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MicroRNA-145 functions as a tumor suppressor by targeting matrix metalloproteinase 11 and Rab GTPase family 27a in triple negative breast cancer

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Through increasing evidences have documented that microRNA-145 (*miR-145*) acts as a tumor suppressor in breast cancer, its exact role in triple negative breast cancer (TNBC) remains poorly defined. In this study, the expression of *miR-145* in human TNBC cells and samples from 30 patients was analyzed by stem-loop real-time PCR. We found that *miR-145* was significantly downregulated in TNBC tissues and cells. Upregulating *miR-145* in HCC1937 cells dramatically suppressed cell proliferation and induced G1 phase arrest, whereas MDA-MB-231 cells did not show growth inhibition. *MiR-145* exhibited inhibitory role in cell invasion through the post-transcriptional regulation of the novel targets MMP11 and Rab27a in TNBC cells. Additionally, *miR-145* silencing could be reversed by DAC. These results demonstrated that *miR-145* plays inhibitory role in TNBC malignancy by targeting MMP11 and Rab27a, which might be potential therapeutic and diagnostic targets for TNBC.

Biography

Feng Yan is the Vice Director of Department of Clinical Laboratory in Nanjing Medical University Affiliated Cancer Hospital and Jiangsu Cancer Hospital. The research works focus on the Bioanalytical Chemistry in laboratory medical diagnostics, particularly in detection of tumor markers and tumor cells. She has published 42 papers in SCI journals.

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