

Supplemental Figure 1. (A) Expression IL-4, IL-5, IL-13 and eotaxin-2 after three weeks of treatment with HDM as measured by qPCR. (B) Intracellular staining for IL-13 in cells recovered from the bronchoalveolar lavage of naive mice. Flow cytometric analysis of (C) CD4⁺IFN γ ⁺ and CD4⁺IL-17A⁺, respectively and (D) Lin⁻CD45⁺ICOS⁺T1/ST2⁺ (Total ILC), Lin⁻CD45⁺ICOS⁺T1/ST2⁺IL-13⁺ (ILC2) and Lin⁻CD45⁺ICOS⁺T1/ST2⁺IL-17a⁺ (ILC3) cells recovered from the lung and quantified by flow cytometry. Levels of HDM specific IgE (E), IgG1 (F) and IgG2a (G), in WT and IRF5^{-/-} mice after 3 weeks of intranasal house dust mite exposure. *P < 0.05, n.s. (not significant), WT compared with IRF5^{-/-} animals by Mann-Whitney test. Data were generated from four independent experiments; n=7-20 per group.

Supplemental Figure 2. Expression of (A) Muc-5b, (B) Muc 5ac, (C) Arginase-1, (D) YM-1 and (E) iNOs after methacholine challenge in whole lung homogenates as measured by qPCR, fold changes are calculated relative to PBS treated wild-type controls. *P < 0.05, n.s. (not significant), WT compared with IRF5^{-/-} animals by Mann-Whitney test. Data were generated from four independent experiments; n=7–20 per group.

Supplemental Figure 3. (A) Flow cytometric analysis of IRF5 positive cells recovered from whole lung homogenates, in naïve WT mice. (B) Immunohistochemistry for total IRF5 expression demonstrates positively stained epithelial cells of the conducting airways and macrophages (arrows). (C) Flow cytometric gating strategy for analysis of donor cells recovered from BAL 24h after transfer; n=4-10 per group.

Supplementary Figure 4. BAL (A) and lung (B) IL-4 levels as determined by ELISA. (C) Data shown represent mean ± s.e.m. *P < 0.05, **P < 0.01, WT-AM recipients compared with IRF5^{-/-}-AM recipient animals, by Mann-Whitney test. Box and whisker plots represent the mean, IQR and minimum and maximum values; n=4-6 per group.

Supplemental Figure 5. Increased protein expression of IRF5 in alveolar macrophages, 2 days after intranasal installation of AdIRF5 as assessed by immunohistochemistry (A) and flow cytometry (B). Photographs are representative examples from each group. AdC, control adenoviral vector; AdIRF5, IRF5-expressing adenoviral vector, IRF5 expressing cells appear brown. (C) IL-6 and (D) IL-1β, (E) TNF-α and (F) IFN-γ levels in the serum as determined by ELISA. (G) BAL differential cell counts 2 days after intranasal installation of AdIRF5. (H) Distribution of IRF5 in AMs or IMs, respectively, 2 days after instillation with adenovirus. *P < 0.05, **P < 0.01, n.s. (not significant), comparing control adenoviral vector (AdC) house dust mite (HDM) treated groups with IRF5-expressing adenoviral vector (AdIRF5); n=4-6 per group.

Supplemental Figure 6. (A) TGF- β 1, TGF- β 2 and TGF- β 3 and (B) IL-10, after HDM challenge in whole lung homogenates as measured by qPCR, fold changes are calculated relative to AdC treated controls. Data shown represent means \pm s.e.m. of two independent experiments. *P < 0.05, **P < 0.01, n.s. (not significant), comparing control adenoviral vector (AdC) house dust mite (HDM) treated groups with IRF5-expressing adenoviral vector (AdIRF5), HDM treated groups by Mann-Whitney test; $n = 5-10$ per group.

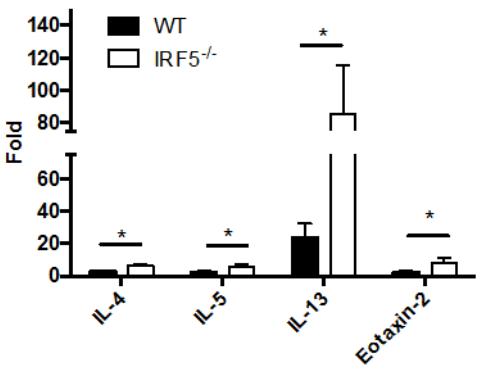
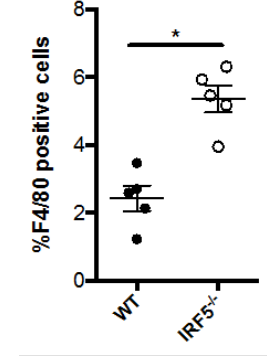
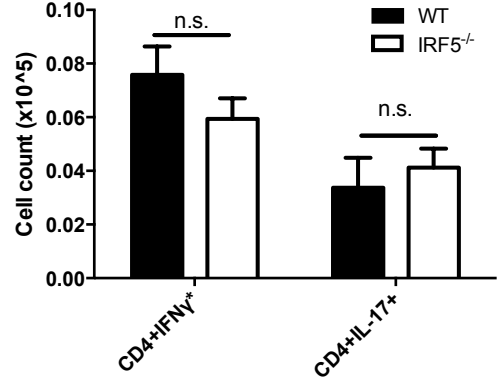
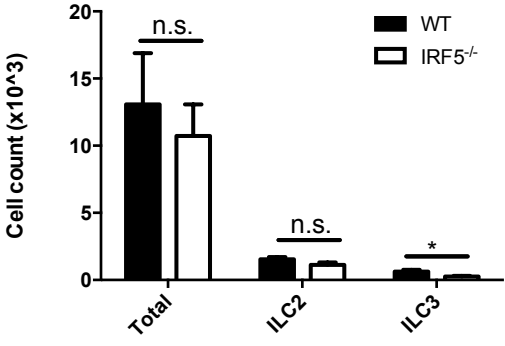
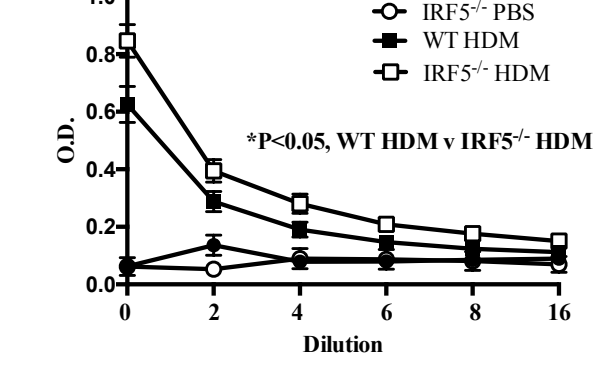
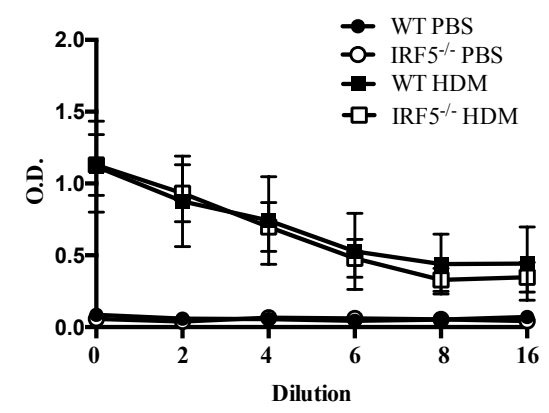
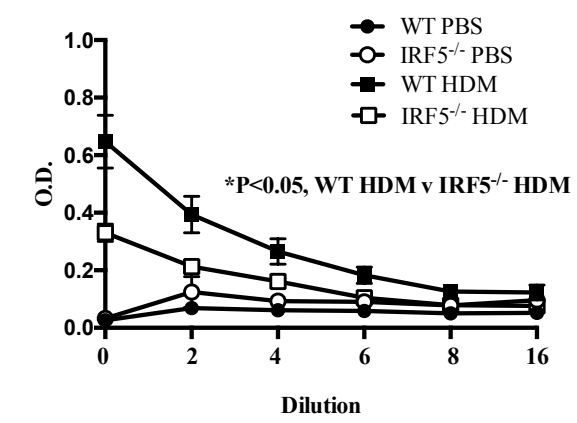
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Figure S1

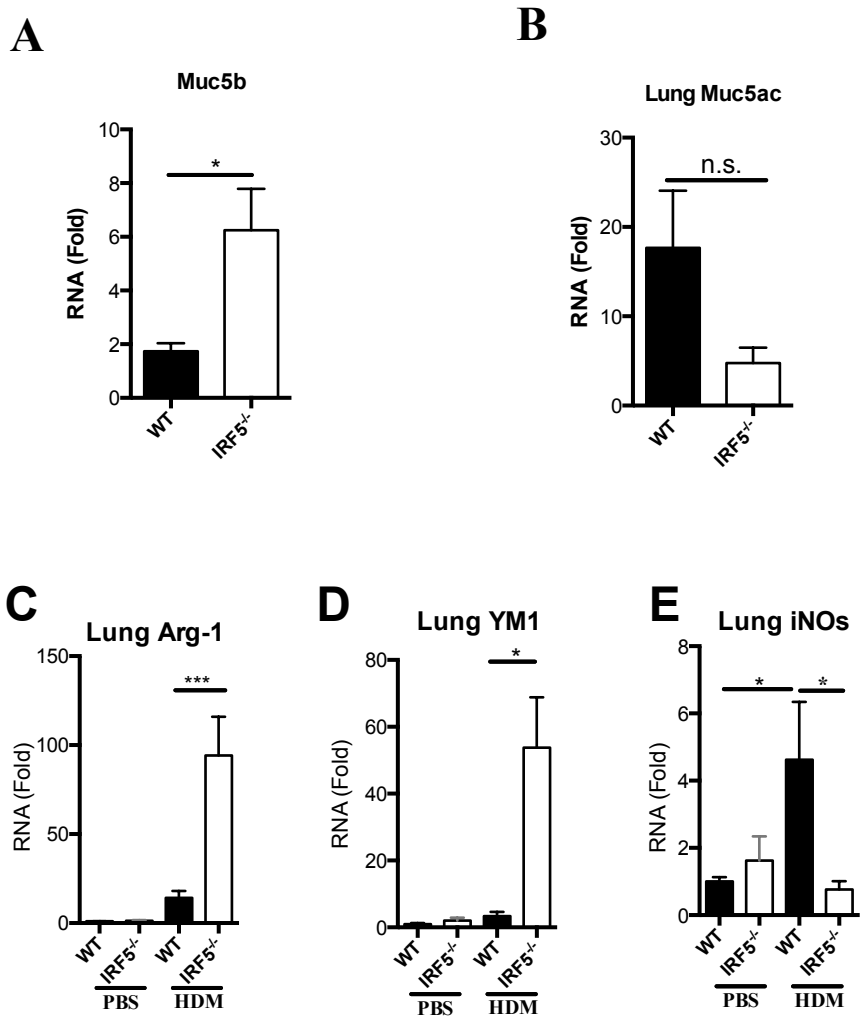
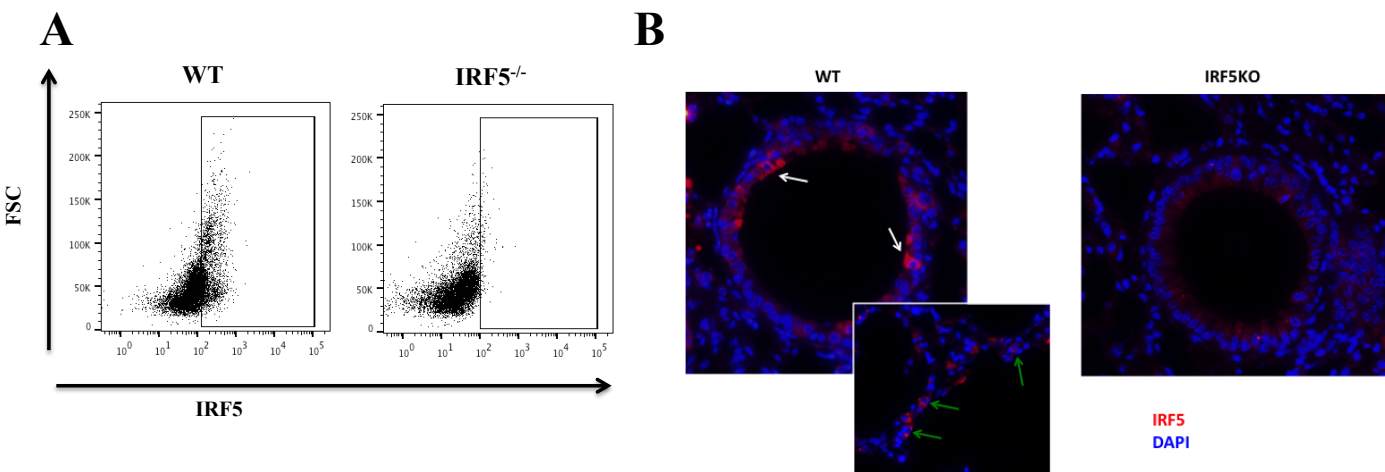


Figure S2



C

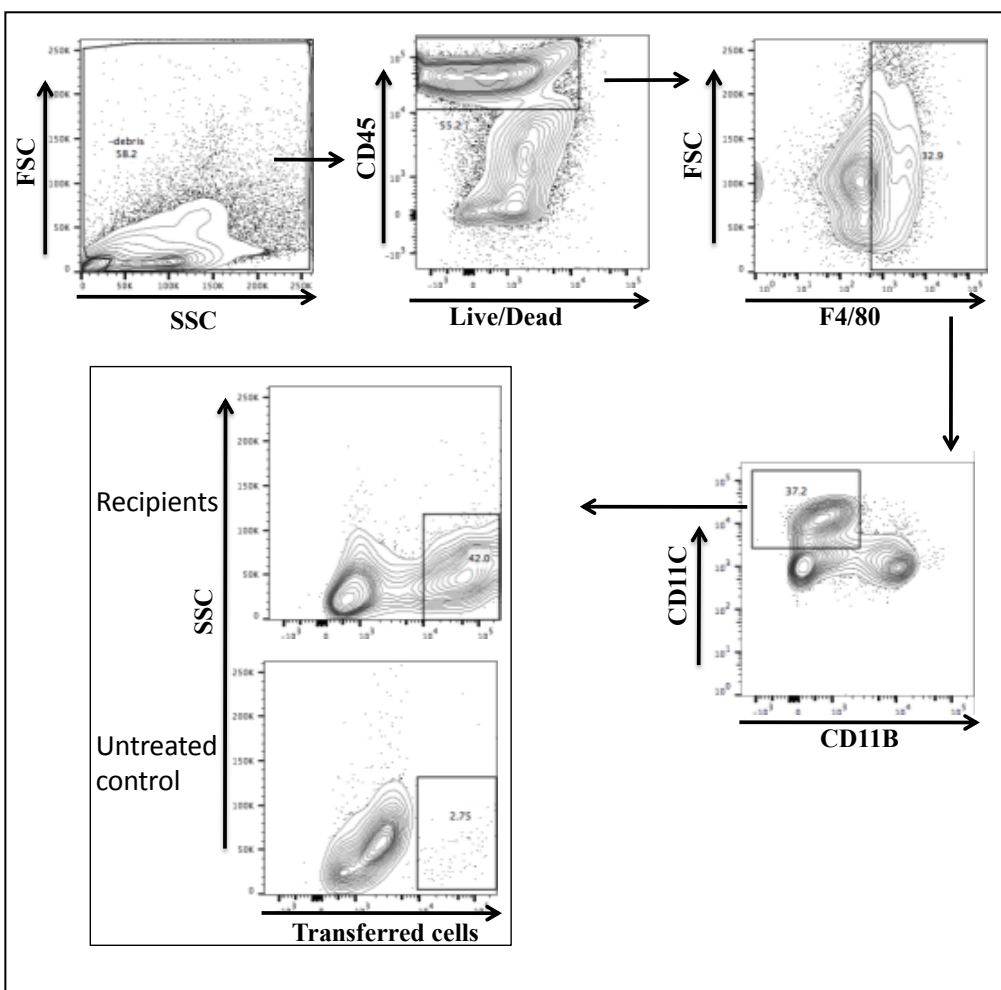


Figure S3

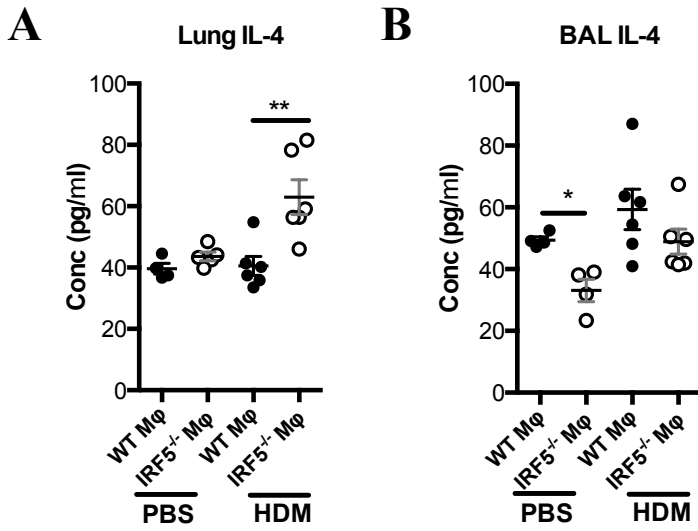
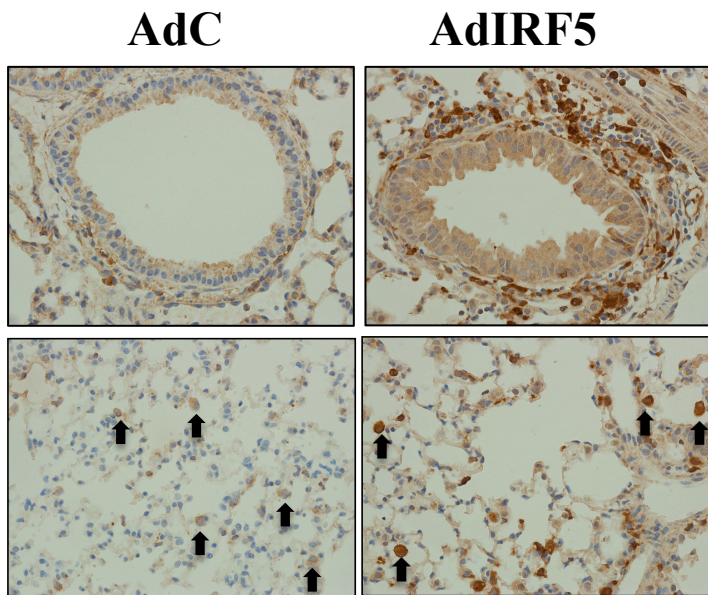
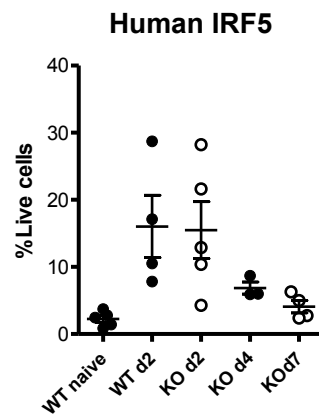
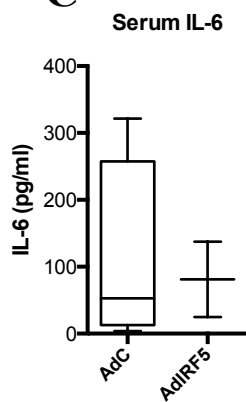
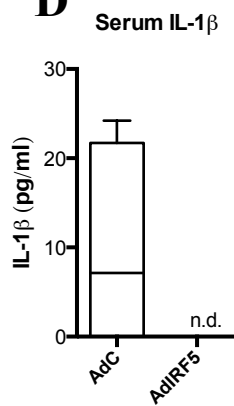
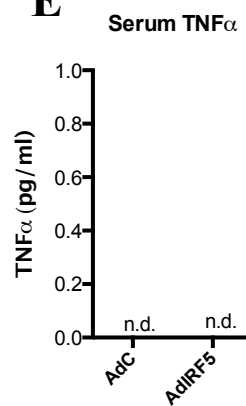
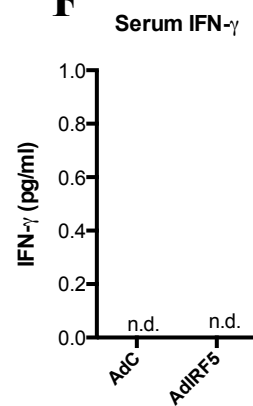
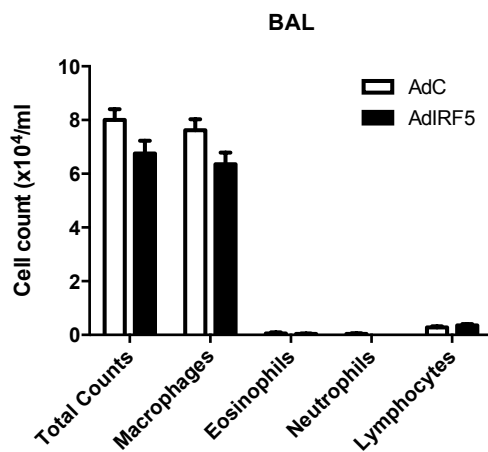
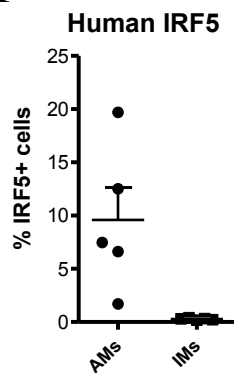
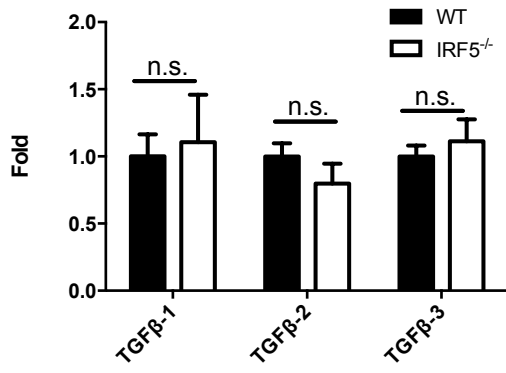
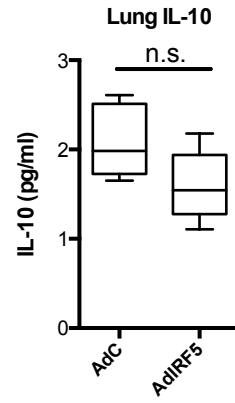


Figure S4

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A**B****Figure S6**