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ABSTRACT

Exploring Stress Conditions Modulating the Expression of the Oncogenic LncRNA LINC01977 in Breast Cancer Cell Line

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LncRNAs play an important role in accommodating cancer growth and tumorigenesis. Thousands of LncRNA have been discovered in the past decade, many of them play critical roles in human diseases, including cancer, and the majority of them remain poorly uncharacterized.

LINC01977 is a long noncoding RNA recently implicated in several cancers. It is considered an oncogenic lncRNA with highlighted roles in previous literature, from promoting breast cancer chemoresistance to increasing aerobic glycolytic capacities of colorectal cancer cells. In an attempt to analyse LINC01977 behaviour under conditions seen in cancer, we have tested LINC01977 expression under normal and hypoxic environments, under oxidative stress from H₂O₂, HGF supplementation, and under serum-starved conditions. Our results were the first to identify an overexpression in LINC01977 that is caused by both conditions: HGF treatment and serum starvation. Our results also indicate the lack of LINC01977 modulation under hypoxia and H₂O₂ stress.

These novel findings highlight the importance of further investigating the possibility of LINC01977's metastatic potential being tethered to HGF presence and serum starvation.

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