

## Establishment of a Novel Chinese Human Lung Adenocarcinoma Cell Line CPA-Yang1 which Produces Highly Bone Metastases in Immunodeficient Mice

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### 摘要

Background and objective Lung cancer is a common malignancy and is the major determinant of overall cancer mortality worldwide. Approximately 70% of lung cancer patients will die from metastatic diseases. The aim of this study is to establish a Chinese lung adenocarcinoma cell line with high metastasis potency for exploring the mechanism of occurrence and development in lung cancer. Methods The cell came from the pericardial effusion of a fifty-year old male patient with lung adenocarcinoma and the cells in primary culture were obtained successfully. Immunodeficient mice tumorigenicity was assayed. The cell growth curve was mapped. Analysis of chromosome karyotype was tested. Tumor marker was detected by radioimmunoassay. The gene expression was measured by real-time quantitative PCR. Results The first passage cells were planted in immunodeficient mice subcutaneously and the tumorigenesis rate was 100% as well as later passages. Under the microscope, the cell showed larger and semi-suspension, semi-adherence. Approximately  $0.8 \times 10^6$  cancerous cells were injected into left cardiac ventricle or tail vein of immunodeficient mice resulted start to appear lower limb paralysis and spine swelling deformation in the mice after inoculation two-three weeks. The bone metastasis rate was 90% in the tumor bearing mice by bone scintigraphy and pathology and only pulmonary metastasis 10% at the same time. The chromosome karyotype analysis of the cells was sub-triploid. The tumor marker CEA was detected in higher secretion by radioimmunoassay in the cell culture suspension. Quantitative real-time PCR was used to examine and compared SPC-A-1 lung adenocarcinoma, VEGF-C, IL-6, IL-8, genes were overexpressed. The novel cell line was named CPA-Yang1. Conclusion The novel strain CPA-Yang1 is a parental cell with characteristics of bone metastasis of Chinese lung adenocarcinoma. It has stable traits, highly metastatic ability and a good experimental model for lung cancer research.

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


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