

# Functional Analysis of Pleckstrin-2 Gene in Lung Cancer Cells

唐琬琿、蔡孟

E-mail: 386686@mail.dyu.edu.tw

## ABSTRACT

Lung cancer is one of the most common cancer in the world. Cancer metastasis is a key factor in survival of lung cancer patients. Metastasis process requires many complex steps, including cell adhesion, cell growth, death and angiogenesis. To understand the molecular mechanisms of metastasis, we used a lung adenocarcinoma cell line model, low-metastatic CL1-0 and highly metastatic CL1-5 cell lines, to perform the microarray assay. We found that PLEK2 is upregulated in highly invasive CL1-5 lung cancer cell line. Moreover, the role of PLEK2 and lung cancer is not clear. We established stable knockdown PLEK2 gene system in CL1-5 lung adenocarcinoma cells. The shRNA is a sequence of RNA that makes a tight hairpin turn that can be used to silence target gene expression via RNA interference (RNAi). Finally, we suggested that knockdown PLEK2 gene expression can inhibit lung cancer cells migration, invasion, proliferation, and anchorage-dependent growth ability. We found that the shPLEK2 cells when compared to parental cells have different morphologies. These results can help us understand the role of PLEK2 gene in lung cancer cells. Its potential role in NSCLC progression provides an attractive target for anticancer therapy.

Keywords : lung cancer、metastasis、Pleckstrin 2、PI3K、Epithelial to mesenchymal transition

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