Impact of Oncogenic Targets Controlled by Tumor-Suppressive miR-30a-5p in Pancreatic Ductal Adenocarcinoma

論 文 要 旨

Impact of Oncogenic Targets Controlled by Tumor-Suppressive miR-30a-5p in Pancreatic Ductal Adenocarcinoma

（ *miR-30a-5p* によって制御される癌促進的分子が膵管腺癌に及ぼす影響 ）

NEPAL PRAMOD

Abstract

Background/Aim: Our recent miRNA analyses have revealed that *miR-30a-5p* has tumor-suppressive activity in pancreatic ductal adenocarcinoma (PDAC). Herein, we sought to identify tumor-suppressive genes controlled by *miR-30a-5p,* emphasizing the genes that are closely involved in the molecular pathogenesis of PDAC. We uncovered several novel findings regarding the pathogenesis of this disease. *Materials and Methods*: *In silico* analyses were used to identify the putative target genes of *miR-30a-5p* and asses their expression levels. Direct regulation of *RRM2* by *miR-30a-5p* and its oncogenic functions were evaluated in PDAC cell lines. The overexpression of RRM2 was demonstrated in clinical samples. *Results*: A total of 24 putative targets were identified by *in silico* database analysis. High expression of 4 genes (*CBFB*, *RRM2*, *AHNAK*, and *DCBLD1*) was significantly associated with shorter survival of patients with PDAC. Functional assays demonstrated that knockdown of *RRM2* attenuated the malignant phenotype of PDAC cells. *Conclusion*: The *miR-30a-5p*/*RRM2* axis facilitated the malignant transformation of PDAC cells.