

## Description of Additional Supplementary Files

**File name:** Supplementary Data 1

**Description:** Results of RNA-seq analysis of mILC2 recovered using IL-13 as an index (related to Figure 3). The first 65 columns are the RNA-seq count data of single-mILC2s. The values were  $\log_2$  (Count Per Million + 1). At the “anova\_p\_val” column, the p-value of ANOVA among pre-stim. cells, dt0.5h cells, LA cells and LS cells are listed. At the “kmeans\_cluster#” column, the results of kMeans clustering of genes with ANOVA p-values less than 0.05 are listed. At the “Class of gene expression transition” column, the results of re-categorizing based on the variation patterns of the genes. The columns behind them show the relative gene expression levels in each cell state in Z-score.

**File name:** Supplementary Data 2

**Description:** Results of GO clustering analysis of mILC2 recovered using IL-13 as an index (related to Figure 3). We analyzed GO of four groups of differentially expressed genes (Pre-stim. < Activated, Pre-stim. < Silent, Silent < Activated and TIGs) by the Metascape. The "Annotation" sheet includes each gene's group, their converted gene ID, annotation, and membership. The "Enrichment" sheet includes enriched GO terms and their statistics.

**File name:** Supplementary Data 3

**Description:** Results of RNA-seq analysis of mILC2 recovered using IL-5 as an index (related to Suppl. Figure 4). The first 65 columns are the RNA-seq count data of single-mILC2s. The values were  $\log_2$  (Count Per Million + 1). At the “anova\_p\_val” column, the p-value of ANOVA among prestim. cells, dt0.5h cells, LA cells and LS cells are listed. At the “k-means\_cluster#” column, the results of k-Means clustering of genes with ANOVA p-values less than 0.05 are listed. At the “Class of gene expression transition” column, the results of re-categorizing based on the variation patterns of the genes. The columns behind them show the relative gene expression levels in each cell state in Z-score.

**File name:** Supplementary Data4

**Description:** List of overlapping genes in TIGs obtained using IL-13 and IL-5 as indexes.

**File name:** Supplementary Data 5

**Description:** Results of GO clustering analysis of IL-13 TIGs and IL-5 TIGs (related to Suppl. Figure 4). We analyzed GO of IL-13 TIGs and IL-5 TIGs by the Metascape. The "Annotation" sheet includes each gene's group, their converted gene ID, annotation, and membership. The "Enrichment" sheet includes enriched GO terms and their statistics.

**File name:** Supplementary Data 6

**Description:** RNA-seq Count data of hILC2 (related to Figure 4). The first 59 columns are the RNA-seq count data of hILC2s. Column names represent the following sample information: D1: Donor 1, D2: Donor 2; D3: Donor 3; P: Pre-simt, T: Transition state, A: Activated. The values were  $\log_2$  (Count Per Million + 1). The next nine columns show the mean values of CPM. At the “anova\_p\_val” column, the p-value of ANOVA among Prestim. cells, Transition cells and Activated cells are listed. At the “k-means\_cluster#” column, the results of k-Means clustering of genes with ANOVA p-values less than 0.01 are listed. At the “Class of gene expression transition” column, the results of re-categorizing based on the variation patterns of the genes. The columns behind them show the relative gene expression levels in each cell state in Z-score.

**File name:** Supplementary Data 7

**Description:** Source data used to generate the graphs and charts in the main figures. The label of each sheet represents the title of the corresponding figure.