



Anti – Inflammatory activity of *Gliricidia sepium*

KEYWORDS

Gliricidia sepium (Jacq). Kunth. Ex. Walp., Leguminosae, kaempferol – 3- O- rutinoid, rat paw oedema.

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ABSTRACT

The flowers of *Gliricidia sepium* (Jacq). Kunth . ex . Walp of Leguminosae have been found to contain kaempferol and its glycoside of kaempferol – 3 – O– rutinoid. The structures of the above compound have been ascertained by UV, Chemical reactions, PC, and hydrolytic studies. The glycoside isolated from the flowers has sample anti – inflammatory activity.

1.Introduction :

Gliricidia sepium (Jacq). Kunth. Ex. Walp blonging to the Leguminosae is an introduced plant , native of south America. It is valued as a green manure for paddy in Tamil Nadu. It is small or medium sized tree, fairly free from pests and diseases. Its leaves and bark are reported to possess insecticidal activity. An attempt has been made to identify the flavonoid constituents of the flowers of this plant and the results are presented.

2.Experimental :

2.1Extraction and Fractionation :

Fresh flowers of *Gliricidia sepium* (1kg) collected from the paddy fields in Thanjavur were extracted with 80% ethanol (4x500ml) under reflux. The alcoholic extract was concentrated in – vacuo. The aqueous concentrate was fractionated successively with petroleum ether (60 - 80°C) (4x300 ml), peroxide – free Et₂O (3x300 ml) and EtOAc (4x300 ml).

Benzene fraction did not yield any isolated material. Et₂O fraction yielded kaempferol and EtOAc fraction kaempferol – 3- O - rutinoid.

2.2 Characterization :

Kaempferol :

Yellow needles, m.p. 276° – 278°C : Yield 0.05%, UV : nm (MeOH) 266, 320, 370; + (NaOMe) 278, 316, 420; +(AlCl₃) 268, 303, 350, 424; + (AlCl₃ - HCl) 269, 302, 352, 420; + (NaOAc) 274, 386, and ; + (NaOAc – H₃BO₃) 267, 320, 372.

Kaempferol – 3 – O - rutinoid :

Yellow solid m.p 222° – 224°C, UV : nm (MeOH) 265, 350 ; + (NaOMe) 275, 390 ; + (AlCl₃) 275, 306, 348, 406 ; + (AlCl₃ - HCl) 270, 305, 350, 402 ; + (NaOAc) 273, 366, and + (NaOAc – H₃BO₃) 265, 352.

3. Anti – Inflammatory activity :

Wister albino rabbits was used for the evaluation of anti – inflammatory activity of the isolated glycoside. It showed 99.18% of anti – inflammatory activity compared with the standard. The percentage of inhibition of drugs was calculated.

Anti – Inflammatory activity of Kaempferol – 3 – O - rutinoid

Group	Dose	Anti – inflammatory activity		
		1hr	2.5 hr	5.5hr
Control	Phenyl butanone	—	—	—
F – 1	50	21.4%	48.8%	50%
F – 1	100	38.1%	53.3%	60%
F – 1	200	33.3%	44.4%	80%

F – 1 = Kaempferol – 3 – O - rutinoid

4. Conclusions :

The fresh flowers of *Gliricidia sepium* were found to contain kaempferol – 3 – O - rutinoid. The structures of the compounds have been ascertained by chemical reactions , chromatographic and spectroscopic techniques. The glycoside was tested for anti – inflammatory activity. The anti – inflammatory activity of the drug was so effect while it was compared with that of the standard drug.

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