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HER3 Gene Expression Study by RT-PCR in Patient with Breast Cancer

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Abstract

Introduction: Today, cancer is the most common and important diseases worldwide which extensive research is done to prevent and treat cancer. HER3 is a membrane- bound protein that is encoded by ErBB3 gene. After heterodimerization with other family members it can be phosphorylated and activated. The aim of this study was HER3 expression investigation as a factor involve in the spread of breast cancer.

Methods: In this study 20 breast cancer and 20 healthy paraffin embedded tissue samples were collected from Mehr Hospital of Tehran in Jan up to Sep 1392. RNA was extracted from tissue samples by RNX solution, and then cDNA synthesis was carried out by Rnadom Hexamer and oligo dT primers and MMULV enzyme. After that PCR reactions were optimized for HER3 gene by using specific primers. PCR products were determined by electrophoresis in Agarose gel.

Results: Her3 gene expression in 70% of patients samples due to the presence of bands observed on agarose gel and specific band were not observed in 30% of samples. In addition to, in 20% of normal samples PCR product were observed but in 80% of normal samples band didn't observe.

Conclusion: on the base of results it could be said that ErbB3 expression is increased in breast cancer patients. Non- significant over expression in normal samples indicate that increased expression of HER3 is a reliable factor to detect the disease in early stages, or even thought it could be a prognostic factor in breast cancer.

Keywords: Breast Cancer, Gene Expression, ErbB-3, RT- PCR.