Special Issue

Prospects of Nanoparticles in Cancer Nanomedicine

Message from the Guest Editors

The juncture of nanotechnology and medicine gave rise to the field of 'nanomedicine' in the archetypal form of nanoparticles carrying drug molecules, which quickly became one of the most intriguing, but also controversial, branches of a new science. Nanoparticle-based nanomedicine can be broadly defined as the branch of medicine that makes use of nanotechnology for disease prevention, monitoring, and intervention through new modalities for imaging, diagnosis, treatment, repair, and regeneration of biological systems. A first unique attribute of nanomedicines is the ability to modulate the distribution of a payload, resulting in improved bioavailability with increased deposition at the biological target and diminished systemic toxicity. Another unique attribute of nanomedicines is their ability to create a 'nanoenvironment' providing the necessary solubility, stability and protection to the selected payload.

Nanomedicine holds the potential to improve anticancer therapy and diagnosis. No actively targeted or stimulus-responsive cancer nanomedicine has yet been granted regulatory approval. Why have so few nanomedicines entered the marketplace?

Guest Editors

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