

## Abstract

# Effect of Paclitaxel Loaded Chitosan Nanoparticles and Quantum Dots on Breast Cancer <sup>†</sup>

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**Abstract:** The aim of the study was to investigate the effect of paclitaxel loaded nanocarrier systems (chitosan nanoparticles or quantum dots) on breast cancer. Paclitaxel loaded chitosan nanoparticles and quantum dots were prepared with the particle size of 153.6 nm and 302.8 nm respectively. The activities nanocarrier systems were determined using 7–12-dimethylbenz a anthracene (DMBA)-induced breast cancer model in six-week-old female, nonpregnant, Wistar albino rats. Paclitaxel loaded nanocarrier systems were administered intraperitoneally to tumor bearing rats and their tumor volumes were measured. At the end of the experiment rats were sacrificed and their tissue sections were analyzed. Both nanocarrier systems (chitosan nanoparticles or quantum dots) successfully reduced the tumors size. This study provides some information about the preparation techniques of paclitaxel loaded nanocarriers and some possible alternatives or strategies for the treatment of breast cancer using these nanocarriers.

**Keywords:** Breast cancer; DMBA; paclitaxel; quantum dots; nanoparticles



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