Supplementary Figure S1

**Fig. S1.** The MTOC is mainly localized in front of the nucleus and occasionally on the side of the nucleus. Time-lapse imaging of a neutrophil expressing EB3-GFP and a nucleus probe mCherry-histone H2B. Arrows indicate localization of MTOC on the side of the nucleus. Scale bar: 10 μm.
**Movie 1.** Time-lapse imaging of a neutrophil expressing GFP-tubulin (green) and mCherry (magenta).

**Movie 2.** Time-lapse imaging of a neutrophil expressing EMTB-3xGFP.
Movie 3. Two examples of time-lapse imaging of neutrophils expressing EB3-GFP.

Movie 4. Two examples of time-lapse imaging of neutrophils expressing EB3-GFP (green) and mCherry-H2B (magenta).
Movie 5. Time-lapse imaging of a neutrophil expressing GFP-Tau.

Movie 6. Time-lapse imaging of a neutrophil expressing γtubulin-GFP (green) and mCherry-H2B (red).
**Movie 7.** Time-lapse imaging of neutrophil random motility in the head (top: DMSO, bottom: nocodazole, green: GFP-UtrCH, magenta: Lifeact-Ruby).

**Movie 8.** Time-lapse imaging of neutrophils expressing PHAKT-GFP (green) and mCherry (magenta) in zebrafish treated with DMSO (first) or nocodazole (second).
**Movie 9.** Time-lapse imaging of neutrophils in tg/mpx:GFP-UtrCH) treated with DMSO, LY294002 then LY294002 and nocodazole.

**Movie 10.** Time-lapse imaging of neutrophils expressing Dendra2-Rho T19N in Tg/mpx:Lifeact-Ruby) treated with DMSO then nocodazole (green: Dendra2-Rho T19N, magenta: Lifeact-Ruby).
**Movie 11.** Time-lapse imaging of neutrophils expressing GFP-UtrCH in a rac2 morphant treated with DMSO (left) then nocodazole (right).

**Movie 12.** Time-lapse imaging of neutrophils expressing mCherry-2A-Rac2D57N in Tg(mpx:mCherry-2A-Rac2D57N) treated with DMSO (left) then nocodazole (right).