

## عنوان مقاله:

Breast cancer nanophotodynamic therapy: curcumin nanohybrid as potential drug delivery system

## محل انتشار:

یازدهمین کنگره بین المللی سرطان پستان (سال: 1394)

تعداد صفحات اصل مقاله: 1

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## خلاصه مقاله:

Curcumin (1,7-bis(4-hydroxy-3-methoxyphenyl)- 1,6-heptadiene-3,5- dione), an active compound of *Curcuma longa*, have been found to be very potent anticancer agent against many different types of cancer cells. Recent studies show that curcumin can be used as a photosensitizer in photodynamic therapy for cancer treatment. However, the major disadvantage of curcumin is its poor aqueous solubility. To improve its applicability in cancer therapy, we intercalated curcumin into layered double hydroxide (LDH) and used as a nanohybrid photosensitizer in photodynamic therapy of human breast cancer cells. Powder X-ray diffraction (XRD), TEM and SEM microscopy analyses indicate that curcumin is stabilized in the host interlayer. According to the spectroscopy results, the water solubility and dispersity of intercalated curcumin increased and loading amount of curcumin in LDH is about 50%. The photodynamic effect of curcumin and the curcumin– LDH nanohybrid was studied on the MDA-MB-123 human breast cancer cell line. The Cell viability studies revealed that the curcumin–LDH nanohybrid were able to show more effective photodynamic effects on the cancer cells as compared to free curcumin. These results suggest that the biocompatible layered double hydroxide can be used as the basis of a tunable curcumin delivery carrier for photodynamic therapy in breast cancer treatment.

## کلمات کلیدی:

nano photodynamic therapy, breast cancer, curcumin–LDH nanohybrid

## لینک ثابت مقاله در پایگاه سیویلیکا:

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