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In vivo general trends, filtration and toxicity of nanoparticles

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The medical field is a vastly expanding one and with the discovery of nanoparticles (carbon nanotubes, diamondoids, fullerenes, gold and silver nanoparticles, quantum dots, etc.) there lies a vast field of unsolved medical diagnoses to be reassessed. Upon reassessment of the current medical problems, it is important to know what happens to a particle once it is free in the body. This review examines the different destinations of nanomaterials after they enter the body, their toxicity and their filtration. Assessment of the destination of nanoparticles is done in order to find out whether they are removed by macrophages. It is concluded that the strongest trend of the nanoparticles itself is of shape. Toxicity of nanoparticles is found to be mostly dose-dependent. The nanoparticle filtration goal is to have the body naturally filter out the nanoparticles without a response from the immune system.

Biography

Grant A. Hartung just completed his B.Sc. degree in Bioengineering with a Mechanical Engineering minor from the University of Illinois at Chicago. He has a comprehensive educational background in computer science, human neuroscience, information technology, nanotechnology, and pathology. He is the founder of Engineering World Health (EWH) branch of the UIC Biomedical Engineering Society which he also was instrumental to initiate. He has served as the captain and chief fabricator and assembler of the Baja team of the Society of Automotive Engineers which he also was instrumental to initiate. He has created test equipment for medical devices for use in the developing countries and has published in the UIC Bioengineering Student Journal.

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