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Influence of the medicinal plant extracts (*Ziziphus lotus*) on the crystallization of ammonium-magnesium phosphate hexahydrate (struvite)

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The urolithiasis constitutes a major problem to public health. It is a disease resulting from the presence of stones in the kidneys or urinary tract. It, increasingly every day, asserts itself as a sign which reflects our socio-economic life conditions, and our dietary habits. Many plants species, described in pharmacopoeias of several countries is used as a remedy for urinary stones. The selection of the plant *Ziziphus lotus* (Rhamnaceae family) was done according to an ethnopharmacological survey on medicinal plants used in the region of the south west of Algeria to cure the urinary tract diseases. On the first stage, we have studied the crystallization of struvite "*in vitro*" without inhibitors. The work was resumed, and this time by crystallization with inhibitors in order to explore the influence of the medicinal plant extracts on the phase of crystallization of struvite. We have used an optical polarizing microscope to follow the evolution of the size of crystals and aggregates as a function of time. At the end of the experiment, the crystallization precipitate subjected to the spectroscopic analysis IRTF. The results of the most of the organic and aqueous extracts compared to crystallization without inhibitor have a significant inhibitory effect on the size of crystals and aggregates of struvite. It is very important reduction for the aqueous, chloroforme and hexane extracts (12 to 5-8 μm), we have observed a decrease in the size of the aggregates in the presence of all the extracts. This reduction is important for the chloroforme extract (45 to 8-10 μm) and hexanes extract (45 to 8-12 μm)

Biography

Nacira Benahmed contributes to one of the scientific researches in the laboratory of phytochemical and organic synthesis (LPSO) which is based on the study of the inhibitory power of extracts of medicinal plants of the region of the south west of Algeria on crystallisation of phosphates lithiasis.

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