



Isolation and Identification of Quercetin and Rutin from Leaves of *Tridax Procumbens* Linn by HPLC Analysis

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Abstract

Tridax procumbens (Linn) is an important medicinal plant belonging to the family Asteraceae. Number of chemical compounds of plant have been isolated and identified, these belongs to some major classes of substances namely alkaloids, flavonoids and essential oils. Quercetin and Rutin, the major flavonoids from the leaves of *Tridax procumbens* have been isolated and identified with the help of HPLC fingerprint analysis technique.

Keywords: Quercetin, Rutin, HPLC.

Introduction:

Tridax procumbens Linn is a weed having medicinal value.¹⁻² In Ayurveda, the plant has extensively used as a medicine for number of diseases such as diabetic and liver disordered.³⁻⁴ The plant has also been reported for various pharmacological activities such as anti-inflammatory, immunomodulatory, wound healing and antioxidant activity.⁵⁻⁹ the plant has also effective against Gram positive and Gram-negative bacteria.¹⁰ plant is reported to have a number of chemical constituent like alkaloid, tannins, flavonoids like luteolin, keampherol, saponins, carotenoids, and various acids like fumaric, lauric, myristic, palmitic, stearic, arachidic, benenic, palmitoleic, linoleic acid etc.¹¹

Materials and Methods:

Chemicals : Quercetin, Rutin and all other chemicals and solvents were obtained from SD Fine chemicals (India).

Plant Material: The leaves of plant *Tridax procumbens* were collected from local market of hilly area near Melghat region of Maharashtra and identified.

Experimental:

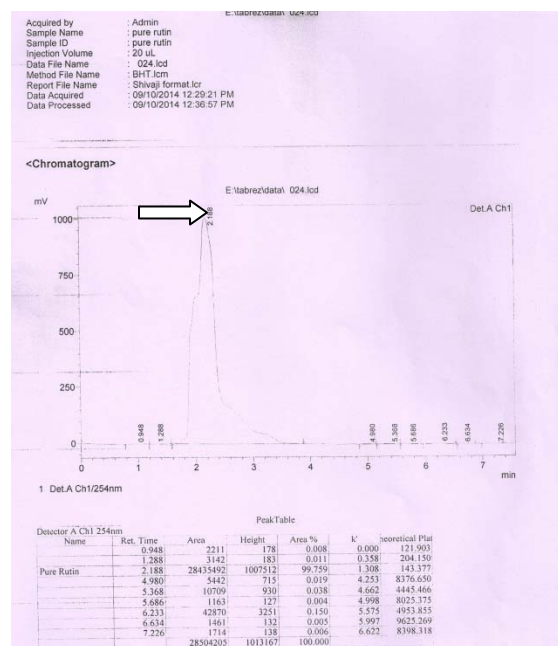
1) Isolation of Rutin fraction : The leaves of *Tridax procumbens* L. were collected and washed with tap water then shade dried and after complete drying, coarse powder was prepared. Twenty grams of the powder was extracted by soxhlet apparatus with 250 ml of 80% ethanol till exhaustion. The extract was filtered and concentrated by evaporation under vacuum to about 10 ml then mixed with 25 ml distilled water and extracted with petroleum ether (50 x 3), then with chloroform (50 x 3). After extraction, the

aqueous layer was collected and left to stand in a cold place for 72 hours; a yellow precipitate separated out of the solution .the precipitate was dissolved in ethanol and used for HPLC analysis.

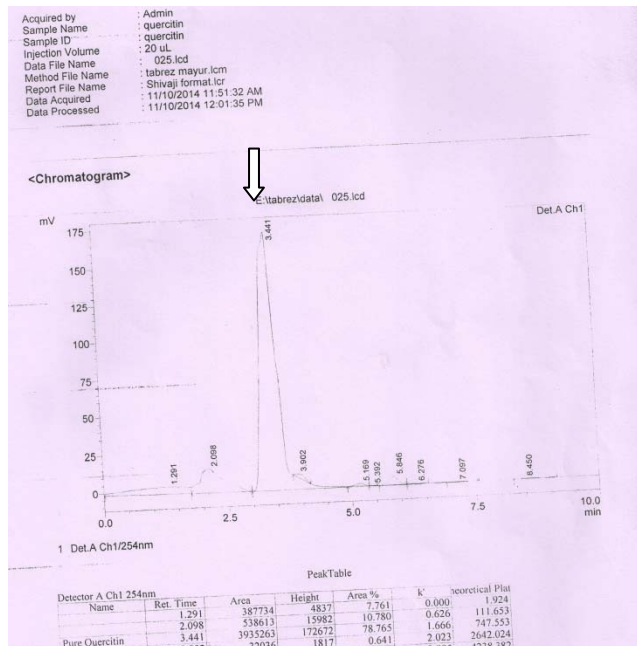
2) Isolation of Quercetin fraction: The leaves of Tridax procumbens L. were collected and washed with tap water then shade dried and after complete drying coarse powder was prepared. Twenty grams of the powdered was successively soxhlet extracted with petroleum ether ,chloroform and methanol respectively. Each of solvent was used for a period of 24 hours. The methanolic fraction was concentrated to obtain a semisolid consistency. The same semisolid fraction was successively extracted with 50 ml of petroleum ether (fraction I) , 50 ml of ethyl acetate (fraction II) and 50 ml of ethyl acetate (Fraction III) with the help of separating funnel. Each extraction was repeated three times to ensure complete extraction in each case .This was done for the entire methanolic extract. Fraction III was used for HPLC analysis.

Result and Discussion:

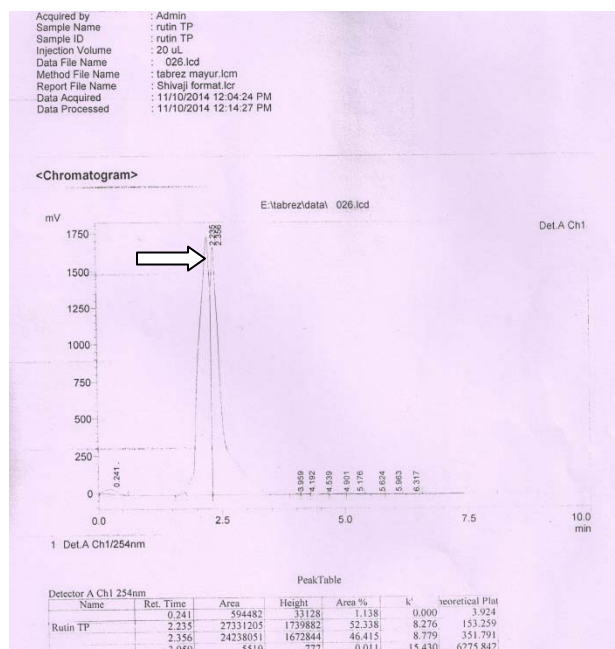
The HPLC chromatogram of the sample containing rutin fraction (isolated by procedure 1) was compared with that of pure rutin, the peaks for rutin coincided indicating rutin in the extract of leaves of tridax procumbens, analogusly the HPLC chromatogram of the sample containing quercetin fraction (isolated by procedure 2) was compared with that of pure quercetin, the peaks for quercetin coincided indicating quercetin in the extract of leaves of tridax procumbens.



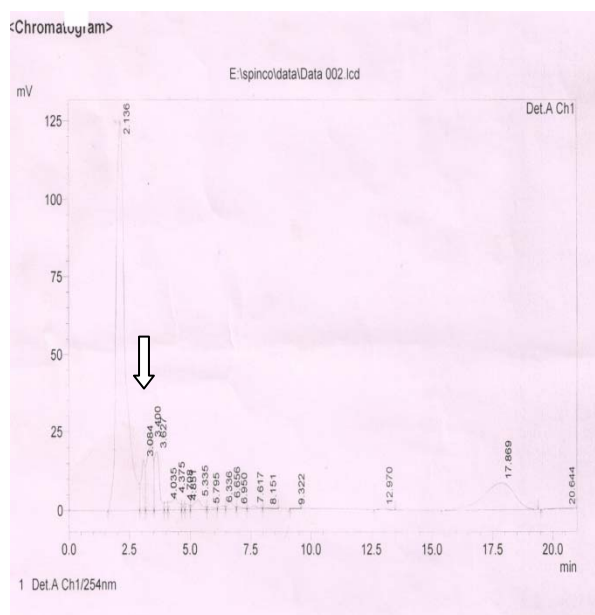
HPLC chromatogram of pure rutin



HPLC chromatogram of pure quercetin



HPLC chromatogram of rutin in sample



HPLC chromatogram of quercetin in sample

Conclusion:

HPLC analysis showed presence of rutin and quercetin in the leaf extract of tridax procumbens.

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