

Description of Additional supplementary files

Supplementary Data S1:

Characteristics of Patients of Idiopathic Pulmonary Fibrosis and Normal individuals Clinical specimens of IPF patients and Normal individuals were obtained through lung transplantation or surgical lung biopsy

Supplementary Data S2:

Human Sample Sequencing Data Summary .The snRNA-seq data of five Normal samples and four IPF samples were analyzed and the relevant results of data quality control were listed.

Supplementary Data S3:

Cell type proportions identified from the merged analysis of human lung samples. All snRNA-seq data were analyzed and annotated as fifteen cell types. Counts and proportions of celltypes were listed.

Supplementary Data S4:

Mice Sequencing Data Summary. The scATAC-seq data of Silica or Saline induced mice were analyzed and the relevant results of data quality control were listed.

Supplementary Data S5:

Mice scRNA sequencing Data Summary. The scRNA-seq data of Silica or Saline induced mice were analyzed and the relevant results of data quality control were listed.

Supplementary Data S6:

Cell type proportions identified from the merged analysis of the SiO₂-induced mouse model lung samples. All scRNA-seq or scATAC-seq data of Silica or Saline induced mice were analyzed and annotated. Counts and proportions of celltypes were listed.

Supplementary Data S7:

Mice Sequencing Data Summary. The scATAC-seq data of Bleomycin or Saline induced mice were analyzed and the relevant results of data quality control were listed.

Supplementary Data S8:

Mice scRNA sequencing Data Summary. The scRNA-seq data of Bleomycin or Saline induced mice were analyzed and the relevant results of data quality control were listed.

Supplementary Data S9:

Cell type proportions identified from the merged analysis of the Bleomycin-induced mouse model lung samples. All scRNA-seq or scATAC-seq data of Bleomycin or Saline induced mice were analyzed and annotated. Counts and proportions of celltypes were listed.

Supplementary Data S10:

Gene sets for scoring. Gene sets for Mechanical Stress score and Fibrosis score of human or mouse data were listed.