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Nanoparticle-Macrophage Interactions: Implications for Nanosafety and Nanomedicine

Guest Editors:

Dr. Olesja Bondarenko
1. National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, Tallinn 12618, Estonia;
2. University of Helsinki, HiLIFE unit Helsinki, Finland

Dr. Fernando Torres Andón
1. Center for Research in Molecular Medicine & Chronic Diseases (CiMUS), Universidade de Santiago de Compostela, 15706 Campus Vida, Santiago de Compostela, Spain
2. IRCCS Istituto Clinico Humanitas, Via A. Manzoni 56, 20089 Rozzano, Milan, Italy

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Message from the Guest Editors

Dear colleagues,

Nanoparticles (NPs) offer unique physicochemical properties useful for biomedical applications. Once in the body, NPs are recognized by the immune system. The mechanisms implicated in the uptake of NPs by macrophages that are a major class of phagocytic innate immune cells determine the lifetime of NPs, which has consequences for their nanosafety and biomedical applications. Various strategies have been applied to manipulate the recognition of NPs by monocytes/macrophages and thus, their immunotoxicological properties. NPs have been also designed to target macrophages with the aim to trigger or to inhibit immune responses, for example, killing or reprogramming the tumor associated macrophages.

The aim of the current Special Issue is to cover recent advancements in our understanding of NP-macrophage interactions using in vitro, in vivo, and in silico approaches, novel strategies to control the toxicological and immunological profile of NPs, and innovative ways to modulate the delivery of NPs towards macrophages for safety and medical purposes.

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Dr. Fernando Torres Andón
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Editor-in-Chief

Prof. Dr. Shirley Chiang
Department of Physics, University of California Davis, One Shields Avenue, Davis, CA 95616-5270, USA

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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Contact Us

Nanomaterials Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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