Targeting oncogenic microRNAs in Triple Negative Breast Cancer using CRISPR/cas9 approach

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OBJECTIVES

- Construction of CRISPR/cas9 system against microRNAs upregulated in TNBC cases.
- Incorporation of CRISPR/cas9 system in exosomes to improve intracellular delivery.

INTRODUCTION

Triple negative breast cancer (TNBC) represents 15-20% of breast cancer cases (about 2 out of every 10 cases).

Characterized by the absence of three biomarkers: human epidermal growth factor receptor 2, estrogen and progesterone receptor.

Treatment is a major clinical challenge due to lack of targeted therapy

METHODOLOGIES

Dysregulation of microRNAs was involved in the initiation of oncogenesis. Many microRNAs have been associated to TNBC due to their overexpression in this cancer subtype.

CRISPR/cas9 is a powerful genome-editing tool able to knock out the expression of oncogenic microRNAs

Exosomes as a delivery platform of CRISPR/cas9 system in TNBC

REFERENCES