

**A SINGLE NUCLEOTIDE POLYMORPHISM IN THE 5'
UNTRANSLATED REGION OF *RAD51* IN BREAST CANCER**

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The breast cancer suppressor proteins BRCA1 and BRCA2 interact with RAD51, which plays a central role in homology-dependent recombinational repair of DNA double strand breaks, a process that is essential for maintaining genomic stability. Therefore, genetic variability in the *RAD51* gene may contribute to the appearance and/or progression of breast cancer. Preliminary reports suggest that a single nucleotide polymorphism in the 5' untranslated region of *RAD51* (a G to C substitution at position 135, the G/C polymorphism) may modulate breast cancer risk. We investigated the distribution of genotypes and frequency of alleles of the G/C polymorphism in breast cancer. Tumor tissues were obtained from postmenopausal women with node-negative and node-positive ductal breast carcinoma with uniform tumor size. Blood samples from age-matched healthy women served as the control. The G/C polymorphism was determined by PCR-based *MvaI* restriction fragment length polymorphism. The distribution of the genotypes of the G/C polymorphism did not differ significantly ($P > 0.05$) from those predicted by the Hardy-Weinberg distribution. There were no differences in the genotype distribution and allele frequencies between the node-positive and node-negative patients. There were no significant differences between the distributions of genotypes in subgroups assigned to histological grades according to Scarf-Bloom-Richardson criteria and the distribution predicted by Hardy-Weinebrg equilibrium ($P > 0.05$). Our study implies that the G/C polymorphism of the *RAD51* gene may not be directly involved in the development and/or progression of breast cancer.
Supported by grant 505/431 from the University of Łódź.