**Supplementary Figure 1.** Histological changes in lungs of mice treated with 0.4 mg of Asian sand dust particles at (**A**) 24 hours, (**C**) 1 week, (**E**) 1 month, (**G**) 2 months, (**I**)
3 months and (**K**) 4 months after instillation, and 3.0 mg treated mice at (**B**) 24 hours, (**D**) 1 week, (**F**) 1 month, (**H**) 2 months, (**J**) 3 months and (**L**) 4 months after instillation. Multifocal accumulation of particles (arrows) dominated around the bronchioles, and infiltration of inflammatory cells around particles. Solid white arrows: spindle-shaped cells. Solid black arrows: epithelioid macrophages. White arrowheads: lymphocytic inflammation. Black arrowheads: large foamy macrophages. Gray arrowheads: multinucleated giant cells. H & E staining . Bars = 50 µm

**Supplementary Figure 2.** Histological changes in lungs of mice treated with 0.4 mg of Asian sand dust particles at 3 months after instillation. **A.** Infiltration of lymphocytes (black arrowheads) around the blood vessels and bronchioles and scattered necrotic cells (solid arrows); **B.** Focal accumulation of large foamy macrophages (arrows).
H & E staining (A, B); **C.** CD3-immunopositive T lymphocytes (white arrowheads) in the lesion; **D.** The same area as in C. Occasional CD20-immunopositive lymphocytes (white arrowheads) were observed mixed with a large number of CD3 positive lymphocytes. Bars = 50 µm

**Supplementary Figure 3.** Histological changes in the lungs of mice treated with
3.0 mg of Asian sand dust particles at 4 months after instillation. **A.** Granulomatous lesion. Increased volume of interstitium (arrows) and some spindle-shaped cells (arrowheads); **B.** Focal accumulation of epithelioid macrophages (solid arrows) and lymphocytes. H & E staining (A, B); **C.** Spindle-shaped to elongated cells in the inflammatory lesion show positive immunolabelings for α-smooth muscle actin (arrowheads); **D.** Fibrillar components in the interstitium of the granulomatous lesions show positive immunolabelings for collagen III (arrows). Bars = 50 µm (A, B),
20 µm (C, D)

**Supplementary Figure 4.** Histological changes in the lungs of mice treated with
3.0 mg of Asian sand dust (A–D) at 4 months after instillation. **A.** Lymphoid hyperplasia of bronchus-associated lymphoid tissue (BALT); **B.** Higher magnification of the oblong box in A. Macrophages containing fine particles (arrow); **C.** Focal accumulation of plasma cells containing Russell bodies (mott cells) (white arrowheads) around bronchi. H & E staining (A–C); **D.** Focal accumulation of immunoglobulin G-positive cells around bronchi. Bars = 50 µm