

## PREPARATION OF SULFUR NANOPARTICLES AND INVESTIGATING THEIR ACTIVITIES AGAINST CANCER CELLS

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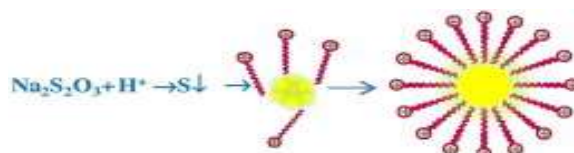
### Abstract

Sulfur is an important element has many practical applications in present as nanoparticles. Nanosize sulfur particles also have many important applications like in pharmaceuticals, medicine, synthesis of nano-composites for lithium batteries, modification of carbon nano tubes [1]. Different methods were used for nano-sized particle synthesis; among those, chemical precipitation, electrochemical method, micro emulsion technique, composing of oil, surfactant, co-surfactant, aqueous phases with the specific compositions and ultrasonic treatment of sulfur-cystine solution [2]. In this work Sulfur nanoparticles (S NPs) were prepared by a quick precipitation method with and without using a surfactant to stabilize the formed S NPs.

**Keywords:** Sulfur Nanoparticles (S-NPs), TEM, SEM, XRD

### MAIN TEXT

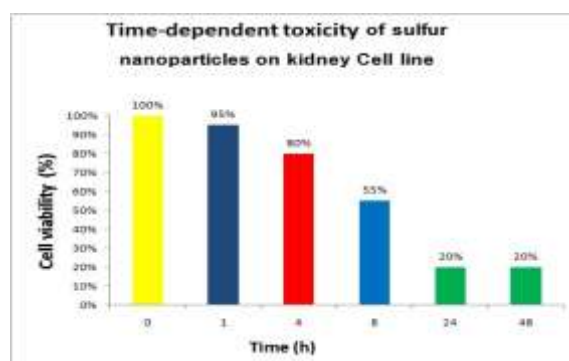
The synthesized S NPs were characterized by XRD, SEM and TEM in order to confirm their sizes and structures.



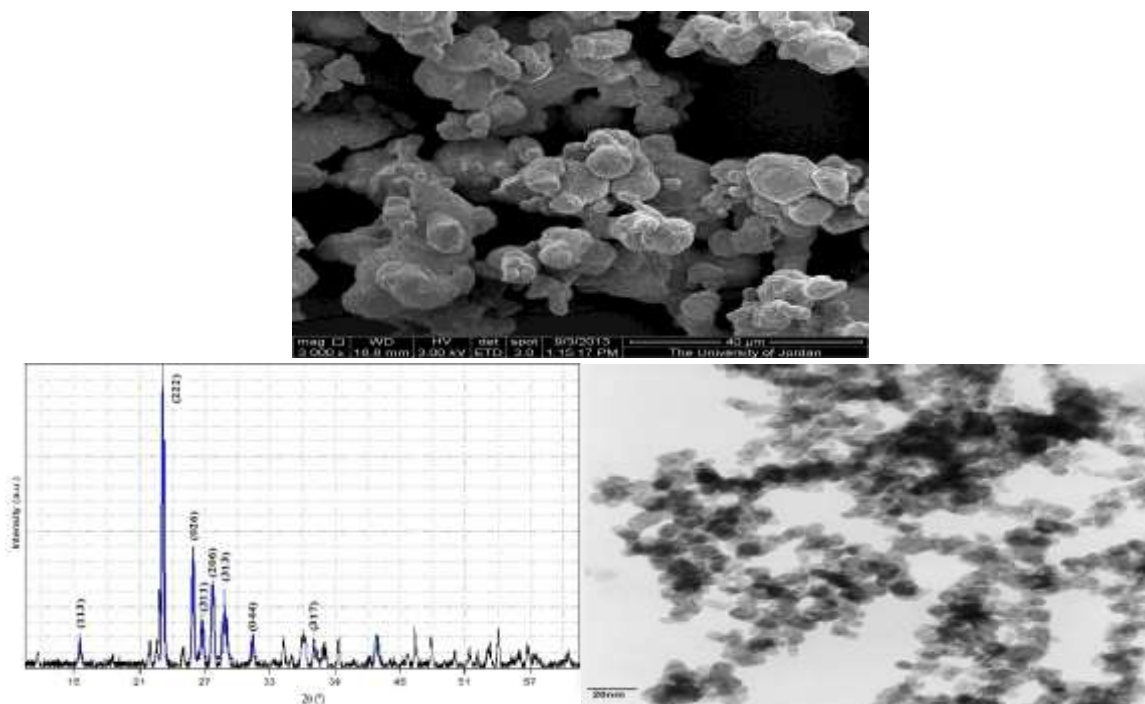
**Scheme 1.** Synthesis of the stabilized S NPs.

Application of nanotechnology is suggested for diagnosis and treatment of cancer [3]. The anticancer activity of the prepared S NPs has been tested on various types of cancer cell clones including leukemia, kidney and colon cancers.

The desired S NPs revealed ahigh promising activity and selectivity toward killing kidney cancer as seen in Figure1.



**Figure 1.** Time-dependent toxicity of (7.3 nm) S NPs in Kidney cells.



**Figure 2.** SEM micrographs, XRD pattern , TEM micrographs of S NPS

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