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Cucurbitacin B enhances the cytotoxicity of doxorubicin by increasing intracellular drug accumulation

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We investigated the combined antitumor activity of cucurbitacin B (CuB) and doxorubicin (Dox) in hepatocellular carcinoma cells and explored the potential mechanisms. The cytotoxicity of combined CuB and Dox in HepG2 was investigated with a 3-(4, 5-dimethylthiazol-2-yl)-2, 5-diphenyl tetrazolium bromide (MTT) assay. The effect of CuB on Dox concentration in HepG2 cells was determined by evaluating the influx of Dox and the efflux of Dox from such cells. In vivo effect of combined CuB and Dox on the growth of murine H22 cells was also determined. Our data demonstrated that the cytotoxicity induced by CuB and Dox was additive in HepG2 cells. CuB has significantly increased intracellular Dox concentration by promoting Dox influx and suppressing Dox efflux as well. In vivo anti-tumor activity assay also showed that the combination of two drugs can result in more significant tumor regression compared with single drug usage. In conclusion, our results suggested that combined CuB and Dox may be an promising regime for the chemotherapy of HCC.

Biography

Jiao Yang got her bachelor's degree from Heilongjiang University of Chinese Medicine in 2004. She is now a master student in China Medical University.