Special Issue

Progress in Pharmaceutical Applications of Lipid-Based Nanoparticles

Message from the Guest Editor

Lipid-based nanomaterials and nanoparticles are gaining increasing interest in targeted drug delivery, diagnostic imaging, and nanomedicine. They offer possibilities for encapsulation of both hydrophilic and hydrophobic bioactive guest molecules in nanoscale reservoirs for controlled multidrug release. Moreover, they represent safe systems for nanoformulation of protein and peptide drugs and nonviral delivery of gene-editing complexes. Considerable progress has been achieved with lipid membrane mimetic cubosome and spongosome nanoparticles for anticancer and transcutaneous applications, regeneration after spinal cord injury, and modulation of neural stem cells in brain repair. Recent strategies also include the embedding of drug-loaded lipid nanoparticles in hydrogel matrices and the fabrication of biocompatible scaffolds for neural tissue engineering and neuronal regeneration. This Special Issue of *Nanomaterials* will focus on recent advances and ongoing cutting-edge research in liquid crystalline nanocarriers (cubosomes, spongosomes, hexosomes, and liposomes), nanostructured lipid carriers, solid lipid nanoparticles, and lipid–drug conjugates.

Guest Editor

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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