

'Delivery of nanoparticles to solid tumors: implication for therapy and diagnosis'

The clinical success of any systemic cancer therapy and detection strongly relies upon the efficient delivery of bioactive agents. The use of nanotechnologies may provide a valuable tool to enhance and improve the delivery efficacy of the commercially available therapeutic and diagnostic molecules and, at the same time, offers novel routes to cancer detection and treatment. However, any blood-born entity has to overcome a series of physiological and patho-physiological barriers before it enters the tumor mass and approaches its cells. Therefore the understanding of the biological and physical factors that regulate vascular and interstitial transport of nano-objects has important implication in the control of tumor development and in the developing strategies to improve drug penetration in solid tumor.

In this lecture the most relevant transport barriers, the experimental techniques used to quantify them will be presented and discussed along with the most recent experimental data on the use of nanotechnology in cancer therapy and diagnosis.

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