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Recognition of New Biomarkers in the Epigenetic Pathway of Breast Cancer

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Abstract : This study aimed to evaluate the expression of miR-299-3p, DNMT1, DNMT3A, and DNMT3B in breast cancer samples and investigate their diagnostic significance. Using the GSE40525 and GSE45666, the miR-299-3p expression level was studied in breast cancer tissues. Also, the expression levels of DNMT1, DNMT3A, and DNMT3B were investigated by analyzing GSE61725, GSE86374, and GSE37751 datasets. The target genes were studied in terms of biological processes of molecular functions and cellular components. Consistent with the in silico results, miR-299-3p expression was substantially decreased in breast cancer tissues, and the expression levels of DNMT1, DNMT3A, and DNMT3B were considerably upregulated in breast cancer samples. It was found that the expression levels of miR-299-3p and DNMT1, DNMT3A, and DNMT3B could be valuable diagnostic tools for detecting breast cancer. Also, miR-299-3p downregulation may play a role in DNMT1, DNMT3A, and DNMT3B upregulation in breast cancer.

Keywords : breast cancer, miR-299-3p, DNMTs, GEO database
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