**Supplementary Table 1**: Clinicopathological characteristics of PDAC patients in cohort (n=25) analyzed by flow cytometry (Figure 1a).

| Characteristic               | n (%)     |
|-----------------------------|----------|
| **Gender**                  |          |
| Male                        | 16 (64)  |
| Female                      | 9 (36)   |
| **Age**                     |          |
| Median (Range)              | 65 (50-77) |
| **Tumor Location**          |          |
| Head                        | 20 (80)  |
| Body/Tail                   | 5 (20)   |
| **Procedure**               |          |
| Distal Pancreatectomy       | 5 (20)   |
| Pancreaticoduodenectomy     | 20 (80)  |
| **Pathological State**      |          |
| IA                          | 3 (12)   |
| IB                          | 2 (8)    |
| IIA                         | 4 (16)   |
| IIB                         | 14 (56)  |
| III                         | 2 (8)    |
| IV                          | 0 (0)    |
| **pT**                      |          |
| 1                           | 3 (12)   |
| 2                           | 6 (24)   |
| 3                           | 16 (64)  |
| 4                           | 0 (0)    |
| **pN**                      |          |
| 0                           | 9 (36)   |
| 1                           | 14 (56)  |
| 2                           | 2 (8)    |
| **pM**                      |          |
| 0                           | 25 (100) |
| 1                           | 0 (0)    |
| **Margin**                  |          |
| Positive                    | 5 (20)   |
| Negative                    | 20 (80)  |
| **Adjuvant Treatment**      |          |
| Yes                         | 19 (76)  |
| No                          | 6 (24)   |
| **Neoadjuvant Treatment**   |          |
| Yes                         | 11 (44)  |
| No                          | 14 (56)  |
**Supplementary Table 2:** Clinicopathological characteristics of PDAC patients in transcriptome cohort (Figure 1c, Extended Data Figure 1b).

| Characteristic                      | Short Term (n=12) | Long Term (n=13) | P value |
|-------------------------------------|-------------------|------------------|---------|
|                                     | n (%)             | n (%)            |         |
| **Gender**                          |                   |                  |         |
| Male                                | 6 (50)            | 5 (38)           | 0.70    |
| Female                              | 6 (50)            | 8 (62)           |         |
| **Age**                             |                   |                  | 0.01    |
| Median (Range)                      | 76 (53-83)        | 58 (45-88)       |         |
| **Tumor Location**                  |                   |                  | 0.65    |
| Head                                | 8 (67)            | 10 (77)          |         |
| Body/Tail                           | 4 (33)            | 3 (23)           |         |
| **Procedure**                       |                   |                  | 0.57    |
| Distal Pancreatectomy               | 4 (33)            | 3 (23)           |         |
| Pancreaticoduodenectomy             | 8 (67)            | 10 (77)          |         |
| Total Pancreatectomy                | 0 (0)             | 0 (0)            |         |
| **Pathological Stage**              |                   |                  | 0.82    |
| I                                   | 0 (0)             | 0 (0)            |         |
| II                                  | 9 (75)            | 12 (92)          |         |
| III                                 | 1 (8)             | 1 (8)            |         |
| IV                                  | 2 (17)            | 0 (0)            |         |
| **pT**                              |                   |                  | 0.72    |
| 1                                   | 0 (0)             | 0 (0)            |         |
| 2                                   | 0 (0)             | 0 (0)            |         |
| 3                                   | 10 (83)           | 12 (92)          |         |
| 4                                   | 2 (17)            | 1 (8)            |         |
| **pN**                              |                   |                  | >0.99   |
| 0                                   | 5 (42)            | 6 (46)           |         |
| 1                                   | 7 (58)            | 7 (54)           |         |
| **pM**                              |                   |                  | 0.22    |
| 0                                   | 10 (83)           | 13 (100)         |         |
| 1                                   | 2 (17)            | 0 (0)            |         |
| **Margin**                          |                   |                  | 0.16    |
| Positive                            | 4 (33)            | 1 (8)            |         |
| Negative                            | 8 (67)            | 12 (92)          |         |
| **Adjuvant Treatment**              |                   |                  | 0.91    |
| Yes                                 | 9 (75)            | 10 (77)          |         |
| No                                  | 3 (25)            | 3 (23)           |         |
| Unknown                             | 0 (0)             | 0 (0)            |         |

*P value by two-sided Chi square test.
Supplementary Table 3: ILC2 single-cell RNA sequencing cellular and transcriptomic metrics (Figure 4c, Extended Data Figures 7-9, 10g).

| Compartment          | Treatment         | Median # genes | Median # UMIś | Cells post Seurat QC |
|----------------------|-------------------|----------------|---------------|----------------------|
| Tumor                | Vehicle           | 1,840          | 6,258         | 28                   |
|                      | rIL33             | 1,145          | 3,075         | 752                  |
|                      | rIL33 + αPD-1     | 1,618          | 5,607         | 2,635                |
| Draining lymph node  | rIL33             | 1,359          | 3,764         | 882                  |
|                      | rIL33 + αPD-1     | 1,143          | 2,764         | 2,725                |

UMI: unique molecular identifier