

Accepted Manuscript

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PII: S0006-291X(17)30313-3

DOI: [10.1016/j.bbrc.2017.02.045](https://doi.org/10.1016/j.bbrc.2017.02.045)

Reference: YBBRC 37293

To appear in: *Biochemical and Biophysical Research Communications*

Received Date: 2 February 2017

Accepted Date: 7 February 2017

Please cite this article as: Z. Liu, Z. Liu, Y. Zhang, Y. Li, B. Liu, K. Zhang, miR-24 represses metastasis of human osteosarcoma cells by targeting Ack1 via AKT/MMPs pathway, *Biochemical and Biophysical Research Communications* (2017), doi: 10.1016/j.bbrc.2017.02.045.

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miR-24 represses metastasis of human osteosarcoma cells by targeting Ack1 via AKT/MMPs pathway

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Running Title: miR-24 represses osteosarcoma metastasis by targeting Ack1

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Abstract

The expression levels of the protein tyrosine kinase Ack1 has been reported to be dysregulated in various cancers and involve in oncogenesis and progression. However, the expression and role of Ack1 in osteosarcoma remains unknown. In this study, we found that Ack1 were evidently upregulated in human osteosarcoma tissues and cell lines. In addition, the clinical data showed that high expression level of Ack1 is closely associated with clinical stage and positive distant metastasis, and negatively correlated with overall survival. Then, bioinformatics prediction and luciferase reporter assay indicated Ack1 as a direct target of miR-24, and Ack1 could be downregulated by miR-24 at both the mRNA and protein expression levels. Moreover, Ack1 expression levels were inversely correlated with that of miR-24 in osteosarcoma tissues. Furthermore, functional assay showed that miR-24 significantly suppressed osteosarcoma progression partially mediated by inhibiting Ack1 expression. Finally, western bolt assay revealed that miR-24 regulate AKT/MMPs pathway via Ack1 in osteosarcoma cells. In conclusion, our study

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