Figure S1. Upregulation and nuclear accumulation of β-catenin in BOS-MCs compared with non-BOS MCs was confirmed by immunocytochemistry. Representative immunofluorescent images of β-catenin localization in non-BOS MCs and BOS-MCs. The primary antibody of β-catenin was ab6302 from Abcam with 1:500 dilution, and Alexa fluor 568 conjugated Goat anti-Rabbit secondary antibody (A-11036, Thermo Fisher Scientific) was used with 1:500 dilution. Slides were imaged using a Nikon Eclipse 50i microscope operated with the Q-CAPTURE PRO7 program. n = 4/group. Scale bars: 100μm.
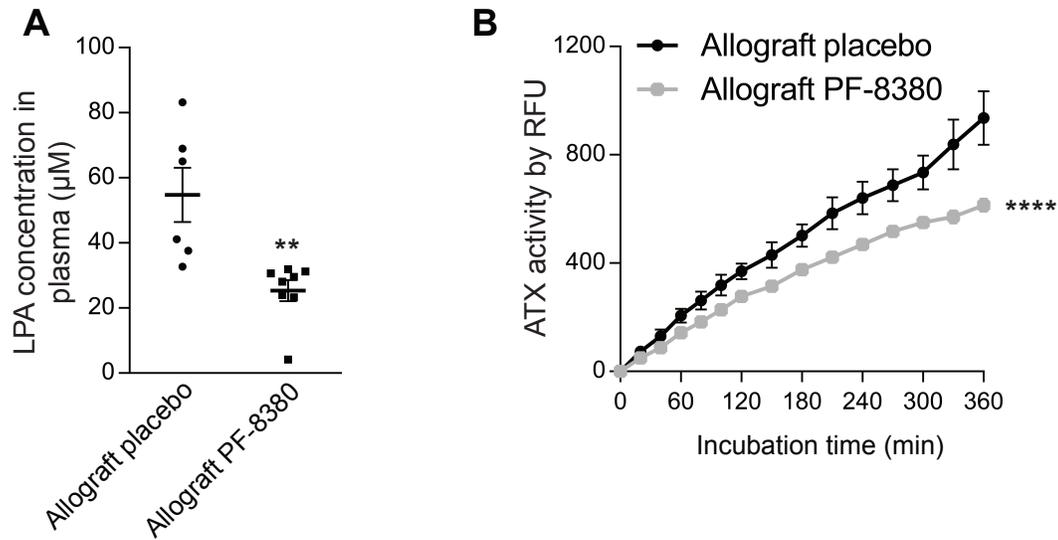
Figure S2. PF-8380 treatment reduced plasma LPA levels and ATX activity in lung lysates in murine orthotopic lung transplant model. Mice with lung transplant allografts were treated with PF-8380 or placebo from day 14 through to harvest on day 40 posttransplantation. (**A**) LPA levels in mouse plasma were quantitated by ELISA. Plasma from lung allograft recipient mice were diluted to 12-fold, and LPA levels were measured with LPA assay kit (K-2800S, Echelon). n = 6 for allograft placebo group and 8 for PF-8380 treatment group with unpaired t test. (**B**) ATX activity was assayed in lung lysates of allograft placebos or PF-8380 treated allografts using ATX substrate FS-3 (n = 7 for placebo and 6 for PF-8380 with two-way ANOVA). Mean ± SEM. **P<0.01; ****P<0.0001.
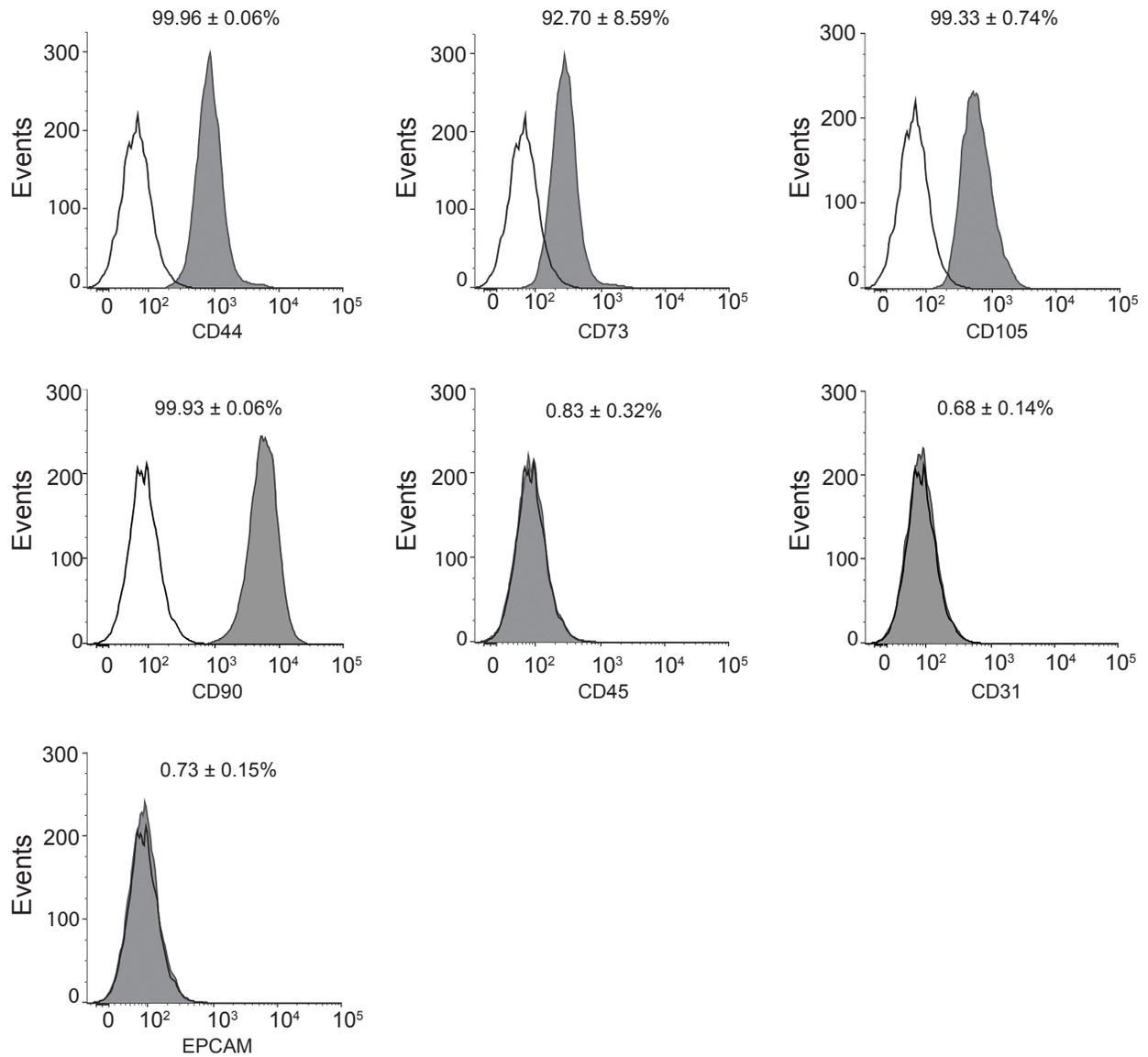
Figure S3. Immunophenotype and purity analysis of MCs by flow cytometry. MCs were isolated from BAL fluid of lung transplant recipients, and specific antibodies for human cell-surface markers were used for staining MCs at passage 4. Specific antibody stained cells were demonstrated in grey and unstained controls were shown by black outline. The percentage of stained positive cells among total cells (mean ± SD) is shown above each histogram (n = 3). Antibodies used were from BD Pharmingen, including CD44 PE (Cat#550989), CD73 PE (Cat#550257), CD105 PE(Cat#560839), CD90 FITC (Cat#555595), CD45 FITC (Cat#555482), CD31 FITC (Cat#560984), or from Becton Dickinson for EPCAM FITC (Cat#347197). All histograms shown were from the same mesenchymal cell line, thus the histograms of unstained sample under channels detecting PE and FITC were used as the corresponding negative controls for staining with PE-conjugated antibodies (CD44, CD73, and CD105), and FITC-conjugated antibodies (CD90, CD45, CD31, and EPCAM), respectively.