Phytochemical screening of the ethanolic extracts of *Zizyphus xylopyrus* (Retz.)Willd.

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ABSTRACT

To evaluate the presence of phytoconstitute of ethanolic fractions of *Zizyphus xylopyrus* on anti-ulcer activity. Root powder of the plant was extracted successively with ethanol; Extract had pungent odour, showed the presence of desired phytochemicals i.e. flavonoids, tannin, phenol. Qualitative chemical tests were carried out for the ethanolic extract of *Z. xylopyrus*. The results of the tests showed the presence of carbohydrates, reducing sugars, saponins, phenolics, tannins, and flavonoids. On the basis of all the qualitative tests performed in each extracts; ethanolic extract was subjected for the further phytochemical and pharmacological studies because only the ethanolic extracts and saponins.

Keywords: *Zizyphus xylopyrus.* Anti- Ulcer, Ethanolic Extract

INTRODUCTION

The drug consists of the whole dried herb of *Zizyphus* xylopyrus (Retz.) Willd. (Family: Rhamnaceae) Zizyphus is a genus of about 40 species of spiny shrubs and small trees in the buckthorn family *Rhamnaceae*. The leaves are alternate, entire, with three prominent basal veins, and 2-7 cm long; some species are deciduous, others evergreen[1].The common name of this plant in Hindi - Kat-ber, Gote, Kakor, Ghont. A large, straggling shrub or a small three, armed with spines, up to 4 m. in height[2]. The major chemical composition of Z. *xylopyrus* are rich in flavonoids in particular quercetin, quercitrin, kaempferol-4'-methylether and kaempferol, tannins (7.2%), d-7, 3', 4'-trihydroxyflavan-3, 4-diol and oleanolic acid [3-4]. It also contains cyclopeptide alkaloids namely amphibine H, nummularine- K, xylopyrine - A and xylopyrine – B[5.] The bark was also found to contain betulinic acid (1%), betulin[6]. Fruit contains catechol-type of tannins (8-12%). Fruits were also reported to have oleanolic acid, l-leucocyanidin, 3, 3', 4-tri-O-methyl-ellagic acid [7]. Seeds unsaponifiable matter (0.8%) consists of a sterol, insoluble mixed fatty acid found to contain myristic, linoleic and oleic acid.[8]. This plant is widely used in Turkish folk medicines as a potent sedative [9]. The root bark of this plant is reported to have antinociceptive, anti-convulsant and anti-inflammatory activity. Apart from that the leaf of this plant has been reported to have antidepressant and antioxidant activities. The present study was undertaken to evaluate the antiulcer activity of ehtanolic extract of *Zizyphus xylopyrus* and prove tribal claim scientifically.

MATERIALS AND METHODS

Plant

Whole plant of *Zizyphus xylopyrus* (Retz.) Willd. was collected near from the college campus, Bhopal (M.P.) India in the months of March to April 2010. The leaf of this plant was shade dried and finely powdered with the help of mixer. A small amount of powdered drug was spread on a white tile and physically examined for general appearance i.e. color, nature, texture etc.

Preparation of ethanolic extracts

About 100 gm. leaves of *Z. xylopyrus* were shade dried at room temperature. The shade dried plant material was coarsely powdered and subjected to extraction with petroleum ether in soxhlet apparatus. The extraction was continued till the defatting of the material had taken place. The

marc obtained after petroleum ether was subjected to ethanol extraction in soxhlet apparatus. The extraction was continued for a period of 6-7 days to achieve complete extraction. The extract was concentrated and dried to a constant weight. The dried extracts of the drugs were evaluated for physical parameters such as consistency, color, odor and taste. The presence of desired phytochemicals i.e. flavonoids, tannin. Qualitative chemical tests were carried out for the ethanolic extract of *Z. xylopyrus*. **.** The results of the tests showed the presence of carbohydrates, reducing sugars, saponins, phenolics, tannins, and flavonoids.

Preliminary phytochemical investigations[10]

The preliminary phytochemical investigations were carried out with ethanolic extracts of roots of *Z .xylopyrus* for qualitative identification of phytochemical constituents present with each extract and tests were carried out by following standard methods. All the chemicals and reagents used were of analytical grade. On the basis of all the qualitative tests performed in each extracts; ethanolic extract was subjected for the further phytochemical and pharmacological studies because only the ethanolic extract s and Saponins

RESULTS AND DISCUSSION

The plant after drying, was powdered and it was subject for the organoleptic characterization. The colour of the powdered drug was found to be light green with aromatic odour and coarse texture. After this 100 gm powdered drug was carried out for direct ethanolic extraction. The extractive value was calculated and was found to be 10.2 %. The extract was further examined for its physical characterization like colour, odour, consistency, etc. The colour of the extract was brown, with a semi-solid consistency. Extract had pungent odour, showed the presence of desired phytochemicals i.e. Flavonoids, Tannin Qualitative chemical tests were carried out for the ethanolic extract of *Z. xylopyrus*. The results of the tests showed the presence of carbohydrates, reducing sugars, saponins, phenolics, tannins, and flavonoids. On the basis of all the qualitative tests performed in each extracts; ethanolic extract was subjected for the further phytochemical and pharmacological studies because only the ethanolic extracts and Saponins.

CONCLUSION

Today we are witnessing a great deal of public interest in the use of herbal remedies. Herbal medicine is based on the premise that plants contain natural substances that can promote health and alleviate illness. This work was conducted to explore the hidden potential of this unexplored herb. Initially due to the less data available in this plant we felt tough to decide the basis of our work, so the strong basis was opted to work on that plant was the other species of the same genera and phytochemical reported on this plant mainly flavonoids .In recent findings done on these plants as well as flavonoids It was thought worthwhile to investigate and to provide the scientific data on its use as an antiulcer agent. The work was initialized by the collection of its leaves, which was not a daunting task. The successive solvent extraction was the primary work done in it, the extractive value of all the extracts except the ethyl acetate and ethanolic extract were in workable quantities. Qualitative tests revealed the fact that ethanolic extract of this plant contains major phytochemicals viz. phenolics, flavonoids, tannins, saponins, and traces of alkaloids. It was thought worthy to select this extract for the further studies.

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Table I: Organoleptic characters of powder of crude drugs

Drug	Nature	Color	Odour	Texture
Zizyphus xylopyrus (Retz.) Willd.	Coarse	Dark green	Aromatic	Rough

Table II: Physical characteristics of extracts of *Zizyphus xylopyrus*

Name of Extract	Consistency	Color	Odor	Extractive value (%w/w)
Petroleum ether extract	Semi- Solid	Dark green	Characteristic	7.7%
Ethanolic extract (Direct)	Semi- Solid	Brown	Pungent	10.2%

Table III: Qualitative chemical tests performed in the ethanolic extract of *Zizyphus xylopyrus*

Phytoconstitutents	Ethanolic extract
Alkaloids	-
Glycosides	+
Phenols/Tannins	+
Flavonoids	++
Saponins	+
Fixed oil/Fats	+
Gums & Mucilage	_
Carbohydrates	+
Amino acids	_
Steroids	+

+ = Present - = Absent

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