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Preparation of BSA nanoparticles by desolvation technique using ethyl alcohol as desolvating agent

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Aim: In order to see functionality and toxicity of nanoparticles in various food and drug applications, it is important to establish procedures to prepare nanoparticles of a controlled size. Desolvation, a thermodynamically driven self-assembly process for polymeric materials. Here BSA nanoparticles were prepared by desolvation technique using Ethyl alcohol as desolvating agent.

Methodology: In our study, Ethyl alcohol was added intermittently into 1% BSA solution under stirring at 700 rpm. Amount of Ethanol added, intermittent timeline of Ethanol addition, and pH of solution were considered as process parameters to be optimized. Effect of the process parameters on size of the nanoparticles was studied.

Results: The results indicated that the size control of BSA nanoparticle was achieved by adding Ethanol intermittently. The standard deviation of average size of BSA nanoparticles at each preparation condition was minimized by adding Ethanol intermittently.

Conclusions: Particle size of BSA nanoparticles prepared by continuous addition of Ethyl alcohol as desolvating agent was in between 200-300nm.Whereas uniform particle size was obtained by adding Ethyl alcohol intermittentely. The particle size was found to be in between 180-220nm.FTIR spectra Indicates that there was no drug and polymer interaction.

Keywords: Bovine serum albumin(BSA), Ethanol, Scanning electron microscope(SEM), Fourier Transforms infrared Spectroscopy (FT-IR), Desolvation technique, Continuous and intermittent addition methods.

Biography

Abbaraju Krishna Sailaja is M-Pharm (Ph.D) with an overall experience of 8 years in various fields such as Teaching, Research and in Drugs control administration. She worked as Assistant Professor for a period of 3 years, worked as Drugs Inspector for 1 year worked as JRF for two years and working as senior research scholar since 2010 in Osmania University Hyderabad. Published 15 papers in various national and International Journals of High repute. Published one book titled as “PPARg polymorphisms and their association with type 2 diabetes”. Attended various conferences and presented papers.

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