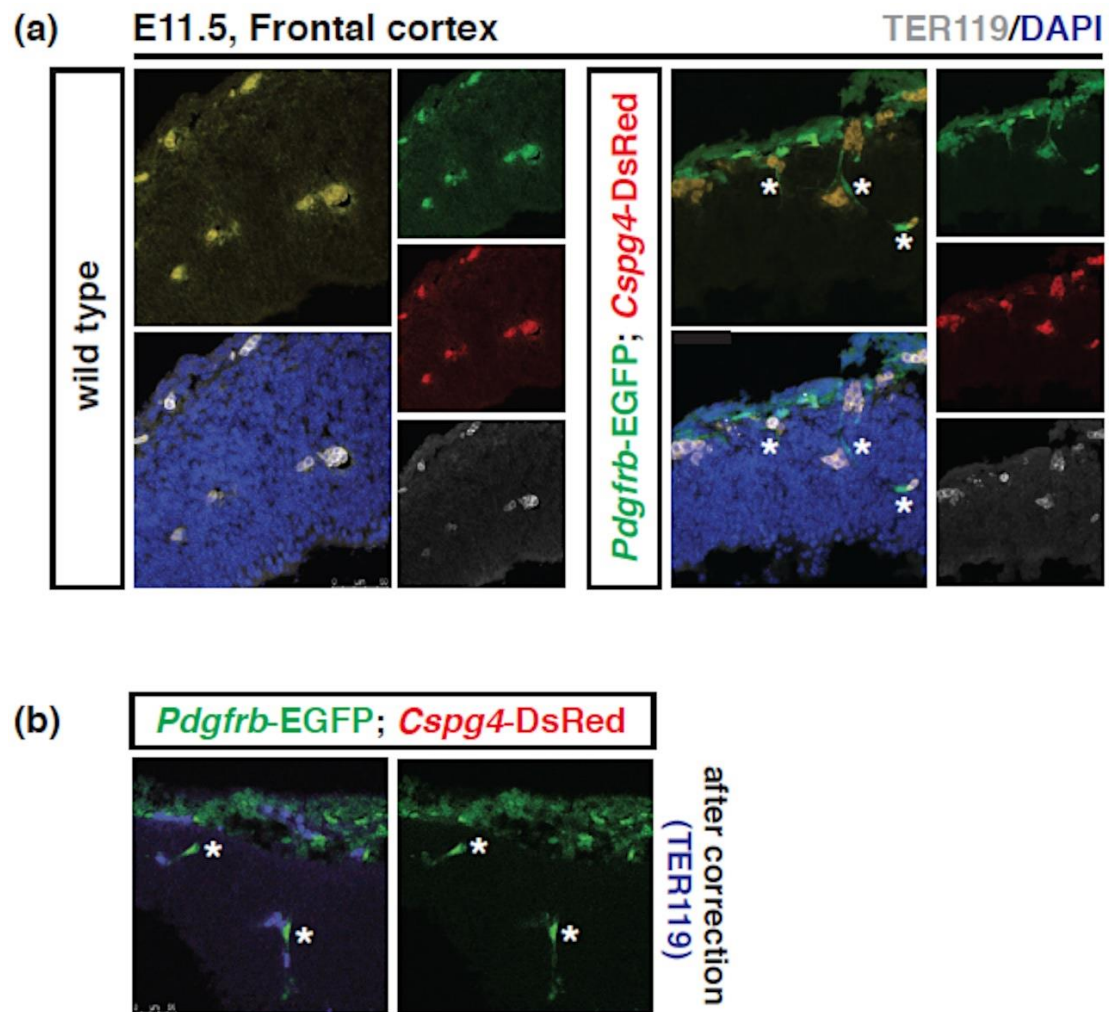
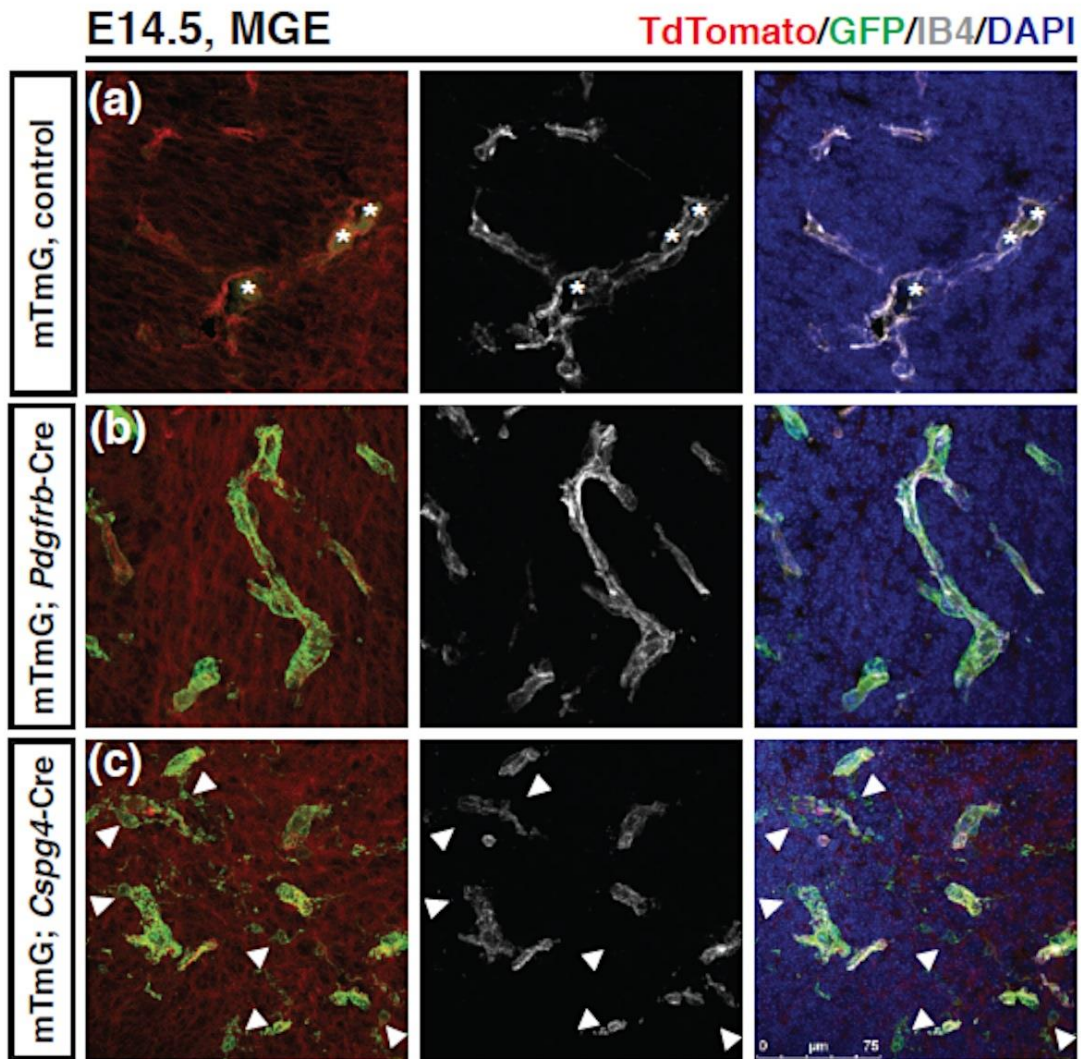


## Supplementary Data



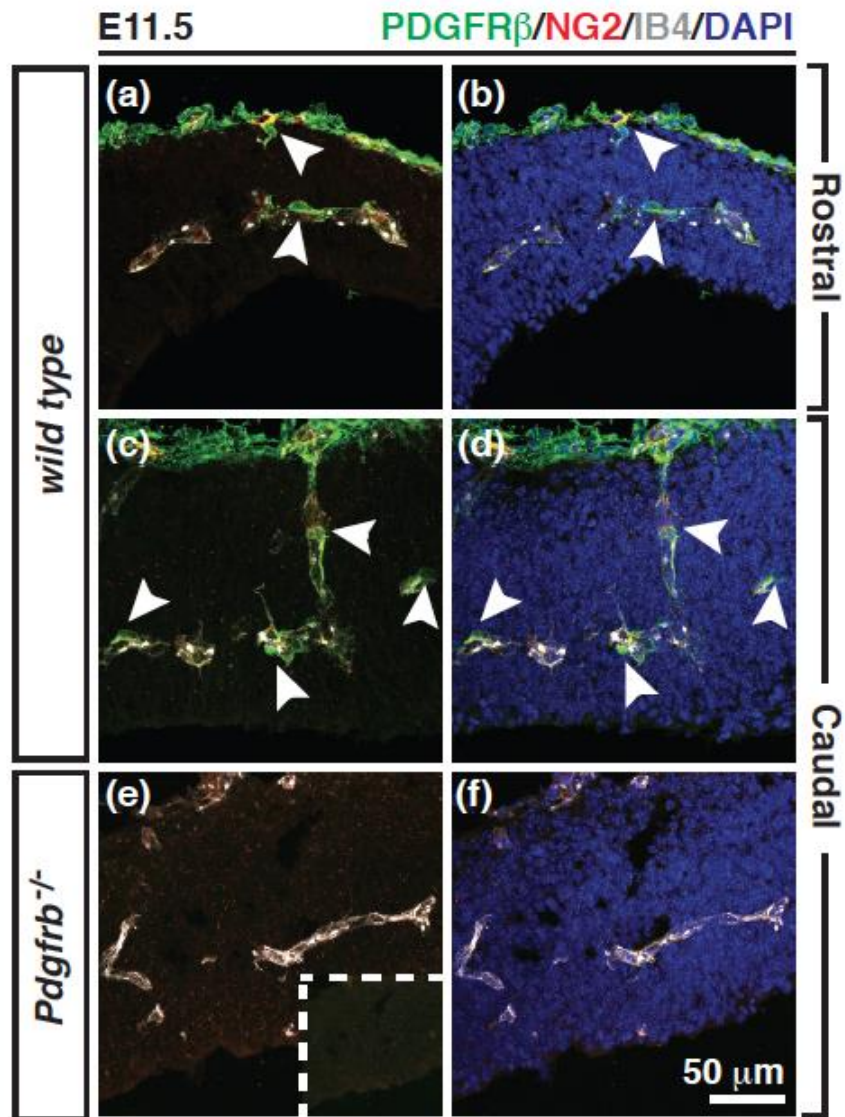
### Figure 1. Erythrocytes in the lumen are responsible for autofluorescence

(a) Autofluorescence from erythrocytes observed in the CNS vasculature at E11.5. Frontal cortex from wild type and double *Pdgfrb-EGFP; Cspg4-DsRed* mouse brain was stained in TER119 (erythrocytes, grey) followed by DAPI (nuclei, blue). (b) An image of the frontal brain cortex from the double reporter mouse embryo after subtraction of the TER119 signal. *Pdgfrb-EGFP<sup>+</sup> Cspg4-DsRed<sup>-</sup>* mural cells are shown (asterisks, a and b).



**Figure 2. Recombination patterns of 2 Cre mouse strains in ganglionic eminence**

Images from ganglionic eminence (MGE) from mTmG control (a), mTmG; *Pdgfrb*-Cre (b) and mTmG; *Cspg4*-Cre (c) mice at E14.5. The vasculature was visualized in IB4 staining. Note that *Pdgfrb*-Cre; mGFP<sup>+</sup> exhibits vessel-associated, mural cell-specific recombination around the vessels while *Cspg4*-Cre; mGFP<sup>+</sup> reveals both perivascular and parenchymal recombination patterns. RBCs (asterisks, a) and non-vascular *Cspg4*-Cre; mGFP<sup>+</sup> cells (arrowheads, c) are indicated.



### Figure 3. Vascular mural cell-specific expression of PDGFR $\beta$ and NG2

E11.5 brain sections from wild type (a-d) and *Pdgfrb*-null mice (e and f) were stained in PDGFR $\beta$  (green), NG2 (red), IB4 (grey) and DAPI (blue). Arrowheads indicate vascular mural cells (a-d). Note that both PDGFR $\beta$  and NG2-positive cells are absent in *Pdgfrb*-null brain cortex vasculature (e and f, dotted box), suggesting that PDGFR $\beta$  and NG2 are exclusively expressed by vascular mural cells at this stage.