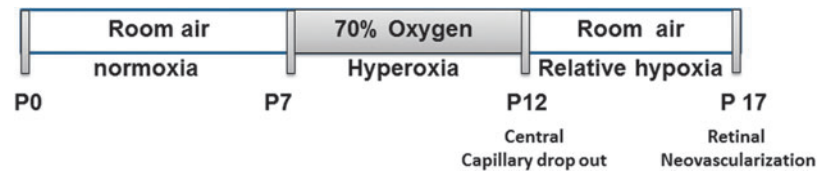
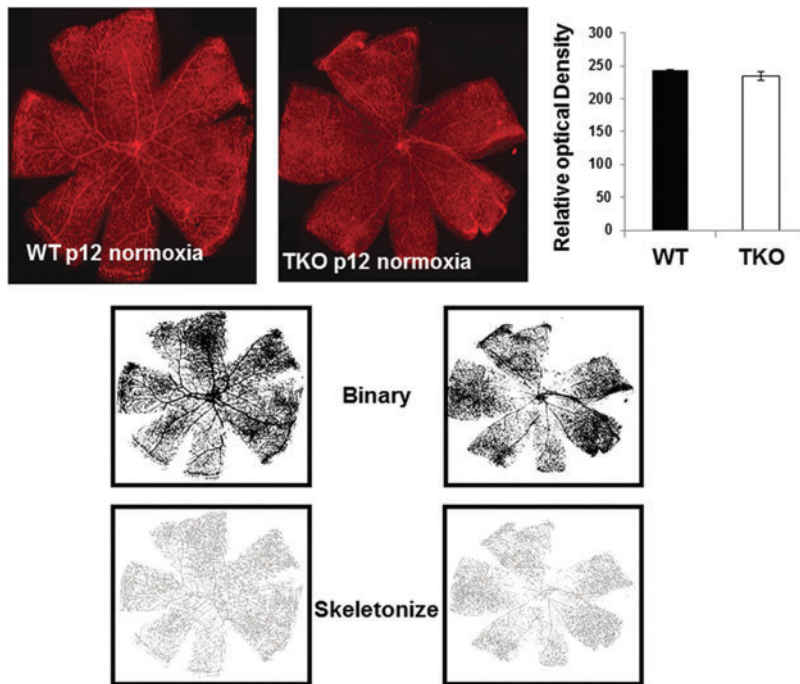


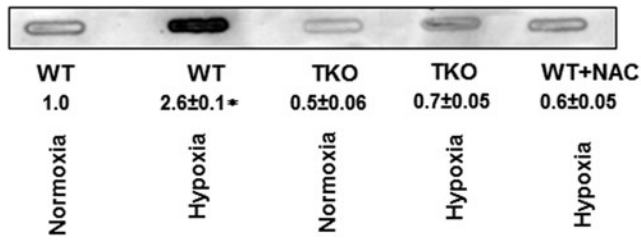
Supplementary Data



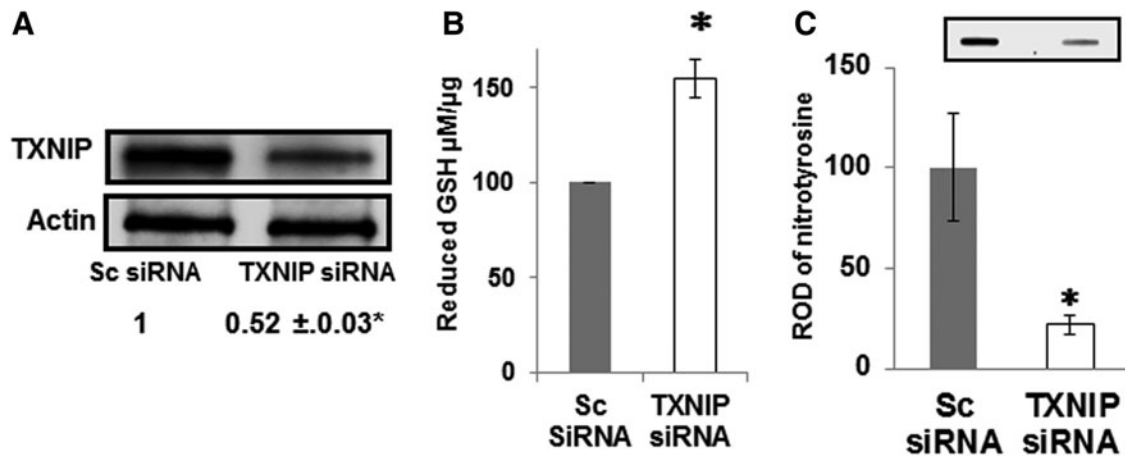
SUPPLEMENTARY FIG. S1. Schematic representation of the hypoxia-induced retinal neovascularization model. Seven-day-old pups (p7) were placed along with their dams in high oxygen chamber (70% oxygen) for 5 days. Mice were returned to normal oxygen room air (21%) where their retinas sensed relative hypoxia, for additional 5 days resulting in retinal neovascularization.



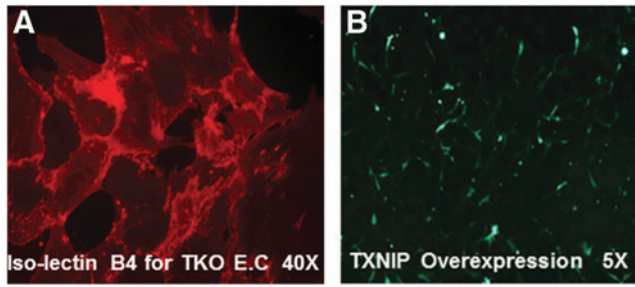
SUPPLEMENTARY FIG. S2. Flat-mount retinas stained with Isolectin B-4 special stain for retinal vasculature showing a normal development pattern of TKO mice retinas compared with control. Images are converted to binary images and then into a skeleton that is analyzed by FIJI software. TKO, TXNIP-knockout; TXNIP, thioredoxin-interacting protein.



SUPPLEMENTARY FIG. S3. Determination of retinal nitrate stress in retinas was performed by measuring the foot print of peroxynitrite, nitrotyrosine using slot-blot. Hypoxia induced retinal nitrotyrosine formation by 2.5-fold compared with WT normoxia but not in TKO or WT+NAC. Results are expressed as mean \pm SE, $n=6-8$, two-way ANOVA (WT *vs.* TKO/WT-NAC and Normoxia *vs.* Hypoxia), * $p < 0.05$ *vs.* control. NAC, N-acetyl cysteine; WT, wild-type.



SUPPLEMENTARY FIG. S4. Silencing TXNIP expression increases cellular antioxidant defense in endothelial cells. TXNIP expression was silenced in HME cells using siRNA. **(A)** Western blot analysis showed 48% reduction in TXNIP expression in cells treated with siRNA compared with scrambled siRNA. **(B)** Detection of total and oxidized glutathione showed 1.6-fold increases in cellular levels of reduced-glutathione. **(C)** Slot blot analysis of nitrotyrosine showed 80% reduction of peroxynitrite formation in siRNA-treated cells compared with cells treated with scrambled siRNA. Results are expressed as mean ± SE, $n=4-6$, one-way ANOVA, $*p < 0.05$ vs. control.



SUPPLEMENTARY FIG. S5. Characterization of primary TKO-endothelial cells isolated from TKO brains. (A) Image representative of positive staining (red) with isolectin-B4, a specific marker of vascular endothelial cells in freshly isolated TKO-endothelial cells. (B) Representative image showing green fluorescence and transfection efficacy (85%–90%) of TXNIP plasmid transduction in TKO-endothelial cells.