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The long non-coding RNA LINC01013 enhances invasion of human anaplastic large-cell lymphoma

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Anaplastic large-cell lymphoma (ALCL) is a rare type of highly malignant, non-Hodgkin lymphoma (NHL). Currently, only studies on the chimeric oncogene NPM-ALK have reported a link to ALCL progression. However, the specific molecular mechanisms underlying the invasion of ALCL are still unclear. Here, we sought to investigate differentially expressed, long non-coding RNAs (lncRNAs) in ALCL and their potential biological function. Our microarray analyses revealed that LINC01013, a novel non-coding RNA gene, was highly expressed in clinical specimens of ALCL and was significantly upregulated in invasive ALCL cell lines. Knockdown of LINC01013 suppressed tumor cell invasion; conversely, its overexpression enhanced tumor cell invasion. LINC01013-induced invasion was mediated by activation of the epithelial-to-mesenchymal transition (EMT)-associated proteins, snail and fibronectin. Specifically, LINC01013 induced snail, resulting in activation of fibronectin and enhanced ALCL cell invasion. Collectively, these findings support a potential role for LINC01013 in cancer cell invasion through the snail-fibronectin activation cascade and suggest that LINC01013 could potentially be utilized as a metastasis marker in ALCL.

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