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Supplemental information

Abi1 mediates airway smooth muscle cell proliferation and airway remodeling via Jak2/STAT3 signaling

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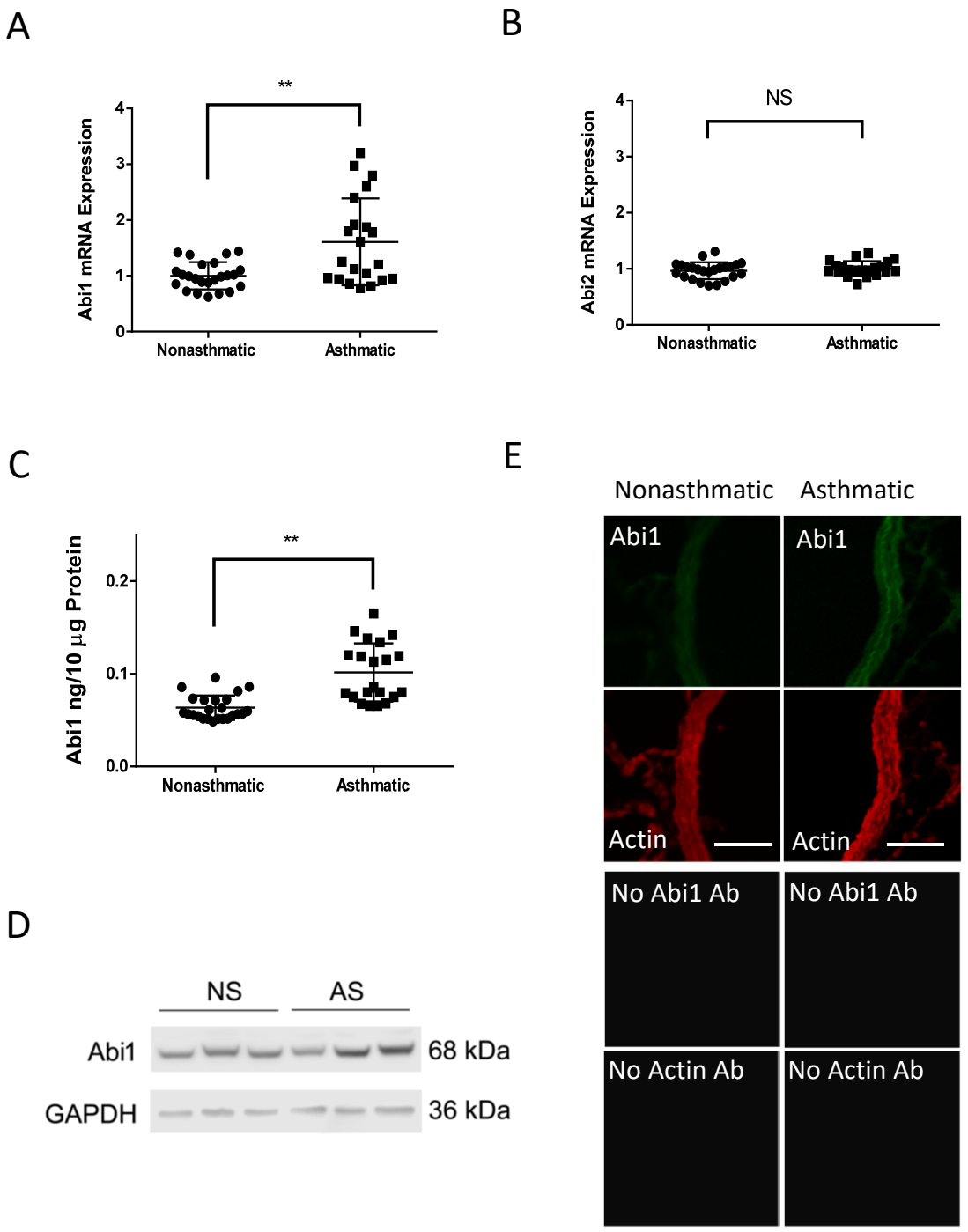

Figure S1. Mean analysis of Abi1 mRNA, Abi2 mRNA and Abi1 protein in nonasthmatic and asthmatic human ASM cultures. Related to Figure 1.

A. Abi1 mRNA. **B.** Abi2 mRNA. **C**. Abi1 protein. Data are means ± S.E.M. *t*-test was used for data analysis. **D**. Representative IB of Abi1 expression in nonasthmatic (NA) and asthmatic (AS) cells. **E.** Abi1 is upregulated in asthmatic human small airways as evidenced by immunofluorescence microscopy. Scale bar, 120 μm. Images of no primary antibody controls are also included.

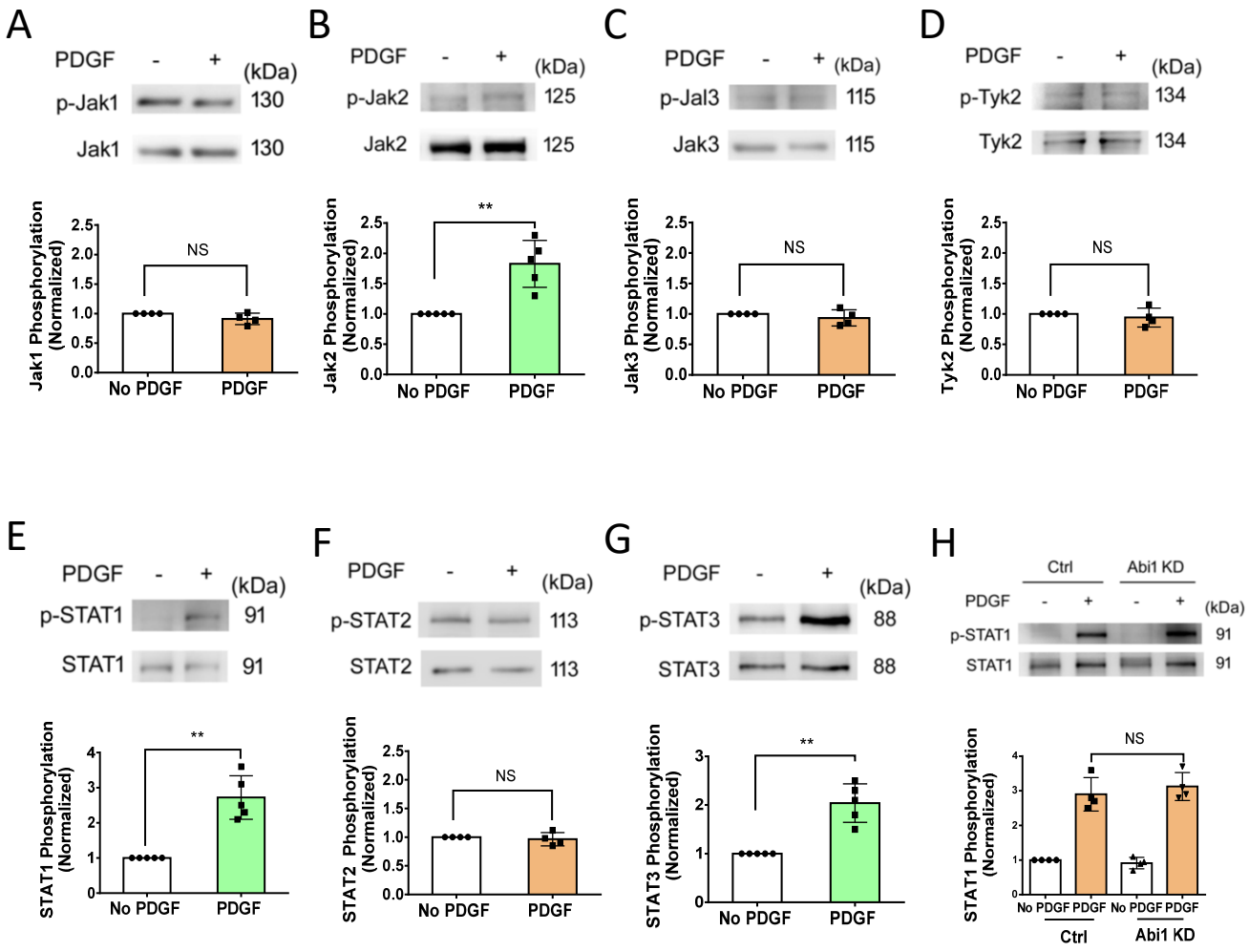

Figure S2. Stimulation with PDGF differentially affects phosphorylation of Jaks and STATs in HASM cells. Related to Figure 3.

A-D. Treatment with PDGF increases p-Jak2 (Y1007/Y1008), but not p-Jak1 (Y1034/Y1035), p-Jak3 (Y980/Y981) and p-Tyk4 (Y1054/Y1055). **E-G.** Stimulation with PDGF increases p-STAT1 (Y701) and p-STAT3 (Y705), but not p-STAT2 (Y609). **H.** Abi1 KD does not affect the phosphorylation of STAT1 (Y701). Data are means ± S.E.M. n = 4-5. The *t*-test was used for statistical analysis for Figure S2, A-G. Two-way ANOVA was used for Figure S2H. NS, not significant. ** $p < 0.01$.

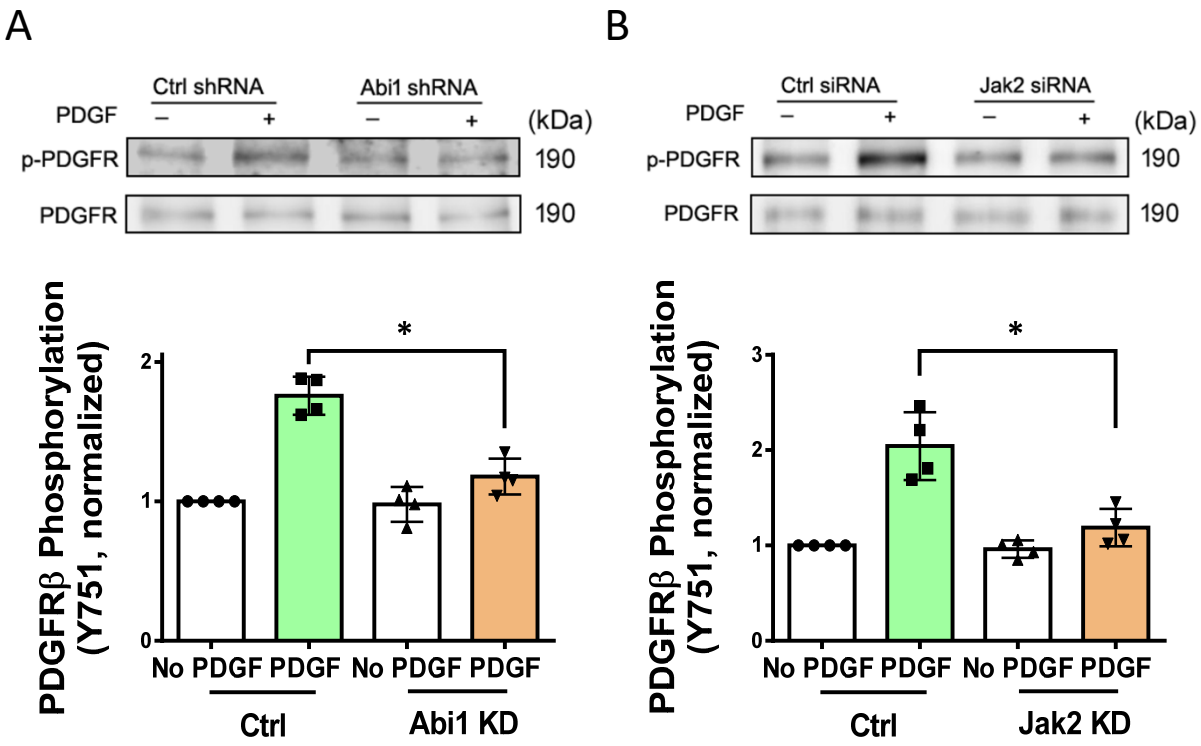

Figure S3. Role of Abi1 and Jak2 in PDGFR phosphorylation. **Related to Figure 5**.

A. Abi1 KD attenuates the PDGF-induced PFGFRβ phosphorylation in HASM cells. Data are means ± S.E.M. n = 4. Two-way ANOVA was used for statistical analysis. **B.** Jak2 KD attenuates the PDGF-induced PFGFRβ phosphorylation in HASM cells. Data are means ± S.E.M. n = 4. Two-way ANOVA was used for statistical analysis.

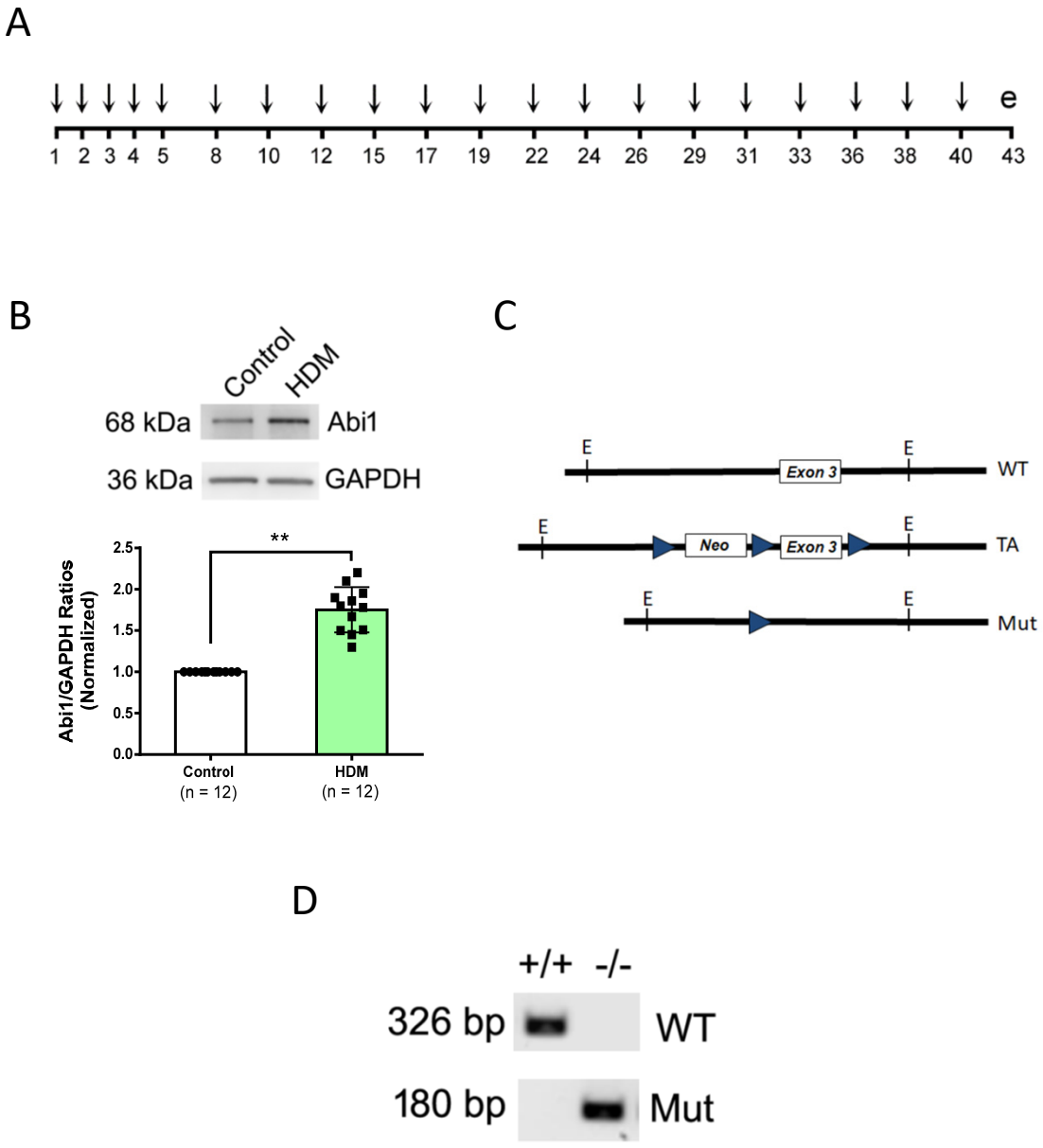

Figure S4. Protocol and characterization of murine asthma model. Related to Figure 8.

A. Schematic overview of study protocol of allergen exposure. Arrows; intranasal exposure; e, experiment. **B.** The expression of Abi1 in tracheal/bronchial extracts of house dust mite (HDM)-treated mice is higher than control mice (*P < 0.05). *t*-test was used for statistical analysis. **C.** Strategy of generating Abi1-floxed mouse. Exon 3 of Abi1 is flanked by two loxP sites. Crossing of MYH11-Cre mouse with floxed mouse generates conditional KO mouse. **D**. Agarose gel of PCR products amplified from mouse tails of indicated mouse strains.

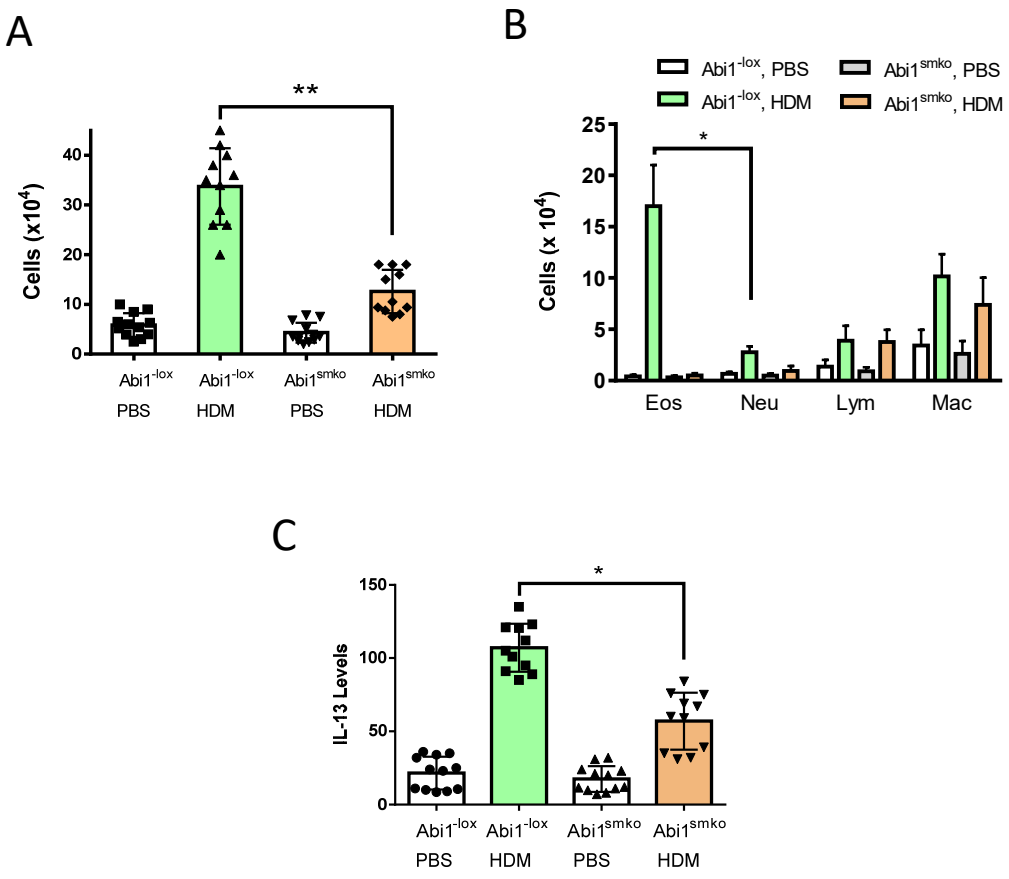

Figure S5. Role of Abi1 in airway inflammation. Related to Figure 8.

A. Conditional Abi1 knockout affects total cell counts in the lungs of animals after HDM exposure. **B**. The differential cell counts are reduced in the lungs of conditional Abi1 knockout mice treated with HDM. **C.** The IL-13 level in BALF of HDM-exposed Abi1^{-lox} mice is increased compared to Abi1^{-lox} treated with PBS. Abi1 conditional knockout inhibits the HDM-induced increase in IL-13 level (n = 11-12). Data are means ± S.E.M. *P < 0.05; **P < 0.01. Two-way ANOVA was used for statistical analysis.