

عنوان مقاله:

Early detection of breast cancer using circulating miRNAs in peripheral blood

محل انتشار:

چهاردهمین کنگره بین المللی سرطان پستان (سال: 1397)

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خلاصه مقاله:

Introduction & Aim: The routine screening for breast cancer (BC) depends primarily on imaging techniques such as mammography, although it is not often sensitive enough for early detection and requires complementary approaches. The discovery of microRNAs (miRNA) has opened a new window for tumor diagnosis. miRNAs are a class of small noncoding RNAs that control gene expression by targeting mRNAs. The aberrant expression is involved in human disease, including breast cancer. The aim of this study was to identify novel biomarkers of circulating miRNAs for detecting BC in early stages. **Methods:** we analyzed the data of miRNAs expression related to 778 patients diagnosed with breast cancer and, 87 control samples, and 5239 healthy and unhealthy samples regarding 13 different types of cancer from The Cancer Genome Atlas (TCGA) database. Twenty-two candidate miRNAs were identified that could distinguish individuals with breast cancer from normal ones based on two bioinformatics approaches: Machine learning and differentially expression. We used quantitative real-time polymerase chain reaction (qRT-PCR) to validate miRNAs expression levels, in whole blood samples from 71 breast cancer patients and 61 healthy controls. **Results:** We demonstrated that seven miRNAs could be used as potential biomarker to detect breast cancer in early stages. **Conclusion:** These findings suggest that assessment of miRNAs in blood samples can be applied as minimally non-invasive markers for early detection of breast cancer

کلمات کلیدی:

Breast cancer, Early detection, miRNA, Biomarker

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