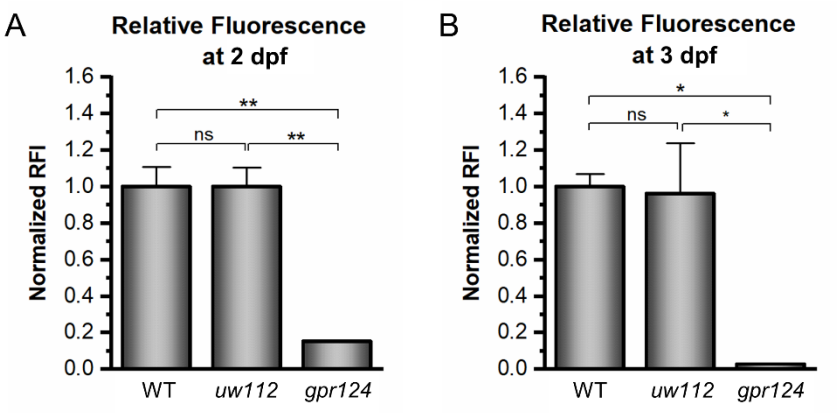

Fig. S1. Relative fluorescence of *glut1b:mCherry*. (**A**) Quantification of the normalized relative fluorescence intensity (RFI) of *glut1b:mCherry* in WT, *uw112* mutants, and *gpr124* mutants at 2 dpf. (**B**) Quantification of the normalized RFI of *glut1b:mCherry* in WT, *uw112* mutants, and *gpr124* mutants at 3 dpf. Data are presented as means ($n = 3$) ± SEM (*$p < 0.05$; **$p < 0.01$; ns = not significant).

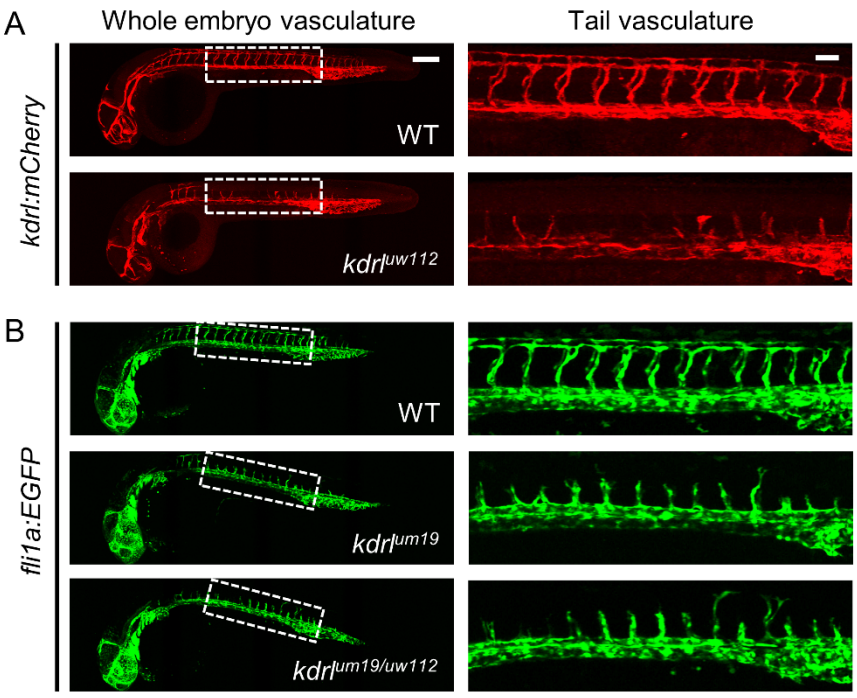

Fig. S2. Vasculature in *kdrl* mutants. (**A**) Representative confocal images of a WT and *kdrl*^{uw112} mutant in the transgenic *kdrl:mCherry* background at approximately 28-30 hpf (lateral views; anterior left). (**B**) Representative confocal images of a WT, *kdrl*^{um19}, and *kdrl*$^{um19/uw112}$ mutants in the transgenic *fli1a:EGFP* background at approximately 28-30 hpf (lateral views; anterior left). All embryos showed normal heartbeat and circulation and no gross abnormalities. Note that *kdrl*^{uw112}, *kdrl*^{um19}, and *kdrl*$^{um19/uw112}$ mutants show similar defects in tail vasculature. Scale bars are 100 μm (left panels) and 50 μm (right panels).

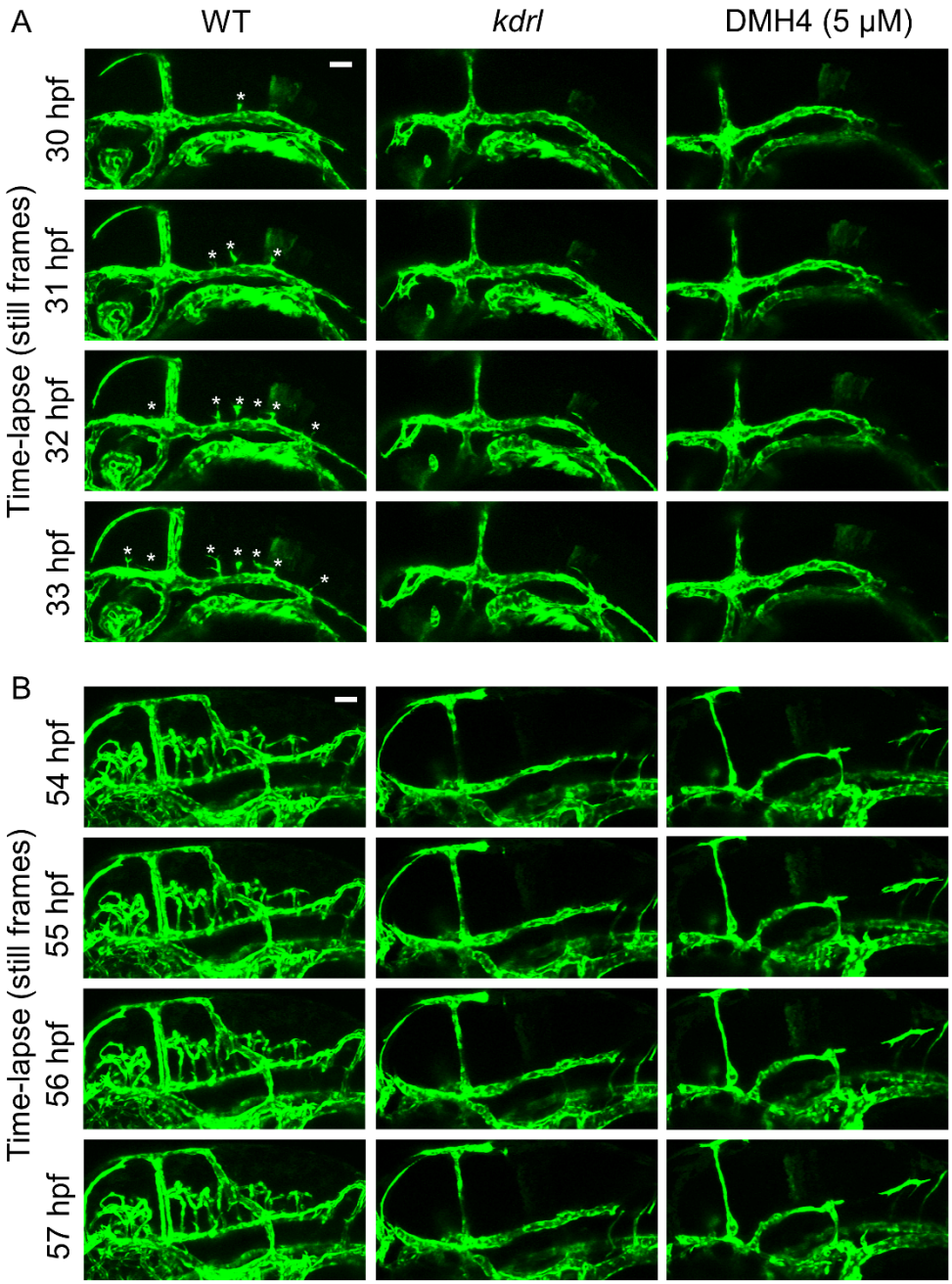

Fig. S3. Time-lapse still frames of CNS angiogenesis. (**A**) Representative confocal images of WT, *kdrl* mutant, and DMH4-treated (5 μM) embryos in the *kdrl:mCherry* transgenic background at 1-hour intervals beginning at 30 hpf (lateral views; anterior left). Note that *kdrl* mutant and DMH4-treated embryos lack endothelial tip cell spouting from the PHBCs, whereas WT embryos show normal spouting of the CtAs (white asterisks) (**B**) Representative confocal images of WT, *kdrl* mutant, and DMH4-treated embryos at 1-hour intervals beginning at 54 hpf (lateral views; anterior left). Note extensive CNS angiogenesis in WT and absence of CNS angiogenesis in both the *kdrl* mutant and the DMH4-treated embryos. Scale bar is 50 μm (top left panel).

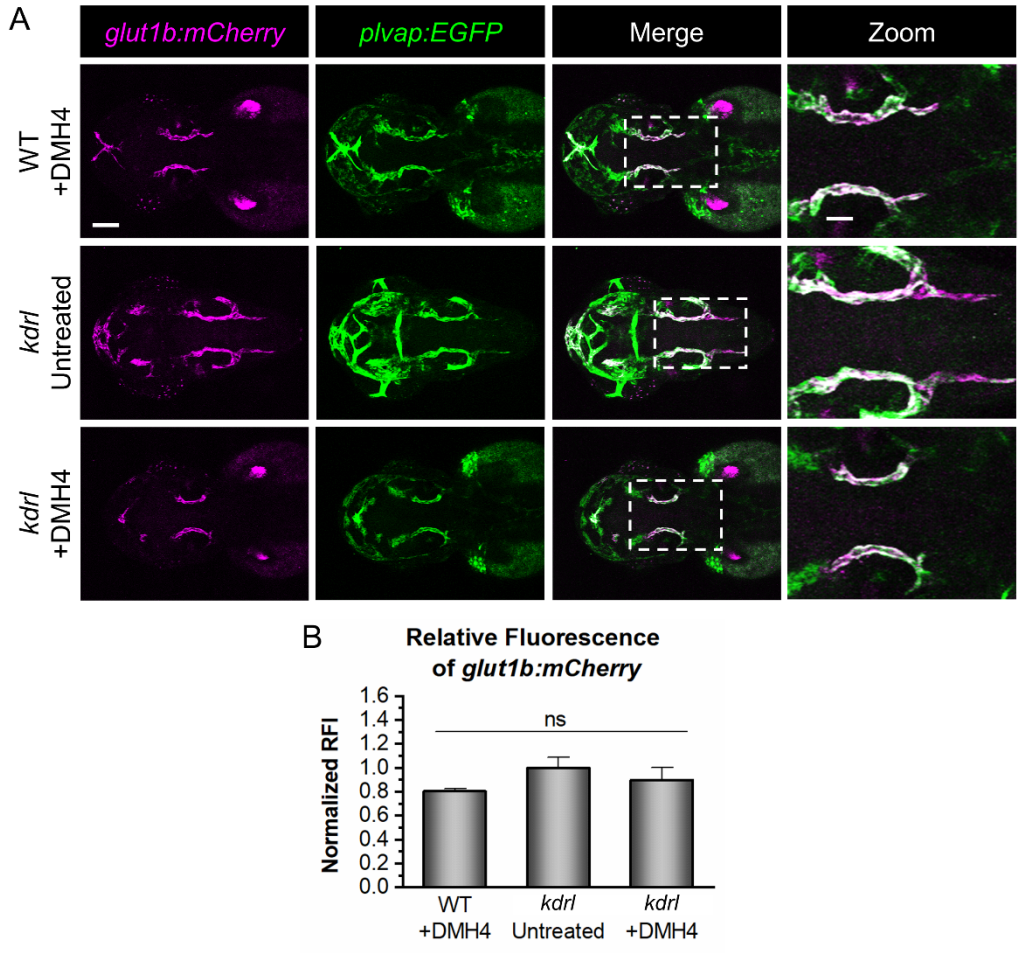

Fig. S4. *kdrl* mutants in combination with DMH4. (**A**) Representative confocal images of WT treated with DMH4 (5 µM), untreated *kdrl* mutants, and *kdrl* mutants treated with DMH4 (5 µM) at 2 dpf (dorsal views; anterior left). Note that *glut1b:mCherry* is similarly expressed in the PHBCs of all embryos. Scale bar is 100 µm for the first three columns and 40 µm for the zoomed images (right panels). (**B**) Quantification of the normalized RFI of *glut1b:mCherry* in WT treated with DMH4, untreated *kdrl* mutants, and *kdrl* mutants treated with DMH4 at 2 dpf (*n*=3). Data are presented as means ± SEM (ns = not significant).

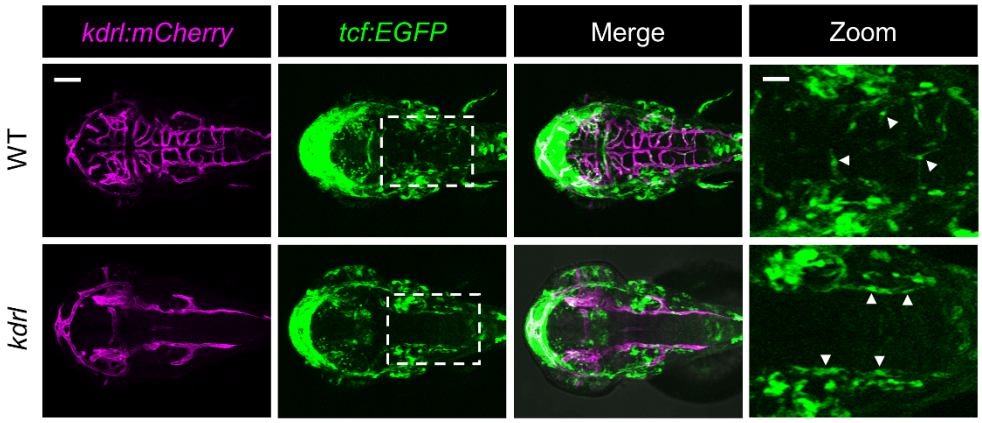

Fig. S5. *tcf:EGFP* expression in *kdrl* mutants. Representative confocal images of WT and *kdrl* mutants in the *tcf:EGFP, kdrl:mCherry* transgenic background at 2 dpf (dorsal views; anterior left). *tcf:EGFP* signal is present in the brain vasculature of WT (top panels; white arrows) and in the PHBCs of the *kdrl* mutant (bottom panels; white arrows). Scale bar is 100 μm for the first three columns and 40 μm for the zoomed images (right panels).