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Author Chih-Liang Pan
Author's Email Address No Public.
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Abstract

Antrodia camphorata (Chinese name, niu-chang-chih or niu-chang-ku) is a very rare and expensive mushroom because it slowly grows on the inner heart wood wall of the Cinnamomum kanehiraae only, which is an unique tree in Taiwan with limited amount. A. camphorata still has not been cultivated successfully. The potential health improvement and disease prevention of Antrodia camphorata have been emphasized in traditional Taiwanese herb medicine. Recent studies demonstrated 2 % (v/v) ethanol-extracts of A. camphorata cultivated by solid-state fermentation could effectively inhibit the proliferation of human lung carcinoma A549 cells in 72 hours.

In this study, we reported a proteomic experiment and showed the appreciable changes in protein synthesis after 8 hours treatment with 0.4% (v/v) ethanol-extracts of A. camphorata on A549 cells. After we compared two-dimension gel maps of non-treated with treated A549 cells using PDQUEST software, we have identified five protein spots,which were 2-fold or above differentially expressed with statistically significance（$P<0.05$）.

These five significantly downregulated protein spots were further identificatied by high performance liquid chromatography-electrospray tandem mass spectrometry (HPLC-ESI/MS/MS). These five proteins were identified as human galectin-1、human eukaryotic translation initiation factor 5A (eIf-5A)、Rho GDP dissociation inhibitor (Rho-GDI)、human calcium-dependent protease (CANP) and annexin V respectively. The results of this study help us to get insight into the effect of ethanol-extracts of A. camphorata cultivated by solid-state fermentation on the gene expression in the tumor A549 cells.
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