



In Vitro* and *In Vivo* Anti-Urolithiatic Activity of Terpenoid-Rich Ethyl Acetate Extract of Rhizomes of *Curcuma zedoaria

Vinodhini Velu¹, Neeraj Fuloria², Shivkanya Fuloria², Jayanti Panda³,
Bhabani Prasad Panda⁴ and Himaja Malipeddi^{1*}

¹*Department of Chemistry, School of Advanced Sciences, VIT University,
Vellore, 632014, Tamil Nadu, India*

²*Department of Pharmacy, AIMST University, Semeling Campus, Bedong,
Kedah Darul Aman, Malaysia-08100*

³*Department of Chemistry, BJB Autonomous College, Bhubaneswar, Odisha, India*

⁴*Department of Physics, Chikiti Mahabidyalaya, Chikiti, Odisha*

KEYWORDS Calcium Oxalate. Ethylene Glycol. Prophylactic. Struvite. Terpenoid

ABSTRACT *Curcuma zedoaria* is a medicinal plant belonging to *Zingiberaceae* family. The objective “of the study is to analyze the phytoconstituents of the ethyl acetate extract of rhizomes of *C. zedoaria* and to evaluate for anti-urolithiatic activity by *in vitro* single gel diffusion technique and by *in vivo* ethylene glycol induced urolithiasis model. Terpenoids were found to be predominant in both qualitative and quantitative analysis. The struvite crystals were grown in a gel medium. The extract of different concentrations was added to the gel formed and decrease in the crystal size was measured for 5 days using a travelling microscope. The *in vivo* anti-urolithiatic activity was assessed in wistar rat models. Histopathological analysis of kidney of treated rats showed a normal architecture similar to control. Results of both *in vitro* and *in vivo* studies” conclude potent antiurolithiatic activity of *C. zedoaria* which can be attributed to the presence of terpenoids.