miR-204 suppresses non-small-cell lung carcinoma (NSCLC) invasion and migration by targeting JAK2

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ABSTRACT. Aberrant expression of microRNA is associated with the development and progression of cancers. MicroRNA-204 (miR-204) down-regulation has been previously demonstrated in non-small-cell lung carcinoma (NSCLC); however, the underlying mechanism by which miR-204 suppresses tumorigenesis in NSCLC remains elusive. In this study, miR-204 expression was found to be down-regulated, and that of Janus kinase 2 (JAK2) was found to be up-regulated in four NSCLC cell lines (A549, H1299, H1650, and H358) compared to the normal lung cell line. The overexpression of miR-204 suppressed the invasive and migratory capacities of H1299 cells. A luciferase assay confirmed that the binding of miR-124 to the untranslated region of JAK2 inhibited the expression of JAK2 proteins in H1299 cells. JAK-2 overexpression effectively reversed miR-204-repressed NSCLC metastasis. Taken together, our findings revealed that miR-204 functions as a tumor suppressor in NSCLC by...
targeting JAK2, and that miR-204 may therefore serve as a biomarker for the diagnosis and treatment of NSCLC.

Key words: MicroRNA-204; NSCLC; Metastasis; Janus kinase 2