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Abstract
Antrodia camphorata (AC), a unique fungal species, used as a folk medicine in Taiwan. Hepatocellular carcinoma (HCC) is one of the most prevalent cancers, often respond with limited efficacy to currently available chemotherapeutics with multidrug resistance (MDR) expression. The present study were to establish an evaluation system on MDR, compare the adjuvant anti-cancer effects from ACs mycelia on the human hepatoma cell lines (HepG2, C3A and PLC/PRF/5), which cause resistance to most chemotherapies.
The results indicated that cisplatin and paclitaxel can cause drug resistance and MDR-1 expression were positive on high dose (10 M), while another (Mytomyocin) were more sensitivity and the MDR-1 expression were negative. Meanwhile, we found that diverse ACs on high dose also caused the cytotoxicity by MTT assay as well as the inhibition of MDR-1 expression by western blotting (100 M) such as some chemotherapies induction above. Interestingly, the regiment of ACs treatment (<10 M) combined with chemotherapies to HCC can potentate the anti-cancer activities and decreased MDR-1 expression, but ACs (>10 M) treatment alone also induced the cytoxicity to normal liver cell (BNL).
Our data indicated that treated AC combined with chemotherapies can decrease MDR-1 expression through inhibition COX-2, P-Akt, and increase the PAPR-1 expression to HCC by western blotting. So, we believed that AC may play a important role of adjuvant chemotherapies to regulate MDR for HCC. Continuously, the cell cycle pase and apoptosis percentage (FACS) testing in vitro and in vivo model (ICR nude mice implanted liver tumor cells) to the effect of ACs with chemotherapies will be done.
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