

THE KLF6-RELATED SUPER ENHANCER MODULATES CELL PROLIFERATION VIA MIR-1301 IN HUMAN HEPATOMA (HEPG2) CELLS

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Super enhancers, the genome regions including large clusters of transcriptional enhancers, are shown to specifically regulate the genes involved in cell identity and disease, including oncogenes, and to play critical roles in the development and progression of cancer. Recent studies have attempted to elucidate the function of super enhancers by means of microRNAs. Although the functional outcomes of microRNAs have become clearer, the pathways that regulate the expressions of microRNAs remain unclear. In this study, we hypothesized that the inhibition of cell proliferation induced by the disruption of the -related super enhancer may be associated with microRNAs. As a result, it was demonstrated that the over-expression of miR-1301 induced by the disruption of the -related super enhancer leads to a significant inhibition of proliferation in HepG2 cells. Moreover, it was demonstrated that the -related super enhancer propagates the anti-proliferative and pro-apoptotic effects which are mediated, at least in part, by the induction of p²¹ and p⁵³ in a p⁵³-dependent manner.

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