

Supplementary Tables

Table S1. Performance of the miRNA panel tested in subjects with PDAC at stages (TNM) compared with that of HC

Stages (TNM)	Subjects recruited	Subjects tested positive	Subjects tested negative	Specificity (95%CI)	Sensitivity (95%CI)	Accuracy (95%CI)
Training cohort						
I	69	60	9	92.4% (88.7%-96.1%)	94.2% (88.7%-99.7%)	92.9% (92.8%-92.9%)
II	108	91	17	89.3% (85.0%-93.6%)	95.4% (91.4%-99.3%)	91.5% (91.4%-91.5%)
III	44	35	9	89.3% (85.0%-93.6%)	90.9% (82.4%-99.4%)	89.6% (89.6%-89.7%)
IV	30	25	5	90.9% (86.8%-94.9%)	93.3% (84.4%-92.9%)	91.2% (91.1%-91.3%)
Validation cohort						
I	60	54	6	92.4% (88.7%-96.1%)	93.3% (87.0%-99.6%)	92.6% (92.6%-92.7%)
II	117	103	14	88.4% (83.9%-92.8%)	96.6% (93.3%-99.9%)	91.4% (91.4%-91.5%)
III	48	36	12	89.9% (85.7%-94.1%)	91.7% (83.8%-99.5%)	90.2% (90.2%-90.3%)
IV	33	27	6	90.4% (86.3%-94.5%)	84.8% (72.6%-97.1%)	89.6% (89.5%-89.7%)

Table S2. Performance of the miRNA panel and common biomarkers in discriminating patients with early-stage PDAC from non- PDAC subjects (CP/HC) in the training cohort

Scenario	Sensitivity (95%CI)	Specificity (95%CI)	Accuracy (95%CI)	AUC (95%CI)
miRNA panel				
Early-stage PDAC vs non-PDAC	93.8% (89.4%-98.2%)	75.7% (71.2%-80.2%)	80.1% (80.1%-80.2%)	0.924 (0.899-0.949)
Early-stage PDAC vs CP	81.4% (74.2%-88.6%)	86.7% (76.7%-96.6%)	82.9% (82.7%-83.1%)	0.905 (0.853-0.956)
Early-stage PDAC vs HC	92.9% (88.2%-97.6%)	92.9% (89.3%-96.5%)	92.9% (92.9%-92.9%)	0.971 (0.956-0.987)
CA125				
Early-stage PDAC vs non-PDAC	81.2% (73.4%-89.1%)	53.7% (47.6%-59.8%)	61.3% (61.1%-61.4%)	0.677 (0.622-0.732)
Early-stage PDAC vs CP	9.4% (3.5%-15.2%)	97.2% (91.9%-102.6%)	33.3% (33.0%-33.7%)	0.468 (0.358-0.578)
Early-stage PDAC vs HC	82.3% (74.7%-89.9%)	66.0% (58.4%-73.6%)	72.4% (72.2%-72.5%)	0.719 (0.655-0.783)
CA19-9				
Early-stage PDAC vs non-PDAC	69.5% (60.7%-78.3%)	80.6% (76.0%-85.1%)	77.6% (77.5%-77.7%)	0.790 (0.732-0.849)
Early-stage PDAC vs CP	52.4% (42.8%-61.9%)	94.7% (87.6%-101.8%)	63.6% (63.3%-64.0%)	0.688 (0.602-0.774)
Early-stage PDAC vs HC	82.9% (75.6%-90.1%)	75.9% (69.5%-82.3%)	78.5% (78.4%-78.7%)	0.820 (0.763-0.878)
CA242				
Early-stage PDAC vs non-PDAC	67.8% (55.9%-79.7%)	69.8% (63.8%-75.9%)	69.4% (69.2%-69.5%)	0.680 (0.598-0.762)
Early-stage PDAC vs CP	54.2% (41.5%-66.9%)	100.0% (100.0%-100.0%)	70.3% (69.9%-70.8%)	0.711 (0.606-0.816)
Early-stage PDAC vs HC	67.8% (55.9%-79.7%)	72.7% (65.5%-79.8%)	71.3% (71.1%-71.5%)	0.682 (0.600-0.765)
CEA				
Early-stage PDAC vs non-PDAC	82.7% (75.4%-90.0%)	41.2% (35.3%-47.1%)	52.8% (52.7%-53.0%)	0.580 (0.522-0.638)
Early-stage PDAC vs CP	13.5% (6.9%-20.0%)	97.4% (92.3%-102.5%)	35.9% (35.6%-36.2%)	0.432 (0.319-0.546)
Early-stage PDAC vs HC	98.1% (95.4%, 100.7%)	26.7% (19.6%, 33.7%)	55.9% (55.7%, 56.1%)	0.520 (0.448, 0.591)

Table S3. Performance of the miRNA panel and common biomarkers in discriminating patients with early-stage PDAC from non-PDAC subjects (CP/HC) in the validation cohort

Scenario	Sensitivity (95%CI)	Specificity (95%CI)	Accuracy (95%CI)	AUC (95%CI)
miRNA panel				
Early-stage PDAC vs non-PDAC	95.1%(91.0%-99.3%)	77.0%(72.6%-81.4%)	81.1%(81.0%-81.2%)	0.861(0.818-0.903)
Early-stage PDAC vs CP	80.6%(72.9%-88.2%)	82.2%(71.1%-93.4%)	81.1%(80.9%-81.3%)	0.814(0.720-0.908)
Early-stage PDAC vs HC	94.2%(89.7%-98.7%)	92.4%(88.7%-96.1%)	93.0%(93.0%-93.1%)	0.933(0.892-0.974)
CA125				
Early-stage PDAC vs non-PDAC	65.5%(55.5%-75.5%)	58.6%(52.5%-64.8%)	60.4%(60.3%-60.6%)	0.621(0.540-0.701)
Early-stage PDAC vs CP	14.9%(7.5%-22.4%)	94.6%(87.3%-101.9%)	38.7%(38.3%-39.1%)	0.548(0.474-0.622)
Early-stage PDAC vs HC	69.0%(59.2%-78.7%)	72.9%(65.7%-80.2%)	71.4%(71.3%-71.6%)	0.709(0.625-0.794)
CA19-9				
Early-stage PDAC vs non-PDAC	63.5%(53.9%-73.2%)	63.5%(53.9%-73.2%)	78.7%(78.6%-78.8%)	0.737(0.668-0.807)
Early-stage PDAC vs CP	46.9%(36.9%-56.9%)	94.7%(87.6%-101.8%)	60.4%(60.1%-60.8%)	0.708(0.623-0.793)
Early-stage PDAC vs HC	79.2%(71.0%-87.3%)	83.7%(78.1%-89.3%)	82.1%(82.0%-82.2%)	0.815(0.746-0.883)
CA242				
Early-stage PDAC vs non-PDAC	78.1%(68.0%-88.3%)	66.4%(60.1%-72.6%)	69.0%(68.9%-69.2%)	0.722(0.641-0.804)
Early-stage PDAC vs CP	65.6%(54.0%-77.3%)	87.9%(76.7%-99.0%)	73.2%(72.8%-73.6%)	0.768(0.654-0.881)
Early-stage PDAC vs HC	78.1%(68.0%-88.3%)	70.8%(63.4%-78.3%)	73.1%(72.9%-73.3%)	0.745(0.657-0.833)
CEA				
Early-stage PDAC vs non-PDAC	77.7%(69.2%-86.1%)	38.1%(32.2%-44.1%)	48.7%(48.6%-48.9%)	0.579(0.507-0.651)
Early-stage PDAC vs CP	27.7%(18.6%-36.7%)	89.5%(79.7%-99.2%)	45.5%(45.1%-45.8%)	0.586(0.492-0.680)
Early-stage PDAC vs HC	96.8%(93.3%-100.4%)	15.3%(9.4%-21.2%)	47.5%(47.3%-47.7%)	0.560(0.513-0.608)

Table S4. Performance of the miRNA panel in discriminating patients with pancreatic cystic neoplasm (PCN) from early-stage PDAC subjects (CP/HC) in the training and validation cohorts

Scenario	Sensitivity (95%CI)	Specificity (95%CI)	Accuracy (95%CI)	AUC (95%CI)	Positive Predictive Value	Negative Predictive Value
Training cohort						
PCN vs CP	70.7 (61.7-79.7)	62.2 (48.1-76.4)	68.1 (67.8-68.4)	0.681 (0.588-0.773)	80.5 (72.1-88.8)	49.1 (36.1-62.1)
PCN vs HC	79.8 (71.9-87.7)	77.2 (71.3-83.0)	78.0 (77.9-78.2)	0.841 (0.792-0.889)	63.7 (55.2-72.2)	88.4 (83.6-93.2)
PCN vs Early-stage PDAC	85.8 (79.4-92.3)	67.7 (58.5-76.9)	77.4 (77.2-77.5)	0.851 (0.802-0.901)	75.2 (67.7-82.6)	80.7 (72.2-89.2)
Validation cohort						
PCN vs CP	64.0 (54.6-73.4)	53.3 (38.8-67.9)	60.7 (60.4-61.0)	0.587 (0.467-0.707)	75.3 (66.1-84.5)	40.0 (27.6-52.4)
PCN vs HC	80.0 (72.2-87.8)	74.2 (68.2-80.3)	76.2 (76.1-76.3)	0.771 (0.702-0.841)	61.1 (52.7-69.4)	88.0 (83.1-92.9)
PCN vs Early-stage PDAC	90.3 (84.6-96.0)	69.0 (59.9-78.1)	79.8 (79.6-80.0)	0.796 (0.723-0.870)	75.0 (67.4-82.6)	87.3 (80.0-94.7)

Table S5. Univariate and multivariate logistic regression analysis of risk factors of PCa

Diseases	Univariate analysis			Multivariate analysis		
	P value	Estimate OR	95%CI	P value	Estimate OR	95%CI
Sex	0.02	0.77	0.61-0.96	0.47	0.90	0.69-1.19
Age	<0.0001	1.07	1.06-1.08	<0.0001	1.07	1.06-1.08
BMI, Kg/m ²	0.006	1.04	1.01-1.08	0.18	1.02	0.98-1.06
Smoking history ^a	0.37	1.12	0.87-1.43	NA	NA	NA
Drinking history ^b	0.045	1.30	1.01-1.69	0.15	1.26	0.92-1.71
Family history of cancer	<0.0001	2.07	1.51-2.86	<0.0001	2.63	1.81-3.86
History of diabetes	<0.0001	4.36	3.02-6.42	<0.0001	2.30	1.55-3.47

^a Current and former smoking history was considered as ever. ^b Drinking at least once a month or for more than half a year was considered as ever. p < 0.05 indicated significance. BMI was calculated by dividing a person's weight by the square of their height. OR, odds ratio. NA, not applicable.