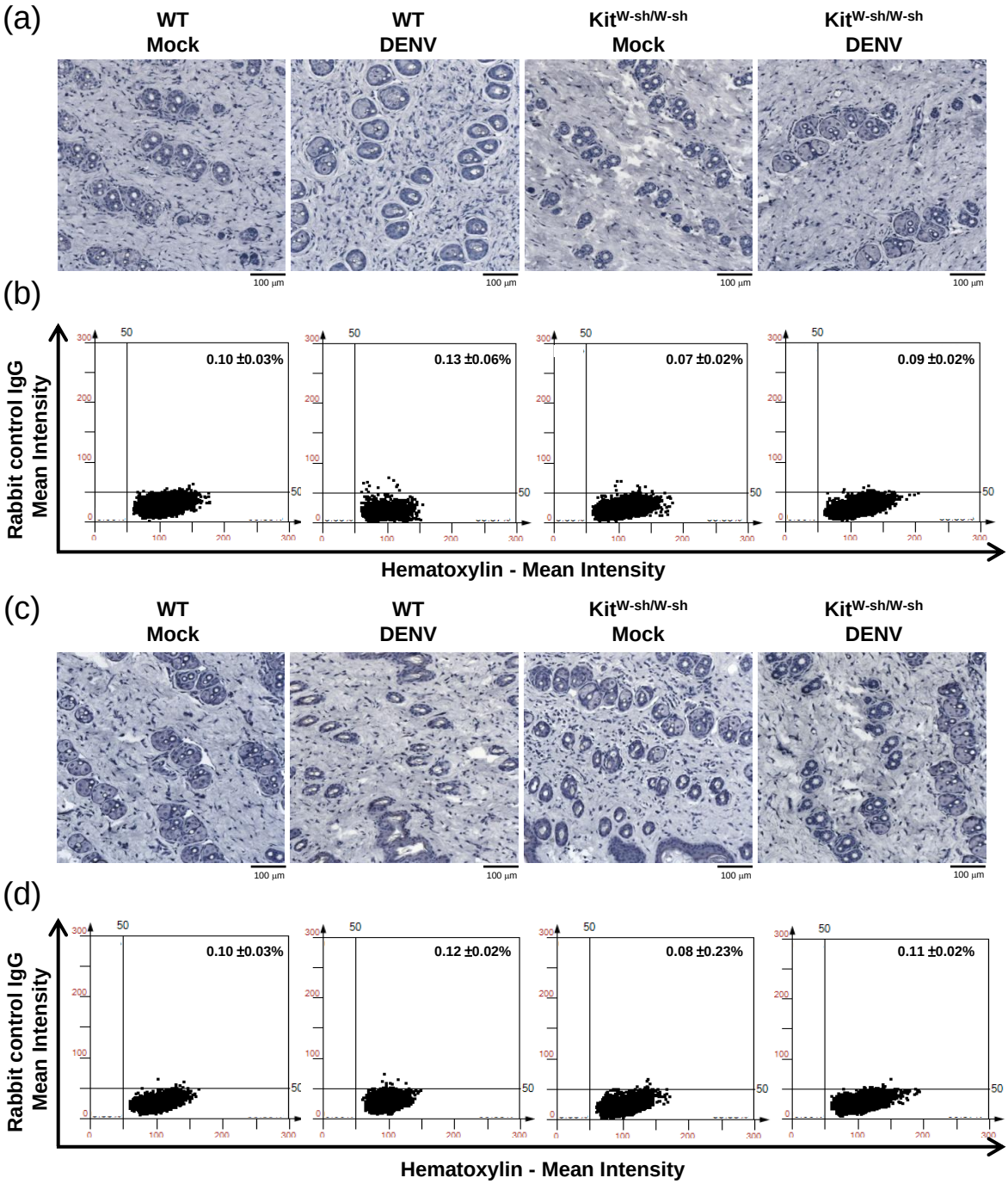
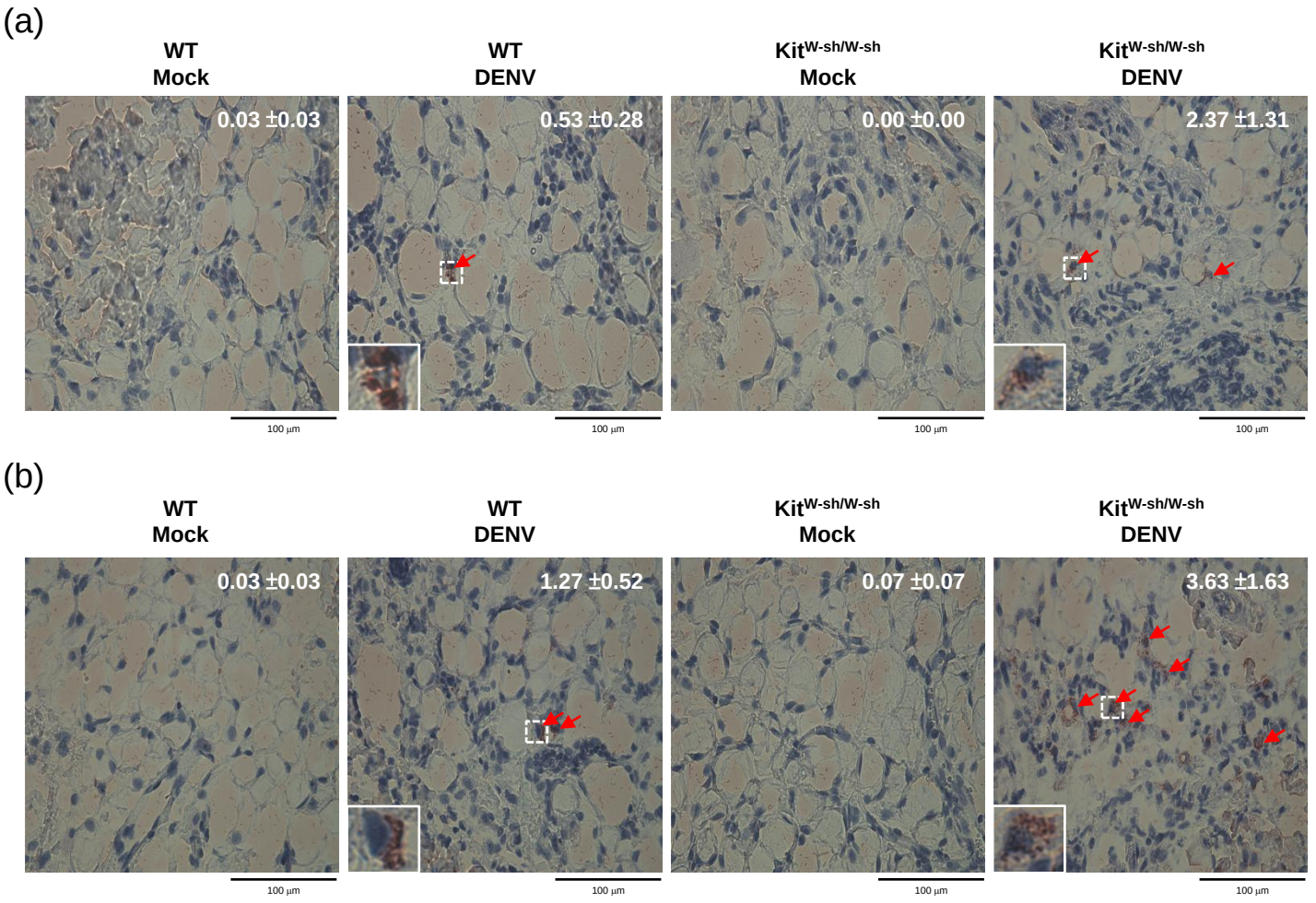
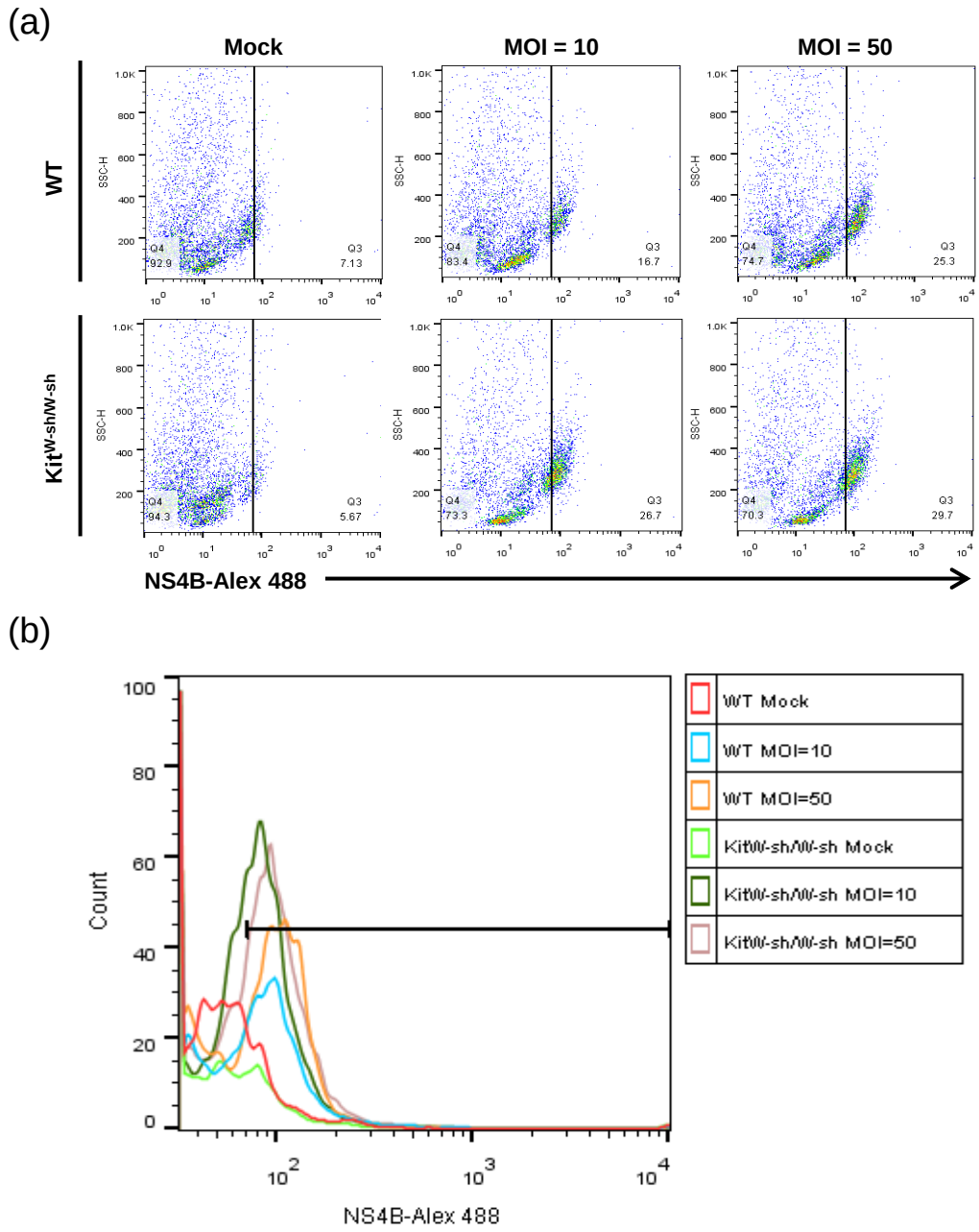


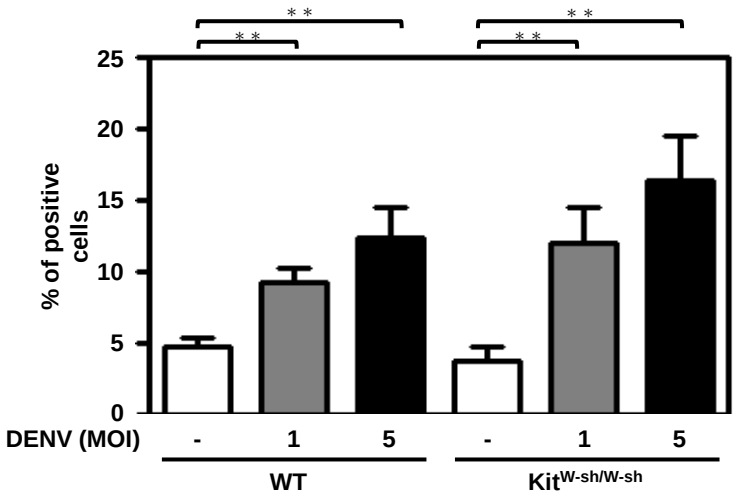
Supplementary figure 1: DENV infection does not lead to an increase in autofluorescence and nonspecific staining. WT and Kit$^{W\text{-}sh/W\text{-}sh}$ mice (n = 8/group) were i.d. inoculated with medium (Mock) or DENV (1×10^9 PFU/mouse) at four sites on the upper back and were sacrificed on 2 (a, b) or 3 (c, d) d.p.i. The skin inoculation site sections were stained with anti-rabbit IgG (red) antibody and nuclei were stained with hematoxylin (blue). The staining images were quantified by HistoQuest software.



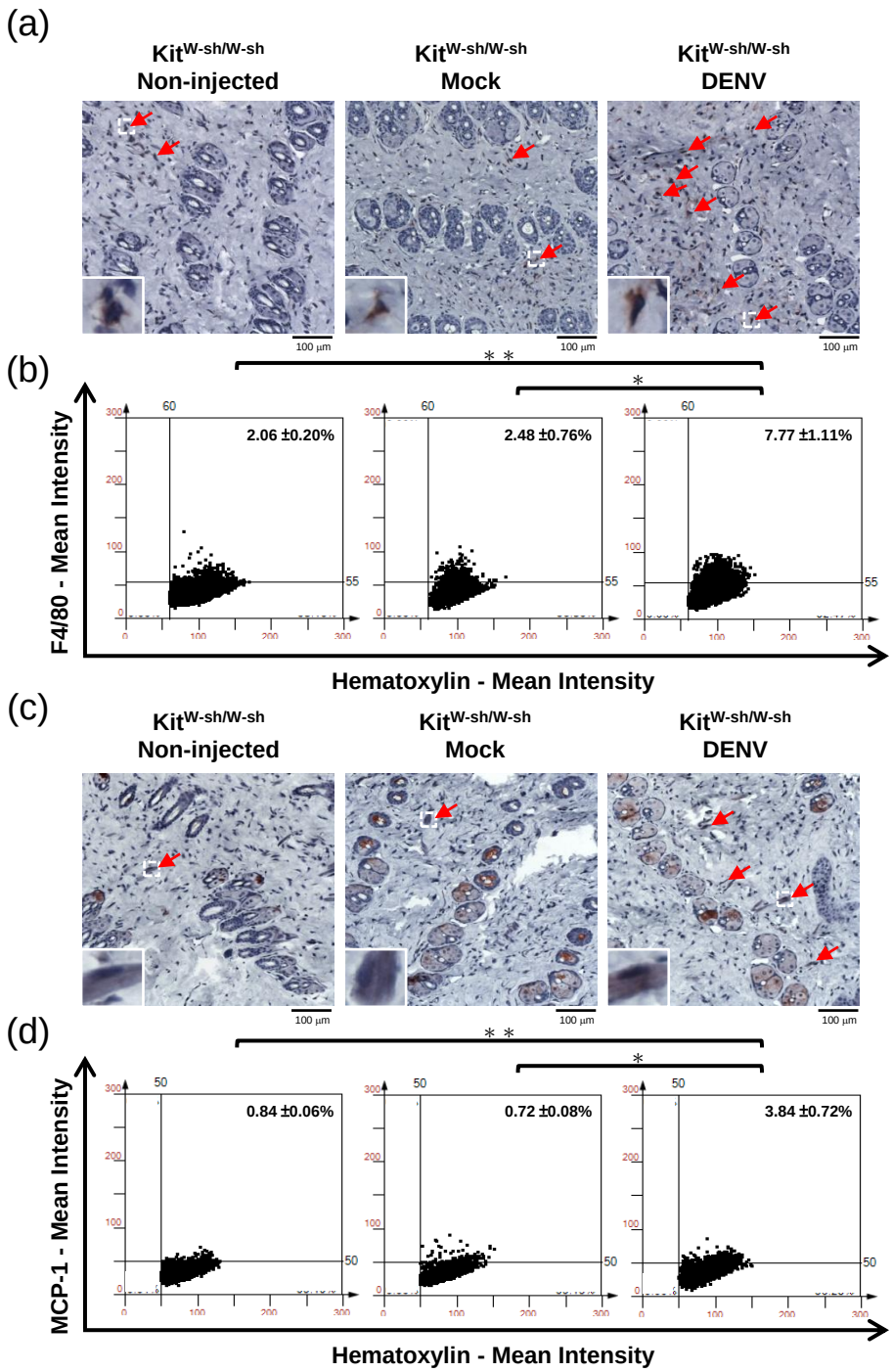
Supplementary figure 2 : The expression levels of viral RNA are higher in DENV-infected Kit$^{W\text{-}sh/W\text{-}sh}$ than in WT mice. WT and Kit$^{W\text{-}sh/W\text{-}sh}$ mice (n = 3/group) were i.d. inoculated with medium (Mock) or DENV (1×10^9 PFU/mouse) at four sites on the upper back and were sacrificed on 2 (a) or 3 (b) d.p.i. The skin inoculation site sections were incubated with a biotin-labeled DNA probe (5′-TGACCATCATGGACCTCCA-3′) and viral RNA was detected by HRP-conjugated anti-biotin antibody. AEC was used as a substrate for color development (red), and nuclei were stained with hematoxylin (blue). (Magnification: × 400) The viral nucleic acid-positive cells were counted in ten microscopic fields per mouse and the average numbers of viral nucleic acid-positive cells per field were calculated (red arrows). The averages from three mice ± SD are shown.



Supplementary figure 3: DENV infection rates are higher in peritoneal macrophages isolated from Kit$^{W\text{-}sh/W\text{-}sh}$ mice than those from WT mice. Cells were inoculated for 1.5 hr at 4°C with medium alone (RPMI 1640 containing 2% FBS; Mock) or with DENV (MOI = 10 or 50). After washing, cells were cultured in fresh medium and incubated for 72 hr followed by flow cytometric analysis. (a) The dot-plot of a set of representative experiment. (b) The histograms show a representative experiment.

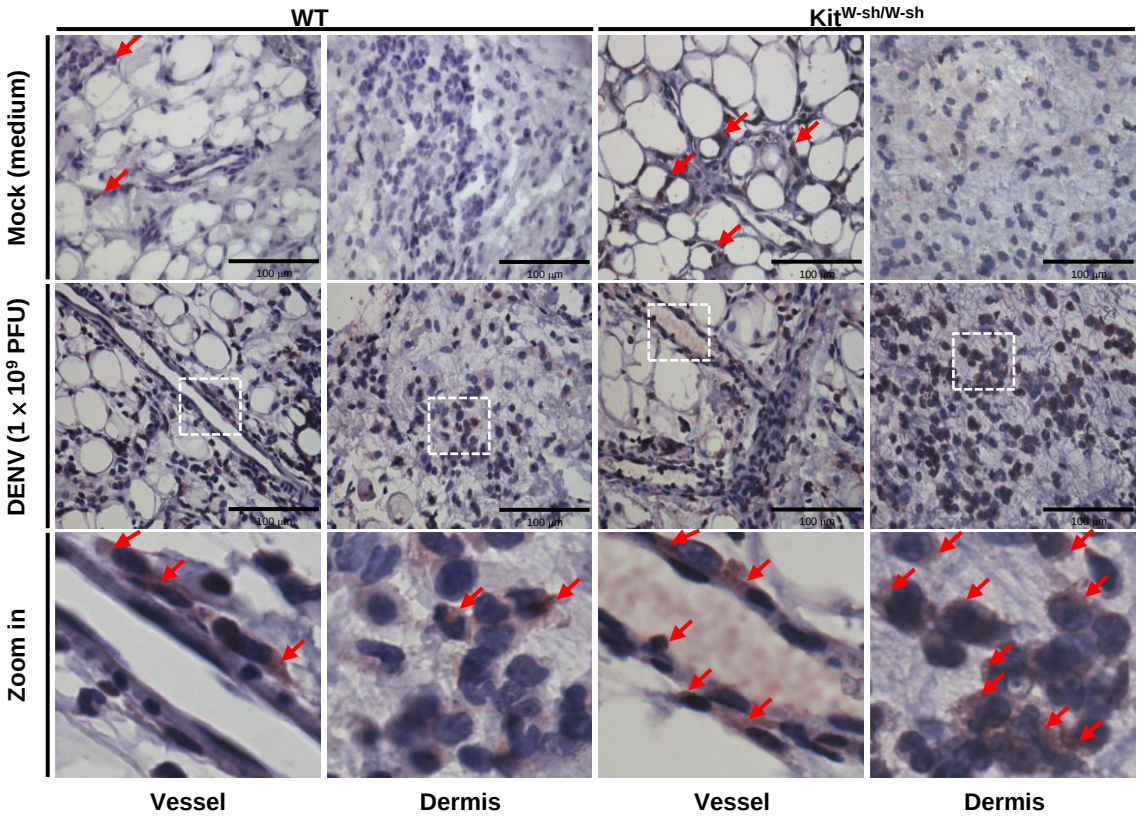


Supplementary figure 4: DENV infection rates are slightly higher in peritoneal macrophages isolated from Kit$^{W\text{-}sh/W\text{-}sh}$ mice than those from WT mice. Cells were inoculated for 1.5 hr at 4°C with medium alone (RPMI 1640 containing 2% FBS; Mock) or with DENV (MOI = 1 or 5). After washing, cells were cultured in fresh medium and incubated for 72 hr followed by flow cytometric analysis. The DENV-infected cells were detected by anti-NS4B antibody. The averages of triplicate cultures ± SD are shown. ***P* < 0.01.

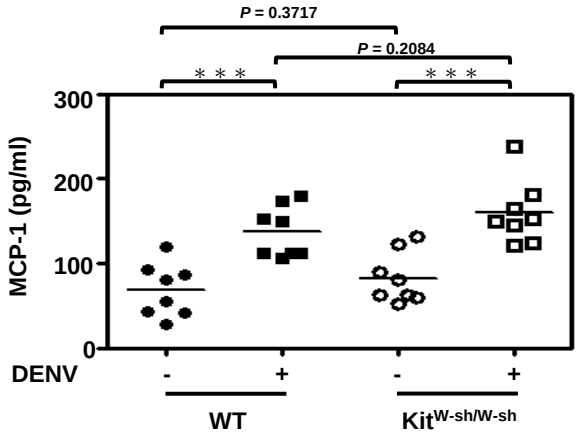


Supplementary figure 5: The numbers of infiltrating macrophages and CCL2 (MCP-1) show no difference between non-injected and mock–infected Kit$^{W\text{-}sh/W\text{-}sh}$ mice. (a, c) Kit$^{W\text{-}sh/W\text{-}sh}$ mice (n = 3/group) were not injected or i.d. inoculated with medium (Mock) or DENV (1×10^9 PFU/mouse) at four sites on the upper back and were sacrificed on 3 d.p.i. The local skin sections were stained with anti-F4/80 and anti-CCL2 (MCP-1) antibody (red) and nuclei were stained with hematoxylin (blue). Red arrows indicate F4/80-positive macrophages and CCL2 (MCP-1)-positive cells. (Magnification: × 200) (b, d) The F4/80-positive macrophages and CCL2 (MCP-1)-positive cells were counted in 15 regions per mouse field and the average numbers of macrophages and CCL2 (MCP-1)-positive cells were calculated by HistoQuest software. *$P < 0.05$; **$P < 0.01$.

(a)

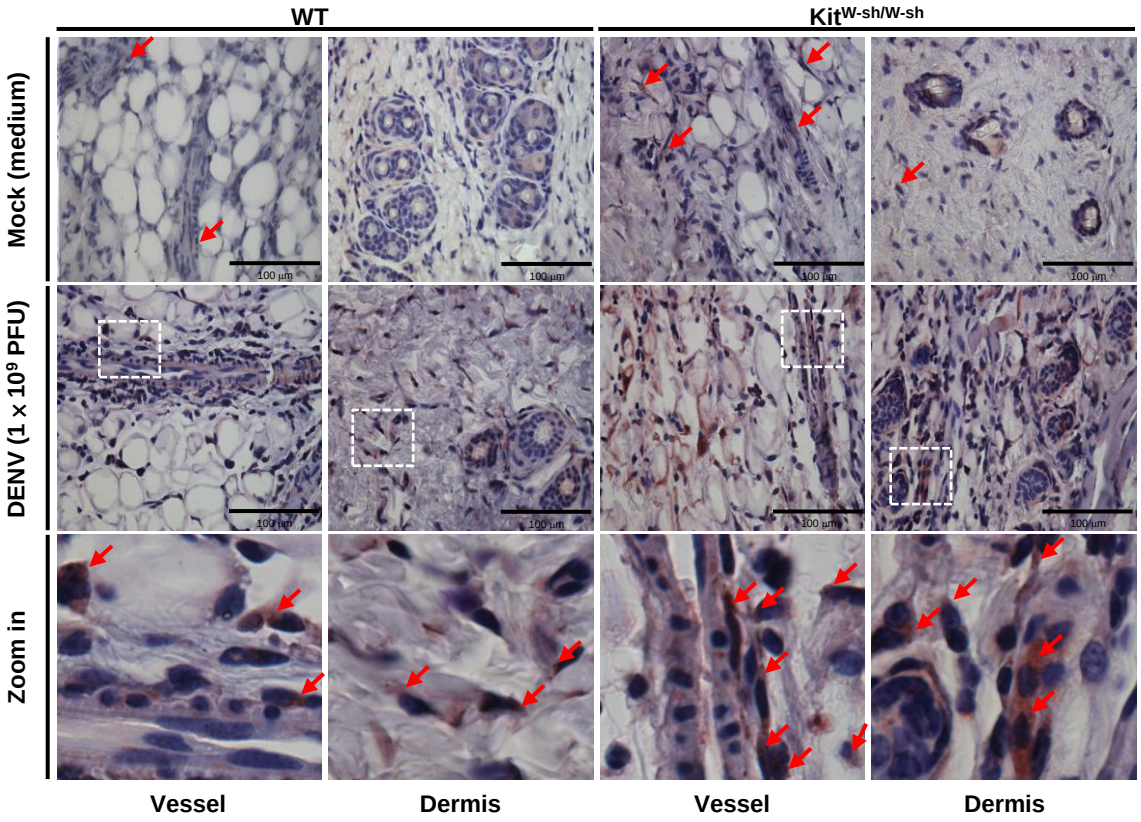


(b)

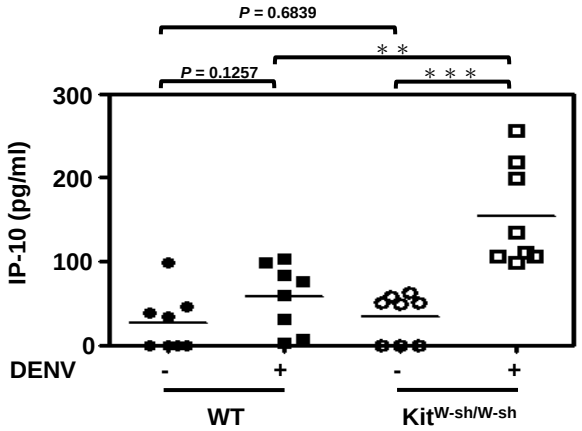


Supplementary figure 6: Levels of CCL2 (MCP-1) at the skin inoculation site and in serum. (a) WT and Kit$^{W\text{-}sh/W\text{-}sh}$ mice were i.d. inoculated with medium (Mock) or DENV (1×10^9 PFU/mouse) at four sites on the upper back and were sacrificed on 2 d.p.i. The local skin sections were stained with anti-CCL2 (MCP-1) antibody (red) and nuclei were stained with hematoxylin (blue). Red arrows indicate CCL2 (MCP-1)-positive cells (Magnification: × 40). Lower panels reveal detail of the boxed areas in the upper panels. (b) The mouse sera (n = 8/group) were collected on 2 d.p.i., and CCL2 (MCP-1) levels were determined by ELISA. ***$P < 0.001$.

(a)

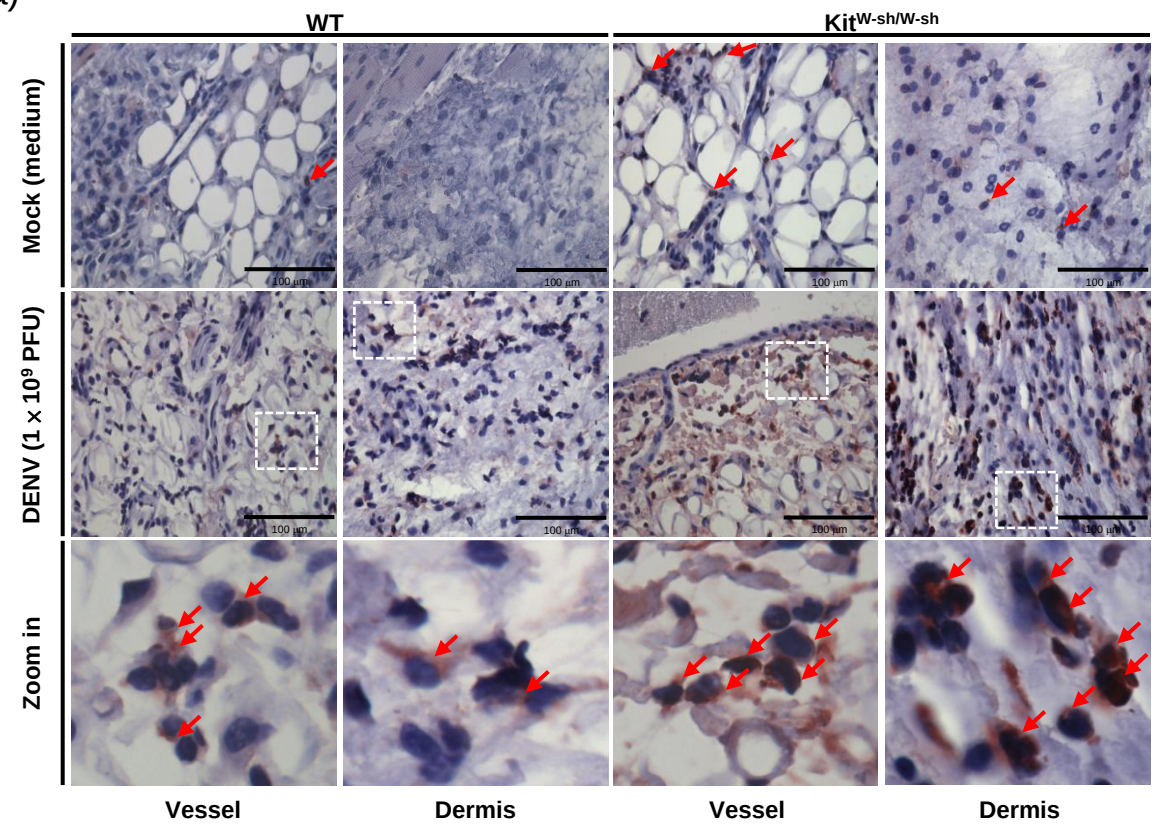


(b)

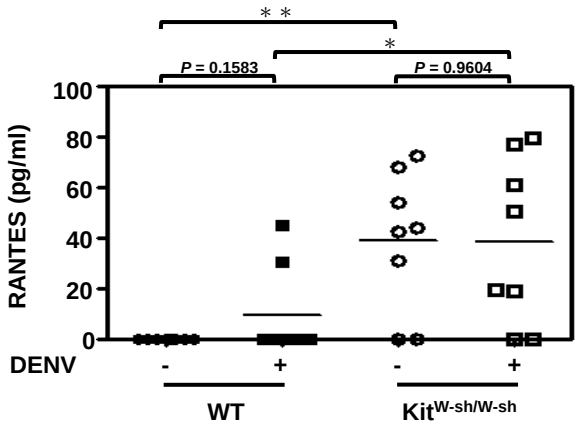


Supplementary figure 7: Levels of CXCL10 (IP-10) at the skin inoculation site and in serum. (a) WT and Kit$^{W\text{-}sh/W\text{-}sh}$ mice were i.d. inoculated with medium (Mock) or DENV (1×10^9 PFU/mouse) at four sites on the upper back and were sacrificed on 2 d.p.i. The local skin sections were stained with anti-CXCL10 (IP-10) antibody (red) and nuclei were stained with hematoxylin (blue). Red arrows indicate CXCL10 (IP-10)-positive cells (Magnification: × 40). Lower panels reveal detail of the boxed areas in the upper panels. (b) The mouse sera (n = 8/group) were collected on 2 d.p.i., and CXCL10 (IP-10) levels were detected by ELISA. $^{**}P < 0.01$; $^{***}P < 0.001$.

(a)



(b)



Supplementary figure 8: Levels of CCL5 (RANTES) at the skin inoculation site and in serum. (a) WT and Kit$^{W\text{-}sh/W\text{-}sh}$ mice were i.d. inoculated with medium (Mock) or DENV (1×10^9 PFU/mouse) at four sites on the upper back and were sacrificed on 2 d.p.i. The local skin sections were stained with anti-CCL5 (RANTES) antibody (red) and nuclei were stained with hematoxylin (blue). Red arrows indicate CCL5 (RANTES)-positive cells (Magnification: × 40). Lower panels reveal detail of the boxed areas in the upper panels. (b) The mouse sera (n = 8/group) were collected on 2 d.p.i., and CCL5 (RANTES) levels were detected by ELISA. *P < 0.05; **P < 0.01.