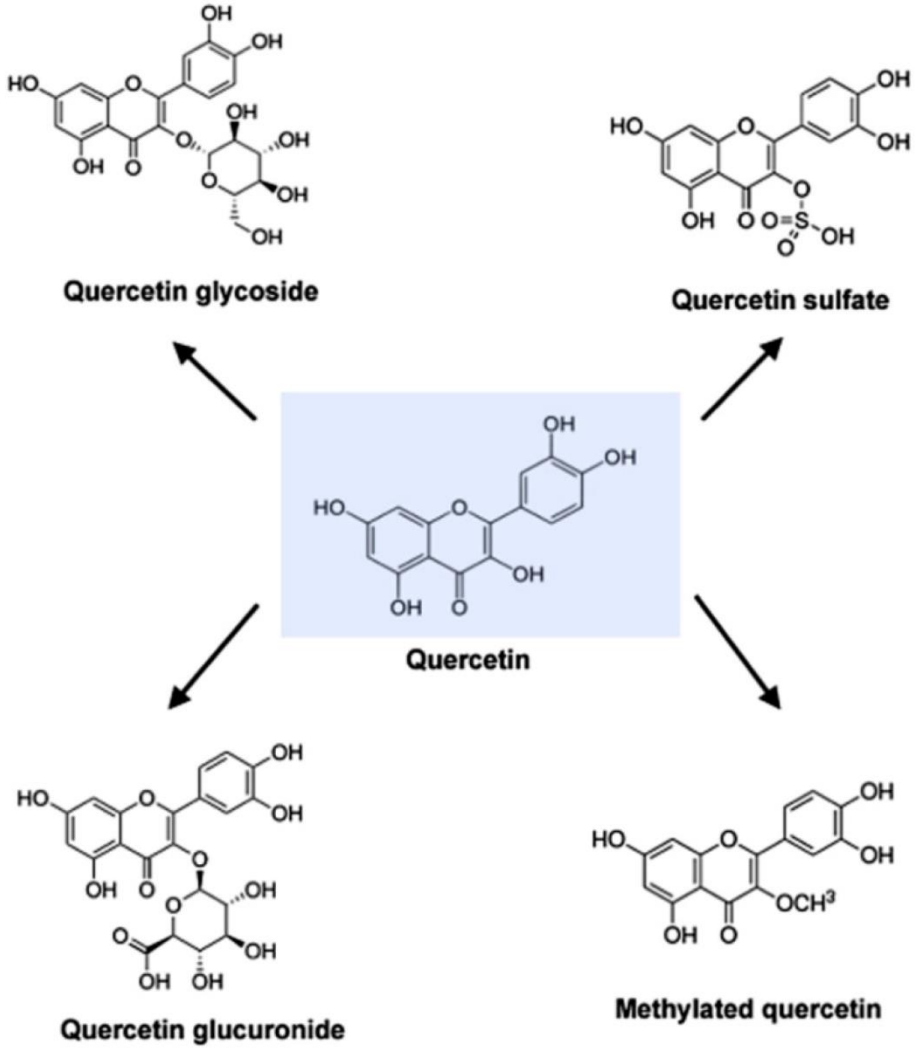
Description of the plant

Pseudarthria viscida (L.) Wight & Arn. Herb up to 50 high; branchlets viscid. Leaves alternate, 3-foliolate; leaflets terminal rhomboid-obovate, 2 - 6 x 1.5 - 5.5 cm, cuneate at base, entire at margin, acute at apex, villous; 5-pairs; petiole 03 mm long. Stipule lanceolate-subulate, setaceous. Racemes terminal, 25 cm long. Flowers ca. 06 mm across, rosy-pink; pedicel 1.2 cm long; peduncle 4 cm long; bracts lanceolate, 2 - 3 mm long; bracteoles subulate-linear. Calyx campanulate, tube 1.5 mm long, lobe lanceolate-subulate. Petals 5, excreted; standard obovate-oblong, 3.2 mm long; wing oblong-oblonceolate, 05 mm long; keels lanceolate, obtuse at apex. Staminal sheath subcylindric, 04 mm long. Stamens 10; filament unequal, filiform, 01 mm long; anther ovoid. Ovary oblong, flat, 03 mm long; 1-loculed; ovules 2 - 3; style slender, 02 mm long, glabrous; stigma capitate. Pod oblong-obovate, flat, ca. 1.5 mm long, compressed, hooked-pubescent; seeds 4, reniform, 2.3 mm long.



Compounds in the plant

Gallic acid, Caffeic acid, Rutin, Quercetin and Ferulic acid are phenolic compounds. Structurally they have phenol groups which serve as a source of readily available hydrogen atoms such that the subsequent radicals produced can be delocalized over the phenol structure . The interest of these compounds is due to their pharmacological activity as radical scavengers . They have proved to have potential preventive and therapeutic effects in many diseases. These five phenols are widely distributed in the plant kingdom.

Antifungal properties of Pseudarthria viscida

The extracts of leaf, root, stem, and the callus obtained from Pseudarthria viscida showed significant inhibitory activity against some fungal pathogens causing major diseases in crop plants and stored food grains.

Neuroprotective potential of ethanolic extract of Pseudarthria viscida (L) Wight and Arn against beta-amyloid(25-35)-induced amnesia in mice.

The neuroprotective potential of ethanolic extract of roots of Pseudarthria viscida (L) Wight and Arn (EEPV) was investigated against beta-amyloid(25-35)-induced amnesia in mice which is a suitable animal model for Alzheimer's disease (AD). The senile plaques of beta-amyloid (Abeta) are major constituents accumulated during the progression of AD as a potent neurotoxicant. In our investigation, intracerebroventricular injection of Abeta(25-35) in mice induced the neurodegeneration, exhibited the increased time of escape latency in behavioral pattern using water maze and decreased the levels of antioxidants namley superoxide dismutase (SOD), glutathione peroxidase (GPx), catalase (CAT) and vitamin C with elevated level of acetylcholinesterase enzyme (AChE). The neuroprotective potential of EEPV was determined by behavioral pattern using water maze and biochemical parameters such as SOD, CAT and GPx and vitamin C content as well as AChE. Mice were treated with EEPV at 200 and 400 mg/kg doses for 21 days. Except control, all animals received a single injection of neurotoxicant Abeta(25-35) on 14th day. In behavioural assessment, treatment with ethanolic extract improved the cognitive function in the water maze and attenuated the elevated levels of AChE with increase in antioxidant enzymes, indicating the neuroprotection with increased levels of vitamin C. These findings suggest that ethanolic extract of P. viscida exerts anti-amnesiac effects and enhances cognitive function

Chemoprotective Activity of Ethanolic Extract of Pseudarthria Viscida Linn Against N-Nitroso Diethylamine Induced Liver Carcinogenesis in Rats

Liver cancer is one of the leading causes of cancer deaths worldwide. This idea has prompted us to evaluate the hepatoprotective effect of ethanolic extract of Pseudarthria viscida (PV) Linn against N-Nitrosodiethylamine (NDEA) induced liver cancer in rats. Wistar albino rats were administered with PV extract (100 and 200 mg/kg b.w; p.o.) on alternate days for 120 days. Various in vivo biochemical parameters like lipid peroxidation, superoxide dismutase and catalase were evaluated to determine the hepatoprotective and antioxidant activity of PV. NDEA significantly increased LPO and decreased the endogenous antioxidant enzymes (SOD and CAT). The PV extract significantly restored the antioxidant enzyme level in the liver and exhibited significant dose dependant protective effect against NDEA induced liver toxicity, which can be mainly attributed to the antioxidant potential of the extract. In the present study, a rat model of liver cancer was established. The present study focused the attention on the global molecular events that occurred in NDEA treated rats (and probably represent the earliest ones that start the multistep process of hepatocarcinogenesis). Additional information may be mined from this and similar studies to provide clues to many areas including the very important search for diagnostic markers, therapy targets and prognosis prediction markers. From these observations it can be concluded that EEPV(ethanolic extract of Pseudarthria viscida) may suppress the formation of NDEA induced hepatocarcinogenesis in rats by alleviating lipid peroxidation through scavenging of free radicals, or by enhancing the activity of antioxidants, which then detoxify free radicals.

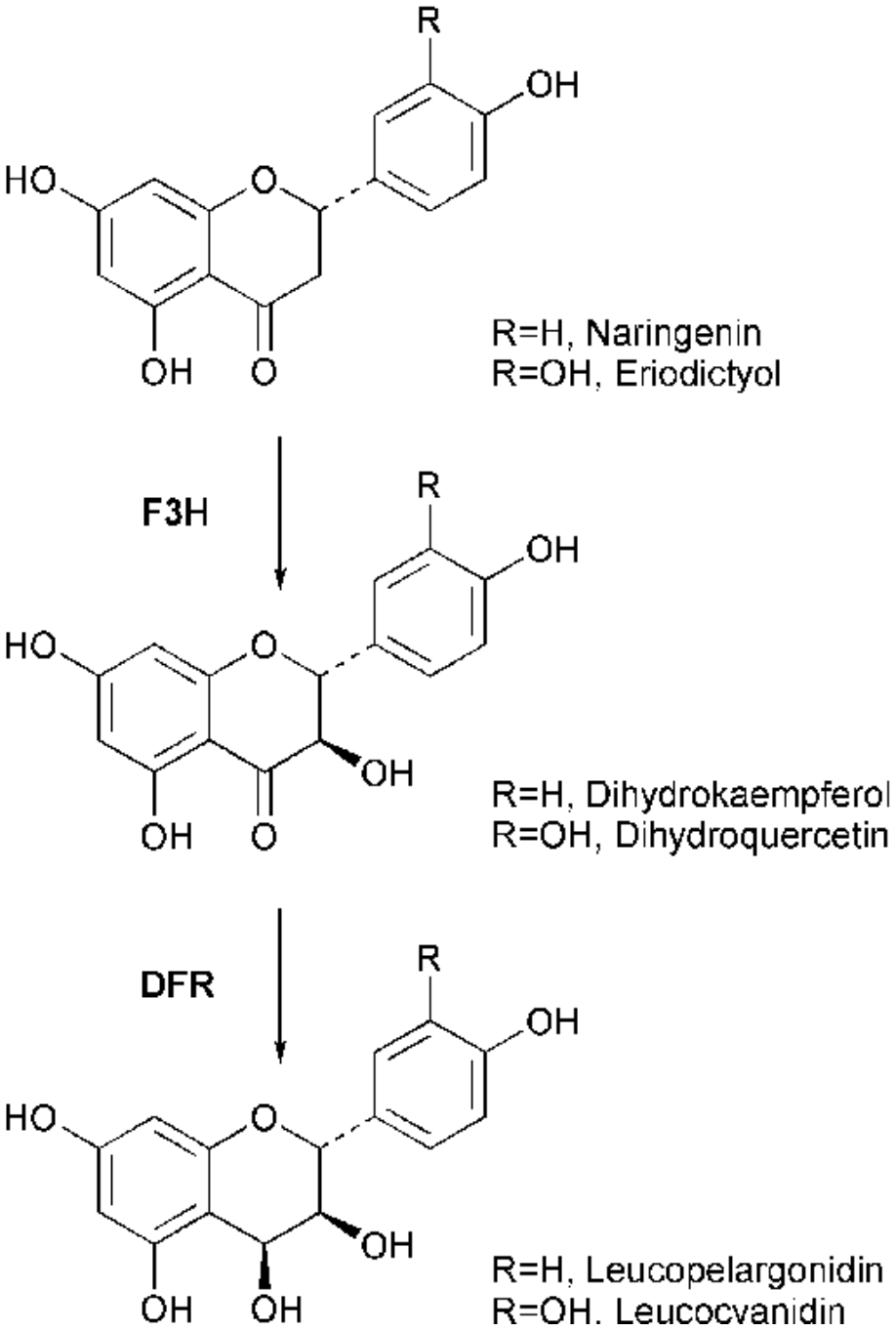
Antidiabetic activity of *Pseudarthria viscida*aqueous root extract in neonatal streptozotocin-induced NIDDM rats

The antidiabetic activity of the aqueous root extract of *Pseudarthria viscida* (L.) Wight & Arn., Fabaceae, was investigated in normal and neonatal streptozotocin (n2-STZ)-induced non insulin-dependent diabetes mellitus (NIDDM) rats and compared with glibenclamide as a reference standard. Two different doses (250 and 500 mg/kg) of the extract were administered to normal and experimental diabetic rats for 21 days. Fasting blood glucose levels, serum lipid profiles and changes in body weight were evaluated in normal and diabetic rats while serum insulin, glycated hemoglobin, urea, creatinine, magnesium, protein, albumin and glycogen, glutamate oxaloacetate transaminase (GOT), glutamate pyruvate transaminase (GPT), lactate dehydrogenase (LDH) levels in kidney and liver were evaluated additionally in diabetic rats. Treatment with extract at both dose levels was found to exhibit antidiabetic activity, with the higher dose showing more significant activity. The significant reduction of HDL cholesterol on treatment with the aqueous extract of PV may be attributed to the insulin secretogogue activity. Our finding showed diabetic rats with higher levels of glycated hemoglobin thereby indicating their poor glycemic control. Administration of the aqueous extract of PV decreased the concentration of glycated hemoglobin in n2-STZ diabetic rats, which could be due to an *i.p.*ovement in insulin secretion (Vasudevan & Sreekumari, 1998). A significant decrease was observed in the serum creatinine and urea levels of the aqueous extract of PV treated diabetic groups as compared to the diabetic control. STZ induced decrease in Mg levels was significantly reversed in groups treated with the aqueous extract of PV.

ANTI-INFLAMMATORY ACTIVITY, CARRAGEENAN INDUCED PAW EDEMA MODEL, INDOMETHACIN, PSEUDARTHRIA VISCIDA.

Pseudarthria viscida had been widely used for its reported biological activities in indigenous system of medicine. The present investigation was carried out to find the effect of ethanol extract of Pseudarthria viscida (EEPV) for its anti-inflammatory activity in rat. In this study, the antiinflammatory activity of Pseudarthria viscida was evaluated by using a carrageenan-induced rat paw edema model and compared with that of standard drug Indomethacin. Oral administration of the extract at the doses 200 and 400 mg/kg b.w. exhibited dose dependent and significant antiinflammatory activity in carrageenan-induced hind paw edema of inflammation. Both the dose of Pseudarthria viscida promoted the antiinflammatory activity significantly when compared to the standard drug. Hence, present investigation established some pharmacological evidences to support the folklore claim that Pseudarthria viscida is used as anti-inflammatory agent. The plant Pseudarthria viscida Linn (family: Fabaceae) is useful in vitiated conditions of pitta and vata, cough, bronchitis, asthma, tuberculosis, helminthiasis, dyspepsia, inflammation, cardiopathy, haemorrhoids, gout, hyperthermia and general debility . 3-5. The plant has shown to possess antifungal6, antioxidant7, anti-tumor8, anti hypertensive9 and antidiarrhoeal activities. Since no information is available on the anti- inflammatory activity of Pseudarthria viscida, the present study was undertaken to investigate the anti- inflammatory activity of ethanol extract of Pseudarthria viscida (EEPV).

CONCLUSION: It is concluded that ethanol extract of Pseudarthria viscida possess significant anti-inflammatory activity against experimentally induced paw oedema in rats. This may be due to the presence of reported active Phytoconstituents & their influence on the prostaglandins pathway. Further research, to isolate anti-inflammatory principle & exact mechanism involved, is needed



conclusion

Pseudarthria viscida (L.) Wight and Arnott (Leguminosae) is a controversial plant commonly known as Salaparni in Sanskrit and is an essential component of many famous Ayurvedic formulations like Dashamoola, Mahanarayana taila and Dhantara taila (Deepa et al., 2004). The plant is a perennial viscid pubescent semierect diffuse undershrub. The roots are used as astringent, sweet, bitter, emollient, digestive, anthelmintic, antiinflammatory, diuretic, cardiotonic, aphrodisiac, febrifuge, rejuvenating and tonic. It has a curative effect on vitiated conditions of vata and pitta, cough, bronchitis, asthma, tuberculosis, dyspepsia, diarrhoea, alternate fever, food poisoning, vomiting and general debility. A decoction of the roots is given for treating rheumatism, asthma, heart diseases and piles. The root juice is given as a nasal drop in case of headache and hemicranias (Warrier et al., 1996). The root of the plant has been reported to contain leucopelargonidin, flavonoids and proteins (Deepa et al., 2004; Prasad and Nambisan 1976)