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EVALUATE AND PERFORM THE PRELIMINARY PHYTOCHEMICAL SCREENING AND REVIEW TO KNOW ITS BIOLOGICAL ACTIVITY ON CARICCA PAPAYA LEAVES

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ABSTRACT

Introduction: Historically, Ayurvedic medicine has grouped plant compounds into categories according to their effects (for example, healing, promoting vitality, or relieving pain). Modern pharmacy now deals with medicinal plants and getting excellent biological activity of those plants. Papaya leaf extract is derived from the leaves of papaya tree. Papaya tree is commonly found everywhere in India. Papaya tree can said medicinal plant as it has proven several biological activity and active against several diseases. There are many health benefits of papaya leaf extract has found including micronutrient provider, red blood cell production, immune booster, antibacterial activity, antioxidant activity and aids in digestion. This study is focusing on the antibacterial and antioxidant properties of papaya leaf extract. These factors have inspired the widespread screening of plants for possible medicinal, antimicrobial and antioxidant properties. Dengue fever commencing on studies of the research on 70 dengue fever patients, said papaya leaf juice helps increase white blood cells and platelets, normalizes clotting, and repairs the liver. **Aim of the work:** To perform the preliminary phyto chemical screening and review to know its biological activity on Caricca Papaya leaves. **Conclusion:** They produce definite physiological action on the human body. In this study caricca papaya was selected for qualitative phyto chemical screening and for reporting biological activities. The extracts green leaves of Carica papaya are rich in phytochemicals coupled with the presence of Flavonoids, Carbohydrates, Steroids and Alkaloids. Carica papaya leaves can be used as a potential source of food and in drug items. The analytical techniques like Gas chromatography and Mass spectroscopy were performed and the compounds were found.

Keywords: Caricca Papaya Leaves, Biological activity, Uses.

INTRODUCTION

Ayurvedic medicine is a system of healing that relies heavily on herbs and other plants including oils and common spices. Currently, more than 600 herbal formulas and 250 single plant drugs are included in the “pharmacy” of Ayurvedic treatments. Historically, Ayurvedic medicine has grouped plant compounds into categories according to their effects (for example, healing, promoting vitality, or relieving pain). Modern pharmacy now deals with medicinal plants and getting excellent biological activity of those plants. Papaya leaf extract is derived from the leaves of papaya tree. Papaya tree is commonly found everywhere

in India [1]. Papaya tree can said medicinal plant as it has proven several biological activity and active against several diseases. There are many health benefits of papaya leaf extract has found including micronutrient provider, red blood cell production, immune booster, antibacterial activity, antioxidant activity and aids in digestion. This study is focusing on the antibacterial and antioxidant properties of papaya leaf extract [2]. These factors have inspired the widespread screening of plants for possible medicinal, antimicrobial and antioxidant properties. Antioxidant substances block the action of free radicals

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which have been implicated in the pathogenesis of many diseases including atherosclerosis, ischemic heart disease, cancer, Alzheimer's disease and in the aging process. Antioxidants are also used to preserve food quality mainly because they arrest oxidative deterioration of lipids. The papaya, *Carica papaya*, is a member of the small family Caricaceae allied to the Passifloraceae [3].

Botanical Description

Papaya plant is a large, single-stemmed herbaceous perennial tree having 20–30 feet height. The leaves are very large (up to 2½ feet wide), palmately lobed or deeply incise with entire margins and petioles of 1-3 feet in length. Stems are hollow, light green to tan brown in color with diameter of 8 inches and bear prominent of scars.



Uses of Caricca Papaya

Colon cancer- The fiber of papaya is able to bind cancer causing toxins in the colon and keep them away from the healthy colon cells. These nutrients provide synergistic protection for colon cells from free radical damage to their DNA [4].

Anti-Inflammatory effects- Protein enzymes including papain and chymo-papain and antioxidant nutrients found in papaya; including vitamin C, vitamins E, and beta carotene, reduce the severity of the conditions such as asthma, osteoarthritis, and rheumatoid arthritis [5].

Rheumatoid arthritis- Vitamin C - rich foods, such as papaya, provide humans with protection against inflammatory poly arthritis, a form of rheumatoid arthritis involving two or more joints.

Dengue fever- Commencing on studies of the research on 70 dengue fever patients, said papaya leaf juice helps increase white blood cells and platelets, normalizes clotting, and repairs the liver.

Cancer Cell Growth Inhibition- Recent research on

papaya leaf tea extract has demonstrated cancer cell growth inhibition. It appears to boost the production of key signaling molecules called Th1-type cytokines, which help regulate the immune system [6].

Antimalarial and Antiplasmodial Activity- Papaya leaves are made into tea as a treatment for malaria. Antimalarial and anti plasmodial activity has been noted in some preparations of the plant, but the mechanism is not understood and not scientifically proven.



Facilitate Digestion- The leaves of the papaya plants contain chemical compounds of karpain, Substance which kills microorganisms that often interfere with the digestive function [7].

Aim of the Work

To perform the preliminary phyto chemical screening and review to know its biological activity on Caricca Papaya leaves.

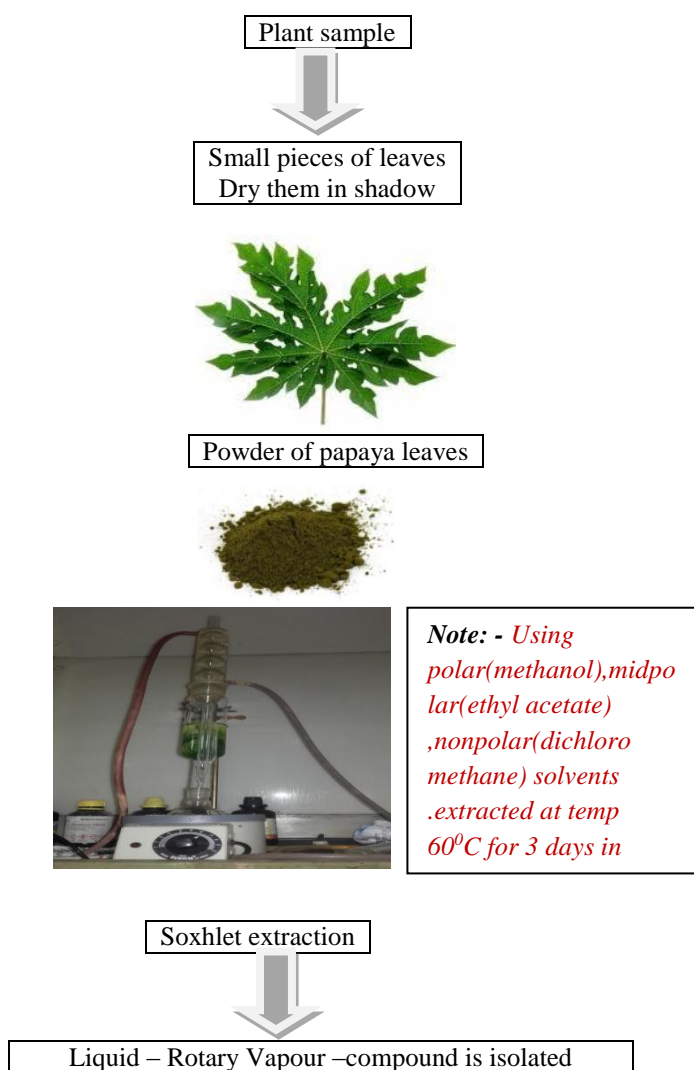
Collection of plant materials

Leaves of Carica Papaya were collected from Chittoor, Andhra Pradesh state in the month of February 2019. The papaya leaves was washed by using distilled water and cut into small pieces and dried at room temperature for 2 days.

Extraction of papaya leaf material

The dried leaves of papaya was powdered to 22 mesh size and then subjected to successive soxhlet extraction using highly non polar, mid polar, polar solvent systems such as Di-chloro methane (DCM), Ethyl acetate, Methanol respectively. The extracts obtained were further evaporated to dryness under vacuum and stored in the refrigerator for further use [8].

EXTRACTION METHODS



Preliminary Phytochemical Screening

The extract was subjected to preliminary phytochemical screening test to determine the group of secondary metabolites present in the plant material was tested. Condensed extracts were used to preliminary screening of phytochemical alkaloids, flavanoids, steroids,phenols,glycosides ,triterpenoids, saponins,tannins. Crude plant extract samples were dissolved in respective solvents used for qualitative conformation of major phytochemical constituents such as

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alkaloids, flavanoids, phenolics, steroids, tannins, carbohydrates and volatile oils [9].

Alkaloids: In a test tube containing 1ml of a leaf extract a few drops of Dragendroff's reagent added and coloured development was noticed appearance of orange colour indicates the presence of alkaloids

Flavonoids: When 5ml of 1% hydrochloric acid extract was added shaken with sodium hydroxide a yellow coloured appeared indicating in the presence of flavanoids.

Phenolics: To 1 ml of extract were added 2 ml of distilled water and few drops of 10% ferric chloride appearance of blue or green colour indicates the presence of phenols.

Steroids: The extract powder was dissolved in 2ml of chloroform in a dry test tube 10 drops of acetic anhydride and 2 drops of concentrated sulphuric acid were added. The solution became red then blue and finally became bluish white indicates the presence of steroids.

Tannins: 1 drop of ferric chloride was added to 2 ml of the extract, and the appearance of bluish or greenish, black colorization indicates the presence of tannins.

Carbohydrates: In a test tube 5 ml of the filtrate was treated with 5ml of Fehling solution A and B was added and heated. The appearance of red precipitate indicates the presence of reducing sugar.

Volatile oils: To 2ml of extract was added 0.1ml of diluted sodium hydroxide and a small amount of diluted hydrochloric acid. The formation of a white precipitate indicates Volatile oils [10].

CONCLUSION

They produce definite physiological action on the human body. In this study Carica papaya was selected for qualitative phytochemical screening and for reporting biological activities. The extracts green leaves of Carica papaya are rich in phytochemicals coupled with the presence of Flavonoids, Carbohydrates, Steroids and Alkaloids. Carica papaya leaves can be used as a potential source of food and in drug items. The analytical techniques like Gas chromatography and Mass spectroscopy were performed and the compounds were found [11].

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