

Capparis Spinosa is an Alternative Drug for Vitality

Ali Awad Hamoud Aljeboory, Rafid Mohammed Mohammed Hashim and Yahya Yahya Zaki Farid

Pharmacy College, Uruk University Iraq.

*Correspondence:

Ali Awad Hamoud Aljeboory, Pharmacy College, Uruk University Iraq.

Received: 10 February 2021; Accepted: 02 March 2021

Citation: Aljeboory AAH, Hashim RMM, Farid YYZ. *Capparis Spinosa* is an Alternative Drug for Vitality. *Stem Cells Regen Med.* 2021; 5(1): 1-4.

ABSTRACT

From traditional and folk medicine, the fruit of Capparis used as antiseptic for intestinal dysentery and as protective for the liver from diseases in addition it is used as aphrodisiac and antihypertensive agent in addition as anticancer so as we know that natural product still a bank of new drug resources for the following reasons; these are a target for production by biotechnology. In addition, they are as a source of new lead compounds of novel chemical structure, which act as a tool for invention of new drug using nanoscience in medicine. There is a third reason as active ingredients of useful treatment divided from traditional medicine. As we know the drugs which manufacturing from bioactive, materials are cheap and available and not polluted as the chemical synthetic drugs and do not need-sophisticated technology. In this study we use fruits and leaves of Capparis dried and milled then extracted with alcohol 80% in addition deal with different organic solvent and get rid of chlorophyll and caryophylline and phytochemical studies by using liquid-liquid HPLC and we managed to extract quercetin and quercitrin in addition to proteins. The last product was anti-oxidant compared with racemic vitamin C using Noradrenaline as a test for the oxidation. Lastly, we see the activity of these materials as potent activator to the male compared with Sildenafil. The Capparis increase the activity twice the effect of sildenafil, And Tadalafil.

Keywords

Capparis Spinosa, Flavonoid, Quercitrin, Protein.

Introduction

Capparis Spinosa (Caper) plants belong to Capparidaceae family they distributed in Asia and in Mediterranean countries especially in Iraq, it grows in hills and on side of rivers. This plant gives their fruits in autumn the fruit look like water melons but small, oval shapes fruit usually used by people as safe fruit. The buds have spikes near the fruits on them and has a bitter taste [1]. Historically from folk medicine different parts of the plants have been proposed to be effective as antihypertensive, anti-inflammatory, anti-asthmatic, anti-hyperlipidemia and antimicrobial agents, [2]. We have noticed that the old men used these buds and fruits as vital agents so we encourage to do a research to solve this phenomenon. We know from our research that natural product will continue to be important in three areas of discovery:

1- As a target for production by biotechnology And Nanotechnology.

2- As a source of new lead compounds of novel chemical structure discovery and built a new drugs.

3- As the active ingredients of useful treatments divided from traditional systems of medicine [3,4].

These proposed drugs very effective than chemical synthetic drugs with less side effects. Also, can be obtained from cheap resources and does not need sophisticated instrument to prepare them. So these factors encourage us to go further step to evaluation of these valuable medicinal plant as Caper.

Method & Result

Phytochemical method (5)

Extraction of active ingredient of *Capparis Spinosa*: We have taken 500 grams of dried leaves and fruits of *Capparis Spinosa* and follow the following schematic diagram for preparation of *Capparis Spinosa* extract and fraction of its methanol preparation in figure 2. Figure 3 shows the extraction of (flavonoids) from *Capparis S.* leaves and fruit extract by using chromatography method with different organic solvents 1:1 ratio.



Figure 1: Which shows typical picture of *Capparis Spinosa* plants (buds, fruits and leaves).

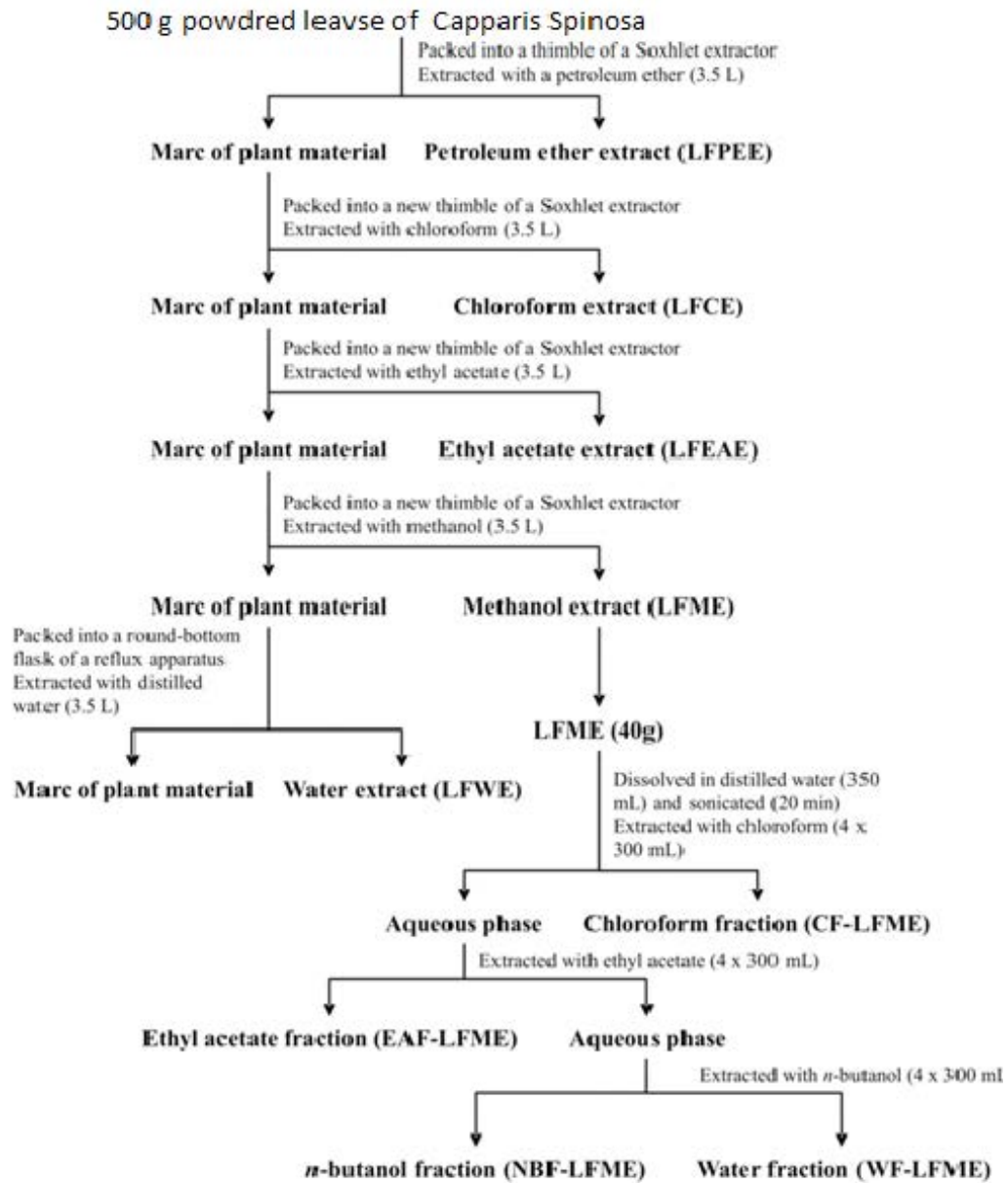


Figure 2: Shows the extraction of methanol preparation.

The dried fruits extracted by same way (5).

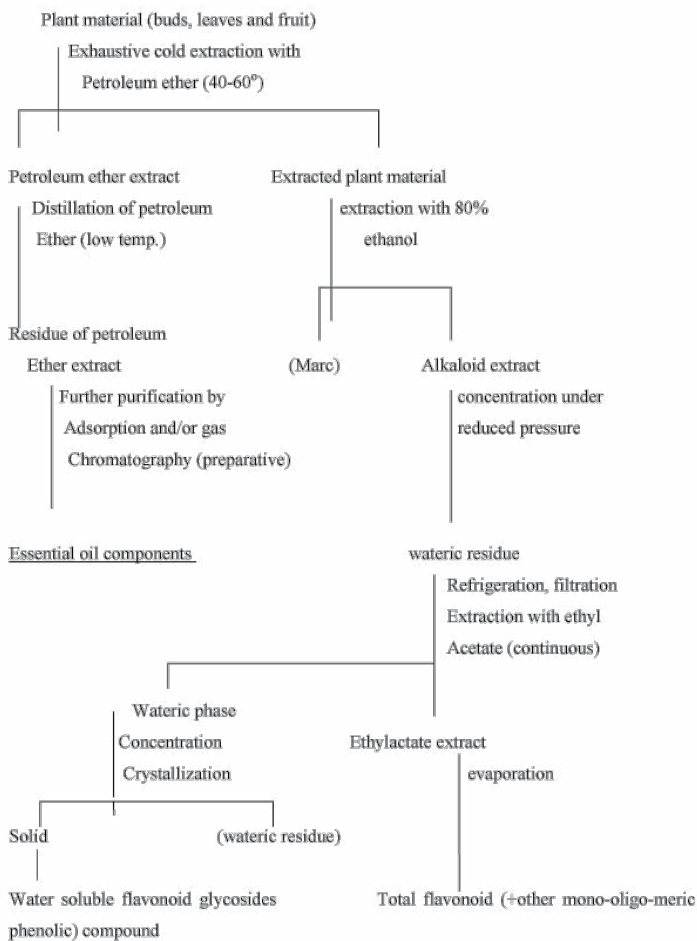


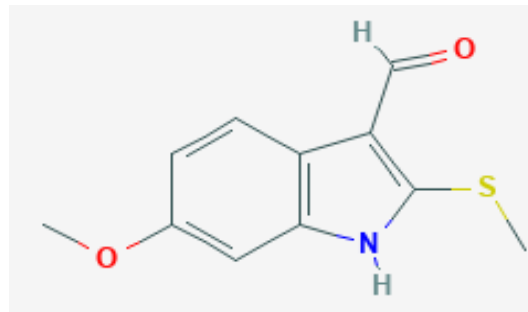
Figure 3: Shows separation of flavonoids.

This ratio used because we used HPLC (liquid/liquid) chromatography method. The ethyl acetate extract contain flavonoid which contain quercitin and quercitrin after the quantitative and measurement of molecular and structural elucidation foundation as shown in table 1.

Flavonoid	% w/w	3.9g	flavonoid	+ other mono-oligo-meric phenolic compound
quercitin	%w/w	2.5g	Chemical formula $C_{15}H_{10}O_7$	
quercitrin	%w/w	2g	Chemical formula $C_{21}H_{20}O_{11}$	

Table 1: This table shows the quantities of active Flavonoid ingredient of *Capparis Spinosa* leaves and fruit Extract.

In addition to the above table there was Capparine B. isolated from Capparis leaves and fruit. The chemical structure of Capparine B. alkaloids.



Method and Result B

Antioxidant activity for plant extract

1-Preparation of adrenaline solution

3ml of adrenaline (1mg/ml) put in 25 ml volumetric flask and complete the volume to produce stock solution of adrenaline.

2-Preparation of 1mg/ml Ascorbic acid solution

25 mg of ascorbic acid are dissolved in 25 ml DW.

We take 3ml of adrenaline solution and add 3 drop of either ascorbic acid or plant extract and wait for 15 minute then observe the color of solution (if the color is yellow this mean the oxidation is occur) as in the followings table.

No.	Adrenaline	Ascorbic acid	Plant extract	Color
1	3ml	-	-	Yellow
2	3ml	3 drop	-	Clear
3	3ml	-	3 drop	Clear

Table 2: Shows the antioxidant activity of plants extract (*Capparis Spinosa* leaves and fruit extract).

Each test tube is incubated for 15 minutes at 25°C.

N.B. (Adrenaline ampule 1mg/ml taken from LINCOLN pharm. LTD. Company).

Method & Result C

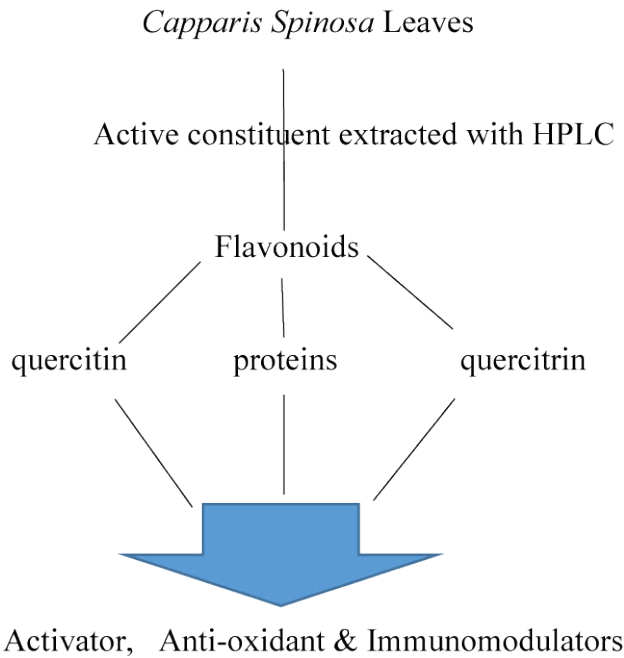
12 men age 60-70 years old divided in to 4 groups each group 3 men. The first group have taken Sildenafil 50 mg, the second group received Tadalafil 5mg tablets and the third group received capsule contain 50 mg of active constituent extract while the fourth group received lactose capsule 30 mg. this repeated on night for three days in week for 1 month the result was clear that the active constituent produced erectile function similar to Sildenafil and Tadalafil.

Discussion

From the folk medicine we found that the fruit used as antiseptic for intestinal dysentery also used as a protective for the human being against diseases [6] in addition it is used as aphrodisiac and antihypertension agent also in treatment of cancer diseases [7,6] so according to our knowledge the natural product still a bank of new drugs resources, in fact they are target for production by nanotechnology & biotechnology. The drugs made from bioactive materials these bioactive materials are used as a tool for invention of new drugs using Nano biotechnology and molecular nanoscience in medicine. These drug not polluted as the chemical

synthetic drugs [8,9]. The last products was antioxidant compared with racemic vitamin C using adrenaline as a test for the oxidation. we have seen that Capparis increase the activity somehow look like the activity of Tadalafil as erectile drugs function agents this may lead us to suggest that the active constituent of Capparis may contain one or more of bioactive agents belong to a group of medicines called phosphodiesterase type 5 inhibitors. Further work need to be done to elucidate this phenomenon.

Image:



Conclusion

The phytochemical and clinical studies of *Capparis Spinosa* buds, leaves and fruits has shown a bioactive ingredient. These active

constituent have shown a vitality activation in old men and have a power of erectile function by increasing the amount of cGMP in old males. Their result indicating a promising future for this wild medicinal plant.

References

1. G.H.M.Lawrence. Taxonomy of Vascular Plants Macmillan press. New York. 1951.
2. Arman, Z.9 Zarshenas,M.m and Aliasghar,k. Management of stroke as Described by Ibn Sina (Avicenna) in Canon medicine, International journal of cardiology. 2013; 169: 233-237.
3. Harvvey A.L. Drugs from natural products, England: Ellis Horwood.1993; 450.
4. Omar Z Ameer, Ibraheim M Salman, Ko Jin Quek, et al. Loranthus derrugineus: Mistletoe from Traditional Uses to Laporatory Bench. Journal of Pharmacopuncture. 2015; 18: 7-18.
5. Ali Awad Hamoud Aljeboory, Nazhat Mahmood Abdlkareem Al-zubaidi. Loranthus Europaeus is an alternative medicine in treatment of cyst and mouth inflammation resulted from chemotherapy of breast cancer. IJDDT. 2020; 10. 183-186.
6. Ali A.Aljeboory Natural pharmacology, 1st edition Book. Iraqi National publisher. 2008.
7. Sharquie K E, Noaimi AA, Salah, B A. Loranthus europaeus as an Alternative Medicine in Treatment of Acute Cutaneous Leshmaniasis: Review Article. Journal of Cosmetics, Dermatological Sciences and Application. 2016; 6: 24-33.
8. Ali Awad Aljeboory. "Haloxylon F Salsoloidpae as an Alternative Nanoscince Medicine in Treatment of Cancer". Acta Scientific Pharmaceutical Sciences. 2019; 3: 23-28.
9. Xiao PuFua, TaoWua, MiribanAbdurahim, et al. New spermidine alkaloids from *Capparis Spinosa*. Roots. Phytochem.lett. 2008; 1: 59-62.