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Figure legends

Fig E1. Levels of PN-specific IgE and IgG$_1$ in serum from PN-sensitized WT and *Kit$^{W\text{-}sh/W\text{-}sh}$* mice. Serum from PN-sensitized C57BL/6J mice (black circles; *n*=15) and MC-deficient *Kit$^{W\text{-}sh/W\text{-}sh}$* mice (white circles; *n*=13-15) was collected 24 hours before PN challenge. Levels of PN-specific IgE (**A**) and PN-specific IgG$_1$ (**B**) were measured by ELISA. Data are mean ± SEM.

Fig E2. Effect of treatment with an anti-Ly6G antibody on blood monocytes, eosinophils and basophils in WT and *Kit$^{W\text{-}sh/W\text{-}sh}$* mice. PN-sensitized C57BL/6J mice (WT) and MCdeficient *Kit$^{W\text{-}sh/W\text{-}sh}$* mice were treated i.p. with 500 ⌈g of neutrophil-depleting anti-Ly6G antibody (⟨-Ly6G; *n*=5-8) or an isotype control (Isotype control; *n*=5) 24 hours before the challenge with PN. Blood was isolated from all groups of mice 1 hour before PN-challenge and blood leukocytes were analyzed by flow cytometry. (**A**) Gating strategy used to distinguish neutrophils (Gr-1$^+$; CD11b$^+$; Siglec-F$^-$), monocytes (Gr-1^{low}; CD11b$^+$; Siglec-F$^-$), eosinophils (SSC^{high}; Siglec-F$^+$) and basophils (CD49b$^+$; IgE$^+$). (**B**) Percentage of blood monocytes (Gr-1^{low}; CD11b$^+$; Siglec-F$^-$). (**C**) Percentage of blood eosinophils (SSC^{high}; Siglec-F$^+$). (**D**) Percentage of blood basophils (CD49b$^+$; IgE$^+$). Data are mean + SEM; * or *** = $P < 0.05$ or < 0.001 *vs*. corresponding isotype control-treated group; # = $P < 0.05$ *vs*. indicated group (unpaired Student's *t* test).

Fig E3. Effect of treatment with diphtheria toxin on blood basophils, monocytes, eosinophils and neutrophils in *Mcpt5-Cre; iDTR* mice. *Mcpt5-Cre$^-$; iDTR$^{fl/+}$* mice (Cre$^-$; *n*=9) and *Mcpt5-Cre$^+$; iDTR$^{fl/+}$* mice (Cre$^+$; *n*=5) mice were treated i.p. with 500 ng of diphtheria toxin once a week starting at the first oral sensitization with PN. Blood was isolated from all groups of mice 1 hour before PN-challenge and blood leukocytes were analyzed by flow cytometry. (**A**) Percentage of blood basophils (CD49b$^+$; IgE$^+$). (**B**) Percentage of blood monocytes (Gr-1^{low}; CD11b$^+$; Siglec-F$^-$). (**C**) Percentage of blood eosinophils (SSC^{high}; Siglec-F$^+$). (**D**) Percentage of blood neutrophils (Gr-1^{high}; CD11b$^+$; Siglec-F$^-$). Data are mean + SEM. N.S.: not significant ($P > 0.05$ by unpaired Student's *t* test).

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Fig E5. Effect of treatment with the basophil-depleting antibody Ba103 on blood monocytes, eosinophils and neutrophils. PN-sensitized C57BL/ 6J mice were treated i.p. with 50 ⌈g of a basophil-depleting Ba103 antibody (*n*=9) or an isotype control (Isotype control; *n*=7) 48 hours before PN challenge. Blood was isolated from all groups of mice 1 hour before PNchallenge and blood leukocytes were analyzed by flow cytometry. (**A**) Percentage of blood monocytes (Gr-1^{low}; CD11b$^+$; Siglec-F$^-$). (**B**) Percentage of blood eosinophils (SSC^{high}; Siglec-F$^+$). (**C**) Percentage of blood

neutrophils (Gr-1$_{high}$; CD11b$_{+}$; Siglec-F$_{-}$). Data are mean + SEM. N.S.: not significant (P > 0.05 by unpaired Student's t test).

Fig E6. Effect of treatment with diphtheria toxin on blood monocytes, eosinophils and neutrophils in *Mcpt8$_{DTR}$* mice. PN-sensitized *Mcpt8$_{+/+}$* (n=9) and *Mcpt8$_{DTR/+}$* (n=9) mice were treated i.p. with 500 ⌈g of diphtheria toxin 48 hours before PN challenge. Blood was isolated from all groups of mice 1 hour before PN-challenge and blood leukocytes were analyzed by flow cytometry. (**A**) Percentage of blood monocytes (Gr-1$_{low}$; CD11b$_{+}$; Siglec-F$_{-}$). (**B**) Percentage of blood eosinophils (SSC$_{high}$; Siglec-F$_{+}$). (**C**) Percentage of blood neutrophils (Gr-1$_{high}$; CD11b$_{+}$; Siglec-F$_{-}$). Data are mean + SEM. N.S.: not significant (P > 0.05 by unpaired Student's t test).

Fig E7. Levels of PN-specific IgE and IgG$_1$ in serum from PN-sensitized *Cpa3-Cre$_{+}$;Mcl-1$_{+/+}$* and *Cpa3-Cre$_{+}$;Mcl-1$_{fl/fl}$* mice. Serum from PN-sensitized *Cpa3-Cre$_{+}$;Mcl-1$_{+/+}$* (black circle; n=6-7) and MC- and basophil-deficient and *Cpa3-Cre$_{+}$;Mcl-1$_{fl/fl}$* (grey circle; n=5-6) was collected 24 hours before the challenge. Levels of PN-specific IgE (**A**) and PN-specific IgG$_1$ (**B**) were measured by ELISA. Data are mean ± SEM.

Fig E8. Responses of WT mice, MC-deficient *Kit$_{W\text{-}sh/W\text{-}sh}$* mice, and *Kit$_{W\text{-}sh/W\text{-}sh}$* mice engrafted with bone marrow-derived cultured MCs in a moderate model of peanut-induced anaphylaxis. C57BL/6J mice (WT), MC-deficient C57BL/6J-*Kit$_{W\text{-}sh/W\text{-}sh}$* mice (*Kit$_{W\text{-}sh/W\text{-}sh}$*) and C57BL/6J-*Kit$_{W\text{-}sh/W\text{-}sh}$* mice engrafted with WT BMCMCs (2 x 10$_6$ cells i.p. + 10$_7$ cells i.v., 12 weeks before the first sensitization with PN) (WT BMCMCsa□*Kit$_{W\text{-}sh/W\text{-}sh}$*) were sensitized orally once a week for 4 weeks with 10 mg PN + 10 ⌈g cholera toxin. Mice were challenged with 2.5 mg PN i.p. two weeks after the last sensitization. (**A**) PN-induced hypothermia. Crossbones symbol indicates death of one mouse. (**B**) MCs in the peritoneal lavage fluid or mesentery ("Mesenteric windows") are indicated by arrows in photomicrographs of cells from the peritoneal cavity (May-Grunwald-Giemsa stain) or of the mesenteric windows (Csaba stain). (**C-D**) Numbers of MCs in the peritoneal lavage fluid (**C**) and mesenteric windows (**D**). (**E-F**) Toluidine blue staining for MCs (**E**) and MC numbers (**F**) in sections of forestomach, glandular stomach, lung, spleen and back skin. Data in **A**, **C**, **D** & **F** are mean ± SEM or mean + SEM from n=8-14 (**A**) or n=4-6 (**C**, **D** & **F**) mice / group. #, ## or ### = P < 0.05, 0.01 or 0.001 *vs*. *Kit$_{W\text{-}sh/W\text{-}sh}$* group (in **A**); *, ** or *** = P < 0.05, 0.01 or 0.001 *vs*. WT group (in **A**) or for comparisons indicated (in **C**, **D** & **F**); N.S. = not significant (P > 0.05) (unpaired Student's t test).

Fig E9. Effect of basophil depletion in a moderate model of peanut-induced anaphylaxis. All mice were sensitized orally once a week for 4 weeks with 10 mg PN + 10 ⌈g cholera toxin, and challenged with 2.5 mg PN i.p. two weeks after the last sensitization. (**A-B**) Percentage of blood basophils (CD49b$_{+}$; IgE$_{+}$) in blood samples collected 1 hour before challenge with PN (**A**) and PNinduced hypothermia (**B**) in PN-sensitized C57BL/6J mice treated i.p. with 50 ⌈g of basophildepleting antibodies Ba103 (n=7) or isotype control antibodies (n=8) 48 h before PN challenge. (**CD**) Percentage of blood basophils (CD49b$_{+}$; IgE$_{+}$) in blood samples collected 1 hour before challenge with PN (**C**) and PN-induced hypothermia (**D**) in PN-sensitized *Mcpt8$_{+/+}$* (n=6) and *Mcpt8$_{DTR/+}$*

(*n*=7) mice treated with 500 ng DT 48 h before challenge with PN. *P* > 0.05 by unpaired Student's *t* test for all time points. Crossbones symbol indicates death of one isotype control antibody-treated mouse.

Figure E1

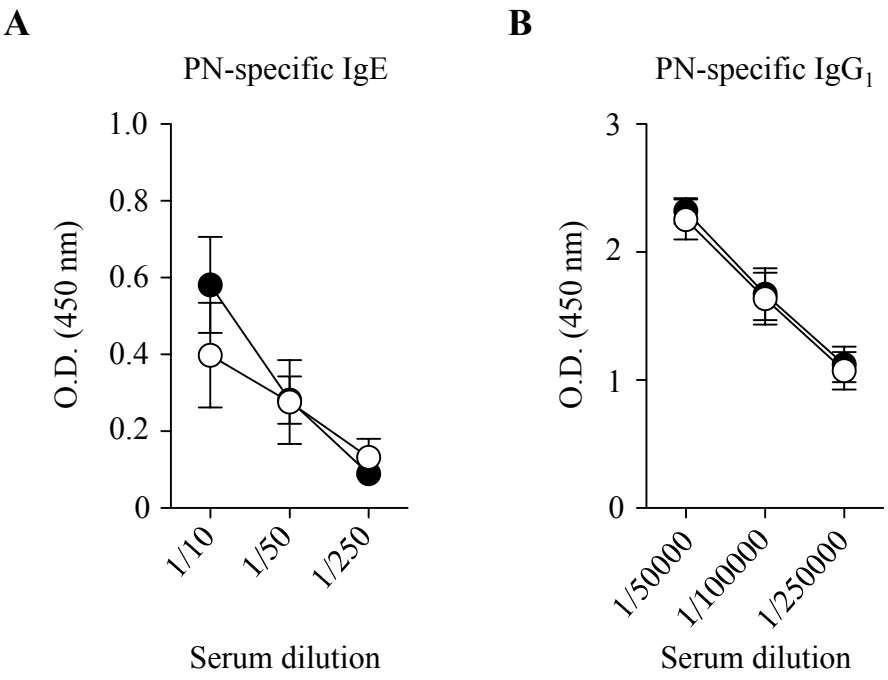

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Figure E2

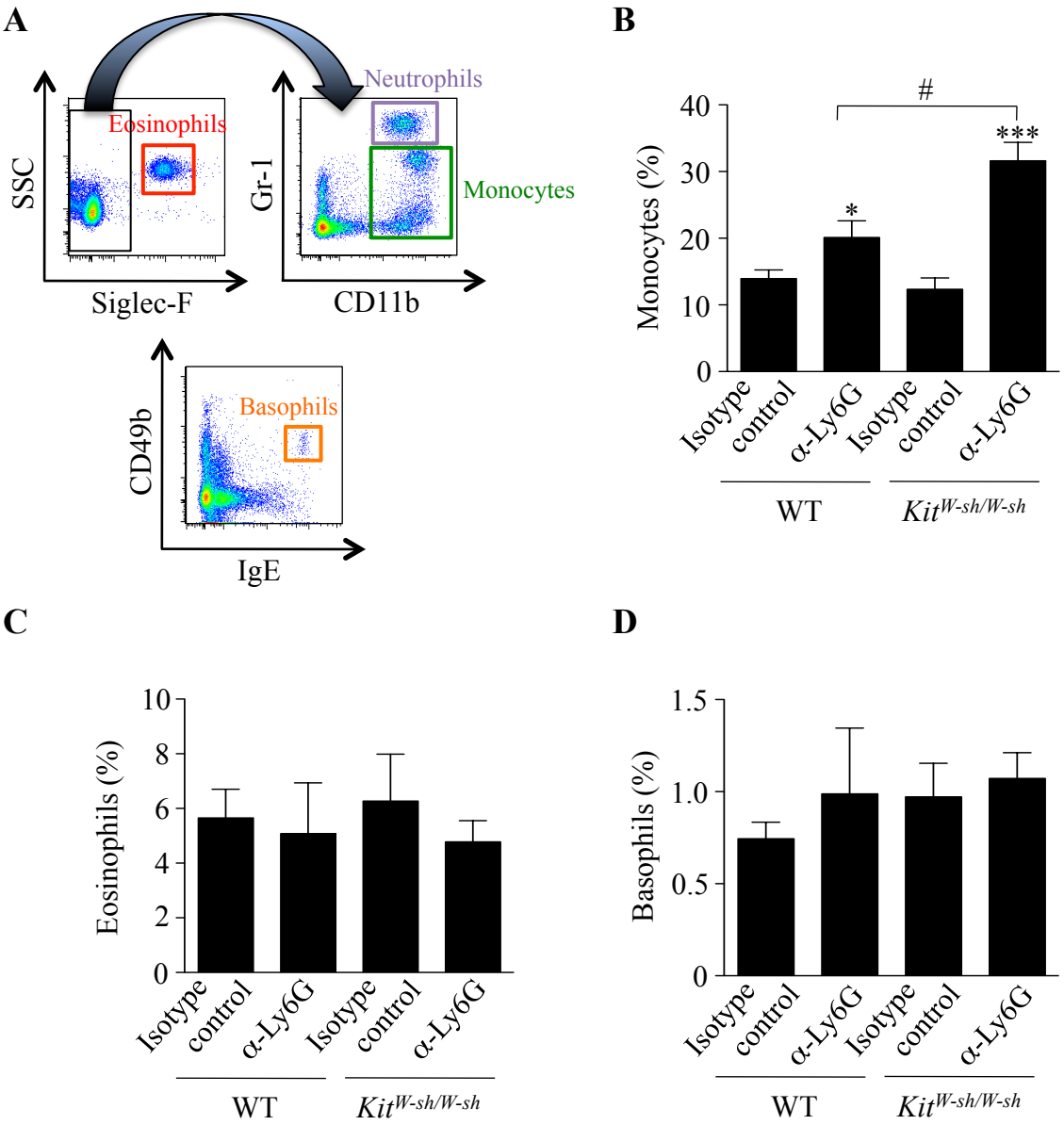

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Figure E3

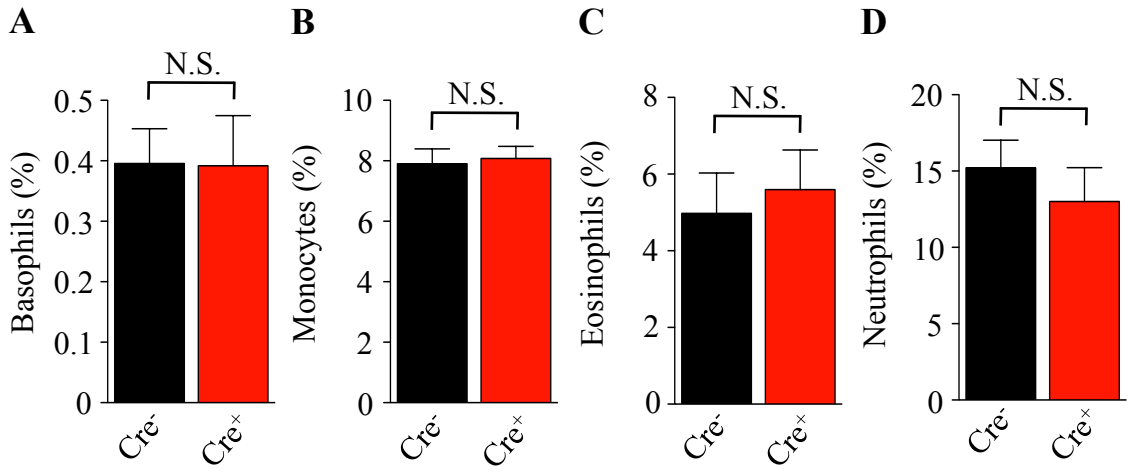

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Figure E4

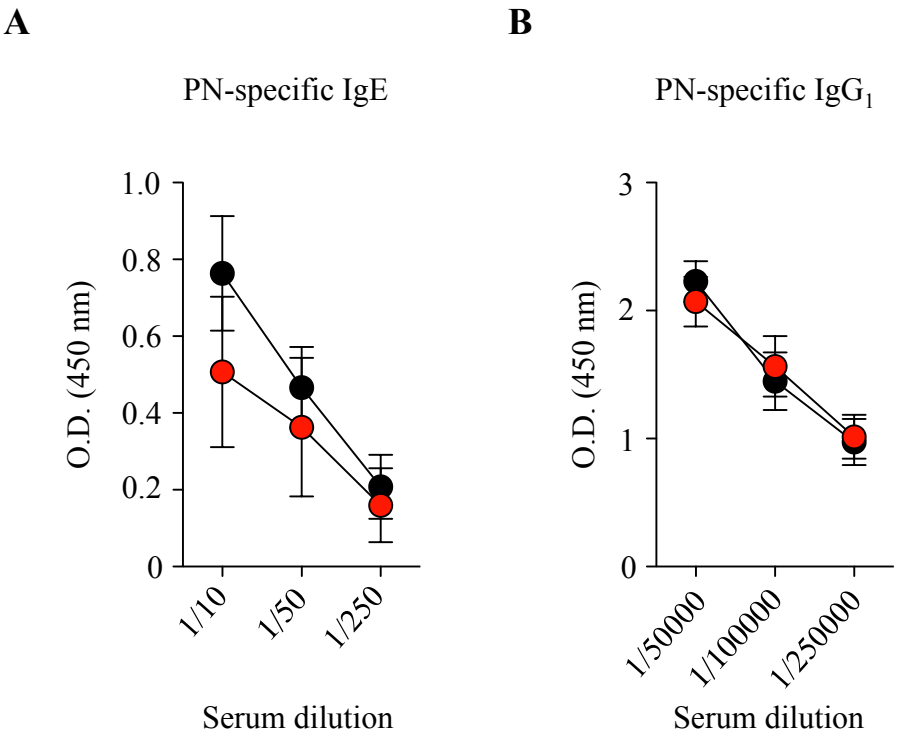

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Figure E5

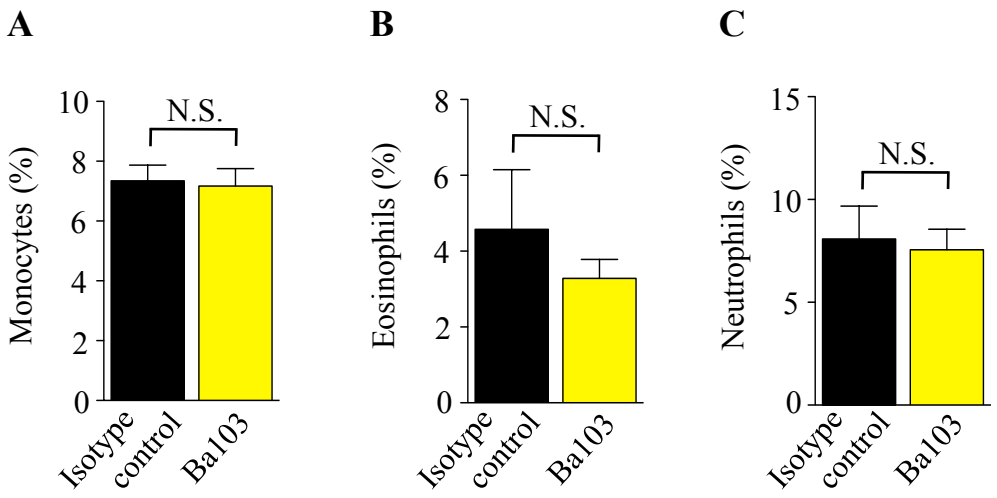

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Figure E6

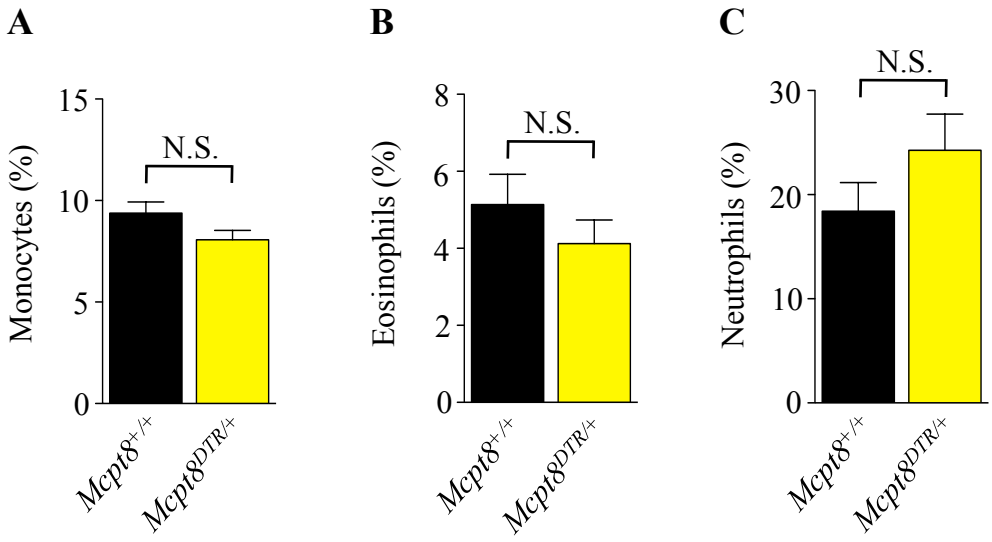

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Figure E7

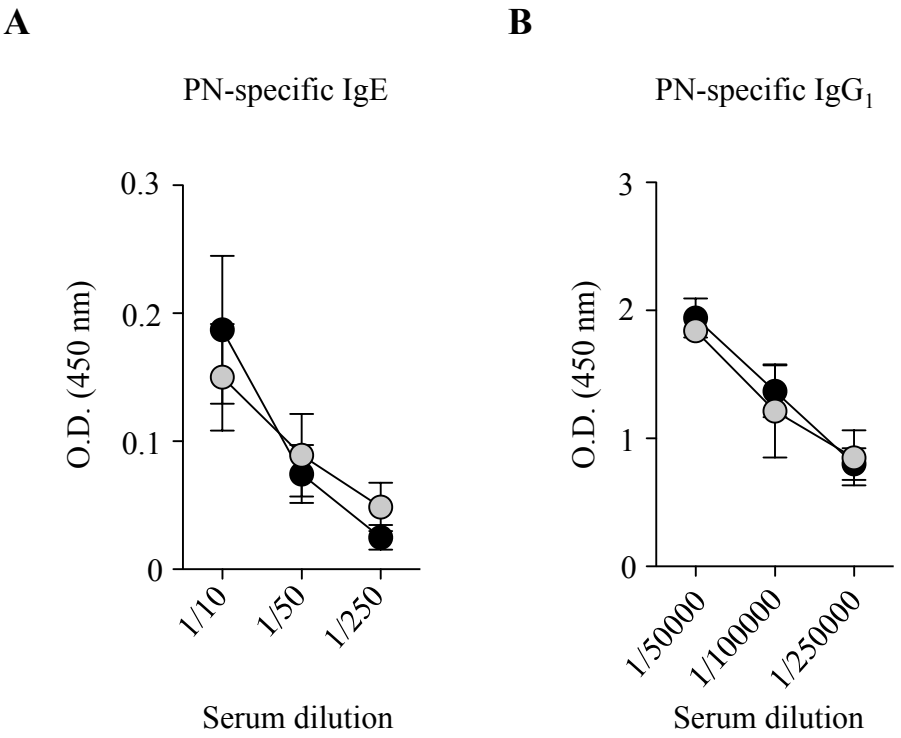

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Figure E8

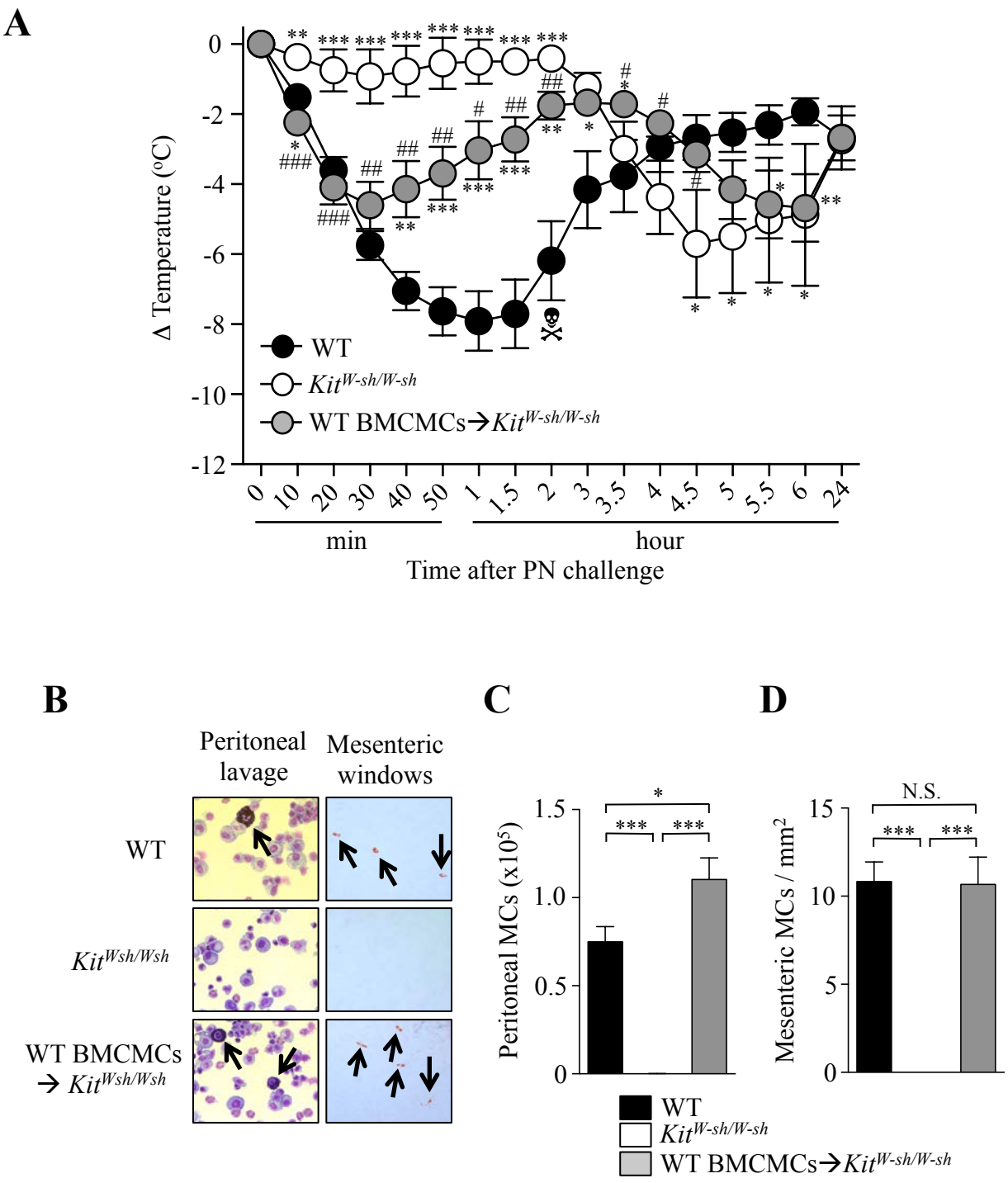
A
Δ Temperature (ºC)
0
-2
-4
-6
-8
-10
-12
WT
Kit W-sh/W-sh
WT BMCMCs→Kit W-sh/W-sh
0 10 20 30 40 50 1 1.5 2 3 3.5 4 4.5 5 5.5 6 24
min
hour
Time after PN challenge
B
Peritoneal lavage
Mesenteric windows
WT
Kit Wsh/Wsh
WT BMCMCs → Kit Wsh/Wsh
C
Peritoneal MCs (x10^5)
1.5
1.0
0.5
0
D
Mesenteric MCs / mm2
15
10
5
0
N.S.
WT
Kit W-sh/W-sh
WT BMCMCs→Kit W-sh/W-sh

Figure E8, continued.

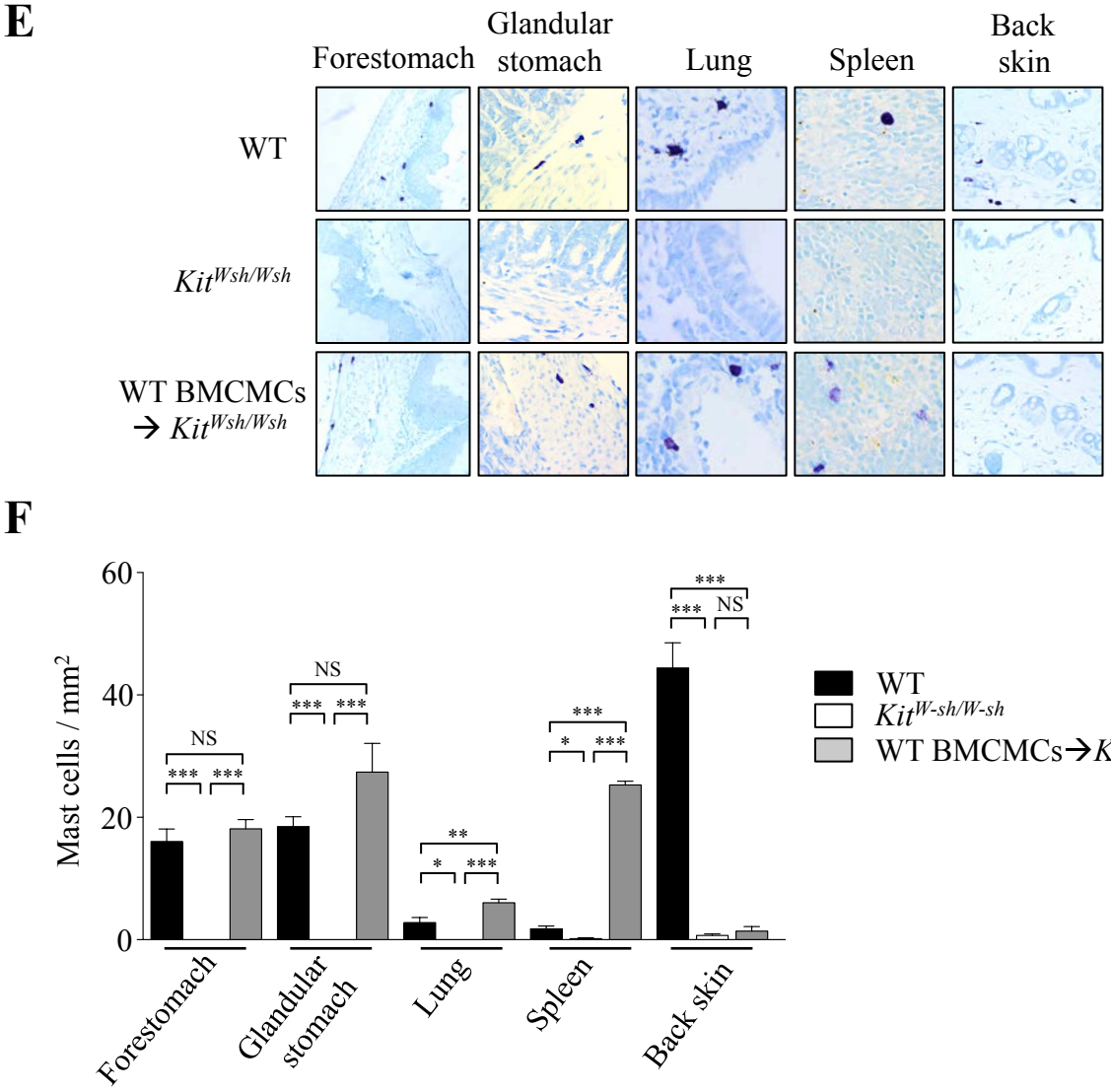

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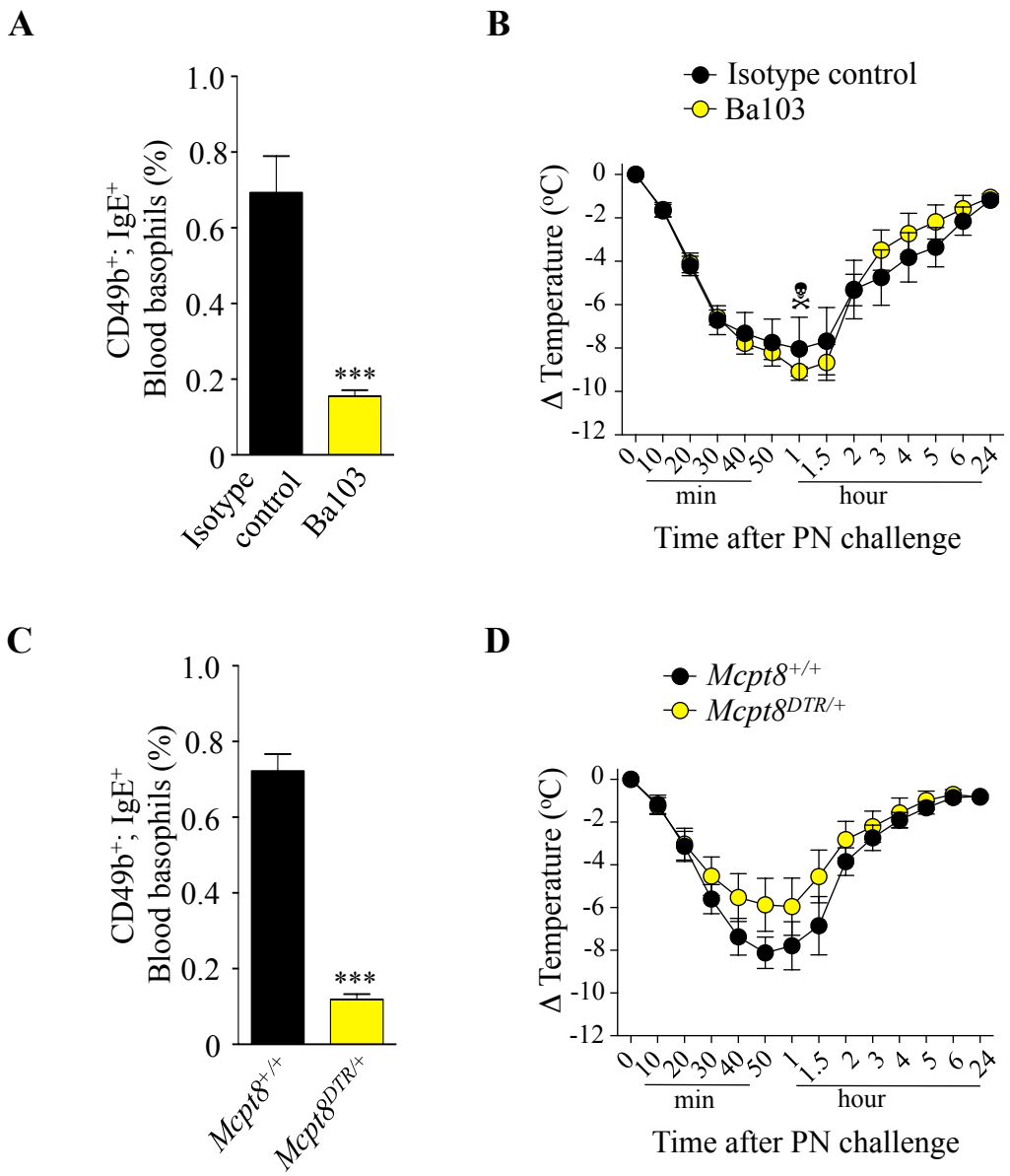
Figure E9



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