

Fig. S1 Distribution of histoscores for miR-21 ISH as well as p85 $\alpha$  and PTEN IHC. Mean histoscores were miR-21: 1.4 (SD 1.0); p85 $\alpha$ : 1.1 (SD 0.8); PTEN 0.5 (SD 0.6).



Fig. S2 Representative PTEN IHC.



**Fig. S3 Expression level of miR-21 in TCs**. Baseline expression of miR-21, relative to normal ductal epithelial cells (HPDE), in PDAC TCs (A). Expression levels of miR-21 in MiaPaCa-2 (B) and Hs766T (C) after treatment with negative control (NC) or miR-21 mimic (miR-21).



**Fig. S4 Overexpression of miR-21 causes gemcitabine resistance in PDAC TCs.** PANC-1 cells were treated with negative control (NC) or miR-21 mimic (miR-21) then exposed to gemcitabine for 72h at the indicated concentrations. MTT assays were performed to quantify cell viability. \*p<0.05, \*\*p<0.01, \*\*\*p<0.001, \*\*\*\*p<0.0001.

Patient	Age	Gender	Differentiation	Stage <sup>a</sup>	Tumor	LN	LVI	PNI	Margin
	-			-	Size (cm)				-
1	79	F	Moderate	IIB	3.2	+	-	-	-
2	70	М	Poor	IIB	3.9	+	+	+	+
3	74	F	Moderate	IIB	3.1	+	+	+	-
4	69	F	Poor	IIB	4.1	+	+	+	-
5	59	М	Well	IIB	6.1	+	-	+	+
6	56	М	Moderate	IIB	2.0	+	+	+	-
7	64	F	Moderate	IIB	3.6	+	+	+	-
8	67	F	Moderate	IIB	3.5	+	+	+	+
9	75	М	Poor	IIA	1.8	-	-	+	-
10	48	М	Well	IIB	3.0	+	-	+	+
11	68	F	Moderate	IIA	2.5	-	-	+	-
12	75	М	Moderate	IIA	3.0	-	-	+	+
13	84	F	Well	IIB	3.4	+	+	+	+
14	59	M	Moderate	IIB	3.7	+	+	+	+

Table S1 Clinical data corresponding to tumors used for ISH and IHC

<sup>a</sup>AJCC VII Stage LN, lymph node; LVI, lymphovascular invasion; PNI, perineural invasion