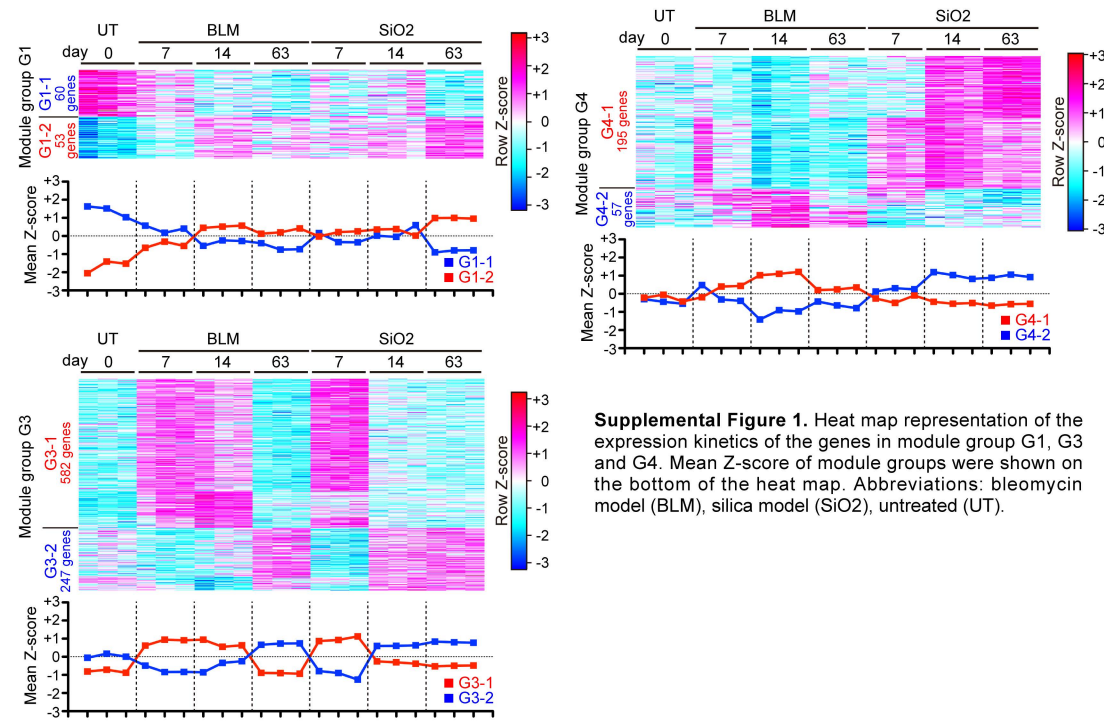
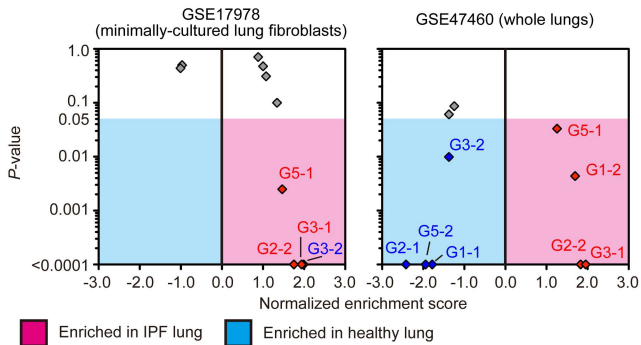


Supplemental Figure 1

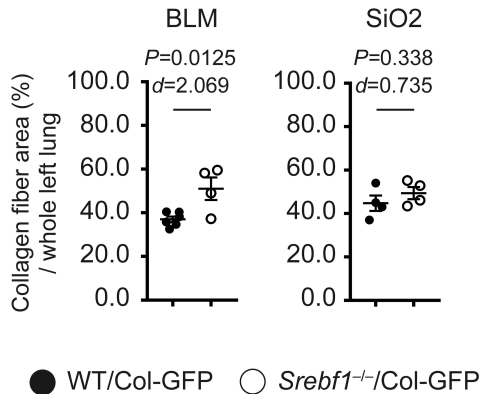


Supplemental Figure 2



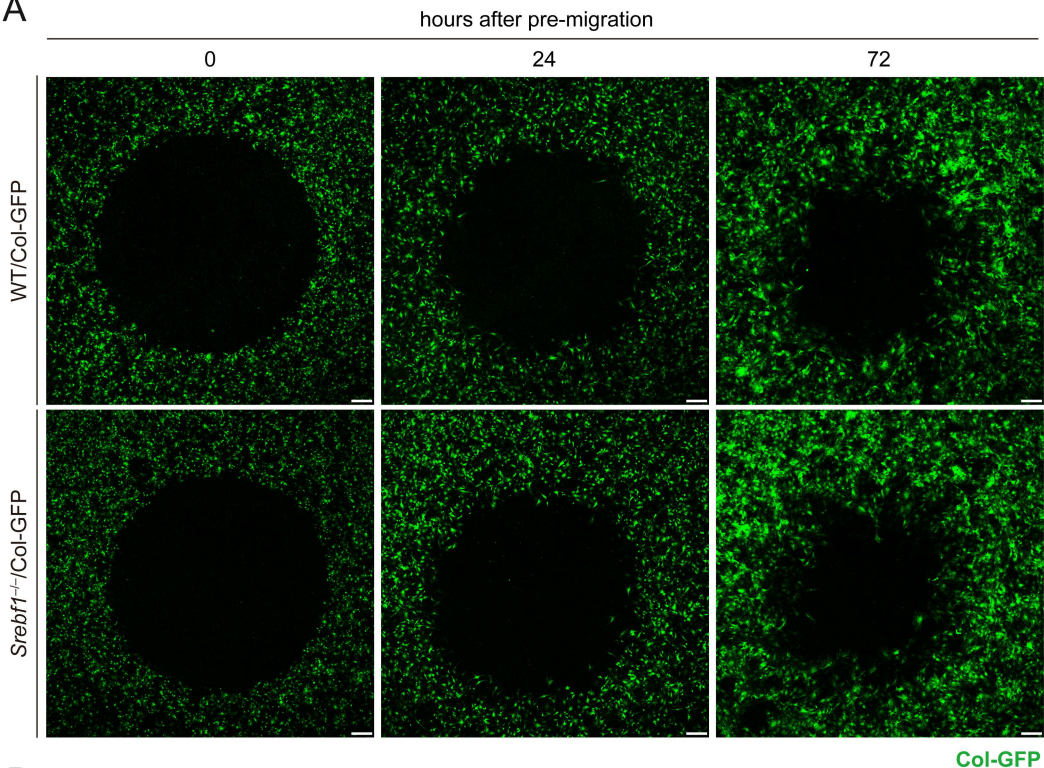
Supplemental Figure 2. Gene set enrichment analysis of all of the gene module groups for the samples from IPF fibroblasts (GSE17978) or IPF whole lungs (GSE47460). Gene modules are plotted by their normalized enrichment score and P -value. The shaded areas indicate significant enrichment. Abbreviations: idiopathic pulmonary fibrosis (IPF).

Supplemental Figure 3

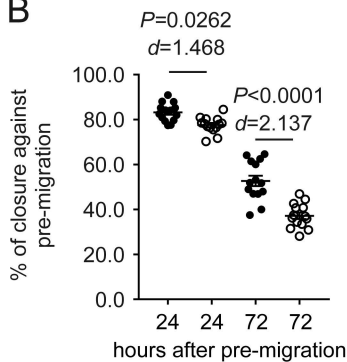


Supplemental Figure 3. Percentages of the areas of collagen fiber accumulation in the whole left lung sections stained via Masson' s trichrome staining on day 14 post-administration. Graphs show the mean $\pm$ s.e.m. values of $n = 4$ (BLM WT/Col-GFP, SiO2 WT/Col-GFP, SiO2 *Srebf1*^{-/-}/Col-GFP), $n = 6$ (BLM *Srebf1*^{-/-}/Col-GFP). Representative results of two independent experiments are shown. Statistical significance was determined through Student' s t-test. Effect size (d) is shown at the top of the graph. Abbreviations: Col1a2-GFP reporter, wild type (WT).

A



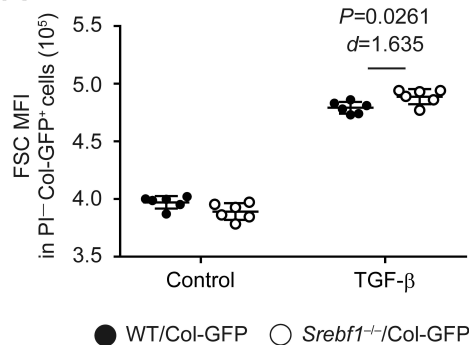
B



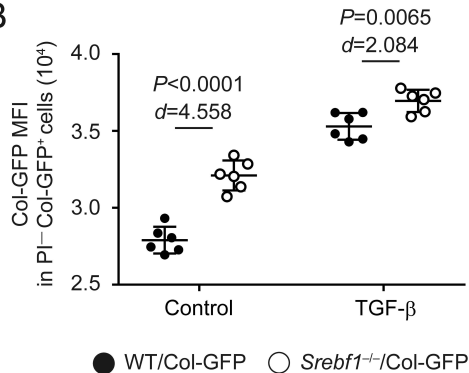
Supplemental Figure 4. Migration analysis of lung fibroblasts isolated from the lungs of *Srebf1*^{-/-}/Col-GFP or WT/Col-GFP mice on day 7 after bleomycin administration. **(A)** Confocal microscopic images of wells after removal of migration stoppers. Col-GFP = green. Representative images of $n = 14$ from two independent experiments are shown. Scale bars, 200 μm . **(B)** Differences in lung fibroblast migration. The cell-free area was determined at the center of each well. Thereafter, migration levels were calculated as the percentage of closure against that immediately after removal of the migration stoppers. Graphs show the mean $\pm$ s.e.m. values ($n = 14$) pooled from two independent experiments. Statistical significance as determined via two-way ANOVA followed by the post hoc Sidak's multiple comparison test. Effect size (d) is shown at the top of the graph. Abbreviations: Col1a2-GFP reporter (Col-GFP), wild type (WT).

Supplemental Figure 5

A



B



Supplemental Figure 5. Responses of primary lung fibroblasts against TGF-β stimulation (10 ng/ml) in vitro. **(A)** Difference in fibroblast size. Mean fluorescence intensity (MFI) of forward scatter of each fibroblasts was assessed via flow cytometric analysis. **(B)** Differences in Col1a2 promoter activity. MFI of GFP of each fibroblasts was assessed via flow cytometric analysis. Graphs show the mean ± s.e.m. values (n = 6) pooled from two independent experiments. Statistical significance was determined via two-way ANOVA followed by the post hoc Sidak' s multiple comparison test. Effect size (d) is shown at the top of the graph. Abbreviations: Col1a2-GFP reporter (Col-GFP), wild type (WT), propidium iodide (PI).

Supplemental Legends

Supplemental Figure 1. Transcriptomic landscape of lung fibroblasts in bleomycin- and silica-induced pulmonary fibrosis. Heat map representation of the expression kinetics of the genes in module group G1, G3 and G4. Mean Z-score of module groups were shown on the bottom of the heat map. Abbreviations: bleomycin model (BLM), silica model (SiO₂), untreated (UT)

Supplemental Figure 2. Gene set enrichment analysis of all of the gene module groups for the samples from IPF fibroblasts (GSE17978) or IPF whole lungs (GSE47460). Gene modules are plotted by their normalized enrichment score and *P*-value. The shaded areas indicate significant enrichment. Abbreviations: idiopathic pulmonary fibrosis (IPF).

Supplemental Figure 3. Percentages of the areas of collagen fiber accumulation in the whole left lung sections stained via Masson's trichrome staining on day 14 post-administration. Graphs show the mean $\pm$ s.e.m. values of *n* = 4 (BLM WT/Col-GFP, SiO₂ WT/Col-GFP, SiO₂ *Srebfl*^{-/-}/Col-GFP), *n* = 6 (BLM *Srebfl*^{-/-}/Col-GFP). Representative results of two independent experiments are shown. Statistical significance was determined through Student's t-test. Effect size (*d*) is shown at the top of the graph. Abbreviations: Col1a2-GFP reporter (Col-GFP), wild type (WT).

Supplemental Figure 4. Migration analysis of lung fibroblasts isolated from the lungs of *Srebfl*^{-/-}/Col-GFP or WT/Col-GFP mice on day 7 after bleomycin administration. **A** Confocal microscopic images of wells after removal of migration stoppers. Col-GFP = green. Representative images of *n* = 14 from two independent experiments are shown. Scale bars, 200 μ m. **B** Differences in lung fibroblast migration. The cell-free area was determined at the center of each well. Thereafter, migration levels were calculated as the percentage of closure against that immediately after removal of the migration stoppers. Graphs show the mean $\pm$ s.e.m. values (*n* = 14) pooled from two independent experiments. Statistical significance as determined via two-way ANOVA followed by the *post hoc* Sidak's multiple comparison test. Effect size (*d*) is shown at the top of the graph. Abbreviations: *Colla2*-GFP reporter (Col-GFP), wild type (WT).

Supplemental Figure 5. Responses of primary lung fibroblasts against TGF- β stimulation (10 ng/ml) *in vitro*. A. Difference in fibroblast size. Mean fluorescence intensity (MFI) of forward scatter of each fibroblasts was assessed via flow cytometry analysis. A. Differences in *Colla2* promoter activity. MFI of GFP of each fibroblast was assessed via flow cytometry analysis. Graphs show the mean $\pm$ s.e.m. values (n = 6) pooled from two independent experiments. Statistical significance was determined via two-way ANOVA followed by the *post hoc* Sidak's multiple comparison test. Effect size (d) is shown at the top of the graph. Abbreviations: *Colla2*-GFP reporter (Col-GFP), wild type (WT), propidium iodide (PI).

Supplemental Table S1. Full list of significantly-enriched biological events associated with module groups G2 and G5.

Supplemental Table S2. Result of transcription factor (TF) binding motif enrichment analysis by GeneXplain platform and list of 90 hub transcription factors of transcriptome network. TFs Connection between 90 hub transcription factors and connected module groups is highlighted by magenta.

Supplemental Table S3. Full list of significantly-enriched biological events associated with 55 hub transcription factors.

Supplemental Table S4. Full list of differentially expressed genes between control and trSrebf1c-expressed intratracheally-transferred lung fibroblasts. Abbreviations: *Colla2*-GFP reporter (Col-GFP), active form of Srebf1c (trSrebf1c).

Supplemental Table S5. List of the antibodies used for flow cytometry.

Supplemental Table S6. List of the primers and adapters used for transcriptome analyses.

Supplemental Table S7. List of the primers used for quantitative PCR (qPCR) analyses.

Supplemental Table S8. List of the statistics.