

ABSTRACT

Tamarix aphylla L. was selected for research work due to its commercial and medicinal importance. It is a fast growing evergreen tree also discussed in Holy Quraan. It has a number of medicinal uses in the traditional medicinal systems of different regions.

Flavonoids refer to a class of phytochemicals that are water-soluble plant pigments. Chemically they are polyphenols. The literature suggested that flavonoids might have diverse benefits including as antioxidant, antiviral, anti-allergic, anti-platelet, anti-inflammatory, and anti-tumor effects. Certain flavonoids might even have antihistamine, anti-microbial, memory and mood enhancing properties.

Flavonoids were extracted from the dried plant material. The extract was treated with 10% HCl to hydrolyze the flavonoid glycosides. It was then extracted with Chloroform and Ethyl acetate. Residual water layer was also kept for analysis. Solid residue in flask was dissolved in Methanol.

Flavonoids were separated by column chromatography. 5 fractions were obtained from unhydrolyzed extract, 1 from Chloroform, 2 from Ethyl acetate, 1 from residual water layer and 2 from the Residue dissolved in Methanol.

Different fractions obtained were further analyzed and characterized by Thin Layer Chromatography, scanned by UV Spectrophotometer and observed under Iodine vapours in an Iodine Chamber. The Flavonoids identified from the unhydrolyzed plant extract were Isoferulic acid, Kaempferol-4',7-dimethyl ether, Quercetin-7,3',4'-trimethyl ether and Quercetin-3- Glucoside(Isoquercitrin). The Flavonoids identified from the hydrolyzed plant extract were Naringenin (Chloroform layer), Kaempferol-4',7-dimethyl ether and Quercetin-7,3',4'-trimethyl ether (Ethyl acetate layer), Kaempferol(Water layer), Isoferulic acid and Quercetin(Residue in Methanol).

The Flavonoids were estimated by Colorimetric Method. Two coloring agents used were Aluminum Chloride and 2,4-dinitrophenylhydrazine.

Finally, the unhydrolyzed and hydrolyzed plant extracts were analyzed by High Performance Liquid Chromatography. Six different sets of conditions were applied according to the reported work. However the results were concluded on the basis of the conditions reported in the literature. The Flavonoids identified from the unhydrolyzed plant extract were Quercetin and Kaempferol derivatives. The Flavonoids identified from the hydrolyzed plant extract were flavonols Quercetin and Kaempferol.

Additionally the shoot wax of the plant was isolated, the %age yield was calculated and its different physicochemical characteristics such as Colour, Melting point, Iodine number, Saponification value, Acid value and Ester value were determined.