Conclusions: The obtained results have shown the possible relation between the GSTT1 genotype and the level of chromosome aberrations in somatic cells of lung cancer patients.

P2-141

Antitumor effect of antibody against a novel antigen (UOEH-LC-1) on lung cancer xenotransplanted into SCID mice

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Background: The clinical application of monoclonal antibodies has been well established for the treatment of various human cancers. However, there were a few reports which showed the effectiveness of antibody therapy against lung cancer. In the present study, we report a novel cell surface antigen which was identified by SEREX method by using the antibody (Ab) derived from tumor-infiltrating B lymphocytes (TIB).

Methods: A904L, a lung large cell carcinoma cell line, was established from patient A904. A904L cells were xenografted into SCID mice. SCID mice engrafted with the lung cancer were bled by retro-orbital venipuncture every 2 weeks and the amount of human immunoglobulin produced from TIB in the blood was analyzed by ELISA. A cDNA library was constructed from A904L cells and immunoscreening was performed by SEREX method by using IgG derived from TIB.

Results: A homology search through BLAST database revealed that the 22 antigen genes included 13 function-known and 9 function-unknown genes. Identified antigens were sequenced and 4 of these antigens had extracellular domain. We designated one of these antigens as UOEH-LC-1. The mRNA expression of UOEH-LC-1 was investigated in lung cancer cell lines, normal tissues and tissue specimens of lung cancer, using quantitative RT-PCR. UOEH-LC-1 was overexpressed in 9 of 15 (60%) lung cancer tissues compared with the paired normal lung tissues. UOEH-LC-1 was also overexpressed in 5 of 11 (45.5%) lung cancer cell lines and also was overexpressed in 9 of 15 (60%) lung cancer tissues compared with the paired normal lung tissues. The obtained results have shown the possible relation between the GSTT1 genotype and the level of chromosome aberrations in somatic cells of lung cancer patients.

Conclusions: UOEH-LC-1 was overexpressed on the cell surface of lung cancer. Furthermore, the antibody against UOEH-LC-1 had antitumor activity both in vitro and in vivo. The growth inhibitory effects of the Ab on lung cancer indicates the usefulness of UOEHLC-1 as an effective target for antibody-based immunotherapy.

P2-142

Female adenocarcinoma expresses higher levels of estrogen receptors

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Background: It has been reported that there are several gender-associated differences in clinicopathological features of non-small cell lung cancer (NSCLC). The aim of this study was to measure the relative expression levels of estrogen receptor (ER) mRNA in NSCLC tissue, and to characterize the role of estrogen in gender differences.

Methods: The ER mRNA expression levels in 20 paraffin-embedded samples of surgically resected NSCLC tissue were retrospectively determined by RT-PCR. The ER mRNA expression levels were prospectively measured in snap-frozen materials of both lung cancer tissue and normal lung in patients with adenocarcinoma. In both studies, the gene expression levels were determined as the relative values to the expression level of GAPDH.

Results: In paraffin-embedded materials of NSCLC, the ERα mRNA expression level was significantly higher in females (p=0.0003, versus males), non-smokers (p=0.0001, versus former or current-smokers), and adenocarcinoma (p=0.003, versus non-adenocarcinoma). The ER β mRNA expression level was significantly higher in females (p=0.02, versus males) and non-smokers (p=0.02, versus former or current-smokers). A high expression level of ERα was associated with well-differentiated adenocarcinoma of females. In snap-frozen normal lung tissues, the ERα mRNA expression levels in males (n=4) and in females (n=3) were 9.85±12.80×10^-3 and 8.90±5.90×10^-3, respectively. On the other hand, the ERβ mRNA expression levels in adenocarcinoma tissue had the tendency to be higher in females than in males (15.87±22.57×10^-3 versus 6.40±11.0×10^-3).

Conclusions: ERs were highly expressed in female pulmonary adenocarcinoma tissue. The results suggest that estrogens play a role in the development of female pulmonary adenocarcinoma, and are associated with the gender-differences in NSCLC.

P2-143

Some of the regulators of apoptosis and their concentrations in serum during chemotherapy of lung cancer

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The Fas/FasL system is a primary mediator of apoptosis. It plays an important role in the development of lung cancer. Osteoprotegerin (OPG) blocks endothelial cell apoptosis through binding to TRAIL (TNF-related apoptosis inducing ligand). Elevated serum levels of soluble Fas (sFas), soluble FasL (sFasL) and OPG have been observed in patients with many kinds of cancer. The dates about levels of sFas, sFasL and OPG in lung cancer are poor. The present study was carried out to ana-