Airborne particulate matter increases *MUC5AC* expression by downregulating Claudin-1 expression in human airway cells

Sang-Su Kim[1], Cheol Hong Kim[2], Ji Wook Kim[1], Hsi Chiang Kung[1], Tae Woo Park[1], Yu Som Shin[1], Ju Deok Kim[1], Siejeong Ryu[1], Wang-Joon Kim[3], Yung Hyun Choi[5],

and Kyoung Seob Song[3, 4]

[1]Department of Anesthesiology and Pain Medicine, Kosin University College of Medicine, Busan, Korea, [2]Department of Pediatrics, Sungkyunkwan University Samsung Changwon Hospital, Changwon, Korea, [3]Department of Physiology, Kosin University College of Medicine, Busan, Korea, [4]Institute of Medicine, Kosin University College of Medicine, Busan, Korea,

[5]Department of Biochemistry, College of Korean Medicine, Don-Eui University, Busan, Korea.

Corresponding Author

Kyoung Seob Song, PhD,

Department of Physiology,

Kosin University College of Medicine,

34 Amnam-dong, Seo-gu,

Busan 49267, Korea,

Tel: +82-51-990-6236,

Fax: +82-51-990-3081,

E-mail: kssong@kosin.ac.kr,

Running title: The effect of Claudin-1 on PM-induced *MUC5AC* expression

Supplementary Figure 1

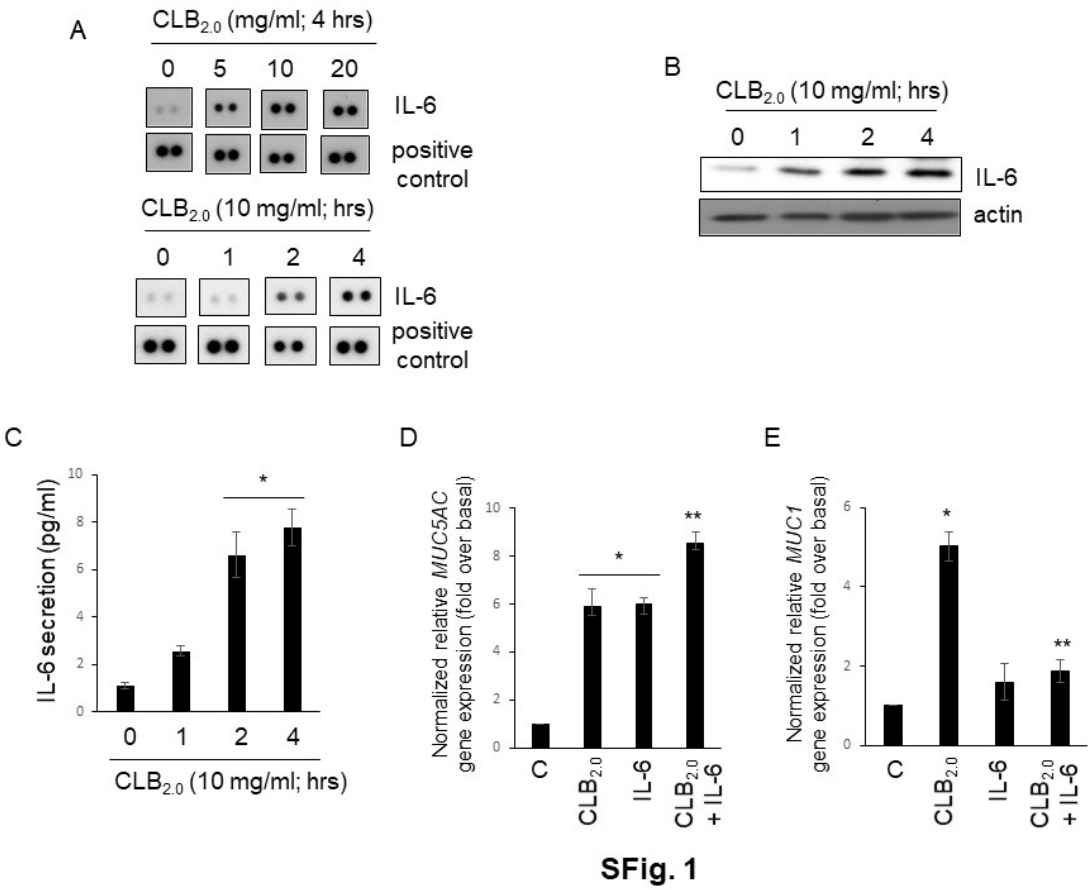

Fig. 1. $CLB_{2.0}$ induces IL-6 secretion and overexpression in NCI-H292 cells.

(A) The cells were treated with $CLB_{2.0}$ for 4 h and a cytokine assay was performed in a dose- and time-dependent manner. (B) After the treatment of $CLB_{2.0}$ for 4 h, the total cell lysates were analyzed by Western blot analysis with specific anti-IL-6 antibody. (C) The cells were then treated with $CLB_{2.0}$ for 4 h, and their supernatants were collected. The levels of IL-6 in the cell supernatants were measured by ELISA. **p* <0.05 compared to the control. Values shown represent the means ± SDs of three technical replicates from a single experiment. Cells were treated with $CLB_{2.0}$ (10 mg/mL), IL-6 (30 ng/mL) and both $CLB_{2.0}$ (10 mg/mL) and IL-6 (30 ng/mL) for 24 h, and their total RNA were collected, and then qRT-PCR for *MUC5AC* (D) and *MUC1* (E) transcript were performed. **p* <0.05 compared to the control, ***p* <0.05 compared to $CLB_{2.0}$ only.