



## Association between survivin gene promoter -31G/C and -644C/T polymorphisms and non-small cell lung cancer

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**ABSTRACT.** Lung cancer is the most common cancer worldwide. Survivin is one of the first reported inhibitors of apoptosis proteins, which is an important family of proteins that regulate apoptosis. The survivin gene is located on human chromosome 17q25, which is composed of 142 amino acids. A common polymorphism of the survivin gene promoter -31G/C has been shown to influence cancer risk. This genetic variant has been associated with overexpression of survivin at both protein and mRNA levels in cancer cells. We examined promoter (-31G/C) genotype frequency in a patient group (N = 146), 77.4% GG, 18.5% GC, 4.1% CC, and in a control group (N = 98), 57.1% GG, 34.7% GC, 8.2% CC. These distributions were significantly different. Promoter (-644C/T) genotype frequency in the patient group was 40.4% TT, 48.6% TC, 11% CC, and in

the control group it was 55.1% TT, 40.8% TC, 4.1% CC; these distributions were also significantly different. Individuals carrying the survivin 31 GC genotype and those carrying the survivin 644 CC genotype had a significantly decreased risk of having non-small cell lung cancer.

**Key words:** Non-small cell lung cancer; Survivin; Gene polymorphism; Genetics; Biomarker