

# An Association of FGFR2 rs2981582 with Breast Cancer among Sudanese Patients: A Potential Biomarker for Breast Cancer Prediction

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## Abstract

The current study targeted the frequently reported C/T SNP (rs2981582) of FGFR2 gene to test the role of this SNP in the susceptibility to breast cancer in Sudanese women. We evaluated the role of FGFR2 gene polymorphism (rs2981582) and some non-genetic risk factors on the risk of breast cancer among Sudanese females. We also evaluated the interactions between known risk factors and C/T SNP of FGFR2.

The rs2981582 single nucleotide polymorphism in the Fibroblast Growth Factor Receptor 2 gene has been constantly associated with an increased risk of susceptibility to breast cancer.

DNA was extracted and PCR-RFLP data from 81 cases and 81 controls were analyzed.

The risk allele (T allele) of the rs2981582 polymorphism was associated with an increased risk of breast cancer (P-value= 0.0017) (OR =2.2, CI95%=1.34 to 3.53). Significant association was also encountered between cases carrying this polymorphism and history of benign tumors (P-value = 0.0001), and those with family history of breast cancer in first degree relatives (P-value=0.045) (OR=7.22 CI95%=1.047 to 81.2).

For genotype risk assessment, breast cancer risk significantly increased with TT genotype (P-value =0.0023) (OR=1.711 CI95%=1.16 to 4.04) when compared to the other two genotypes (CC and CT).

Our findings suggest that FGFR2 rs2981582 is significantly associated with breast cancer susceptibility in Sudanese women and present a potential biomarker for breast cancer prediction.

## Biography

Am Sajda Mustafa Satti completed MSc. at the age of 25 years from University of Khartoum, Department of Zoology in Genetics and Molecular Biology. Currently am a lecturer and post graduate program coordinator at Department of Biology and Biotechnology,

Faculty of Science and Technology, Al-Neelain University, Khartoum, Sudan. Also am lecturer at Nahda College, Pharmacy Program, Khartoum, Sudan.