Special Issue

Nano Based Drug Delivery Systems: Future and Development

Message from the Guest Editor

Drugs are a mainstay of modern medicine, but drug development must overcome many hurdles. Nanoparticle technology offers a method to improve therapeutic efficacy by protecting drug cargo and delivering it with high selectivity to a target site. Existing nanoparticle formulations can effectively protect nucleic acids from degradation; however, they do not actively transport cargo to their target cells and low amounts can actively endosomal escape. This low efficiency of cargo delivery suggests the therapeutic potential of nanoparticles could be significantly enhanced with optimisation of nanoparticle/cell interactions to optimise endosomal escape. In this Special Issue we will focus on understanding how nanoparticles can be engineered to better migrate these biological barriers and thus provide more efficient delivery systems in the future. Some relevant topics include:

- Stimuli responsive nanoparticles;
- Controlling loading and release of biological cargo;
- Understanding impact of targeting, internalisation, endosomal escape or intracellular trafficking on therapeutic activity;
- New techniques to study nanoparticle/biological interactions.

Guest Editor

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