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The Author Response

Presence of Evolutionary Pressures or Genotyping Error

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I would like to thank the interest and comments to our paper entitled "*XRCC1* polymorphisms and risk of papillary thyroid carcinoma in a Korean sample" (1). In our study, we genotyped *XRCC1* Arg194Trp and Arg399Gln single nucleotide polymorphisms (SNPs) in 111 papillary thyroid carcinoma patients and 100 normal control subjects. In the results of our study, the *XRCC1* Arg194Trp Arg/Trp genotype was significantly associated with a decreased risk of papillary thyroid carcinoma compared to that of Arg/Arg genotype, while the *XRCC1* Arg399Gln genotype was not associated with a risk of papillary thyroid carcinoma.

I agree with the comments. There was a mistake in the calculation of Hardy-Weinberg equilibrium (HWE). A genotype distribution of XRCC1 Arg194Trp was in HWE (control $P = 0.728$, case $P = 0.768$); however, a genotype distribution of *XRCC1* Arg399Gln deviated from HWE (control $P = 0.0002$, case $P = 0.0003$). The deviation from HWE could be associated with the sampling bias or the presence of evolutionary pressure, and it might be also associated with the genotyping error. As I already mentioned some limitations of our study in the paper, there was a selection bias as a hospital-based case-control study. The control group in our study may not have accurately represented the general population, and the genotype distribution of *XRCC1* Arg399Gln deviated from HWE. Also, our study included a relatively small number of cases and controls. Therefore, the results of our study should be interpreted with caution. A further study with using large, matched case-control samples is necessary to validate the genetic effects of *XRCC1* polymorphisms in the Korean population.

REFERENCE

1. Ryu RA, Tae K, Min HJ, Jeong JH, Cho SH, Lee SH, Ahn YH. *XRCC1 polymorphisms and risk of papillary thyroid carcinoma in a Korean sample. J Korean Med Sci 2011; 26: 991-5.*

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