Supplementary Materials

Tumor-Suppressive miR-192-5p has Prognostic Value in Pancreatic Ductal Adenocarcinoma

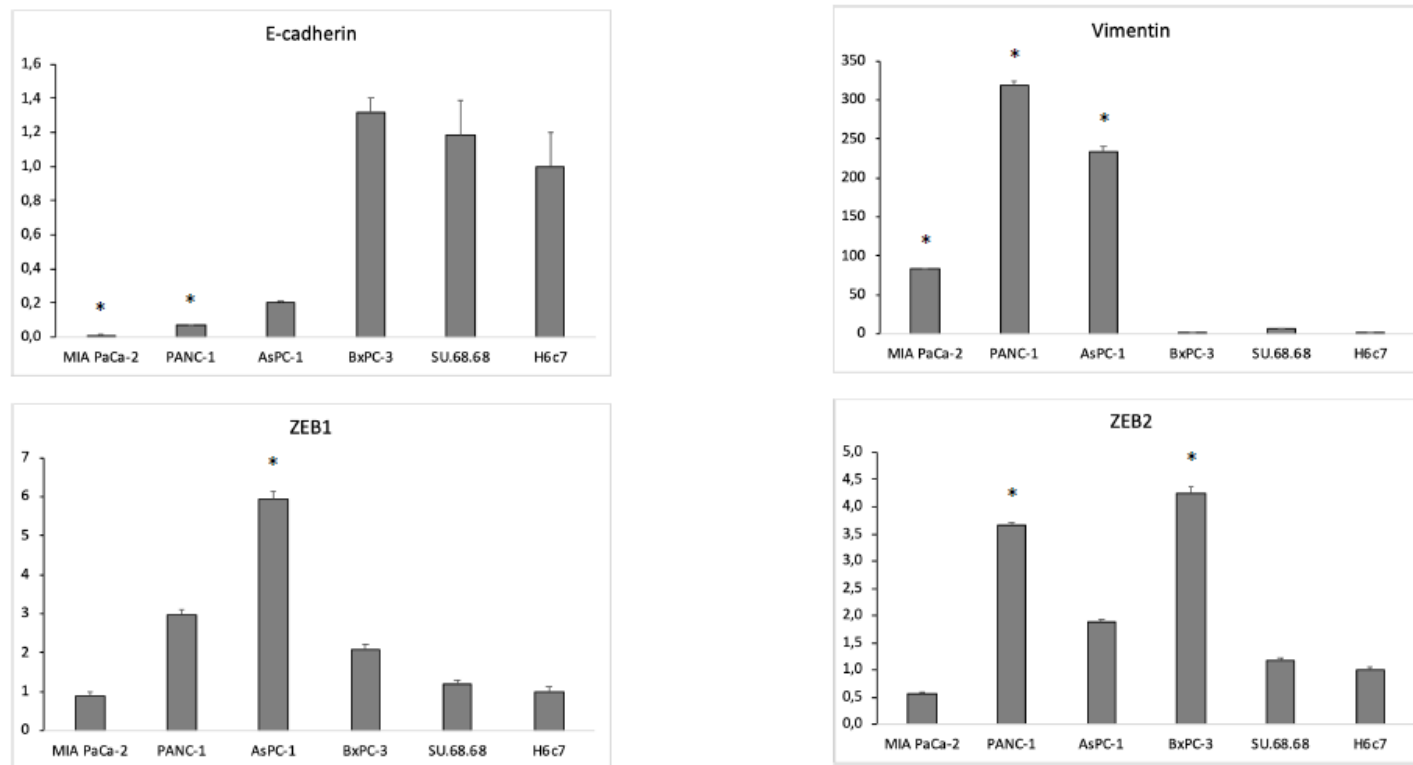**Isabelle Flammang, Moritz Reese, Zixuan Yang, Johannes A. Eble and Sameer A. Dhayat**

Figure S1. Expression of E-cadherin, Vimentin, ZEB1, and ZEB2 in benign and malignant pancreatic cell lines. Data are plotted as $2^{-\Delta\Delta Cq} \pm$ standard error of the mean, relative to benign epithelial pancreatic duct cell line H6c7. * indicates statistical significance to H6c7 as assessed by Kruskal-Wallis test and assumed at $p \leq 0.05$.
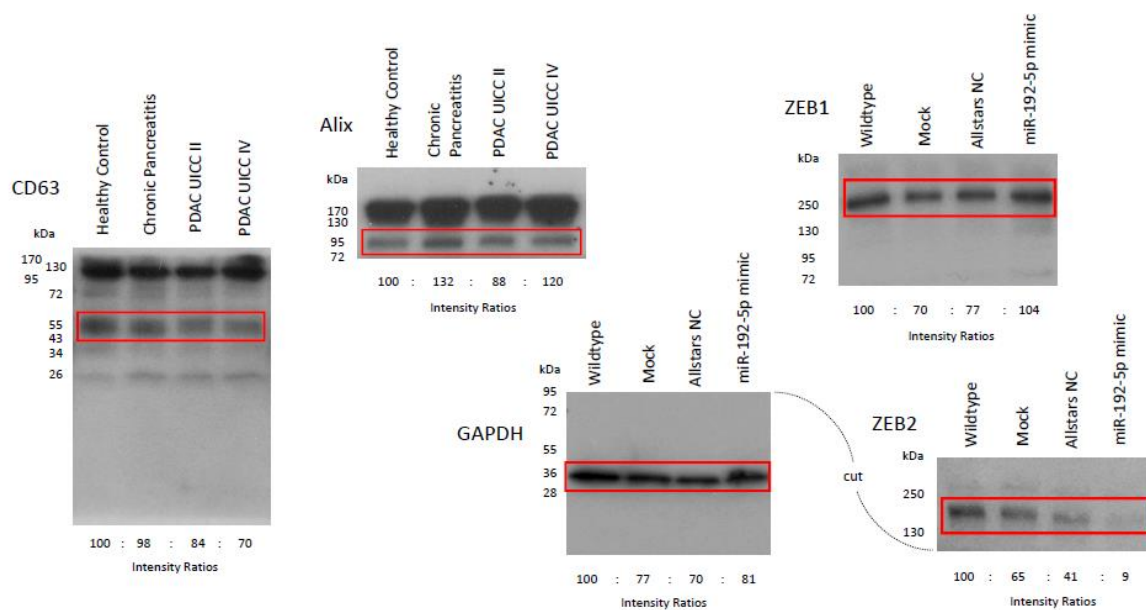
Figure S2. Whole western blot images and intensity ratios relative to healthy controls or wildtype. Red boxes indicate cropped area. Detailed information about western blot can be found at Figure S3.
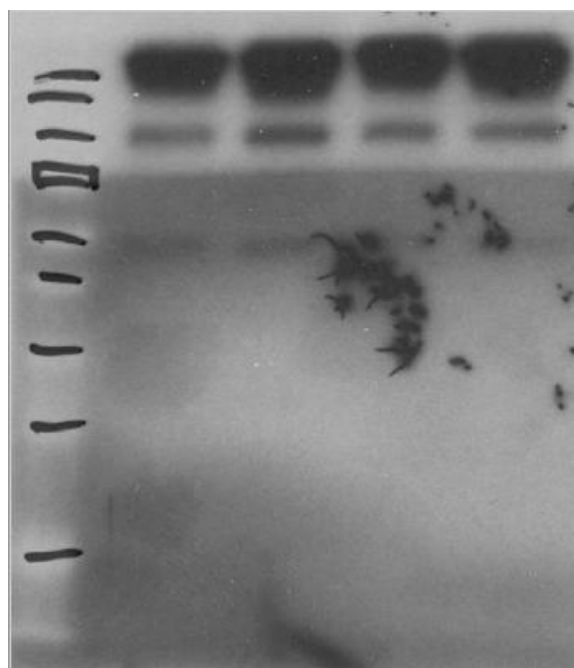

Figure S3. Alix.

Table S1. Landscape of trials investigating microRNA-192-5p in human malignancies.

Study	Entity	Expression				Diagnostic & Prognostic Value
		Tissue	**Blood**	**Exosomes**	**In Vitro**	
Flammang (2020)	PDAC	↓ (n = 31)	↑ (n = 42)	↑ (n = 44)	↑ Primary tumor (PANC-1, MIA PaCa-2) ↑ Malignant ascites metastasis (AsPC-1) ↓ ZEB2 after miR-192-mimic-transfection	- Tissue: AUC 0.86 (PDAC vs. HC) - Serum: AUC 0.64 (PDAC vs. HC) - Exosomes: AUC 0.83 (PDAC vs. HC) - Overexpression in tissue correlated with improved OS (20 vs. 12 months)
Zhao (2013) [30]	PDAC	↑ (n = 80)	↑ (n = 70)		↑ Primary tumor (PANC-1, MIA PaCa-2) ↑ Malignant ascites metastasis (AsPC-1)	- Serum: AUC 0.63 (PDAC vs. HC)
Botla (2016) [31]	PDAC	↓ (n = 94)			↓ cell proliferation ↑ apoptosis	- AUC 0.90 (PDAC vs. HC) - Overexpression correlated with improved OS
Zhou (2018) [27]	PDAC		↑ (n = 41)			- Plasma: AUC 0.937 (PDAC vs. HC)
Zou (2019) [28]	PDAC	↑ (n = 129)	↑ (n = 44)	↑ (n = 32)		- Serum: AUC 0.68 (PDAC vs. HC)
Manohar (2017) [36]	PAC	↑ (n = 109)	↑ (n = 74)			- UICC stage III: overexpression correlated with reduced survival
Huang (2017) [38]	ESCC	↑ (n = 36)	↑ (n = 140)	↑ (n = 28)		- Serum: AUC 0.662 (ESCC vs. HC)
Xie (2019) [45]	GC				↓ Cisplatin-resistant GC cell line	- Overexpression reverses Cisplatin resistance of GC in mice - Potential therapeutic marker
Zheng (2019) [42]	CRC				↓ CRC cell lines (HCT-116, HT-29, SW480, RKO) ↓ cell proliferation ↓ cell migration ↓ cell invasion	
Huang (2020) [43]	CRC				↓ CRC cell lines (HCT-116, SW480) ↓ cell proliferation ↓ cell migration ↑ apoptosis	

Yan-Chun (2017) [47]	HCC		↑ cell proliferation ↑ metastasis	
Chen (2019) [35]	BrC	↓ (*n* = 58)	↓ cell proliferation	
Tavakolian (2019) [34]	BrC	↓ (*n* = 38)		
Zhang (2019) [46]	BrC		↓ BrC cell line (MCF-7/ADR) ↓ Doxorubicin-resistant cell line (MCF-7/ADR) ↑ Doxorubicin sensitivity ↑ apoptosis	
Jin (2015) [44]	NSCLC		↓ cell viability ↑ apoptosis	
Zou (2019) [37]	NSCLC	↓ (*n* = 78 NSCLC with vs. *n* = 68 NSCLC without bone metastasis)	↓ NSCLC cell lines (A549, H1299, PC9, H1650) ↓ cell migration ↓ cell invasion	
Kumar (2020) [48]	NSCLC	↓ (n = 75)		
Chen (2018) [40]	PCa	↑ (*n* = 99) ↑ High grade vs. low grade PCa	↑ cell proliferation ↑ cell cycle progressionn	- Overexpression correlated with shorter RFS
Ji (2018) [33]	BC	↓ (*n* = 60)	↓ BC cell lines (UM-UC-3, 5637, SW 780, J82, T24) ↓ cell growth	
Zhou (2018) [32]	OSC	↓ (*n* = 25)	↓ OSC cell lines (143B, U-2 OS) ↓ cell proliferation ↓ cell migration ↓ cell invasion ↓ apoptosis ↑ Cisplatin sensitivity in OS cells	
Tseng (2019) [41]	Me		↓ cell motility ↓ cell growth ↑ apoptosis	

| Huang (2020) [39] | NPC | ↑ (*n* = 76) | ↑ cell migration
↑ cell invasion
↑ cell growth
↑ EMT- pathways | - Overexpression correlated with poor prognosis |

Abbreviations: ↑, Upregulation; ↓, Downregulation; AUC, area under the receiver operating characteristic curve; BC, bladder cancer, BrC, breast cancer; CRC, colorectal carcinoma; ESCC, esophageal squamous cell carcinoma; GC, gastric cancer; HC, healthy controls; HCC, hepatocellular carcinoma; MM, malignant melanoma; *n*, number of patients; NPC, nasopharyngeal carcinoma; NSCLC, non-small cell lung cancer; OS, overall survival; OSC, osteosarcoma; PAC, periampullary carcinoma; PCa, prostate cancer; PDAC, pancreatic ductal adenocarcinoma; RfS, recurrence-free survival.