論　文　全　文　要　約

miR-142-3p Suppresses Invasion and Adhesion of Mesothelioma Cells by Downregulating ITGAV

（miR-142-3p は、ITGAV の発現抑制により中皮腫細胞の浸潤と接着を抑制する）

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全文要約（Abstract）

Mesothelioma is a malignant tumor arising from mesothelial cells, primarily due to asbestos exposure. Recent cancer research has focused on the aberrant expression of non-coding RNAs. microRNAs, classified as non-coding RNAs, are small RNA molecules approximately 20 nucleotides in length that regulate biological functions by silencing target RNAs with complementary sequences. Studies analyzing microRNA expression between mesothelioma cell lines and non-neoplastic pleural tissues have reported decreased expression of miR-142-3p in mesothelioma cell lines. We performed a biological functional analysis of miR-142-3p in mesothelioma and explored downstream targets. A 5617-fold downregulation of miR-142-3p expression was observed in mesothelioma tissues. miR-142-3p mimic-transfected mesothelioma cells were used for biological functional analysis, which showed significant inhibition of cell proliferation, migration, and invasion. In mesothelioma, miR-142-3p plays a tumor suppressor role, suggesting that downregulation of miR-142-3p expression is involved in mesothelioma progression. Furthermore, ITGAV was extracted as a target RNA of miR-142-3p. Immunocytochemistry revealed diffuse ITGAV expression in mesothelioma cell lines. ITGAV mRNA and protein expression was suppressed in mesothelioma cells transfected with miR-142-3p mimic. Biological functional analysis in ITGAV knockdown showed significant inhibition of cell proliferation, migration, and invasion. Cell adhesion assays showed that both miR-142-3p mimic transfection and ITGAV knockdown significantly suppressed cell adhesion. The inhibition of cell adhesion was larger when vitronectin-coated plates were used, suggesting that miR-142-3p/ITGAV has a specific effect on mesothelioma cell adhesion through vitronectin. This study highlights miR-142-3p/ITGAV as a potential biomarker and therapeutic target for mesothelioma.