

# Summary of Poster

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The current preferred treatment for cancer is oral chemotherapy because it is the most efficient and does not have as many side effects as other cancer treatments. However, there is a lot of work to be done to improve the efficacy of chemotherapy since it kills healthy cells along with cancer cells. Targeting is an especially useful approach in cancer therapy, as most of the commonly used anticancer drugs have serious side-effects because of their adverse effect on healthy cells. In other words, anticancer drugs in chemotherapy have poor bioavailability when it comes to targeting cancer cells, which greatly limits their applications in cancer treatment. Thus, to improve the drug bioavailability and avoid premature release of the anti-cancer drug before it reaches the targeted cancer cells, targeted drug delivery systems based on nanomaterials are now being explored. Since most cancer cells have a more acidic environment compared to normal cells, an efficient way to control the drug release behavior is by using pH as a stimulus. An experiment will be conducted using an oral drug delivery system in which double helical mesoporous silica nanotubes will be encapsulated with doxorubicin hydrochloride (DOX), a well-known anticancer drug, which will then be released at specific pH level in the body to target cancer cells.