

MicroRNA-506 plays different roles in the development and progression of pancreatic ductal adenocarcinoma

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BACKGROUND: MicroRNA-506 (MiR-506) has been reported to function as a tumor suppressor gene or oncogene in several tumors. The role of miR-506 in pancreatic ductal adenocarcinoma (PDAC) remains unclear.

HYPOTHESIS: Our large-scale retrospective study of matched PDAC and adjacent non-tumor tissue with clinicopathologic data will display the expression of miR-506 and indicate its role in the development and progression of PDAC.

METHODS: We collected 114 cases of tumor tissue and 92 cases of the adjacent non-tumor tissue from 119 patients with PDAC, including 87 matched tissues. We performed a miRNA in situ hybridization for miR-506 on tissue microarrays with the above tissues. We evaluated the expression of miR-506 in ductal carcinoma, adjacent non-tumor ducts, acinar cells and pancreatic islands. The relationships between miR-506 expression and clinicopathologic features were analyzed in the 114 cases of PDAC.

RESULTS: miR-506 levels in PDAC were higher than that in the adjacent non-tumor ducts, but lower than that in acinar cells and pancreatic islands. The increased expression of miR-506 was found in PDAC, compared with that in pancreatic intraepithelial neoplasia (PanIN) and normal ducts, suggesting that miR-506 might function as an oncogene in the development of PDAC. On the other hand, miR-506 expression was higher in well- and moderate-differentiated PDAC than that in poor-differentiated PDAC, and negatively correlated with TNM stage and metastasis, indicating that miR-506 might inhibit the progression of PDAC.