Targeted cancer therapies: A chemical pharmaceutics approach

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Targeted cancer therapies are which block the growth and spread of cancer by interfering with molecular targets. Among many possible Targeted therapies delivery of antineoplastic (including biotechnology derived such as siRNA) agents to cancer cells using nanomaterials as pharmaceutical delivery systems is an important strategy. Over the last two decades, nanotechnology has made its impact in every area of science and technology. Many preclinical and clinical studies with nanoparticle based diagnostic and therapeutic system for different cancers are ongoing in different parts of the world. Amongst the different arsenal of nanoparticles, Tumor specific small molecule ligand baring multifunctional nanoparticles that will selectively find and kill cancer cells play a very significant role in development of targeted therapies. Fabrication of the tumor targeted multifunctional nanoparticles with therapeutic excipients to achieve a synergistic therapeutic effect with anticancer agent is an attractive strategy. A novel therapeutic cationic molecule, siRNA and taxol based tumor specific nanoparticle system which currently is in development, targets Prostate specific membrane antigen (PSMA), over-expressed in human prostate cancer. Moreover, since PSMA is also expressed in the tumor neovasculature of other types of cancers, the resulting system may be exploited to target those cancers as well. In this talk will present the development of therapeutic lipid constituted PSMA targeted nanoparticles.

Biography

B Surendar Reddy has completed his PhD at Indian Institute of Chemical technology, Hyderabad, India and postdoctoral studies from Professor Leaf Huang’s lab at University of North Carolina, Chapel Hill, U.S.A. He is working as a scientist at Central Drug Research Institute, Lucknow, India. He has published more than 15 papers in reputed journals.

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