

Inhibition of Crystallization Lithiasis Phosphate (Struvite) by Extracts Zea mays

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Abstract : Kidney stones of infectious origin, in particular, the phosphate amoniaco-magnesian hexahydrate or struvite are one of the risk factors that most often leads of renal insufficiency. Many plants species, described in pharmacopoeias of several countries is used as a remedy for urinary stones, the latter is a disease resulting from the presence of stones in the kidneys or urinary tract. Our research is based on the existing relationship between the effect of extracts of medicinal plant used for the cure of urinary tract diseases in the region of Algeria south-west on urolithiasis especially Ammonium-Magnesium Phosphate Hexahydrate (Struvite). We have selected Zea mays L. (POACEAE) for this study. On the first stage, we have studied the crystallisation of struvite 'in vitro' without inhibitors, after we have compared to crystallization with inhibitors. Most of The organic and aqueous extracts of this plant give an effect on the crystal size of struvite. It is a very significant reduction in the size of the crystals of struvite in the presence of hexane and ethanol extract (12 to 5-6 μm). We've observed a decrease in the size of the aggregates in the presence of all the extracts. This reduction is important for the aqueous, acetone and chloroform extract (45 to 10-16 μm). Finally, a deep study was conducted on the effective extract of Zea mays L.; for determine the influence of inhibitory phytochemical compounds.

Keywords : medicinal plants, struvite, urolithiasis, zea mays

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