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McAb NJ001 plays the key role of immunodiagnosis and immunotherapy for NSCLC

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Abstract

Monoclonal antibody (McAb) is the key tool for cancer immunodiagnosis and immunotherapy. In this study, a cell clone which kept secreting high-titer IgG1-type McAb named NJ001 against human non-small cell lung cancer (NSCLC) cells was obtained. The antigen named SP70 of NSCLC specifically identified by NJ001 was proved to be a protein with the relative molecular mass (Mr) of 70kDa. The results of immunohistochemical staining indicated that NJ001 could positively react to NSCLC, but negatively or weak positively react to human small-cell lung cancer (SCLC), pulmonary pseudotumor and other epithelial tumors. In soft agar assay, the colony formation efficiency in NJ001 groups decreased in a dose-dependent manner. For the concentration of 100 μg/ml, 200 μg/ml and 400 μg/ml, the inhibition ratio of colony formation was 23.4%, 62.5% and 100% respectively. Meanwhile, NJ001 caused significant reduction in tumor volume and tumor weight compared to control mice in lung cancer xenograft model. The tumor growth inhibition ratio in 200 μg, 400 μg and 800 μg NJ001 groups was 10.44%, 37.29% and 44.04%, respectively. NJ001 also led to obvious cytomorphological changes and induced the apoptosis of human lung adenocarcinoma cell line SPCA1 significantly. The newly developed NJ001 selectively reacted to NSCLC and exhibited anti-tumor activity both *in vitro* and *in vivo*. NJ001 is of great value concerning immunodiagnostics and immunotherapy for NSCLC and holds promise for further research regarding the mechanism underlying tumor progression of NSCLC.

Biography

Professor Shiyang Pan has studied lung cancer over 20 years, during which time he has authored more than 100 peer-reviewed reports. He has served on the editorial board for the *Chinese Journal of Laboratory Medicine.* Dr. Pan is the director of the Laboratory Medicine Department of Nanjing Medical University and the National Key Clinical Department of Laboratory Medicine. He is the Chairman of the Jiangsu Society of Laboratory Medicine, and a member of the Standing Committee of Chinese Society of Laboratory Medicine, and he has served on review committees for the NSFC and Health Administration of China.