

# Targeted Drug Delivery System (TDDS): Encapsulating Newly Synthesized Anti-cancer Compounds-Conjugated Gold Nanoparticles

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## Abstract

Targeted drug delivery system(TDDS) is the most important research field for the design and development of pharmaceutical drugs. The basic premise of a TDDS is to concentrate the drug in the tissues of interest while reducing the relative concentration of medication in other remaining tissues [1, 2]. As a result, the drug is localized to a greater degree on the targeted site while leaving surrounding tissues unaffected. The ideal drug delivery system delivers drug at rates finely tuned to the biological requirement of the body sign and development [3, 4]. The significant advantage with TDDS includes protecting the payload and improving therapeutic index [4-6]. TDDS has several advantages for the treatment of disease quantitatively. For instance, drug localization, decreased side effects, reduced dosage, modulated pharmacokinetics, controlled bio-distribution, and most importantly, improved patient's compliance [7, 8]. In this context, TDDS, especially gold-based nanoparticles (AuNPs) will be used as a model system in this work. The main objective and basic principle behind the concept of targeting is that, the specific drug receptor is targeted to fit and improve their binding affinity, to the specific receptor that ultimately will trigger the pharmacological activity [9].

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