

عنوان مقاله:

Interaction of Silica Nanoparticles with Hemoglobin: A Fluorescence Spectroscopy Study

محل انتشار:

اولین کنفرانس ملی نانو از سنتز تا صنعت (سال: 1396)

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خلاصه مقاله:

Silica nanoparticles (Si NPs) have received great potentials for applications in cell biology and medicine. However, the application of these materials into the medicine and biotechnology needs further safety experiments. Recently, there have been concerns about the toxicity of NPs including Si NPs used as drugs and carrier in medicine. The biophysical area of Si NPs toxicology is being actively investigated in this research and when using these particles as medicinal agents, it should be borne in mind that they may not be safe towards the biological macromolecules under study. In this study, the interaction of Si NP with hemoglobin was assessed by fluorescence spectroscopy. It was seen the ANS fluorescent intensity of protein increases as the concentration of Si NPs goes up. This increment ratio almost occurs in a time frame from 2 to 10 minutes. These obtained results may suggest that Si NPs can alter the conformational structure of hemoglobin and may disrupt the function of proteins.

کلمات کلیدی:

Si NPs, Hemoglobin, Interaction, Fluorescence, Spectroscopy

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