



## **Evaluation of Anti- Urolithiasis Potential of Indian Medicinal Herbs *Ficushispida*, *Morindatinctoria* and *Sapindusemarginatus* by Struvite Crystal Growth Inhibition Assay**

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**Abstract:**Renal calculi is a form of solid concentrates formed with in the collecting tubule of kidney. Renal stone normally composed of Calcium oxalate dehydrate, calcium oxalate monohydrate, uric acid, calcium phosphate cystine. In India, 12% of the population is expected to have urinary stone complication. Presently various treatment strategy has been followed for treating nephrolithiasis condition such as hydration, alkali treatment and shock wave lithotripsy and surgery. All the current line treatment for kidney stone offers only symptomatic relief. The major crisis faced by the patients with renal kidney stone is recurrence. It was estimated that average recurrence period could be within 5 to 10 years. Hence the society is in high need of discovering an alternate complimentary medicine that can halts the progression of stone formation. In the present investigation anti-urolithiasis potential of the three significant medicinal herbs such as *Ficushispida*, *Morindatinctoria* and *Sapindusemarginatus* were screened using single diffusion gel growth technique at two dose level of 0.5% and 1%. The efficacy of all the herbs was evaluated by comparing the crystal size of treated medium with that of the control. The average size of the crystal in the control medium ranging from  $1.3 \pm 0.15$  cm to  $1.56 \pm 0.17$  cm. The crystal size was significantly decreased in medium contains 0.5% and 1% of ethanolic extract of *Ficushispida* (EEFH) with the size of  $0.92 \pm 0.13$  and  $0.7 \pm 0.12$  cm. Similar type of results were achieved in medium contains 0.5% and 1% of ethanolic extract of *Morindatinctoria* (EEMT) with the size of  $1.02 \pm 0.13$  and  $0.64 \pm 0.16$  cm. Ethanolic extract of *Sapindusemarginatus* (EASE) at the dose of 0.5 and 1% reveals significant decrease in crystal size of  $1.08 \pm 0.16$  and  $0.72 \pm 0.08$  cm. From the result of the Study, it was concluded that the all the three extracts has shown promising anti-urolithiasis property in the tested medium.

**Keywords:** Renal calculi, *Ficushispida*, *Morindatinctoria*, *Sapindusemarginatus*, crystal size, Anti-urolithiasis, Gel diffusion.