Abstract

"Small molecule based drug delivery system and its bioimaging"

The advances in genomics, proteomics, and bioinformatics have directed the development of new anticancer agents to reduce drug abuse and increase safe and specific drug treatment. Theranostics, combining therapy and diagnosis, is an appealing approach for chemotherapy in medicine which exhibit improved biodistribution, selective cancer targeting ability, reduced toxicity, masked drug efficacy, and minimum side effects. The role of diagnosis tool in theranostic is to collect the information of diseased state before and after specific treatment. Magnetic particle-, mesoporous silica-, various carbon allotrope-, and polymer nanoparticle-based theranostic systems are well accepted and clinically significant. Currently, small conjugate-based systems have received much attention for cancer treatment and diagnosis. The structural architecture of these systems is relatively simple, compact, biocompatible, and unidirectional. In this talk, the latest developments on small conjugate based theranostic agents for tumor treatment and diagnosis using fluorescence undertaken in my lab will be given.