

A high-throughput 2D cell monolayer cultures and 3D spheroid associated with the development of smart drug delivery systems for cervical cancer treatment using laser

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ABSTRACT

Bionanotechnology plays a key role in the development of new therapies, applications of smart drug delivery systems in cancer treatment. In this study, we developed and found that the therapeutics, pharmaceuticals, and efficacy of the association of nanoemulsion (NE) with chloro-aluminum phthalocyanine (AICIPc) photosensitizer induce mitochondrial-mediated apoptotic signaling pathways through reactive species-induced cytotoxicity. oxygen in a cervical cancer cell line (HeLa and SiHa) by in vitro model and 3D tumor (spheroids). The present examinations were for the most part centered around the characterization of NE/AICIPc and their harmful impacts on cervical cancer cell lines. Anticancer potential of NE/AICIPc was studied using HeLa and SiHa cells and the cytotoxic mechanism was using ViaCount (flow cytometry), mitochondrial-mediated apoptotic pathway by Nexin and CellTiter-Glo® Luminescent assays for testing viability of 3D tumors. The present data revealed that the drug delivery system (NE/AICIPc) nanocomplex might include a comprehensive purpose in human cervical cancer treatment.

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