

Therapeutic efficacy and safety of Demethoxycurcumin loaded EGFR-targeted nanoparticles for the treatment of lung cancer

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Non small cell lung cancer (NSCLC) is the main type of lung cancer in the world and usually hard to be cured because of metastasis and multi-drug resistance (MDR) occurred in cancer terminal stages. For improving the efficiency of NSCLC treatment, we established the multifunctional biocompatible polymer-blend nanoparticles used as anticancer drug delivery system. The nanoparticles were formed through self-assembled amphiphilic carbomethyl-hexanol chitosan (CHC) with demethoxycurcumin (DMC), and modified with anti-epidermal growth factor receptor (EGFR) antibody on particles surface as targeting. DMC used as anticancer drug could not only reduce cell migration but also inhibit the MDR protein, P-glycoprotein, expression. Through cell viability test, the DMC-CHC particles enhanced the cytotoxicity about 2.5 times due to drug protection compared with free DMC for A549 cell. Moreover, the DMC-CHC provided higher MDR inhibition proved by western blotting. Additionally, the DMC-CHC/anti-EGFR had better specification for A549 cell than DMC-CHC by flow cytometer, which proved the function of targeting. Consequently, the combination of this nano-device provided a novel and efficient cancer treatment method.

Biography

Wei-Ting Huang has completed her MS degree at the age of 24 from National Chiao Tung University and now studies her Ph.D. program in National Chiao Tung University. She had published 2 papers in reputed journals during MS.

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