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Leptin and leptin receptor single nucleotide polymorphisms are associated to pathological development of oral cancer and affect the susceptibility of carcinogens to oral carcinogenesis**Chia-Jui Weng**

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Oral cancer is causally associated with environmental carcinogens and the susceptibility to carcinogen-mediated tumorigenesis is proposed to be genotype-dependent. Leptin (LEP) and Leptin Receptor (LEPR) both play a crucial role in the mediation of physiological reactions and carcinogenesis and may serve as a candidate biomarker of oral cancer. The present case-control study aimed to examine the effects of *LEP*-2548 G/A (rs7799039), *LEPR* K109R (rs1137100) and *LEPR* Q223R (rs1137101) SNPs with or without interacting to environmental carcinogens on the risk for OSCC. The SNPs of three genetic allele from 567 patients with oral cancer and 560 healthy controls in Taiwan were analyzed. All of the three genetic polymorphisms exhibited insignificant ($P > 0.05$) effects on the risk to have oral cancer. However, the patients with polymorphic allele of *LEP*-2548 have a significant low risk for the development of clinical stage (A/G, AOR=0.670, 95% CI=0.454-0.988, $P < 0.05$; A/G+G/G, AOR=0.676, 95% CI=0.467-0.978, $P < 0.05$) compared to patients with ancestral homozygous A/A genotype. Additionally, an interesting result was found that the impact of *LEP*-2548 G/A SNP on oral carcinogenesis in subjects without tobacco consumption (A/G, AOR=2.078, 95% CI: 1.161-3.720, $p=0.014$; A/G+G/G, AOR=2.002, 95% CI: 1.143-3.505, $p=0.015$) is higher than subjects with tobacco consumption. These results suggest that the genetic polymorphism of *LEP*-2548 G/A (rs7799039), *LEPR* K109R (rs1137100) and *LEPR* Q223R (rs1137101) were not associated to the susceptibility of oral cancer, SNP in *LEP*-2548 G/A showed a poor clinico-pathological development of oral cancer. Population without tobacco consumption and with polymorphic *LEP*-2548 G/A gene may significantly increase the risk to have oral cancer.

Biography

Chia-Jui Weng has completed his PhD at the Department of Food Science and Biotechnology, National Chung Hsing University, Taichung, Taiwan in 2008. He was the Lead Guest Editor of *BioMed Research International* and Guest Editor of *Evidence-Based Complementary and Alternative Medicine (eCAM) Journal*. He is also the Editorial Board Member of *Journal of Turgut Ozal Medical Center*, *Journal of Tumor* and *Journal of Hepatocellular Carcinoma*.

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