Meta-analysis of the relationship between XRCC3 T241M polymorphism and colorectal cancer susceptibility

L.Z. Zhang, Y.S. Li and H.Z. Liu

Department of General Surgery,
Heping Hospital Affiliated with Changzhi Medical College, Changzhi, Shanxi, China

Corresponding author: H.Z. Liu
E-mail: liuhzmed123@126.com

Received May 11, 2015
Accepted July 22, 2015
Published November 18, 2015
DOI http://dx.doi.org/10.4238/2015.November.18.48

ABSTRACT. Numerous studies have evaluated the relationship between the T241M polymorphism of the X-ray repair cross-complementing group 3 (XRCC3) gene and colorectal cancer (CRC) risk. However, the specific relationship remains controversial. We conducted meta-analysis to investigate the relationship between the XRCC3 T241M polymorphism and CRC risk. The PubMed and Embase databases were searched for relevant studies investigating the relationship between the XRCC3 T241M polymorphism and CRC risk. The odds ratio (OR) and 95% confidence interval (CI) were used to assess the possible relationship. Thirteen individual case-control studies, including 4720 cases and 6104 controls, were identified and included in this meta-analysis. Meta-analyses revealed no relationship between the XRCC3 T241M polymorphism and CRC risk (TT vs MM: OR = 0.85, 95%CI = 0.63-1.14; TT vs MT: OR = 0.87, 95%CI = 0.68-1.10; dominant model: OR = 1.18, 95%CI = 0.92-1.50; recessive model: OR = 0.87, 95%CI = 0.69-1.11). In the further subgroup analysis by ethnicity, we found no direct relationship between the polymorphism and CRC risk in either Asians or Europeans. Our findings demonstrated that

©FUNPEC-RP www.funpecrip.com.br
the T241M polymorphism in the XRCC3 gene may not be a risk factor for CRC development.

**Key words:** Colorectal cancer; Meta-analysis; Polymorphism; XRCC3