



# Study on the ERCC1 gene polymorphism response to chemotherapy and prognosis of gastric cancer

L. Liu<sup>1</sup>, C.H. Li<sup>2</sup>, T.F. Jin<sup>2</sup> and D.Y. Xu<sup>3</sup>

<sup>1</sup>Department of Pathology, Affiliated Hospital of Yanbian University, Yanji, China

<sup>2</sup>Department of Gastroenterology and Hepatology, Affiliated Hospital of Yanbian University, Yanji, China

<sup>3</sup>Department of Pathology, Center of Morphological Experiment, Medical College of Yanbian University, Yanji, China

Corresponding author: D.Y. Xu  
E-mail: dongyuanx\_ybu@126.com

Genet. Mol. Res. 13 (4): 8722-8728 (2014)

Received September 27, 2013

Accepted March 29, 2014

Published October 27, 2014

DOI <http://dx.doi.org/10.4238/2014.October.27.13>

**ABSTRACT.** We conducted a cohort study to investigate the role of 2 single-nucleotide polymorphisms of the excision repair cross-complimentary group 1 (ERCC1) gene polymorphism in response to chemotherapy and clinical outcomes of gastric cancer. A total of 231 patients with newly diagnosed and histopathologically confirmed primary gastric cancer participated in the study. ERCC1 rs11615 and rs3212986 were genotyped. Individuals with the ERCC1 rs11615 TT genotype and the T allele showed a significant poorer response to chemotherapy compared to the wild-type genotype. Patients carrying the rs11615 TT genotype (22.8 months) and the T allele (24.2 months) showed a significantly shorter median survival time when compared with the GG genotype (33.7 months). Cox proportional hazard regression analysis showed that adjusted hazard ratios of overall survival in those carrying the rs11615 TT genotype and the T allele were 2.79 (1.15-7.26)

and 1.84 (1.19-2.87) when using the wild-type genotype as a reference variable. In conclusion, this study reports that the ERCC1 rs11615 TT polymorphism can be used as a prognostic marker to determine the clinical outcome of gastric cancer patients treated with 5-fluorouracil-based chemotherapy.

**Key words:** Excision repair cross-complimentary group 1; 5-Fluorouracil; Chemotherapy response; Gastric cancer; Survival time