Opinion article on *Diospyros Melanoxylon* Methanolic Extract

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Abstract

The antioxidant capacity of the test extracts was first determined using the 2,2-Diphenyl-1-Picryl-Hydrazyl-Hydrate (DPPH) assay. By DPPH free radical scavenging activity, only a few extracts showed strong antioxidant activity. Among all, the antioxidant potential of *Diospyros melanoxylon* methanolic extracts was found to be higher. The presence of phenols and flavonoids in the test extracts could explain their high antioxidant activity. The anti-inflammatory efficacy of test extracts was also assessed using a carrageenan-induced paw edoema model.

Keywords: Antioxidant • Melanoxylon • Methanolic

Introduction

RX- is an Anti-inflammatory activity that was found to be moderate. Based on early antioxidant activity results *in vitro Diospyros Melanoxylon* was chosen to test its nephroprotective efficacy against the potassium dichromate-induced kidney damage model. Before moving on to in vivo testing, an acute oral toxicity test was done to determine the safe amount of test extract (Potassium Dichromate induced nephrotoxicity). To determine the Maximum Tolerated Dose, an acute toxicity investigation of the test extract was done in Wistar rats. During the investigation, the test extract did not display any toxicity or mortality symptoms at any of the levels tested.

In rats, the test extract's Maximum Tolerated Dose (MTD) was found to be >2000 mg/kg. The Potassium dichromate-induced nephrotoxicity model was used to test in-vivo nephroprotective activity in Wistar rats. During the study, test extracts (250 mg/kg, 500 mg/kg) were given orally for 7 days before potassium dichromate (15 mg/kg) was given. Blood samples were taken at the end of the trial and utilized to estimate renal biochemical parameters. The Pyridinium Dichromate (PDC) group showed a considerable rise in biochemical parameters when compared to the vehicle control group. At a dose of 500 mg/kg, the test extract significantly reduced blood urea nitrogen and serum creatinine. To screen for organ toxicity, kidney tissue samples were obtained on the termination day of all rats and exposed to measurements of antioxidant enzymes and lipid peroxidation. Many researchers have looked at the effects of plants that have been utilized traditionally by indigenous healers and herbalists to support kidney function and treat renal disorders in recent years.

In most cases, research has corroborated traditional knowledge and wisdom by determining the mechanism and mode of action of these plants, as well as confirming the medicinal efficacy of specific plants or plant extracts in clinical trials. Several hundred plants have been studied for their potential to treat a wide range of ailments. Only a few have been thoroughly investigated. The Coromandel Ebony, also known as East Indian Ebony, is a flowering tree in the *Ebenaceae* family that is native to India and Sri Lanka and has a hard, dry bark. It gets its name from the Coromandel coast in southeastern India. It's known as temburini in the area, or tendu in Hindi. It's known as kendu in Odisha and Jharkhand. The Indian beedi, which is made by wrapping the leaves around tobacco, has outsold traditional cigarettes in India. Long, sessile, or nearly sessile peduncles with mainly 3-flowered flowers.

Female flowers are mauve, often extra-axillary or solitary, while axillary flowers are usually two opposite each other and larger than male flowers. 1-seeded, 2-seeded, 3-seeded, 4-seeded, 5-seeded, 6-seeded, or 8-seeded berries, olive green, ovoid or globose, 3 cm-4 cm across. Yellow pulp, so and sweet. Seeds are compressed, oblong, glossy, and have a band. The name derives from the Greek words 'dios' (divine) and 'pyros' (fruit), referring to the genus' superb fruit. The word 'black wood' comes from the Greek language. Botanical information: *D. melanoxylon* is a medium-sized tree or shrub with a diameter of 1.9 m and a height of 25 m. He has a pelican-like bark that exfoliates in rectangular scales. The primary root is long, thick, and fleshy at first, then becomes woody, greyish, and swollen towards ground level. In sucker-generated plants, the roots form vertical loops. Leaves are coriaceous, opposite or alternate, up to 35 cm long, and mentose on both sides when young, becoming glabrous above when fully mature. Male flowers are mauve in color and range in size from tetramerous to dexterous, measuring 1 cm to 1.5 cm in diameter. *D. melanoxylon* (Roxb.) bark has an anti-hyperglycemic effect in alloxan-induced diabetic rats: *D. melanoxylon* (Roxb.) bark's anti-hyperglycemic efficacy was assessed using a scientific approach that included biochemical measurements and pancreas histopathology examinations. In alloxan-induced diabetic rats, ethanolic extracts of powdered bark were examined for efficacy. The extracts were also tested for acute oral toxicity and their impact on a variety of metabolic markers. Extracts were compared to normal glibenclamide. In comparison to the usual medication, ethanolic extracts significantly (p=0.01) corrected diabetes-induced hyperlipidemia. Histopathological examinations of the pancreas found that it has a considerable impact on the number of -cells. When compared to conventional medication, the extracts demonstrated strong anti-hyperglycemic action.

The presence of steroids, tannins, alkaloids, and triterpenoids in ethanolic extract (200 mg/kg) had favorable effects on blood glucose and hyperlipidemia associated with diabetes, which could be related to the presence of steroids, tannins, alkaloids, and triterpenoids in that extract. The ethanolic extract appears to be promising for the development of phytomedicines for diabetes mellitus and could be used as an adjuvant to other oral hypoglycemic medications.

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