

Analysis of TP53 gene expression and p53 level of human hypopharyngeal FaDu (HTB-43) head and neck cancer cell line after microRNA-181a inhibition

ABSTRACT

The identification of new biomarkers for early detection of highly recurrent head and neck cancer is urgently needed. MicroRNAs (miRNAs) are small and non-coding RNAs that regulate cancer-related gene expression, such as tumor protein 53 (TP53) gene expression. This study was carried out to analyze TP53 gene expression using real-time PCR and to determine changes in intracellular p53 level by flow cytometry after downregulation of miRNA-181a miRNA inhibitor in the FaDu cell line. TP53 gene expression showed a 3-fold increment and the p53 protein level was also increased in the miRNA-181a-treated cells. In conclusion, miRNA-181a binds to the TP53 gene and inhibits its expression, decreasing the synthesis of p53.

Keyword: Head and neck cancer; miRNA-181a; p53