

**IN VITRO ANTI- INFLAMMATORY ACTIVITY OF SEEDS OF TRIGONELLA FOENUM  
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**ABSTRACT**

*Trigonella foenum-graecum* Linn., are used as a spice, in colic, flatulence, dysentery, diarrhea, diabetes, and lipid disorders in India. Ethanol extract, mucilage, and flavonoids of fenugreek seeds were found to have anti-inflammatory, anti-arthritis, and anti-oxidant activities. Ethanolic (90%) extract of the seeds of *Trigonella foenum graecum*. (Fam: Fabaceae) were studied for their in vitro anti-inflammatory action by inhibition of albumin denaturation technique in various concentration. The Ethanolic extract of plant shows anti-inflammatory activity as that of standard drug Diclofenac. This activity must be 50% as compared to standard drug Diclofenac.

**Keywords:** *Trigonella foenum graecum*, Diclofenac, *Invitro* Anti-inflammatory activity.

**INTRODUCTION**

The plant /tree seeds of *Trigonella foenum graecum* is called as Methi Seeds in the local language. The tree is well known for its various medicinal properties. *Trigonella foenum graecum* is a plant whose seeds and leaves are used in traditional medicine. *Trigonella foenum graecum* has several pharmacological effects such as: hypoglycemic <sup>1</sup>, hypocholesterolemic <sup>2</sup>, antioxidant <sup>3</sup>, and appetite stimulation <sup>4</sup>. Furthermore, this plant has gastroprotective activity <sup>5</sup> and histopathological examination of liver and brain has revealed that aqueous extract of fenugreek seeds offer significant protection against ethanol toxicity <sup>6</sup>. Ethanolic extract of seeds of *Trigonella Foenum Graecum*. show the presence of Saponins, Coumarin, Vitamin, Alkaloids, Flavonoids. The present study was focused to evaluate the anti-inflammatory action of ethanolic extract of seeds of *Trigonella Foenum Graecum*.

**MATERIALS AND METHODS:****Collection of plant materials:**

Plant Material the seeds were collected from Grocery Shop in Baramati, Maharashtra. The collected plant materials are cleaned, shade dry, coarsely powdered for further studies.

### **Preparation of extracts:**

1000 gram of powder was extracted with ethanol by soxhlet extractor by decoction, to obtain alcoholic extracts respectively the solvents were removed and marcs (residue) obtained were dried in a desiccator, refrigerated until their use. These dried residues were used for in vitro anti-inflammatory action by Inhibition of albumin denaturation technique.

### **Phytochemical Screening:**

The crude extract obtained by solvent extraction was subjected to various qualitative tests to detect the presence of common chemical constituents as: Alkaloids, Glycosides, Carbohydrates, Phytosterols, Saponins, Tannins, Flavonoids Proteins etc. the process were analyzed qualitatively by the method of Khandelwal, 2005, Kokate, 2006<sup>7,8</sup>.

### ***In vitro* Anti-inflammatory Activity:**

#### **Inhibition of albumin denaturation:**

in vitro anti-inflammatory activity of Ethanolic (90%) extract of the the seeds of *Trigonella Foenum Graecum* by Inhibition of albumin denaturation technique: -

Then take 1ml solution of plant extract with ethanol solvent and dilute with Sodium Diphosphate (0.2 M, pH 7.4) and then to it add 1ml of 1% mM Egg Albumin solution in Sodium Diphosphate and Incubate at  $27 \pm 1^{\circ}\text{C}$  for 15 min. and Denaturate it by heating at  $60^{\circ}\text{C}$  for 10 min., cool it and then observed turbidity and same procedure perform with standard drug Diclofenac.

## **RESULTS AND DISCUSSION:**

### **Phytochemical Screening:**

Qualitative phytochemical analysis of aqueous and methanolic extracts of *Trigonella Foenum Graecum* plant revealed the presence of phenolics and non-phenolics phytochemicals such as total phenols, tannins, and flavonoids, alkaloids, sterol, resins, terpenoids, xanthoproteins, quinines, glycosides, and saponins while the steroids, tannins, and carboxylic acids were absent in both types of extracts. Other compounds were found in fairly detectable quantity.

**Table 1: Phytochemicals extracted from the *T. foenum-graecum* methanolic extract**

Phytochemical constituents	TFGME
Alkaloids	+
Glycosides	+
Steroids	-
Saponins	+
Phenols	+
Resins	+
Tannins	-
Terpenoids	+
Xanthoproteins	+
Quinones	+
Glycosides	+
Carboxylic acid	-

***In vitro* Anti-inflammatory Activity:**

The Turbidity of Ethanolic Extract of seeds of *Trigonella Foenum Graecum* solution observed is less than that of standard drug Diclofenac, but the presence of turbidity shows that the given plant extract shows *in vitro* antiinflammatory activity as that of Standard drug Diclofenac by inhibition of Albumin Denaturation Technique.



Anti-inflammatory Activity of Ethanolic Extract of seeds of *Trigonella Foenum Graecum*



Anti-inflammatory Activity of Standard Diclofenac

## Conclusion:

The Given sample of Test solution i.e.Ethanollic extract of seeds of *Trigonella Foenum Graecum* shows in vitro anti-inflammatory activity by inhibition of Albumin Denaturation Technique.

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