

**To investigate the role of cofilin in Apicidin-induced chemical resistance  
HA22T Hepatocellular carcinoma cells**Po-Hsiang Liao<sup>1</sup>., Wei- Wen Kuo<sup>3</sup>., Chih Yang Huang.<sup>1,2</sup><sup>1</sup>Graduate Institute of Basic Medical Science, China Medical University, Taichung<sup>2</sup> Department of Biological technology, Asia University, Taichung<sup>3</sup>Department of Biological Science and Technology, China Medical University, TaichungE-mail: [robert750927@hotmail.com](mailto:robert750927@hotmail.com)**Abstract**

Hepatocellular carcinoma (HCC) is the most common primary tumor of the liver. Chemoresistance is the major issue in HCC therapy. In our previous study indicated that  $\beta$ -catenin play a important role in metastasis in HA22T HCC cell line and HCC patients. Apicidin is a novel HDAC inhibitor, derived from a fungal metabolite, and it's treatment resistant in HCC remains to be elucidated. To establish a stable HA22T HCC cell line chronically resistant to apicidin, HA22T cells were exposed to gradually increasing concentrations of apicidin. We observed that Apicidin-resistant HA22T (Apicidin-R) cells were highly increased highly potentiate metastasis and pro- survival effect and discovered several proteins highly expression in Apicidini-R cell by 2-dimensional gel electrophoresis (2-DE). In this study, we demonstrated that the protein, phosphorylated cofilin 1 (p-CFL1) correlates with Apicidin resistance in HCC cells. Some protein spots between HA22T and Apicidin-R cells were revealed to be significantly different in spot intensity by statistical analysis, Cofilin 1 (CFL1) was selected as a candidate which may play an important role in Apicidin resistance. Higher expression levels of p-CFL1 in Apicidin-R cells were demonstrated. Furthermore, other studies indicated overexpression of CFL1 or phosphorylation of cofilin correlated with tumor metastasis, but we observed that Apicidin-R cells decrease ROS induce mitochondria-dependent apoptosis via phosphorylation of cofilin.