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MiR-34a replacement effect on growth and migration inhibition in HCT 116 colon cancer cell

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Introduction: Colorectal cancer is the most common cancer of the digestive tract and is also the fourth leading cause of death in the world. Colorectal cancer is the third most commonly reported case in women, and is the second leading cause of cancer deaths in women. In this study, we increased the miRNA-34a substitution in colon cancer cells by transferring the miRNA-34a gene and expressing this miRNA in these cells and examined the effects of this miRNA on growth and migration inhibition.

Methods: Cancer cells were cultured in HCT-116 in RPMI1640 culture medium and all cellular experiments were performed in a logarithmic growth phase. For the transfer of miRNA-34a into colon cancer cells, the JetPAI regent (poly plus) was used. The expression of miR-34a was induced by qRT-PCR after miRNA induction. To investigate the effect of miRNA on the cellular migration status after induction of wound healing. Ultimately, the cells induced by untreated cells were compared and significant amounts were determined.

Results: MTT assay showed that miR-34a induction induced death of cells in a dose-dependent manner. The results of the qRT-PCR test showed a significant increase in the expression of miRNA-34a in the transfected HCT116 cells. Ultimately, the results of the wound healing test demonstrated a reduced migration of transfected cells compared to control cells.

Conclusion: The results revealed that the increase of miRNA-34a induced cell death and decreased both metastasis and migration of HCT-116 cell line colon cancer cells.

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