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Research Article

A COMPARITIVE STUDY OF 6-HYDROXY FLAVONE RESPONSIBLE FOR ANTI ARTHRITIC ACTIVITY OF BARLERIAPRIONITIS LEAVES AND COMPARE IT WITH SYNTHETIC DRUG NAPROXEN.

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Abstract

Ethanollic extract of Barleriapronitis leaves revels the presence of various phytochemicals constituents. Proximate analysis was also performed on leaves. 6-Hydroxy Flavone is present in the leaves of the plant and it is responsible for anti-arthritis property. In our present study we have identified the presence of 6-OH-F in leaves and synthetic drug Naproxen by Thin Layer Chromatography. % Assay was characterized by U.V. vis spectroscopy. At absorption maxima of 294 nm, 331 nm respectively. We concluded that 6-Hydroxy Flavone reduces pain and also reduces the Osteoblast differentiation but the Naproxen cures inflammation for particular time continuous intake shows many side effects.

Keywords: Ethanollic extract of Barleriapronitis 6-OH-FTLC, Ultraviolet spectroscopy.

Introduction

Barleriapronitis Linn (Acanthaceae) is mostly distributed throughout Africa, India, Sri Lanka and tropical Asia. It is an annual shrub, 1-3 feet high. They possess 2-4 sharp long axillary spines.^[1] In India it has several vernacular names Katsareya, piyaabaasaa, jhinti, kala bans.^[2] The plant has been found to possess wide range of pharmacological activity include anti-arthritis, antimicrobial, antioxidants, antibacterial, anthelmintic, antifertility, antioxidant, antidiabetic, anti-inflammatory, cytoprotective, hepatoprotective, diuretic, antidiarrhoeal, enzyme inhibitory without any toxic effects.^[3] The 6-hydroxy flavone is a chemical compound. It is one of the non competitive inhibitor of cytochrome P450 269. It is present in leaves of Barleriapronitis plant. It has a potential as a therapeutic drug capable for treatment of arthritis, anxiety and other disorder.^[4] Naproxen is usually sold as the sodium salts of naproxen. It non steroidal anti-inflammatory drug. (NSAID) of propanoic acid class.^[5]

Materials and Methods

The sample of Barleriapronitis are collected from Sambhavna Medical Trust and Research Centre botanical garden Kazicamp Bhopal. (M.P.) India. Then plant is identified by Botanist Dr. Zia Ull Hasan H.O.D of Botany Department at Safia Science College Bhopal [M.P.] India. He gave the Herbarium number 510 / Bot / Safia / 2014. The plant has been preserved there for future references. The leaves were shade dried for 7 days. The dried leaves were weighed & powdered using electric grinder. The powder is then put in an air tight container. The ethanollic extract was obtained by Soxhlet Apparatus. The extraction was carried out continuous for 48 hrs. and the sample was collected in clean glass jars. Drugs and chemical used

Naproxen and 6-Hydroxy-Flavone were purchased from Sigma Aldrich Chemical Co. which were taken as standard for plant and for Naproxen tablets. The tablets were purchased of brand Naprosyn.

Proximate analysis such as Moisture Ash content, water soluble and acid soluble ash were carried out on

the basis of standard method.^[6] Results are shown in Table No. 1

Table No. 1. Proximate Analysis

S.no.	Tests performed	Result
1.	Moisture Content	5.2 %
2.	Total Ash Content	6.3 %
3.	Acid Insoluble Ash	1.87 %
4.	Water Soluble Ash	21.7 %

Phyto chemical analysis were carried out on ethanolic extract of plant phyto chemical. such as alkaloid, flavonoid, saponin, carbohydrates saponin and tanins,

steroids were present test were performed on the basis of standard methods.^[7] results obtained were shown in Table No .2

Table No .2 Phytochemical Analysis

S.No.	Phytochemical	Present
1.	Flavanoids	+
2.	Cabohydrates	+
3	Glycosides	+
4	Phenolic	+
5	Steroids	+
6	Saponin	+

Qualitative estimation ^[8]

The qualitative profile of 6- Hydroxy Flavone in the ethanolic extract is carried out by TLC and UV-Vis spectroscopy. TLC and UV-Vis spectroscopy are the suitable methods to show the qualitative profile of 6-Hydroxy Flavone in the ethanolic extract. 6-Hydroxy-Flavone and naproxyn. were identified by thin layer chromatography. % Assay was obtained UV visible Spectroscopy.

Preparation of Std. 6-hydroxy flavones

The 6-Hydroxy-Flavone of Sigma Aldrich Chemical Co. was taken as standard which is light yellow colour powder. The 6-OH-F is weighed 50 mg and dissolved in 100ml of ethanol to get 500 µg/ml stock solution. Lower concentration (5, 10, 15, 20, 25, 30 µg/ml) were prepared by diluting serially with ethanol. absorbance was measured against Ethanol as blank^[6]

Preparation of Stock Solution for B.p.:^[9]

For stock solution, take equivalent to 100 mg of sample extract and dissolved it in 25 ml of ethanol. Then we take 10ml solution from filtered

and volume is make up to 100 ml by ethanol. From this stock solution pipette out 1 ml and dilute to 25 ml. The strength of the resultant solutions is 0.0025 mg/ml. The absorbance of the resultant solutions were measured at 294 nm against Ethanol as blank **Fig-1 UV Graph for 6-Hydroxy Flavone**

Preparation of Stock Solution for Naproxen:^[9]

For the estimation of drugs in Naproxen tablets, 20 tablets were accurately weighed, crushed and powdered in a glass mortar. Shake a quantity of powder containing equivalent to 50 mg of Naproxen with 70ml of methanol for 30 min. Now add 30 ml methanol and make up 100ml and filter it. Take 10ml from it and make up to 50ml of methanol. and measure the absorbance at maximum 331nm as shown in **Fig-2.-UV Graph for Naproxen.**

Results and Discussion

The 6-OH-F present in leaves of plant shows antiarthritic property. A comparative study was performed on natural active ingredient of plant 6- OH-F responsible Anti-arthritis synthetic drug Naproxen all the parameters are according to the Indian pharmacopoeia.

The Thin Layer Chromatography analysis revealed that Flavone is present in leaves. The Rf value of plant leaves extract is 0.65 and the standard Rf value for 6-Hydroxyl Flavone 0.67.(as shown in fig no.3). The Rf value of naproxen is 0.84 for which the standard is 0.85 (as shown in fig.no.4) % Assay of flavone in leaves is determined by U.V. Spectroscopy. The % purity for 6-OH-F in leaves of plant is 98.3% and Standard % ASSAY of 6-Hydroxy- flavone is 98%. The % purity for Naproxen tablets is 99.1% both give satisfactory results with there standard. That is 98 % for 6-OH -F and 99 -101% for Naproxen.

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Conclusion

The crude *Barleriaprionitis* leaves contains 6-Hydroxy Flavone not only reduces pain but it also reduces the Osteoblast differentiation. It does not show any side effect and its regular intake shows positive effect on bone metabolism. The Naproxen cures inflammation for particular time and it also causes many side effects.

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