

Role of Long Noncoding RNA HULC on Colorectal Carcinoma Progression through Epigenetically Repressing NKD2 Expression

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Abstract : Recently, long noncoding RNAs (lncRNAs) have been emerged as crucial regulators of human diseases and prognostic markers in numerous of cancers, including colorectal carcinoma (CRC). Here, we identified an oncogenic lncRNA HULC, which may promote colorectal tumorigenesis. HULC has been found to be up-regulated and acts as oncogene in gastric cancer and hepatocellular carcinoma, but its expression pattern, biological function and underlying mechanism in CRC is still undetermined. Here, we reported that HULC expression is also over-expressed in CRC, and its increased level is associated with poor prognosis and shorter survival. Knockdown of HULC impaired CRC cells proliferation, migration and invasion, facilitated cell apoptosis in vitro, and inhibited tumorigenicity of CRC cells in vivo. Mechanistically, RNA immunoprecipitation (RIP) and RNA pull-down experiment demonstrated that HULC could simultaneously interact with EZH2 to repress underlying targets NKD2 transcription. In addition, rescue experiments determined that HULC oncogenic function is partly dependent on repressing NKD2. Taken together, our findings expound how HULC over-expression endows an oncogenic function in CRC.

Keywords : long noncoding RNA, HULC, NKD2, colorectal carcinoma, proliferation, apoptosis

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