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### HPLC Analysis and *In Vitro* Anti-Inflammatory Activity of Ethanol Extract of *Sesbaniagrandidiflora*

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**Abstract:** *Sesbaniagrandidiflora* (family: Fabaceae) commonly known as 'sesbania', is widely used as Indian folk medicine. *Sesbaniagrandidiflora* has the common names of Agati. Ethanol extract of *sesbaniagrandidiflora* leaves was assessed for its anti-inflammatory activity and phytochemical screening. Phytochemical analysis of *Sesbaniagrandidiflora* plant extracts revealed the presence of various biochemical compounds such as alkaloids, flavonoids, glycosides, triterpenoids and saponins etc. High Performance Liquid Chromatography has been used for detection and quantification of flavonoids and phenolic compounds in ethanolic leaves extract of *Sesbaniagrandidiflora*. The standard markers like (Gallic acid, caffeic acid, rutin, quercetin and ferulic acid) were identified by retention time and co-injected with reference standard and quantified by external standard method at 280 nm. Retention time and peaks were used as parameters to determine the presence of specific compounds. Distinct peaks and retention time were recorded, and on that basis Gallic acid (Rt=5.567), Caffeic acid (Rt=8.992), Rutin (Rt=10.992), Quercetin (Rt=12.267), Ferulic acid (Rt=23.192), and the data provided the basis for its wide uses of the therapeutic effects of this plant. The extract showed *in vitro* anti-inflammatory activity by inhibiting the heat induced albumin denaturation HRBC membrane stabilization and proteinase activity was significantly from the result, it is concluded that phytochemicals such as (tannins, flavonoids, terpenoids, phenols and saponins) present in the *Sesbaniagrandidiflora* extract may be responsible for the anti-inflammatory activity. Aspirin was used as a standard drug for the study of anti-inflammatory activity.

**Key words:** *Sesbaniagrandidiflora*, anti-inflammatory activity, aspirin, HPLC.

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