

## Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: **Vascular colonization by *Neisseria meningitidis*.** Intravital imaging (maximum intensity z-projection) of iRFP-expressing *Neisseria meningitidis* vascular colonization. Bacteria rapidly bind to the human endothelium (UEA-1 lectin, grey) and locally proliferate. At 6 hours post-infection, the 3D-rendering shows the complete colonization of the human endothelium whereas no bacteria were detected within adjacent mouse vessels (mouse CD31, red). Time, hh:min:sec. Scale bar, 50  $\mu\text{m}$ .

File Name: Supplementary Movie 2

Description: **Heterotypic mouse-human interactions.** Intravital visualization (maximum intensity z-projection) of the interaction between mouse neutrophils (Ly-6G, magenta) and TNF $\alpha$ -mediated inflamed human (UEA-1 lectin, grey) and/or mouse (mouse CD31, red) endothelia. A chimeric human/mouse vessel is shown in the first field of view. Time, hh:min:sec. Scale bar, 20  $\mu\text{m}$ . A segment of a human vessel is shown in the second field of view. Time, hh:min:sec. Scale bar, 10  $\mu\text{m}$ .

File Name: Supplementary Movie 3

Description: **Neutrophil recruitment during the late phase of *Neisseria meningitidis* infection.** Intravital imaging (maximum intensity z-projection) of neutrophil (LysM<sup>egfp/+</sup>, magenta) recruitment 16h post-infection with iRFP-expressing *Nm* (green). Neutrophils were massively recruited around the infected human vessel. Tracking of individual neutrophils showed their directed migration towards the infected human vessel. Time, hh:min:sec. Scale bar, 50  $\mu\text{m}$ .

File Name: Supplementary Movie 4

Description: **Crawling of neutrophils on the human venular endothelium and phagocytosis of adherent *Neisseria meningitidis*.** Intravital visualization (maximum intensity z-projection) of neutrophils (Ly-6G, magenta) internalizing adherent iRFP-expressing *Neisseria meningitidis* (green) inside infected human venules (UEA-1 lectin, grey). In the first field of view, imaging was performed at 3h post-infection. Time, hh:min:sec. Scale bar, 20  $\mu\text{m}$ .

File Name: Supplementary Movie 5

Description: **Perivascular neutrophil recruitment during the early phase of arteriolar colonization by *Neisseria meningitidis*.** Intravital visualization (maximum intensity z-projection) of neutrophil (Ly-6G, magenta) dynamics in the perivascular area of an infected human arteriole (UEA-1 lectin, grey) during the first 6h of infection. Neutrophils remain outside of vessels and do not internalize iRFP-expressing bacteria (green).

File Name: Supplementary Movie 6

Description: **Reduced neutrophil dynamics following vascular colonization of human arterioles.** Intravital visualization (maximum intensity z-projection) of neutrophil (Ly-6G, magenta) dynamics in an infected human arteriole (UEA-1 lectin, grey) 7h post-infection. Neutrophils containing engulfed iRFP-expressing bacteria (green) display a very low motility compared to neutrophils present in the adjacent non-infected mouse venules (mouse CD31, red). Time, hh:min:sec. Scale bar, 20  $\mu\text{m}$ .