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Inhibitory potential of *Ocimum tenuiflorum* L. on uric acid crystallization: An investigational study

Anjana Krishnan AS, Ashish P Pradhane, Pradip B Dhamole* & Ravi N Methekar

Department of Chemical Engineering, Visvesvaraya National Institute of Technology, Nagpur-440 010, Maharashtra, India

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The enduring problem of kidney stone disease continues to afflict humans worldwide, with its recurrence being the most worrisome factor. Among the variety of stone-forming compounds, uric acid has received less attention despite being a significant contributor to the development of kidney stones. Throughout history, natural plant derivatives have served as a low-cost alternative for treating kidney stones. *Ocimum tenuiflorum* L. (Tulsi) is an indigenous medicinal plant primarily found in the Indian subcontinent and has gained recognition for its efficacy in managing various ailments, particularly kidney stones. The current investigation delves into the inhibitory capability of tulsi extract on *in vitro* uric acid crystallization. The addition of tulsi extract to synthetic urine resulted in a delay in the induction of uric acid crystallization and a decrease in the uric acid crystal size in a concentration dependent manner. At pH 5, a 19 fold increase in the induction time and a 3 fold decrease in the crystal size were observed when the concentration of tulsi extract was increased from 27.5 to 110 µg/mL. The current study effectively illustrates the inhibitory potential of tulsi extract in curbing uric acid crystallization.

Keywords: Holy basil, Kidney stones, Tulsi, Uric acid crystallization

adaptation in allantoin[12,13]. As a result, humans have comparatively