



Correction to: Critical role of interleukin-23 in development of asthma promoted by cigarette smoke

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Correction to: Journal of Molecular Medicine

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The original publication of this paper contains a mistake. Correct images for figures 1,2, 3, 4 and 5 are shown in this paper.

The original article has been corrected.

The online version of the original article can be found at <https://doi.org/10.1007/s00109-019-01768-y>

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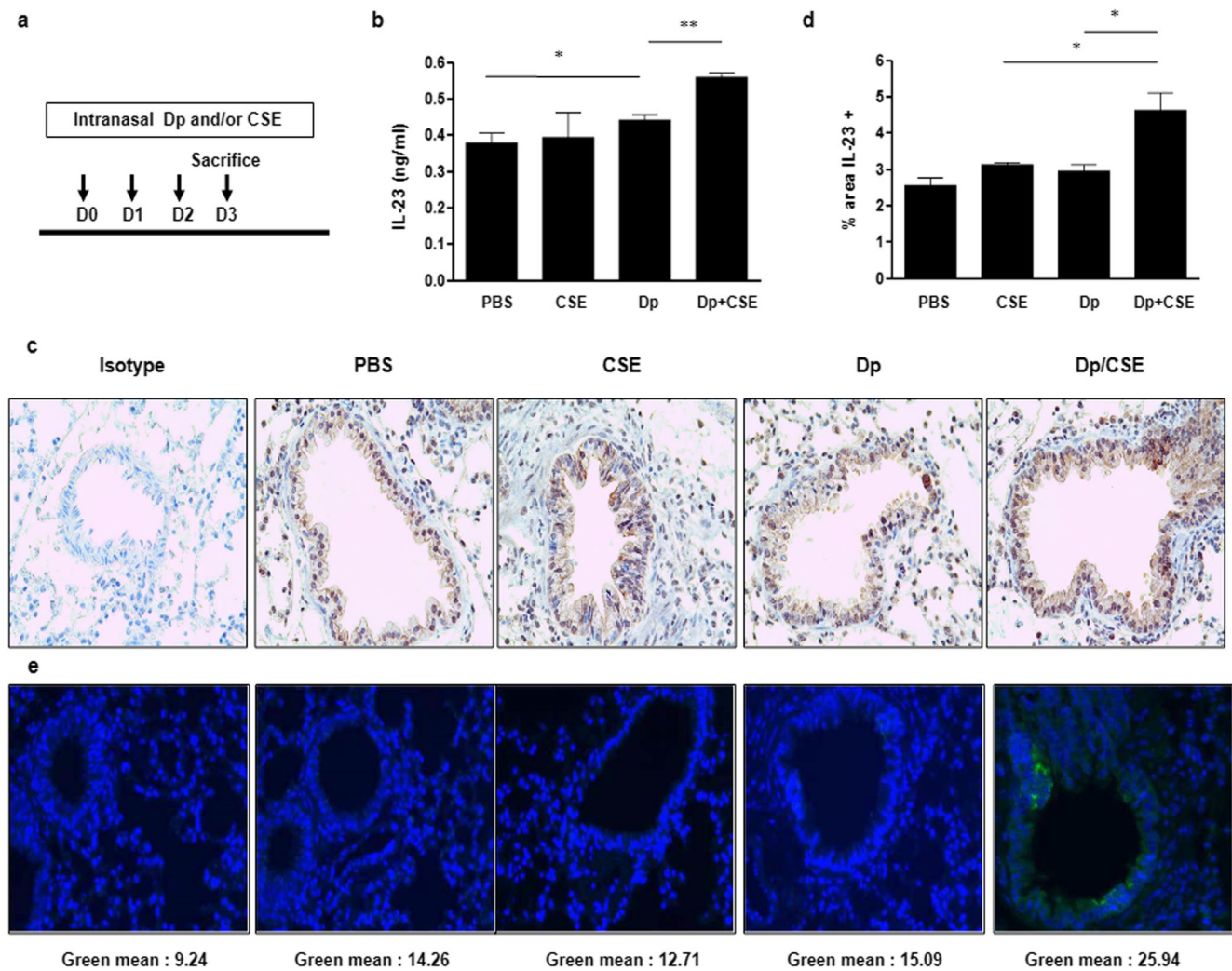


Fig. 1 The expression of IL-23 in lung of mice simultaneously exposed to PBS or Dp and 3 days of cigarette smoke extract (CSE). **a** Experimental protocol. The expression of IL-23 from lung was detected after instillation of Dp with or without CSE. **b** The protein level of IL-23

in crushed lung was detected using ELISA. **c** The expression of IL-23 in lung was detected using immunohistochemistry staining (IHC). **d** IL-23 IHC quantification. **e** The expression of IL-23 in lung was detected using immunofluorescence staining (IF, green). * $p < 0.05$, ** $p < 0.01$

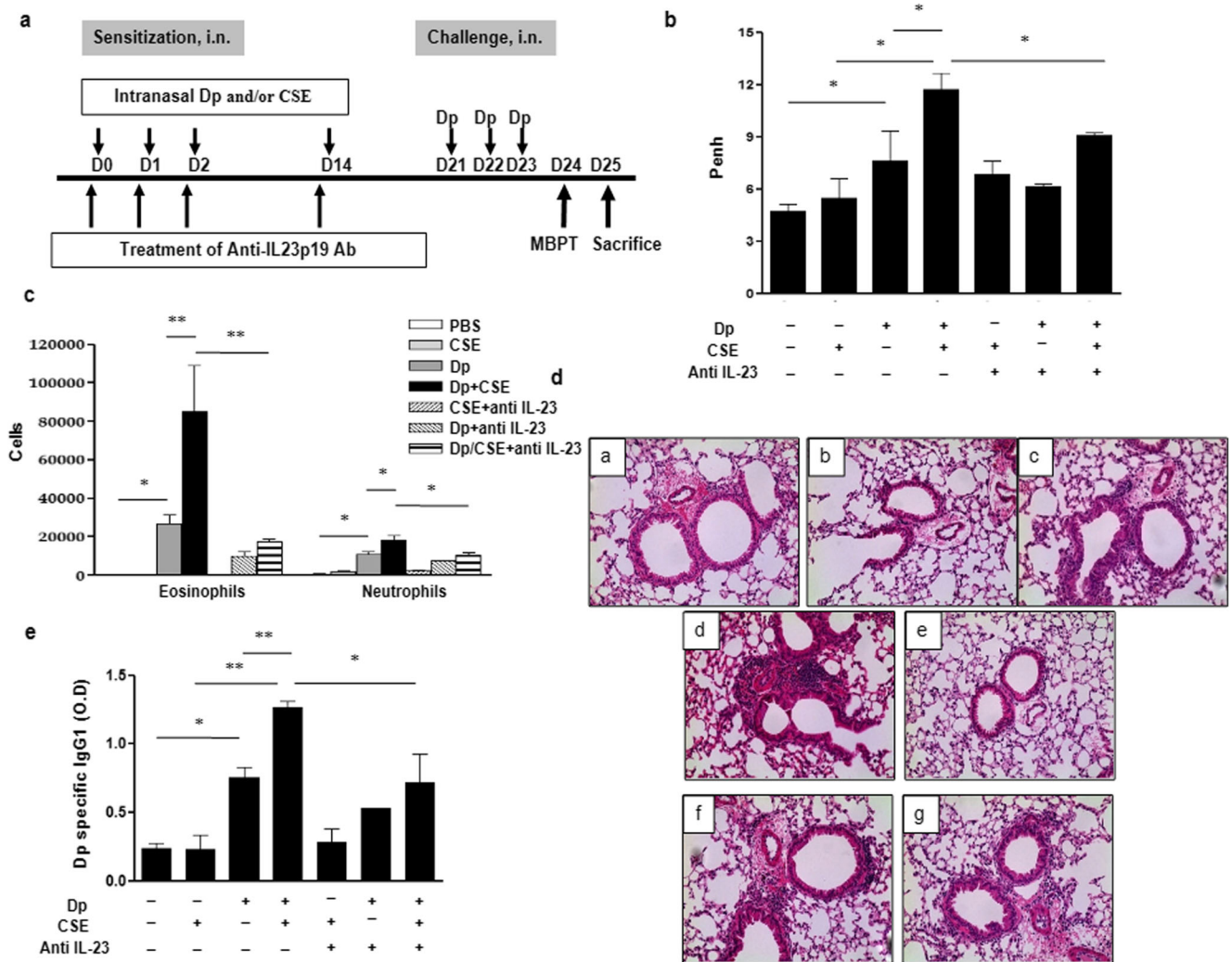


Fig. 2 The evaluation of asthmatic phenotypes in anti-IL-23 Ab-treated mice during sensitization period. **a** Experimental protocol for house dust mite and cigarette smoke extract induced asthma model of study. **b** Methacholine hyperresponsiveness was measured 24 h after the last challenge. **c** The numbers of eosinophils and neutrophils in BALF. **d** Lung

histology after the last challenge (a: PBS, b: CSE, c: Dp, d: Dp/CSE, e: CSE + anti-IL-23 Ab, f: Dp + anti-IL-23 Ab, g: Dp/CSE + anti-IL-23 Ab, H&E stain, $\times 200$). **e** Serum Dp-specific IgG1 was evaluated after the last challenge. OD, optical density; * $p < 0.05$; ** $p < 0.01$

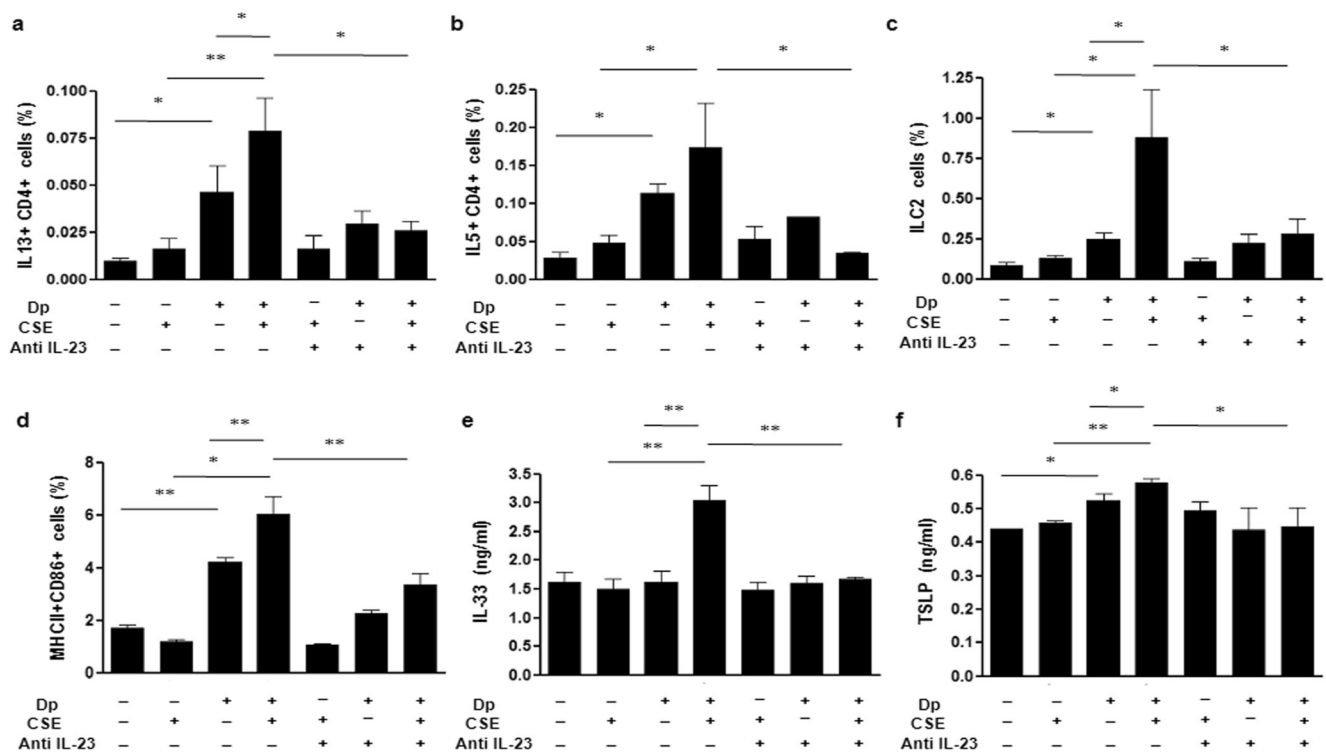


Fig. 3 The population of Th2 cells, IL13 + ILC2 after challenge and the numbers of DCs, the level of innate pro-Th2 cytokines after the last sensitization. **a–c** IL13 or IL5-produced CD4+ T cells and IL13- produced type 2 innate lymphoid cells from lung were evaluated after the last challenge in anti-IL-23 Ab-treated mice during sensitization. After treatment of anti-IL-23 Ab in the sensitization period, mice were

sacrificed 24 h after the last sensitization. After sacrifice, lung draining lymph nodes were isolated from mice. **d** The numbers of MHCII+CD86+ cells in CD11c + DCs were determined using flow cytometry. **e–f** The levels of IL-33 and TSLP in the supernatants of crushed lungs were determined using ELISA; * $p < 0.05$; ** $p < 0.01$

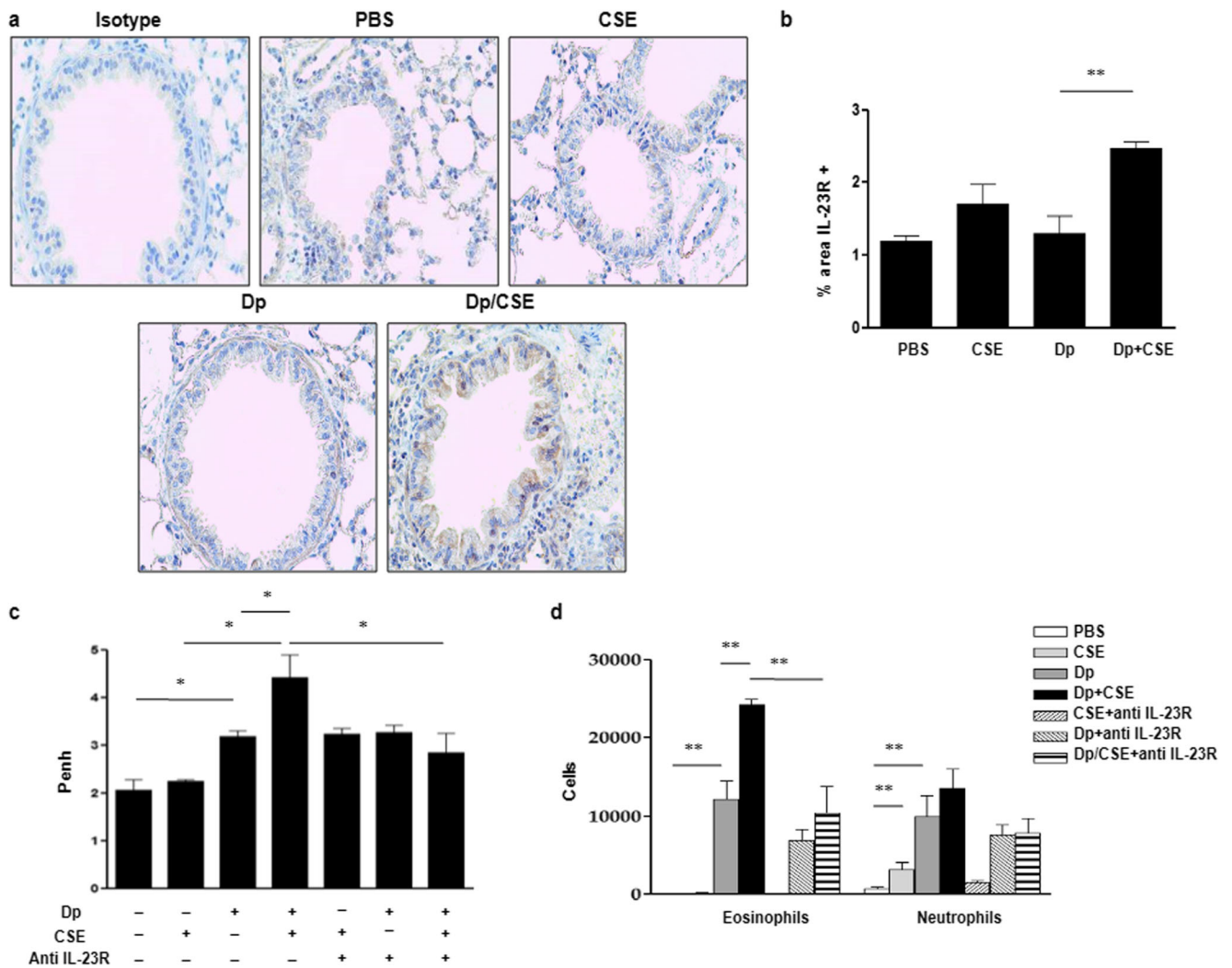


Fig. 4 The expression of IL-23R in lung of mice after sensitization and asthmatic phenotypes after challenge in anti-IL-23R Ab-treated mice during sensitization period. The expression of IL-23R in lung of mice simultaneously exposed to PBS or house dust mite and 3 days of cigarette smoke extract. **a** The expression of IL-23R in lung was detected using

immunohistochemistry staining (IHC). **b** IL-23R IHC quantification. After treatment of anti-IL-23R Ab in the sensitization period, mice were sacrificed 24 h after the challenge. **c** Methacholine hyperresponsiveness was measured 24 h after the last challenge. **d** The number of eosinophils and neutrophils in BALF. * $p < 0.05$, ** $p < 0.01$

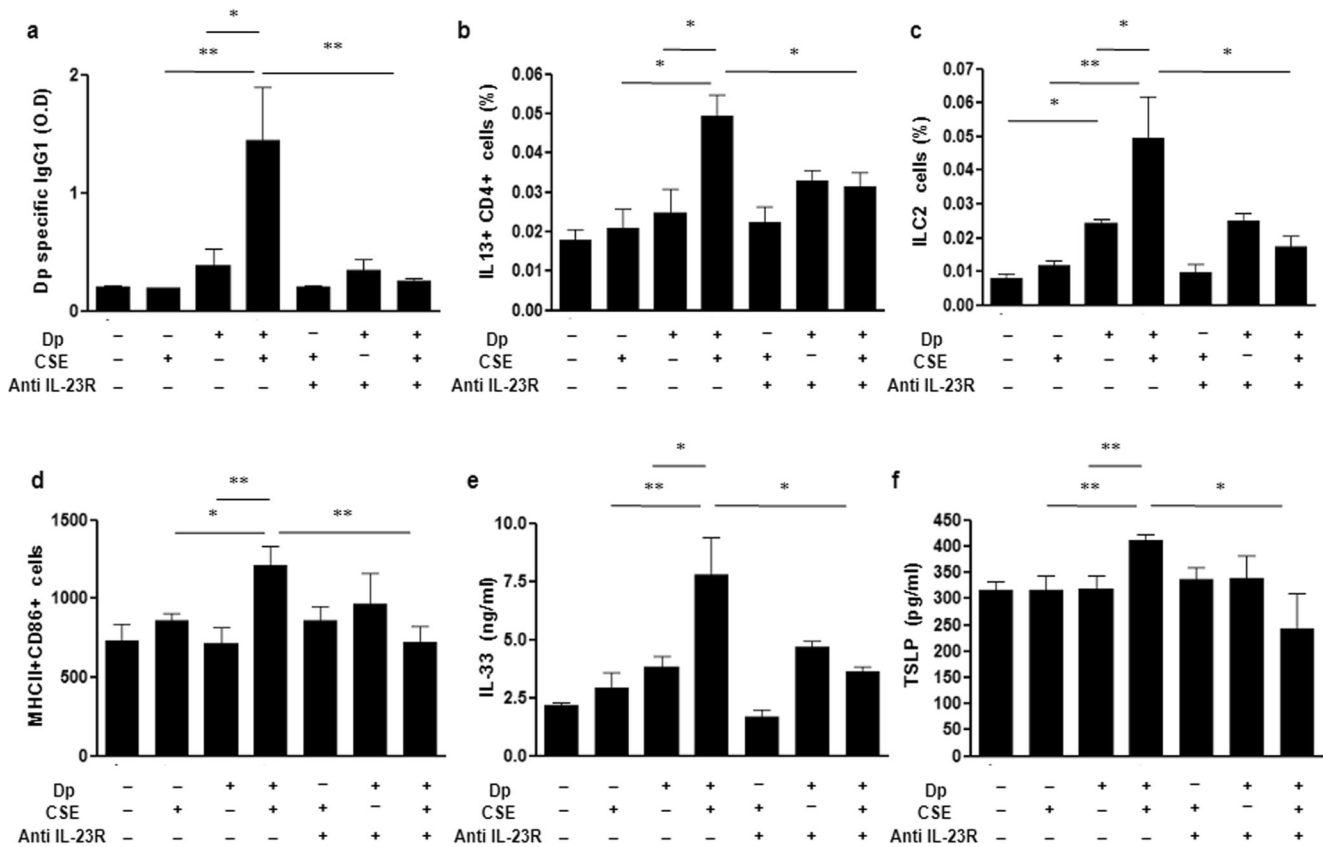


Fig. 5 The population of IL13+ CD4+ T cells, IL13 + ILC2 after the last sensitization and the numbers of DCs, the level of innate pro-Th2 cytokines after the last sensitization. **a** Serum Dp-specific IgG1 was evaluated after the last challenge in anti-IL-23R Ab-treated mice during sensitization. **b–c** IL13- produced CD4+ T cells and IL13-produced type 2 innate lymphoid cell from lung were evaluated after the last challenge in anti-IL-23R Ab-treated mice during sensitization. After treatment of anti-IL-23R Ab in

the sensitization period, mice were sacrificed 24 h after the last sensitization. After sacrifice, lung draining lymph nodes were isolated from mice. **d** The numbers of MHCII+ CD86+ cells in CD11c + DCs were determined using flow cytometry. **e–f** The levels of IL-33 and TSLP in the supernatants of crushed lungs were determined using ELISA. * $p < 0.05$, ** $p < 0.01$