

Enhancement anticancer effect of Gemcitabine and Kaempferol using multifunctional nanostructured lipid carriers (NLCs) on A549 cell line

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Gemcitabine hydrochloride is a nucleoside analog that phosphorylated by deoxycytidine kinase to active form dFdCTP inhibiting cellular DNA synthesis. It is widely used to treat solid tumors including colon, lung, pancreatic, breast, bladder and ovarian cancers[1]. Kaempferol is an active constituent of *Ginkgo Biloba* L. (Ginkgoaceae), and found induced apoptosis in human non-small lung carcinoma[2].

In cytotoxicity study, we found combined gemcitabine and kaempferol on A549 cell lines showed lower IC₅₀ that implied gemcitabine and kaempferol might display synergistic antitumor effect. In order to delivery gemcitabine and kaempferol simultaneously to cancer cell, we used NLCs as drug vehicle and added functional moieties to increase antitumor efficacy. The results showed that the combination of gemcitabine and kaempferol enhanced antitumor efficacy in human lung cancer cell line, A549 cells and tracing nanoparticles distribution.

References

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