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Nano targeted therapies loaded by curcumin against liver and breast cancer

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Abstract

Curcumin is a more efficient polyphenol than many chemotherapeutics. It can inhibit many signaling pathways at the same time resulting in modulation and down regulation for many oncogenic activities, tumor suppressor genes, several transcription factors and their signaling pathways. However it is still not employed as a potential therapeutic tool for cancer treatment. This is due to its hydrophobicity, its hypersensitivity and its poor adsorption. Many trials have been applied for encapsulating curcumin as a delivery system thinking to save its biological benefits. In our recent work, encapsulated curcumin was successfully used to produce bio cross-linkers for mucoadhesive polymer forming multi branched or flower like shape. Moreover , this strategy is not used only to save its biological function, but also to provide a novel bio cross-linker for hydrogel system. This study was investigated by using scanning electron microscopy, FTIR, U-V Visible Spectroscopy. Encapsulated curcumin provides promising bio safe cross-linker for optimizing hydrogel system, since carboxymethyl cellulose raises its ability to penetrate mucus layer. Additionally, flow cytometry and cytotoxicity show ability of encapsulated curcumin to inhibit proliferation of liver and breast cancer cells

Biography:

Hanafy obtained his bachelor degree (with very good grade, 81.2%) in a biological department - Al Azhar University Egypt. Hanafy achieved the qualification of pre master courses for one full time year with very good marks. In February 2006, Hanafy joined Kuwait university where he developed excellent technical skills in histopathological animal model studies with 5 publications in international peer reviewed journals varying from experimental and therapeutic medicine, nanoscience and nanotechnology to cytology. In 2013, Hanafy was awarded a full time three year contract as a scientific researcher by Marie Curie fellowship and admitted to the Italian Council National Research /Nanotechnology institute. After 6 months there, Hanafy joined a PhD position at Italian Salento University. He ran a very successful project in fabrication of multifunctional drug delivery system, with to date, 60 publications (peer reviewed journal, case reports, scientific abstract, mini review, data raw) with more than 30 presentations across the world. Hanafy has been employed as lecturer based on research at Institute of Nanoscience and Nanotechnology, Kafrelsheikh University

Speaker Publications:

1) **Hanafy, et al.** Materials Science & Engineering C.,2020: 111119.
2) **Hanafy, et al.** *Pharmaceutics* 2020, *12*, 421.
3) Magdy, **Hanafy, N**. et al. Cell. Toxicol. (2020).
4) **Hanafy, et al.** *Appl. Sci.* 2019, *9*(5), 825
5) **Hanafy, et al. Int J Mol Sci.** 2018 Mar 6;19(3).

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