkar *et al.* ., 2017)**

This study aimed to validate the conventional applications of *ficus carica* Land regimax 120mg as a lipid-lowering agent, an atherosclerosis preventive strategy, and a way to slow the growth of albino rats' bodies.

2. MATERIAL AND METHODS:

2.1. Materials

1- Extracts of plants : Ficus carica L. *(Moraceae)* Leaf was bought from the local spice shops, Al-Baha region of Saudi Arabia, and was cleaned, sun- dried under vacuum at low temperature) and milled to fine powder and condensers then boiled for one hour to obtain the extract and was coded and filtered. The filterate poured in different petri dishes and dried under vacuum at 70 o c to dried powder. mixing 150g of plant powder with distilled water (1000 ml). The extract of plant was collected and the mixture administered orally 150 and 250 mg/kg body weight

2- Diets:

The experimental diet's composition (g/kg diet) followed **(Kim et al. 2005**). It included the normal diet for control rats (fat 5%, carbohydrates 65%, proteins, 20.3% fiber 5%, salt mixture 3.7% vitamin mixture 1%) and the experimental diet's with powder of cholesterol. The high fat diet contained fat 46%, carbohydrates 24%, proteins, 20.3%, fiber 5%, salt mixture 3.7%, vitamin mixture 1%. El-Gomhoria Company in Cairo, Egypt was the source of the normal and HFD ingredients. HFD was stored at 4°C until it was needed.

3- Cholesterol

The pure white crystalline powder of cholesterol was

procured from Elgomhoriya, a company that specializes in medical preparations, chemicals, and equipment in Cairo, Egypt.

4- Regimax administration

Regimax 120 mg: 1 tablet containing 120 mg orlistat was purchased from the Arab Company for Pharmaceuticals Medicinal Plants (MEPACO, Egypt). The protocol outlined by **(Del Caro and Piga, 2007)** was followed for the oral administration of a dosage of 120 mg/kg each day.

5- Experimental design and animal grouping

66 white male albino rats weighing 210-260 g, 60 days old were used for this study. They were purchased from the National Research Center, Cairo, Egypt. Every animal was kept in cage made of stainless steel with barriers separating each rat for personal dwelling; each cage held six rats. They were housed in a typical clean-air, environmentally controlled temperature that was 24 ± 5°C. All rats were fed on basal diet for one week before starting the experiment for acclimatization. After one-week period, the rats were divided into three main groups . The first main group (A) (n=6 rats) feed on the basal diet only (as control negative healthy rats), The second main group (B) (n=30rats) was fed for 2 weeks on the basal diet plus cholesterol 2% to induce hypercholesterolemia before starting the 4 weeks experiment. Then hypercholesterolemic rats divided into 5 subgroups 6 rats per each, The third main group (G) (n=30 rats) was fed for 6 weeks on the basal diet plus high fat diet to induce obese group experiment, to study the effect of tested *ficus carica L. (Moraceae*) Leaf extract , regimax 120mg and their mixture as follow:

- **Group A**: basal diet (control negative).
- **Group B:** basal diet + cholesterol (control positive).
- **Group C:** basal diet + cholesterol + (150 mg/kg of body weight) *ficus carica* L. extract (FCL**) .**

- **Group D**: basal diet + cholesterol + (250 mg/kg of body weight) *ficus carica* L. extract (FCL).
- **Group E:** basal diet + cholesterol + regimax 120 mg (R).
- **Group F:** basal diet + cholesterol + containing MIX (FCL 150 mg +R).
- **GroupG(a) :** high fat diet (control positive).
- **GroupG(b) :** HFD diet + (150 mg/kg of body weight) *ficus carica* L. extract (FCL)
- **GroupG(c) :** HFD diet + (250 mg/kg of body weight) *ficus carica* L. extract (FCL).
- **GroupG(d)** : HFD diet + regimax 120mg (R).
- **GroupG(e**) : HFD diet + containing MIX (FCL 150 mg +R).

2.2. Materials

1-Blood Sampling

Blood samples were taken at the end of the experiment from all of the previously stated groups following a 12-hour fast. Blood was collected into a dry clean centrifuge tube and allowed to coagulate in a water bath (37c) to separate the serum from the blood, it was centrifuged at 3000 rpm for 10 minutes enzymatic kit and stored at -20°C for subsequent biochemical measurements as: kidney function, Serum levels of total cholesterol and triglycerides , and oxidative stress markers.

2-- **Biochemical analysis of Serum**

Serum urea , creatinine levels and serum uric acid were measured according to the method of **Fossati *et al*., (1980)**. using kits purchased from Diamond Diagnostic Egypt. Serum was analyzed for total cholesterol, triglycerides , HDL, LDL and VLDL according **(Deeg and Ziegenohrm, 1983),** by enzymatic colorimetric methods using kits. Determination of liver Superoxide dismutase (SOD) activity **(Nishikimi et al., 1972)**

Catalase (CAT) activity and liver glutathione levels were assessed using the **Beutler et al.,(1963)** respectively.

3. Statistical analysis

Data were presented as means ± SD. Statistical analysis was performed using computerized Statistical Package of Social Sciences version 20 (SPSS Inc., Chicago, IL, USA). Analysis of Variance (ANOVA) test has been used for determining the significances among different groups according to (**Armitage, and Berry,1980**)

4. RESULT:

Effects of Regimax 120mg and *Ficus carica* L. *(Moraceae)* Leaf extract on plasma Lipid Profiles and body weight gain in adult male rats of the Sprague Dawley strain (A, B,C and G) was studied.

Table (1): Effects of regimax 120mg and fig *(ficus carica)* leaf extract on weight, body weight gain, food intake, food efficiency ratio in hypercholesterolemic rats.

Treatment dose	Parameters				
	Initial b.wt (g)	Final b.wt (g)	BWG (g)	Food intake (g)	F ER
Control - A (-)	216.2±05.5	223.0.0±05.77	6.8	40± 4.3	.17±0.02
Control - B (+)	229.8.0±09.13*	245.1±4..96*	15.3	20± 3.3	.765±0.01*
Group -C Aqueous extracts of FCL 150 mg/kg	210.7±01.13	229.1±3.86	18.4	30.8 ± 2.6	.59±0.03
Group -D Aqueous extracts of FCL 250 mg/kg	231.7±02.13	228.2±2.66	-3.5*	26.9 ± 1.3	-.130±0.04*
Group –E Regimax 120 mg	230.0±03.1	224.0±5.01*	- 6*	22.5 ± 2.3	-.266±0.03*
Group –F Mix (FCL+R)	254.5±04.02	220.0±2.4	- 34.5	21.3 ± 3.03*	-1.61±0.02*

*Mean ± SD values mean significant differences at P< 0.05 .
**Mean ± SD values mean significant differences at P< 0.01 .
IW: initial rat weight, FW: final weight,

Table (1) shows that both regimax 120 mg and fig *(ficus carica)* leaf extract significantly P < 0.05 pzreduced weight compared to the positive control group (15.3), and the group (E) Regimax 120 mg had the greatest weight loss, followed by Group

(F) Mix (FCL+R) (- 6 , - 34.5 and -3.5) and Group (D) respectively.

Table (2): Effects of regimax 120mg and fig *(ficus carica)* leaf extract on serum lipid profiles in hypercholesterolemic rats.

Treatment dose	Parameters				
	TC (mg/dL)	TG (mg/dL)	HDL(mg/dL)	LDL(mg/dL)	vLDL(mg/dL)
Control - A (-)	44.41 ± 03.98	82.60 ± 04.00	49.41 ± 08.50	21.52 ± 02.30	16.52 ± 0.22
Control - B (+)	50.61 ± 03.00*	136.0 ± 05.00	42.01 ± 09.20	18.6± 01.50	27.2 ± 0.50
Group -C Aqueous extracts of FCL 150 mg/kg	45.01 ± 02.40*	50.10 ± 06.40	40.12 ± 01.34*	5.13± 0.50*	10.02 ± 0.33
Group -D Aqueous extracts of FCL 250 mg/kg	49.20 ± 05.30	55.00 ± 05.00	35.00 ± 08.90	-3.2± 0.08	11 ± 0.60
Group –E Regimax 120 mg	46.21± 3.002*	49.00 ± 02.00	36.20 ± 01.60	-.21± 0.09	9.8 ± 0.32*
Group –F MIX(FCL+R)	47.41 ± 04.98*	45.60 ± 05.00*	38.40 ± 06.50*	0.11±.001*	9.12 ± 0.540

*Mean ± SD values mean significant differences at P< 0.05 .
**Mean ± SD values mean significant differences at P< 0.01 .
TC: total cholesterol, TG: triglycerides, HDL: high density lipoprotein, LDL low density lipoprotein

Results showed table (2) significant ($P < 0.05$) improvements in serum lipids fractions (TC, TG, HDL, LDL) of hypercholesterolemia rats. It could be noticed from (Tables 2) that fasting serum TC, TG, and LDL were increased, while the level of HDL decreased in positive control group. In all groups fed on diet supplemented with regimax 120mg and fig *(ficus carica)* leaf extract at different concentrations significant decrease of concentrations of TC, TG and LDLas compared to the positive control group. The best effect was in the group (C) followed by the group (F) (45.01 ± 02.40, 50.61 ± 03.00, 5.13 ± 0.50 and 40.12 ± 01.34) and (47.41 ± 04.98, 45.60 ± 05.00, 0.11±.001and 38.40 ± 06.50).

Table (3): Effects of regimax 120mg and fig *(ficus carica)* leaf extract on Blood urea nitrogen (BUN), uric acid (UA) and creatinine (Cr.) in hypercholesterolemic rats.

Treatment dose	Parameters		
	BUN (mg/dL)	UA(mg/dL)	Cr(mg/dL)
Control - A (-)	19.0 ± 1.3	2.40 ± 0.02	0.55 ± 0.01
Control - B (+)	47.0 ± 3.4 *	4.99 ± 0.06*	1.65 ± 0.04*
Group -C Aqueous extracts of FCL 150 mg/kg	29.1 ± 2.9	2.38 ± 0.03*	1.53 ± 0.03
Group -D Aqueous extracts of FCL 250 mg/kg	28.9 ± 2.5	2.44 ± 0.05*	1.32 ± 0.03*
Group –E Regimax 120 mg	31.6 ± 3.1	2.90 ± 0.01**	1.6± 0.13
Group –F MIX(FCL+R)	27.3 ± 2.8*	2.47 ± 0.05	1.94 ± 0.02*

*Mean ± SD values mean significant differences at P< 0.05 .
**Mean ± SD values mean significant differences at P< 0.01 .

Data in table (3) showed that the activities of blood urea nitrogen, uric acid and creatinine kidney enzymes significantly($P < 0.05$) increased in the positive control group as compared to the negative control group. Administration of regimax 120mg and fig (ficus carica) leaf extract and their combination significantly ($P < 0.05$) decreased serum levels of kidney enzymes as compared to the positive control .Both of group (D) 150 mg/kg and group (F), significantly reduced BUN, UA and Cr activity to (28.9 ± 2.5, 2.44 ± 0.05 and 27.3 ± 2.8, 2.47 ± 0.05) respectively, compared to (47.0 ± 3.4 and 19.0 ± 1.3) that of the positive control group and negative control. The best group was fig (ficus carica) leaf extract group (C and D).

Table(4): Effects of regimax 120mg and fig *(ficus carica)* leaf extract on activity of renal antioxidant enzymes superoxide dismutase (SOD), glutathione peroxidase (GPx), and catalase (CAT) in hypercholesterolemic rats.

Treatment dose	Parameters		
	SOD (U/mg protein)	GPx (nmol/min/mg protein)	CAT (nmol/min/mg protein)
Control - A (-)	60.71 ± 2.2	01.99 ± 0.01	0.197 ± 0.01
Control - B (+)	40.50 ± 2.6	0.29 ± 0.04	0.148 ± 0.02
Group -C Aqueous extracts of FCL 150 mg/kg	40.44 ± 1.26	0.45 ± 0.03*	0.185 ± 0.31
Group -D Aqueous extracts of FCL 250 mg/kg	49.95 ± 2.38	0.55 ± 0.01 **	01.16 ± 0.21 *
Group –E Regimax 120 mg	52.35 ± 2.83	01.56 ± 0.02*	0.198 ± 0.22
Group –F MIX(FCL+R)	59.24 ± 1.43 *	0.82 ± 0.01	01.19 ± 0.02 *

*Mean ± SD values mean significant differences at P< 0.05 .
**Mean ± SD values mean significant differences at P< 0.01 .
Unit of GPx = nmol of GSH utilized/min/mg protein. Unit of CAT = nmol of H2O2 utilized/min/mg protein
Unit of (SOD)= superoxide dismutase

The results in table (4) showed that feeding diet supplemented with of regimax 120 mg and fig (ficus carica) leaf extrac and their combination to hypercholesterolemic rats significantly increased the activity of renal tissue antioxidant enzymes superoxide dismutase (SOD), glutathione peroxidase (GPx), and catalase (CAT) as recorded in Table (4). The best effects are a group (C and F) (40.44 ± 1.26 , 0.45 ± 0.03, 0.185 ± 0.31and 59.24 ± 1.43, 0.82 ± 0.01, 01.19 ± 0.02) combination feeding to hypercholesterolemic rats produced nephroprotective and renal tissue antioxidant effects.

Table (5): Effects of regimax 120mg and fig *(ficus carica)* leaf extract on weight, body weight gain, food intake, food efficiency ratio in normal rats and with high fat diet**.**

Treatment dose	Parameters				
	Initial b.wt (g)	Final b.wt (g)	BWG (g)	Food intake (g)	F ER
Control - A (-)	216.2±05.5	223.0.0±05.77	6.8	40± 4.3	.17±0.02
Control - G(a)(+)	260.8.0±3.12	290.1± 2..66	29.3	50± 4.3	.586±0.01*
Group – G(b)Aqueous extracts of FCL 150 mg/kg	240.7±2.13	220.1± 6.86	-20.7	28.7 ± 7.6	-.72±0.02
Group –G(c) Aqueous extracts of FCL 250 mg/kg	250.8±4.13	225.2 ± 5.76	-25.6	29.8 ± 6.5	-.859±0.03*
Group –G (d) Regimax 120 mg	240.0±7.1	224.0± 6.9	-16	21.3 ± 5.1*	-1.33±0.02
Group –G(e) MIX(FCL+R)	254.5±5.9*	220.0± 1.4	-34.5	27.8 ± 6.6	-1.24±0.04*

*Mean ± SD values mean significant differences at P< 0.05
**Mean ± SD values mean significant differences at P< 0.01 .

Rats fed a regular diet plus dietary fat consume more calories daily than rats fed simply basel food; as a result, they become obese and show several problems associated with obesity.Comparison of weight, food intake, and food efficiency ratio of adult male rats fed normal diet (Group A) and with high fat diet Group G(a,b,c,d,e) is shown in Table 5. Final weight, body weight gain, and food intake values of the untreated control

(Group A and **G(a)**) were significantly increased compared to those of the treated control group (Group G). body weight gain, food intake in the treated control (Group G) were also significantly reduce weight than those of the untreated control (Group A and **G(a)**), The best group for weight loss was (Regimax 120 mg) followed by groups (G"e") , group (G"b") and Compared to the positive group (**29.3**, **-16**, **-34.5** and **-20.7**).

Table (6): Effects of regimax 120 mg and fig *(ficus carica)* leaf extract on serum lipid profiles in normal rats and with high fat diet.

Treatment dose	Parameters				
	TC (mg/dL)	TG (mg/dL)	HDL(mg/dL)	LDL(mg/dL)	vLDL(mg/dL)
Control - A (-)	44.41 ± 03.98	82.60 ± 09.00	49.41 ± 08.50	21.52 ± 02.30	16.52 ± 0.07
Control - G(a) (+)	60.51 ± 01.00	166.0 ± 06.00	32.01 ± 08.20	4.7± 01.50	33.2 ± 0.08
Group –G(b)Aqueous extracts of FCL 150 mg/kg	43.01 ± 02.40	70.10 ± 06.40	35.12 ± 01.34	22.65± 01.50	14.02± 0.10
Group –G(c) Aqueous extracts of FCL 250 mg/kg	42.21 ± 03.30	65.01 ± 07.01	41.02 ± 08.91	11.81± 0.80*	13.02 ± 0.05*
Group –G (d) Regimax 120 mg	35.21± 2.01**	50.003 ± 03.01	49.20 ± 010.60*	13.99± 0.91*	10.06 ± 0.02*
Group –G(e) MIX(FCL+R)	36.42 ± 04.98	46.60 ± 08.00*	48.40 ± 06.60*	21.3±5.6	9.31 ± 0.01**

*Mean ± SD values mean significant differences at P< 0.05 .
**Mean ± SD values mean significant differences at P< 0.01 .
TC: total cholesterol, TG: triglycerides, HDL: high density lipoprotein- cholesterol, LDL low density lipoprotein- cholesterol

Results showed significant improvements in serum lipids fractions (TC, TG, HDL and LDL) of rats with high fat diet. It could be noticed from (Tables 6) that fasting serum TC, TG, and LDL were increased, while the level of HDL decreased in the positive control group. Results of the current study demonstrated that aqueous extracts of FCL 150 mg/kg and regimax 120 mg for six weeks among rats with high fat diet with overweight had beneficial effects loss weight, followed by aqueous extracts of FCL 250 mg/kg group.

5-Histology of liver

Excess saturated fats gradually accumulate in the liver, resulting in fatty liver syndromes. Histology of the liver revealed

that the control group's liver section had normal tissue structures without any detectable alterations Fig.1 The current study found that plus cholesterol and high fat diet -fed mice had higher cholesterol and triglyceride levels, Fig. 2 . However, The group that was fed a high-fat diet showed minimal alterations in fat and hepatocyte pyknotic nuclei. Interestingly, after the fig (ficus carica) leaf extract of FCL 150 mg/kg treatment, there was no fat deposition and the liver histo-structure resembled control group's Fig. 3 .Liver sections from the group fed regimax 120 mg revealed the hepatic lobule, in addition to normal hepatocytes and portal veins without histological change (Fig.4). Polymorphism of hepatocyte nuclei was observed, as shown in Fig (5). The presence of only modest fat droplets was found after oral administration of regimax 120 mg with fig (ficus carica) leaf extract of FCL 150 mg/kg had little fatty changes as well as pyknotic nuclei of hepatocytes (Fig.5).

Fig.1 **Fig. 2** **Fig. 3**

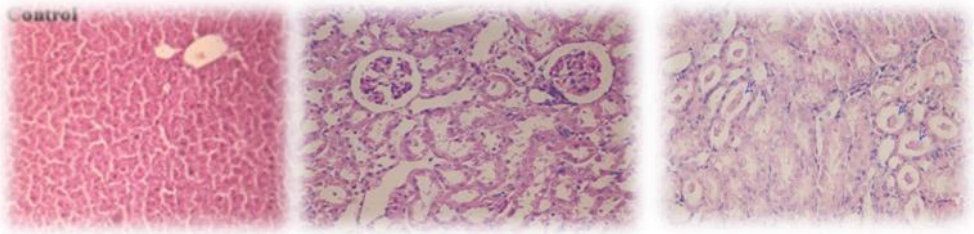

Fig.4 **Fig.5**

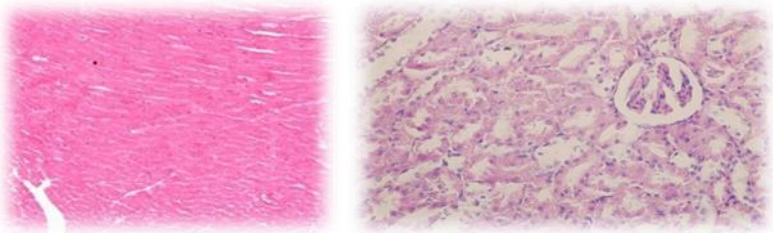

Figure 1: negative control rat's liver, revealing normal histological structure of the hepatic lobule, including normal central vein, hepatocytes. (200 x H&E).

Figure 2: positive control rat's liver after fed cholesterol and high fat diet fatty changes as well as pyknotic nuclei of hepatocytes. **. (200 x H&E)**

Figure 3: Group –G(b)Aqueous extracts of FCL 150 mg/kg there was no fat deposition and the liver histo-structure resembled. **. (200 x H&E)**

Figure 4: group fed regimax 120 mg revealed the hepatic lobule, normal hepatocytes and portal veins without histological change . **(H&E X 400)**

Figure 5:group fed MIX(FCL+R) had little fatty changes as well as pyknotic nuclei of hepatocytes. **. (200 x H&E)**

6- DISCUSSION

In regions where a high dietary fat intake is a significant risk factor for the development of obesity, the prevalence of obesity in adults as well as children and adolescents is rising quickly (**Nguyenet al., 2008**). Despite the complexity of the genesis of obesity, dietary factors—in particular, the intake of a high-fat diet-are thought to be a risk factor for the development of the condition **(Bray and Wilding, 2017).** Natural products have a lengthy safety record and can help control weight, ficus carica has long been utilized to treat a number of illnesses connected to the metabolic syndrome. **Yang and Yuan,(2016)** showed that eating a high-fat diet (HFD) is associated with biochemical changes that promote muscle fat metabolism over storage.

The antioxidant capacity provided by phenolic compounds promote health properties of figs (Mawa et al., 2013). leaves and fruits of figs consist various bioactive compounds such as cyaniding, chlorogenic acid, rutin, luteolin and (+)-Catechin, among others (**Li et al., 2021**).Fig products are used to cure many diseases like dermatological

Hyperlipidemia is linked to reduced levels of high density lipoprotein (HDL), elevated blood total cholesterol (TC),rareity lipoprotein (VLDL), and rare lipoprotein (LDL) . This study

aimed to compare regimax 120mg and fig (ficus carica) leaf extract in reducing weight and reducing lipid profiles in overweight and hypercholesterolemic rats. In addition, a reduction in body weight and food consumption was observed following the intake of regimax 120mg and fig (ficus carica) leaf extract in mice after 45 days with at the different concentrations used. When hypercholesterolemic rats treated with regimax 120 mg and fig (ficus carica) leaf extract (Group B, C, D, E, and F) compared to the untreated control group (Group A), we saw a slight decrease in the final weight, food intake, body weight gain, and serum total cholesterol, triglycerides, and LDL-.

The most important finding of this study was that and fig *(ficus carica)* leaf extractat doses of 150 and 250 mg/kg body weight per day for 45 days slightly reduced body weight gain, serum total cholesterol, triglycerides, and LDL-C levels, whereas HDL-C was increased compared to those of the treated control (Group D) in hypercholesterolemic adult male rats (Table 2). According to a previous study by **Bowen et al. (2017),** rats' serum total lipids, total cholesterol, triglycerides, and LDL-C were significantly reduced on day 60 post-treatment when they were given a high-cholesterol diet supplemented with fig (ficus carica) leaf extract at a rate of 4 g/kg body weight.The mechanism of fig *(ficus carica*) leaf extractat is due to an increase in the intestinal mucosa's paracellular permeability, most likely as a result of inhibition of the ATPase that exchanges Na+/K+ or of the chloride channels, stimulation of colonic motility, which augments propulsion and accelerates colonic transit which in turn reduces fluid absorption from the fecal mass; This results in an increase in the water content in the large intestine. Because of the tannins, purgation is followed by an astringent impact.

The best result for the decrease in total cholesterol, 45.01 ± 04.40 mg/dL, was obtained for the feeding regime containing regimax 120 mg and fig *(ficus carica)* leaf extract doses of 150 mg/kg , which is very close to the negative control, 50.61 ± 02.00 mg/dL, result in agreement with that of **Poblete et al (2018).**

The plasma concentrations of TC, LDL, HDL, and TG are all found to be slightly but significantly reduced after using regimax 120 mg .The effect was compared with fig *(ficus carica)* leaf extract in a model of high fat diet-induced obesity.

The current study, a significant decrease of lipid profiles levels were observed in obese rats with high fat diet treated with regimax 120 mg and fig (*ficus carica*) leaf extract for six weeks. TC and LDL-cholesterol reduction due to orlistat treatment was a decreases in TC concentrations were reported in (**Pirro et al., 2011)** , He discovered that the presence of Orlistat in Regimax 120 mg was linked to a marginally significant reduction in body weight., plasma cholesterol and triglyceride concentrations. Additionally, orlistat slowed the growth of visceral fat and hastened the return of normal food consumption.Additional studies shown that the level of LDL is reduced, and the average LDL particle size is increased with orlistat **Rehman et al .,(2017).** regimax 120 mg is an anti-obesity drug that is a potent inhibitor of pancreatic, gastric, and carboxylic ester lipases and phospholipase A2 which are related to the hydrolysis of dietary fats into fatty acids and monoglycerides in the gastrointestinal (GI) tract **(Niv et al , 2012)**. It was also reported several mild-to-moderate gastrointestinal adverse effects such as fecal urgency and oily spotting occurred in 15–30% of orlistat-treated patients and oily stool, owing to the unabsorbed fat caused by the inhibition of the action of lipases Crider et al ., (2022)**.**

Our results indicated that regimax 120 mg and fig *(ficus carica*) leaf extract produced a significant increase in GSH, SOD and activity of catalase (Table 4). regimax 120 mg and fig *(ficus carica)* leaf extract reduces significantly the content of thiobarbituric acid reactive substances , and causes marked increase in activity of catalase in skeletal muscles of obese rats . fig *(ficus carica)* leaf extract contains Chlorogenic acida and cyanidin 3-glucoside has the potential to play a role in the prevention of oxidative damage in living systems which can be

attributed to its membrane stabilizing activities and stronger antioxidant activity than α-tocopherol.

Both regimax 120 mg and fig (ficus carica) leaf extract have shown improvements in body weight, lipid profile, kidney marker of function, as well as oxidative stress markers. Crider et al ., (2022) have reported that leaf extracts could be used to help combat eating and lifestyle disorders . The obesity and its associated problems in this study could be by using regimax 120 mg and fig (ficus carica) leaf extract . The study also showed that fig (ficus carica) leaf extract significantly improved body weight, cholesterol, LDL triglyceride concentrations, creatinine, urea, oxidative stress, resulting from the high-fat diet.

7- CONCLUSION

The current study was evaluated the beneficial effects of regimax 120 mg and fig (ficus carica) leaf administration on weight and metabolic status in rats with overweight and hypercholesterolemic. Body weight, lipid profile, and renal marker of function have all improved with regimax 120 mg and fig (ficus carica) leaf extract.The research demonstrated that figs (ficus carica) leaf can be used as an alternative to manufactured medications because they contain an excellent composition of bioactive compounds, Such as this Chlorogenic acid , Epicatechin, Quercetin, cyanidin 3-glucoside and Pg 3-rutinoside content of Ficus carica is responsible for most pharmacological activities..

8- Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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تقييم المجلة (يونيو ٢٠٢٤) : (7) نقاط

معامل ارسيف Arcif (أكتوبر ٢٠٢٤) : (0.4167)

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