Engineered nanomaterials (ENs) have fundamentally different properties compared to their bulk counterparts and offer great opportunities for diverse technological and biomedical applications. These properties enable unique interaction of ENs with biological systems, and consequently these materials could also exert adverse effects on human health. Understanding the interactions of ENs with biological systems is a key challenge in nanosafety research and could lead not only to the mitigation of EN-induced toxicities but may also promote safe biomedical applications of these novel materials for diagnosis and treatment of human disease. The immune system protects us from foreign materials and microbes, and understanding the mechanisms and consequences of nano-immuno-interactions is of central importance. The FP7-NANOMMUNE Closing Workshop focuses on the interaction between ENs and the immune system and features leading international experts in nanotoxicology, immunology, systems biology (transcriptomics), and material sciences. The Keynote Lecture is presented by Prof. Andrew Maynard, a member of the Advisory Board of the NANOMMUNE consortium. Key results from the FP7-NANOMMUNE project are reported.

FP7-NANOMMUNE is funded by the European Commission through the Seventh Framework Programme. The aim of the project is to elucidate the putative adverse effects of engineered nanomaterials on the immune system through a comprehensive, multi-disciplinary approach involving partners in both Europe and the United States.

Organizer and Chairman:
Prof. Bengt Fadeel, M.D., PhD.
Karolinska Institutet

Please note that participation including lunch and coffee is free-of-charge, but registration by e-mail is mandatory:

erika.witaspi@ki.se

Participation is limited to 100 persons.

Registration deadline: April 30

For more information, please visit:

www.nanommune.eu
Welcome Note and Introduction

Bengt Fadeel
Project Coordinator, Karolinska Institutet, Stockholm, Sweden
Welcome and Overview of FP7-NANOMMUNE

Andrew Maynard (Keynote Speaker)
University of Michigan School of Public Health, Ann Arbor, MI
New Toxicology of Sophisticated Materials: Nanotoxicology and Beyond

FP7-NANOMMUNE: Research Highlights

Valerian Kagan
Department of Environmental and Occupational Health, University of Pittsburgh, Pittsburgh, PA
Carbon Nanotubes: Enzymatic Degradation by Immune-Competent Cells

Anna Shvedova
National Institute for Occupational Safety and Health, Morgantown, WV
Pulmonary Toxicity of Carbonaceous Nanomaterials versus Asbestos Fibres

Annika Scheynius
Karolinska Institutet and Karolinska University Hospital, Stockholm, Sweden
Impact of Engineered Nanomaterials on Exosomes, Endogenous Nanoparticles

Riitta Lahesmaa
Turku Biotechnology Centre, Turku, Finland
Nanotoxicogenomics: Gene Expression Profiling of Engineered Nanomaterials

Related Projects on Nano-Immuno-Interactions

Diana Boraschi
National Research Council, Pisa, Italy
Suitability of in vitro Immunotoxicity Methods for Assessment of Nanomaterials

Barbara Rothen-Rutishauser
University of Bern, Bern, Switzerland
Co-Cultures of Immune and Lung Cells for in vitro Assessment of Nanoparticle Toxicity

Harri Alenius
Finnish Institute of Occupational Health, Helsinki, Finland
Engineered Nanoparticle Effects on Allergic Asthma

Rob Vandebriel
National Institute for Public Health and the Environment, Bilthoven, The Netherlands
Impact of Agglomeration State on Gold Nanoparticles on Pulmonary Inflammation

Victor Puntes
Institut Català de Nanotecnologia, Barcelona, Spain
Impact of Protein Corona on Nanoparticle Interactions with Immune Cells

Fritz Krombach
Ludwig-Maximilians-Universität München, München, Germany
Effects of Quantum Dots on the Adhesion and Migration of Blood Cells

Closing Discussion Panel Members

Sanjay Mathur, University of Cologne, Cologne, Germany; Harald Krug, Swiss Federal Laboratories for Materials Research & Testing, St. Gallen, Switzerland; Anna Shvedova, National Institute for Occupational Safety & Health, Morgantown, WV; Lang Tran, Institute of Occupational Medicine, Edinburgh, United Kingdom; Diana Boraschi, National Research Council, Pisa, Italy; Harri Alenius, Finnish Institute of Occupational Health, Helsinki, Finland

Impact of Engineered Nanomaterials on Exosomes, Endogenous Nanoparticles

Nanotoxicogenomics: Gene Expression Profiling of Engineered Nanomaterials

Effects of Quantum Dots on the Adhesion and Migration of Blood Cells