

## عنوان مقاله:

A Molecular Case-Control Study on the Association of Melatonin Hormone and rs#10830963 Single Nucleotide Polymorphism in its Receptor MTNR1B Gene with Breast Cancer

## محل انتشار:

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## خلاصه مقاله:

**Background:** The main function of the pineal hormone melatonin which is mediated via its two receptors, MTNR1A and MTNR1B, is to mediate dark signals in addition to anti-oxidation, immune system enhancement, protection from radiation, and anti-cancer functions. A common single nucleotide polymorphism in the MTNR1B gene is rs#10830963, which is well known as a risk factor for type 2 diabetes mellitus. This study intends to figure out the role of melatonin and its receptor MTNR1B gene rs#10830963 polymorphism in breast cancer incidence, diagnosis and prognosis. **Methods:** This study included 43 females with breast cancer and 45 apparently normal healthy females. Restriction fragment length polymorphism-PCR was used for amplification and genotyping of the MTNR1B gene rs#10830963 polymorphism in whole blood. Serum melatonin levels were measured using a ready-for-use radioimmunoassay kit. **Results:** For the MTNR1B gene rs#10830963 polymorphism, we observed a significantly higher GG genotype frequency among cases (72.1%) than controls (13.3%), with a diagnostic sensitivity of 83.78% and specificity of 76.47%. The cases had a frequency of 11.6% for the CC genotype and 16.3% for the CG genotype which was significantly lower compared to controls that had a 44.4% frequency of the CC genotype and 42.2% frequency of the CG genotype. The GG genotype had a significant association with larger tumor volume ( $P=0.048$ ). Serum melatonin levels were significantly lower among breast cancer patients than controls. Using the ROC curve analysis, serum melatonin showed a significant AUC (72.6%,  $P=9.5$  pg/ml). **Conclusion:** The risk for breast cancer incidence increased as the serum levels of melatonin decreased and in females homozygous for the G allele (GG genotype) of

the MTNR1B gene rs#۱۰۸۳۰۹۶۳ polymorphism. The GG genotype was found to be associated with increased breast tumor volume as a marker of a poor prognosis breast cancer

**کلمات کلیدی:**

**لینک ثابت مقاله در پایگاه سیویلیکا:**

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