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PO ***Abstract***

Growth of Brushite Crystals On Glass Slide: A Simple And Inexpensive *In Vitro* Model to Evaluate Natural Antiurolithiatic Drugs

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The kidney contains mineral deposits in various phases of calcium salts such as calcium oxalate and calcium phosphate. Calcium hydrogen phosphate dihydrate ($CaHPO_4.2H_2O$) / brushite is a stable form of calcium phosphate which exist in the form of kidney and bladder stone. The purpose of the study was to explore the possible morphological features of brushite crystals. The study was carried out on a glass slide under microscope to observe the growth patterns of these crystals. For this purpose, a drop of gel medium (sodium meta silicate solution + 1M orthophosphoric acid solution) at pH 4.99-5.09 was placed in the middle of glass slide and allowed to convert into gel, then single drop of 1M calcium chloride was added to properly formed gel. The glass slide was observed under microscope till it was completely dried. Calcium hydrogen phosphate dihydrate were formed as elementary needles, needle clusters, an assemblage of needles with platy crystals, plates with spatial branches, radiating assemblage of platy crystals, star shape crystals and tetragonal bipyramidal. Current study provides different phases of brushite crystallization on glass slide for the first time. It may also be used as a model to evaluate prophylactic management against renal stones through *in vitro* assessment of crystal growth and aggregation inhibition and modulation of developing or developed crystals by using different natural products. However, it was a preliminary study and doesn't have any quantitative and statistical analysis.