

## EVALUATION OF TP53 GENE EXPRESSION IN FFPE OF BREAST CANCER PATIENTS

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### ABSTRACT

#### Background

Breast cancer is a malignant tumor arising from the terminal duct lobular unit of the breast tissues. It is most prevalent malignancy in women and its incidence is increasing globally and the lifetime risk of developing breast cancer between 5-10%. Tumor suppressor gene TP53 is essential for preventing inappropriate cell proliferation and maintaining genome stability and integrity following genotoxic stress. TP53 gene is the most commonly mutated gene in cancer and approximately 20% of breast cancer. Thus, gene expression was investigated.

#### Patients and Methods

One hundred formalin fixed paraffin embedded (FFPE) tissues samples of malignant breast tumor as well as 100 FFPE samples of normal breast tissues samples obtained from same patients were investigated. The blocks of breast cancer patients were collected from Al Sadder Medical City, Najaf, Iraq. Ages of patients were expressed as Mean  $\pm$  S.D 48.4  $\pm$  10.90 year with a minimum to maximum of 20 -75 years. Nucleic acid (RNA) isolated and evaluated by picodrop spectrophotometer for the expression of TP53 gene by qRT-PCR. cDNA was prepared using the High Capacity RNA-to-cDNA (ABI). For real-time quantitative PCR (RTQ-PCR), 100 ng cDNA was added to SYBR Green Master Mixture (Applied Biosystems) and run in Corbett Real-time PCR System.

#### Results

The current study involved investigated of TP53 gene expression in FFPE tissues of breast cancer tissues. TP53 gene expression was indicated to be 44 fold ( $P < 0.001$ ) relative to housekeeping gene (18S rRNA).

#### Conclusions

TP53 gene is a major tumor suppressor that is altered by mutations in 50% of human cancers and functionally inactivated in other 50%.

**KEYWORDS:** TP53, Breast Cancer, Tumor Suppressor Gene