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Inhibition of urinary calculi – a spectroscopic study FELICIA MANCIU, JAYESH GOVANI, WILLIAM DURRER, LAYRA REZA, LUIS PINALES, Physics Department, University of Texas at El Paso, El Paso, TX 79968
— Although a considerable number of investigations have already been undertaken and many causes such as life habits, metabolic disorders, and genetic factors have been noted as sources that accelerate calculi depositions and aggregations, there are still plenty of unanswered questions regarding efficient inhibition and treatment mechanisms. Thus, in an attempt to acquire more insights, we propose here a detailed scientific study of kidney stone formation and growth inhibition based on a traditional medicine approach with *Rotula Aquatica Lour (RAL)* herbal extracts. A simplified single diffusion gel growth technique was used for synthesizing the samples for the present study. The unexpected Zn presence in the sample with *RAL* inhibitor, as revealed by XPS measurements, explains the inhibition process and the dramatic reflectance of the incident light observed in the infrared transmission studies. Raman data demonstrate potential binding of the inhibitor with the oxygen of the kidney stone. Photoluminescence results corroborate to provide additional evidence of Zn-related inhibition.

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