Meta-analysis confirms that a common G/C variant in the pre-miR-146a gene contributes to cancer susceptibility and that ethnicity, gender and smoking status are risk factors

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ABSTRACT. Evidence has shown that miR-146a is involved in carcinogenesis, and a common G/C variant (rs2910164) in the pre-miR-146a gene has been associated with various types of cancer. We summarized the data from 22 published case-control studies on the association between rs2910164 and cancer risk and performed subgroup analyses by ethnicity, gender and smoking status. We found a significant association between the pre-miR-146a polymorphism and cancer risk in Caucasian populations (odds ratio (OR) = 0.93, 95%
confidence interval (CI) = 0.88-0.99 for G- vs C-allele), while the
significance was borderline in Asian populations (OR = 1.11, 95%CI
= 1.00-1.23 for G- vs C-allele). A significantly increased risk of cancer
was found in males with GG/GC genotypes (OR = 1.23, 95%CI = 1.10-
1.37), and the significance was more pronounced in smokers (OR =
1.82, 95%CI = 1.32-2.51) than in non-smokers (OR = 1.24, 95%CI =
1.01-1.53). We conclude that there is evidence that the pre-miR-146a
polymorphism contributes to cancer susceptibilities and that gender and
smoking status affect the probability of cancer in individuals with this
polymorphism.

**Key words:** miR-146a; Polymorphism; Cancer susceptibility; Gender;
Smoking