A microRNA-based signature predicts local-regional failure and overall survival after pancreatic cancer resection

SUPPLEMENTARY MATERIALS

Supplementary Figure 1: Histogram of risk score per patient in the (A) OSU or (B) TCGA cohort.

Supplementary Figure 2: Overall survival for high (red) versus low (black) risk groups in the TCGA cohort, only including patients who did not receive post-operative chemoradiation (n = 102 patients).
### Supplementary Table 1: Multivariable analysis of TCGA patients for overall survival who did not receive post-operative chemoradiation (n = 102 patients)

| Variable | Hazard ratio for OS | 95% C.I. | p-value |
|----------|---------------------|----------|---------|
| miRNA risk score, continuous | 1.15 | 1.03–1.30 | 0.017 |
| Age, continuous | 1.02 | 1.00–1.05 | 0.098 |
| pTstage (T3-4 vs T1-2 vs T1-2) | 1.16 | 0.46–2.92 | 0.750 |
| pNstage (1 vs 0) | 1.30 | 0.61–2.77 | 0.498 |
| Histologic grade (Grade3 vs Grade1-2) | 1.71 | 0.97–3.01 | 0.064 |
| Margin status (R1 vs R0) | 2.30 | 1.28–4.13 | 0.005 |

### Supplementary Table 2: Potential mechanisms and targets for miRNAs contributing to miRNA risk score

| microRNA | Proposed target(s) | Proposed mechanisms |
|----------|--------------------|---------------------|
| miR-29c | Specificity protein 1 (Sp1) | Suppresses EMT Inhibit migration/invasion |
| miR-125a | PI3K/AKT/mTOR | Suppresses proliferation/migration |
| miR-155 | SOCS1 and STAT3, MLH1 | Inhibit proliferation/invasion |
| miR-200b | ERM, ZEB1/ZEB2 | Inhibit migration/invasion/proliferation Suppresses EMT |

### Supplementary Table 3: 30 miRNAs commonly linked to human pancreatic cancer based on literature search and used to generate the miRNA risk score which included miR-155, miR-29c, miR-125a, and miR-200b

| Function | miRNA |
|----------|-------|
| Oncogenic (up-regulated) | 10a, 15a, 21, 98, 99a, 100, 125b, 155, 221, 222, 223, 301a, 424, 497, 574 |
| Tumor Suppressor (down-regulated) | Let-7b, 26a, 29c, 30a, 30d, 34a, 125a, 126, 141, 200a, 200b, 200c, 217, 375, 494 |

“Oncogenic” miRNAs are typically up-regulated in pancreatic cancer, while “tumor suppressor” miRNAs are typically down-regulated in pancreatic cancer.