PREPARATORY PHYTOCHEMICAL SCREENING OF MEDICINAL PLANT Ziziphus mauritiana LAM. FRUITS

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ABSTRACT

The show paper appears the therapeutic significance of Ziziphus mauritiana Lam. The plant natural product compounds were extricated with petroleum ether, chloroform, methanol, 95% ethanol and refined water for 48 hours offer assistance of cold permeation strategy and found distinctive sorts of auxiliary metabolites as flavonoids, glycosides, saponins, phenols, lignins, sterols and tannins were displayed.

Keywords: Flavonoids, Glycosides, Saponins, Tannins, Ziziphus Mauritiana Lam.

INTRODUCTION

Plants are portion of life. Without them no one can live. For the most part individuals accept in ayurvedic or unani drugs since they don't appear any side impacts compared to allopathic medications. When a plant has an anti-microbial properties it is called restorative plants. Almost 80% of the world populace utilize conventional drugs, which are overwhelmingly based on plant materials [WHO; 1993]. These materials are basically and optionally metabolites.

In India, diverse locales have particular highlights concurring to the climatic conditions. These plants counting therapeutic plants are too utilized as a nourishing for creatures. They are by implication appeared by their impacts by which creatures don't endure by any sorts of infections. Developing plants are one of the cheapest sources of nourishing for creatures having unrefined proteins of 14-25% [Abdu SB. et. al 2007, Simbaya J; 2002]. These plants give vitamins and minerals which are missing in meadow pastures [Keay RWJ; 1989].

Ziziphus is one of which that's found in all over the world. Distinctive sorts of morphological changes are found cause to temperature and climate changes. Concurring to their morphological alter, the species names were chosen. Ziziphus mauritiana Lam. is one of which that's developed in dry places. It is by and large utilized for bolstering by cattle and camels and goats and get resistance control against diverse sorts of pathogens [Morton J., 1987]. Ziziphus mauritiana Lam. has a place to the family of Ziziphus has a place to the kingdom; plantae, arrange; roasles, division; magnoliophyta, lesson; magnoliopsida, family; rhamnaceae, sort; Ziziphus, species; mauritiana.

Ziziphus mauritiana Lam. is additionally called jujube tree [Morton; 1987, Michel 2002]. All the parts of this plant are exceptionally viable against the distinctive sorts of infections. Its leaves are valuable within the treatment of loose bowels, wounds, abscesses, swelling and gonorrhoea [Michel; 2002]. The takes off mauritiana are moreover utilized within the treatment of liver infections, asthma and fever [Morton; 1987].
Carbohydrates, starch, proteins, sugar, mucilages and vitamins are liberally found in ziziphus species [Clifford S.C. Paper- Characterization; 2002]. Ziziphus mauritiana Lam. natural products can be utilized within the treatment of liver [Dahiru, D. et.al. 2005].

Ziziphus mauritiana Lam. fruiting time is February to Walk finishing and the colour is ruddy with more delicious as like litchi. The natural product has been utilized as anodyne, narcotic, tonic anticancer, powerful wound healer. It has too been utilized against asthma [J. Morton; 1987, E. W. M. Verheij and M. Calabura; 1991]. The natural product [A. R. Ndhala; 2006] clears out [D. Dahiru and O. Obidoa; 2007] and seeds [A. Bhatia and T. Mishra; 2009] extricates have been show antioxidant action though bark [E. Pisha et. al. 1995] is detailed to cytotoxicity against distinctive cancer cell lines.

MATERIAL AND METHODS

Collection of Plant Material

Ziziphus mauritiana Lam. is found all over the world. I had collected the plant tore natural products from Barmer area, Rajasthan. Barmer Area shapes the Western projection of Rajasthan. Barmer located in Rajasthan state of India. It is found (25.7599° N, 71.3824° E) within the western portion of Rajasthan state shaping a portion of the Thar Desert. Barmer is the third biggest locale by region in Rajasthan and fifth biggest locale in India. Possessing an area of 28,387 km².

Preliminary Screening of Secondary Metabolites

The tore fruits were dried and powdered utilizing blender processor, and subjected to cold permeation handle for 48 hours with petroleum ether, chloroform, 95% ethanol, methanol and refined water. After this handle, the extricates were sifted and utilized for preparatory phytochemical screening such as alkaloids (Iodine, Wagner, and Dragendorff’s test), flavonoids (Pew’s, Shinoda and NaOH tests), glycosides(Keller-killani, Conc. H 2 SO 4, and Molisch tests), saponins(Foam and Haemolysis test), sterols (Libermann- Burchard, and Salkowski tests), tannins (Gelatin and Lead acetic acid derivation test), Lignin (Labat and Lignin tests), Phenols (Ellagic corrosive and Phenol tests) were carried out [Shashank Bhatt et. al.,2011].

Preliminary Screening of Phytochemical Test

Phytochemical Screening

The filtrate obtained was subjected to Preliminary Phytochemical screening.

Test for Alkaloids

Iodine Test: Mix 3 ml test solution and added few drops of dilute iodine solution. Blue colour appears; it disappears on boiling and reappears on cooling [Khandewal K.R., 2008].

Wagner’s Test: To 2-3 ml extract with few drops Wagner’s reagent. Formation of reddish brown precipitate indicates the presence of alkaloids [Kokate C. K. et. al; 2001].

Dragendorff’s Tests: To 2-3 ml extract, add few dropsDragendorff’s reagent Formation of orange brown precipitate indicates the presence of alkaloids [Kokate C. K. et. al; 2001].

Test for Flavonoids

Pew’s Tests: To 2-3 ml extract, added zinc powder in a test tube, followed by dropwise addition of conc. HCl. Formation of purple red or cherry colour indicates the presence of flavonoids [Peach K., Tracey MV. 1956].
Shinoda Tests: To 2-3 ml extract, few fragments of magnesium metal were added in a test tube, followed by dropwise addition of conc. HCl. Formation of magenta colour indicated the presence of flavonoids [Kokate C. K. et. al; 2001].

NaOH Tests: To 2-3 ml of extract, few drops of sodium hydroxide solution were added in a test tube. Formation of intense yellow colour that became colourless on addition of few drops of dilute HCl indicated the presence of flavonoids [Khandewal K.R., 2008].

Test for Glycosides

Keller-Kiliani Test: To 2 ml extract, add glacial acetic acid, one drop 5% FeCl3 and conc. H2SO4. Reddish brown color appears at junction of the two liquid layers and upper layer appears bluish green indicates the presence of glycosides [Kokate C. K. et.al; 2001].

Glycosides test: To small amount of extract, add 1 ml water and shake well. Then aqueous solution of NaOH was added. Yellow colour appeared that indicates the presence of glycosides. [Treare GE, Evans WC. 1985].

Concentrate H2 SO4 Test: To 5ml extract, add 2ml glacial acetic acid, one drop 5% FeCl 3 and conc. H2 SO 4 . The appearance of brown ring indicates the presence of glycosides [Khandewal K.R., 2008].

Molisch’s Test: To 1 ml of extract, 2 drops of Molisch’s regent was added in a test tube and 2 ml of conc. H2 SO4 was added carefully keeping the test tube slightly curved. Formation of violet ring at the junction indicated the presence of glycosides [Kokate C. K. et. al; 2001].

Test for Phenols

Ellagic Acid Test: The test solution was treated with few drops of 5% (w/v) glacial acetic acid and 5% (w/v) NaNO2 solution. The solution turned muddy or niger brown precipitate occurred in the extract indicated the presence of phenols solution [Gibbs R.D., 1974].

Phenol Tests: To 0.5 ml of FeCl3 (w/v) solution was added to 2 ml of test solution, formation of an intense colour indicated the presence of phenols [Gibbs R.D., 1974].

Test for Lignins

Lignin test: To 2 ml of 2% (w/v) furfuraldehyde was added to the test solution, formation of red colour indicated the presence of lignin [Gibbs R.D., 1974].

Labat test: The test solution was mixed with gallic acid; it developed olive green colour indicating the positive reaction for lignins [Gibbs R.D., 1974].

Test for saponins

Foam Test: The extract was diluted with 20 ml of distilled water and it was shaken in a graduated cylinder for 15 minutes. A 1 cm. layer of foam indicated the presence of saponins [Kokate C. K. et. al; 2001].

Haemolysis Tests: - Add leaves extract to one drop of blood placed on glass slide. Hemolytic zone appears [Kokate C.K., 1994].
Test for Sterols

Liebermann-Burchard Test: Mix 2ml extract with chloroform. Add 1-2 ml acetic anhydride and 2 drops concentrated H2 SO 4 from the side of the test tube. First red, then blue and finally green colour indicated the presence of sterols [Kokate C. K. et. al; 2001].

Salkowski’s Test: To 2 ml of extract, add 2ml chloroform and 2 ml concentrated H 2 SO4 and was shaken well. Chloroform layer appeared red and acid layer showed greenish yellow fluorescence indicated the presence of sterols [Kokate C. K. et. al; 2001].

Test for Tannins

Gelatin Test: To the extract, gelatin (gelatin dissolves in warm water immediately) solution was added. Formation of white precipitate indicated the presence of tannins [Treare GE, Evans WC. 1985].

Lead acetate test: To 5 ml of extract, add few drops of 10% lead acetate solution were added. Formation of yellow or red precipitate indicated the presence of tannins. [Treare GE, Evans WC. 1985].

RESULT AND DISCUSSION

The plant tore natural products were powdered and subjected to cold permeation with petroleum ether, chloroform, methanol, 95% ethanol and refined water for 48 hours. The comes about of the phytochemical screening of natural products extractive of Ziziphus mauritiana Lam. were displayed in Table-1. Diverse sorts of auxiliary metabolites such as flavonoids glycoside, phenol, lignin, saponins, sterols and tannins were show whereas alkaloids was truant in Ziziphus mauritiana Lam. [Table-1]

<table>
<thead>
<tr>
<th>Test</th>
<th>Petroleum Ether</th>
<th>Chloroform</th>
<th>Methanol</th>
<th>95% Ethanol</th>
<th>Distilled water</th>
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<td>Alkaloids</td>
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<tr>
<td>Iodine Test</td>
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<tr>
<td>Drageendorff Test</td>
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<td>-ve</td>
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<td>Shinoda Test</td>
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<td>-ve</td>
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<td>+ve</td>
<td>+ve</td>
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<tr>
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<td>+ve</td>
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<td>-ve</td>
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<tr>
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<td>+ve</td>
<td>+ve</td>
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<td>-ve</td>
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<td>Lignin</td>
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<tr>
<td>Labat Test</td>
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<td>+ve</td>
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<tr>
<td>Saponins</td>
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<td>+ve</td>
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</table>
Tannins have common antimicrobial and antioxidant activities [Rievere et. al., 2009]. Current reports appear that tannins may have potential esteem such as cytotoxic and antineoplastic operators [Aguinaldo et. al., 2005]. Saponins have antifungal properties [Aboada and Efuwape, 2001; Mohanta et. al., 2007].

These substance are appeared distinctive sort of movement against diverse pathogens. Subsequently, it can be utilized within the treatment of diseases. Saponins are utilized in hypercholesterolemia, hyperglycemia, antioxidant, anticancer, anti-inflammatory and weight misfortune etc. concurring to medical field. It could be a bioactive antibacterial specialist of plants [Mandal et. al. 2005: Manjunatha, 2006].

CONCLUSION

Agreeing to the investigate works on *Ziziphus mauritiana* Lam. natural product, I have concluded that distinctive sorts of auxiliary metabolites are show that have compelling capacities on distinctive sort of infections. It appears exceptionally successful work against pathogens. Subsequently, its natural product can be utilized within the treatment of liver maladies according to their work additionally utilized in cancer treatment. The natural products ought to be utilized within the planning of therapeutic sedate for the treatment of distinctive sorts of cancer, antimicrobial and antifungal activity.

ACKNOLEDGEMENT

The investigate work would have been a dream, had it not been edified, by my well wishers and the over respectable. Final but not slightest the Almighty God is extraordinary without whose thoughtfulness and elegance, nothing may have happened.

REFERENCES


27. WHO (1993). Regional Office for Western Pacific, research guidelines for evaluat