

## P033

# Synergistic Effects of DNA Apurinic/apyrimidinic Endonuclease Genotype and Smoking Habit on Lung Cancer Risk Prediction

李芳菁<sup>1,4</sup>, 陳偉峻<sup>1,2,3</sup>, 蔡佳紋<sup>1,5</sup>, 夏德椿<sup>1,2,3</sup>, 張文馨<sup>1,6</sup>, 林良怡<sup>1</sup>, 梁信杰<sup>2</sup>, 涂智彥<sup>1,2</sup>, 施子卿<sup>4</sup>, 包大韞<sup>1,5,6</sup>

**Fang-Jing Li**<sup>1,4</sup>, **Wei-Chun Chen**<sup>1,2,3</sup>, **Chia-Wen Tsai**<sup>1,5</sup>, **Te-Chun Hsia**<sup>1,2,3</sup>, **Wen-Shin Chang**<sup>1,6</sup>, **Liang-Yi Lin**<sup>1</sup>, **Shinn-Jye Liang**<sup>2</sup>, **Chih-Yen Tu**<sup>1,2</sup>, **Tzu-Ching Shih**<sup>4</sup>, **Da-Tian Bau**<sup>1,5,6</sup>

<sup>1</sup>Terry Fox Cancer Research Laboratory,

<sup>2</sup>Department of Internal Medicine, China Medical University Hospital,

<sup>3</sup>Departments of Respiratory Therapy,

<sup>4</sup>Biomedical Imaging and Radiological Science,

<sup>5</sup>Graduate Institute of Basic Medical Science,

<sup>6</sup>Graduate Institute of Clinical Medical Science, China Medical University

**Backgrounds:** To evaluate the association and interaction among *APEX1/Ref-1* (the gene for DNA-apurinic/apyrimidinic endonuclease) genotypic polymorphism, personal smoking habit and lung cancer risk in Taiwan, the polymorphic variants of *APEX1/Ref-1*, Asp<sup>148</sup>Glu (rs1130409), was analyzed in association with lung cancer risk, and discussed of its joint effect with personal smoking habits on lung cancer susceptibility. **Materials and Methods:** In the hospital-based case-control study, 358 lung cancer patients and 716 cancer-free controls frequency matched by age and sex were recruited and genotyped by PCR-RFLP. **Results:** The results showed that the percentages of TT, TG and GG *APEX1/Ref-1* Asp<sup>148</sup>Glu genotypes were 43.0, 41.1 and 15.9% in the lung cancer patient group and 39.9, 46.1 and 14.0% in non-cancer control group, respectively. We have further analyzed the genetic-environmental effects on lung cancer risk and found the contribution of *APEX1* Asp<sup>148</sup>Glu genotypes to lung cancer susceptibility was neither enhanced in the cigarette smokers nor in the non-smokers ( $P=0.3550$  and  $0.8019$ , respectively). **Conclusion:** Our results provide the evidence that the non-synonymous polymorphism of *APEX1* Asp<sup>148</sup>Glu may not directly associate with lung cancer risk, or enhance the effects of smoking habit on the lung cancer development.