



Advancement in Cancer Therapy through Modulation of Nano Bio Interface

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Abstract:

The goal of NP-based platforms will be the targeted delivery of therapy to tumors with minimal side effects. Optimizing the interface between NPs and biological environment at various levels should be discussed for improving delivery of NPs to the target tumour area. Successful delivery of NPs into tumor depends on efficiency of crossing few boundaries effectively as discussed in the previous section: NPs needs to be functionalized for circulation through the blood vessels until it reaches tumor vasculature where NPs can make use of the leakiness of the vasculature to enter tumor tissue, once NPs enter the tumor tissue, their transport through the tumor matrix depends on their size and surface properties, and c) Once these NPs reaches single cells

within the tumor matrix, their uptake depends on size, shape, and surface properties of NPs. In this presentation, will discuss a how we can optimize interface between nanotechnology and medicine using gold nanoparticle as a model system. Will also share the results of a recent study where optimization at all three interfaces (monolayer, tissue, in vivo delivery) resulted in 12 to 15% injected NP dose within the tumor. Hence, we will unveil a road-map to clinical translation of GNPs through overcoming barriers at many different interfaces.

Biography:

B Devika Chithrani did her doctoral and postdoctoral studies at the University of Toronto, Canada. She supported by many prestigious scholarships and awards throughout her academic carrier. She is the director of nanoscience and technology development laboratory at the University of Victoria. She leverages nanotechnology to create innovations that advance the care of cancer patients. Her work is featured on the cover of journals and her publications in reputed journals have received close to 7500 citations in few years. She has earned a strong international reputation for her innovative research through her many review articles, book chapters, and invited presentations. She is an associate editor of many nanotechnology-based journals. Her passion is to develop smart nanomaterials to improve existing cancer therapeutics.