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Comparative spectroscopic analysis of urinary calculi inhibition by *Larrea Tridentata* infusion and NDGA chemical extract[1] FELICIA MANCIU, University of Texas at El Paso — In the present comparative spectroscopic study we try to understand calcium oxalate kidney stone formation as well as its inhibition by using a traditional medicine approach with *Larrea Tridentata* (LT) herbal extracts and nordihydroguaiaretic acid (NDGA), which is a chemical extract of the LT bush. The samples were synthesized without and with LT or NDGA using a simplified single diffusion gel growth technique. While the use of infusion from LT decreases the sizes of calcium oxalate crystals and also changes their structure from monohydrate for pure crystals to dihydrate for crystals grown with different amounts of inhibitor, both Raman and infrared absorption spectroscopic techniques, which are the methods of analysis employed in this work, reveal that NDGA is not responsible for the change in the morphology of calcium oxalate crystals and does not contribute significantly to the inhibition process. The presence of NDGA slightly affects the structure of the crystals by modifying the strength of the C-C bonds as seen in the Raman data. Also, the current infrared absorption results demonstrate the presence of NDGA in the samples through a vibrational line that corresponds to the double bond between carbon atoms of the ester group of NDGA.

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