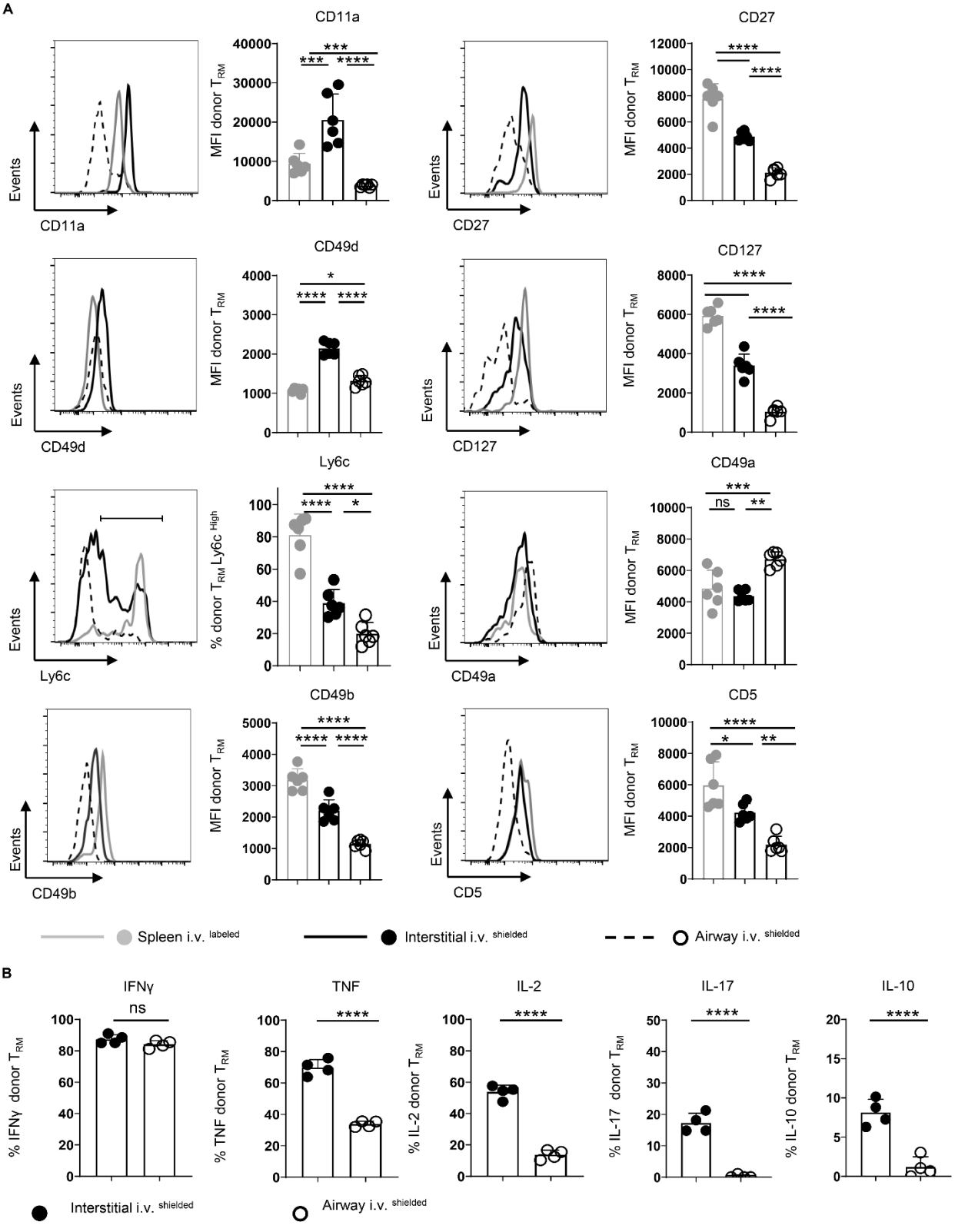
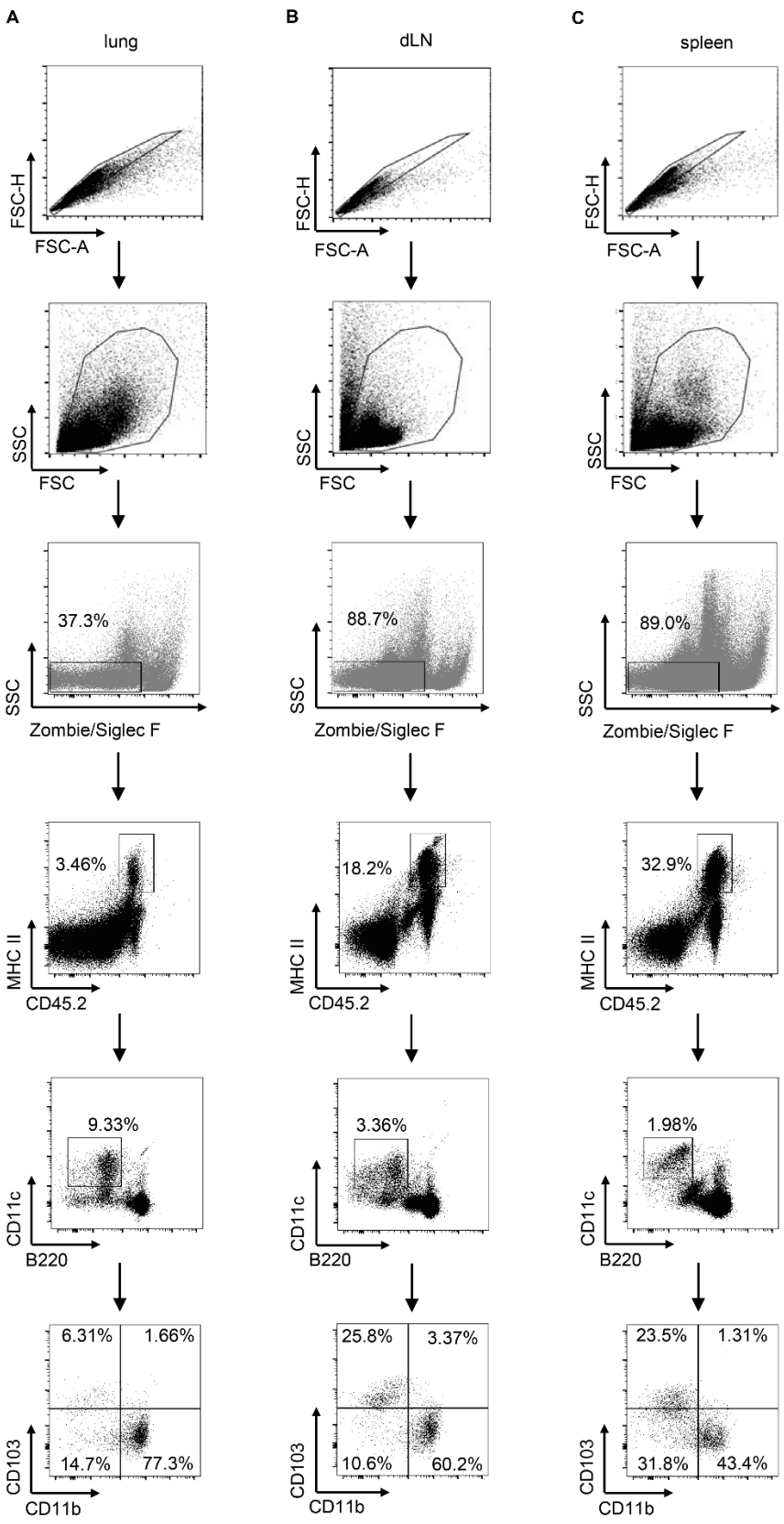
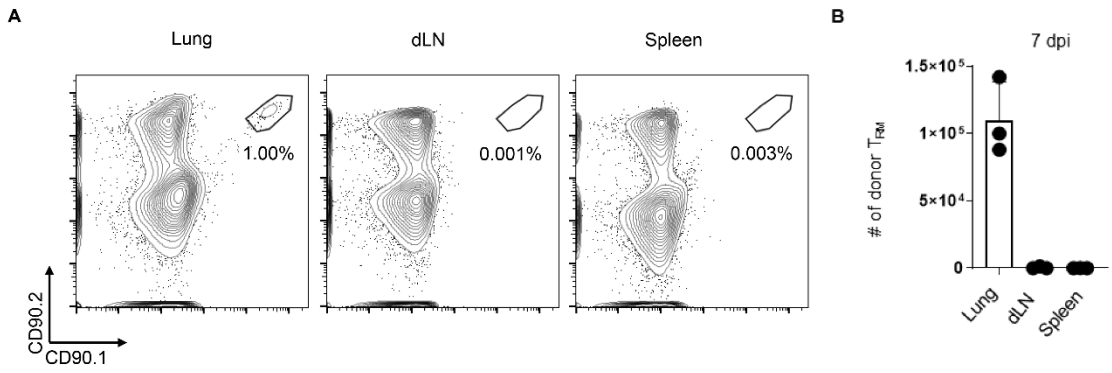

A
CD11a
CD27
CD49d
CD127
Ly6c
CD49a
CD49b
CD5
Events
MFI donor T_RM
% donor T_RM Ly6c High
Spleen i.v. labeled
Interstitial i.v. shielded
Airway i.v. shielded
B
IFNγ
TNF
IL-2
IL-17
IL-10
ns
% IFNγ donor T_RM
% TNF donor T_RM
% IL-2 donor T_RM
% IL-17 donor T_RM
% IL-10 donor T_RM
Interstitial i.v. shielded
Airway i.v. shielded

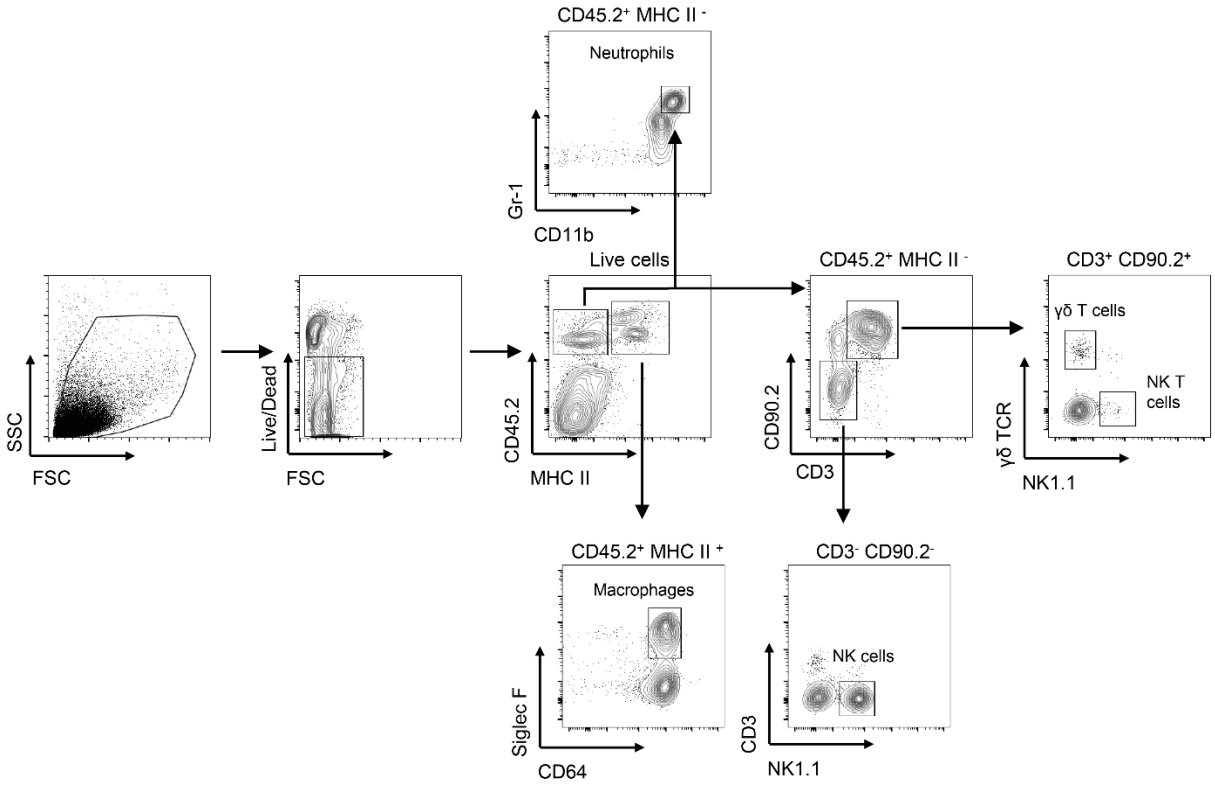
Supplemental Figure 1: *Airway and Interstitial T_{RM} are characterized by unique phenotypes and functional potential.* **(A)** Representative staining and summary analysis for stated marker expression by OT-II memory cells in IAV-primed mice at 45 dpi by splenic memory cells labeled with anti-CD4 antibody shortly before organ harvest (i.v.^{labeled}), i.v.^{shieled} cells from the lungs not recoverable by BAL, and i.v.^{shielded} cells recovered by BAL. n=6/group; pooled from 2 individual experiments. **(B)** The frequency of interstitial and airway memory OT-II cells positive for stated cytokines after restimulation; n=4/group; 1 of 3 experiments. One-way ANOVA with Tukey's post-test used in (A) and Students t test used in (B).



Supplemental Figure 2: *Representative staining* of *gating strategies for FACs identification of DC in lung (**A**), dLN (**B**) and spleen (**C**)*. Mice were primed with PR8-OVA_{II} and challenged 45 dpi i.n. with 50 ug of FITC-OVA. Organs were harvested at 1 day post OVA installation.



Supplemental Figure 3: *IAV-primed CD4 T_{RM} respond locally against IAV in adoptive hosts*. $CD90.2^{+}CD90.1^{+}$ OT-II memory cells were isolated from the lungs of PR8-OVA_{II}-primed mice at 26 dpi and $1x10^{6}$ were transferred i.n. to new unprimed B6 mice. The mice were then challenged with a sublethal dose of PR8-OVA_{II}. Shown is representative staining to identify donor memory-derived cells at 7 dpi in stated organs **(A)** and the number of donor cells detected in individual mice **(B)**; n = 3 mice; results from 1 of 2 experiments.



Supplemental Figure 4: *Representative staining of gating strategies used to identify innate cells populations in the lungs summarized in Figure 4F.*