Special Issue

Nanoparticles: The Future of Drug Delivery

Message from the Guest Editors

The emergence of nanotechnology has paved the way for the precise treatment of different diseases due to its intrinsic physicochemical properties. In this Special Issue, Nanotechnology focuses on nanoscale particles under 200 nm diameter and their delivery systems. Current drug delivery nanosystems includes liposomes, solid nanoparticles, nanoparticles, polymeric micelles, nanogels, and extracellular vesicles. Therapeutic agents can be loaded into the core or onto nanoparticle surface via chemical conjugation, physical encapsulation, or electrostatic adsorption. This process allows for the extended blood circulation of drugs, enhanced bioavailability, improved therapeutic responses, and reduced side effects. However, the designed nanosystems also face various challenges, including intrinsic toxicity, off-target effects and obstacles for clinical transformation. Accordingly, this Special Issue seeks to showcase research papers and review articles that focus on developments on novel nanosystems and their use in various biomedical applications.Moreover, comprehensive studies on the toxicity, degradation and metabolism of existing nanoparticles are also welcome.

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