

Special Issue

Nanoparticle-Protein Corona: A Source of Novel Molecular Targets

Message from the Guest Editor

When nanoparticles are introduced into a biological fluid (serum, urine, cell and tissue lysates), proteins tend to associate on the particle surface to form a protein layer termed the "protein corona" (PC). Many factors affect the PC signature, these include characteristics of the NP (i.e. size, charge, and surface functionalization), the composition of the core NPs, characteristics of the protein (i.e. molecular weight, isoelectric points, structure and folding), characteristics of the interaction (i.e. time, temperature, concentration) and the type of biological sample. Importantly, PC composition vary with individual disease states (e.g. diabetes, rheumatism, cancer, hyperfibrinogenaemia, hypercholesterolemia, obesity, haemodialysis, haemophilia and pregnancy), as well as specific disease conditions (e.g. cancer stage or grade and tumor heterogeneity). Hence, NP surfaces provide a unique platform to sequester, enrich, and identify novel molecular targets with potential diagnostic and therapeutic applicability.

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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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