

**Title: Personalized nanomedicine: A new era of targeted cancer therapy**

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**Abstract:** The design and syntheses of biocompatible, multifunctional nanomedicines are emerging fields of research with important applications in the targeted drug delivery and cancer treatment. Our lab is focused on developing new biodegradable, polymeric and magnetic nanomedicines for the targeted delivery of theranostic agents to the specific tumor. New methods for three-dimensional hyperbranched polyester (HBPE) polymer synthesis and polymeric nanomedicine formulation are developed for the targeted cancer imaging and treatment. This presentation will include the importance of nanotechnology in the evaluation of therapeutic efficacy of new line of anti-cancer drugs. Inhibitor-induced cancer nano-chemotherapeutics are developed and showed more than 80% of lung cancer cell death within 24 h of incubation. Results indicated that nanotechnology-based combination therapy approach is one of the most effective ways for effective drug delivery and to overcome the multidrug drug resistant (MDR) effect.