Supplemental material

Up-regulation of Wnt/β-catenin Expression is Accompanied with Vascular Repair after Traumatic Brain Injury

Arjang Salehi M.S.[1,2], Amandine Jullienne Ph.D.[2], Mohsen Baghchechi[2], Mary Hamer[2], Mark Walsworth[2], Virginia Donovan Ph.D.[2], Jiping Tang M.D.[4], John H. Zhang M.D. Ph.D.[4,5,6], William J. Pearce Ph.D.[4,7], Andre Obenaus Ph.D.[1,2,3 *]

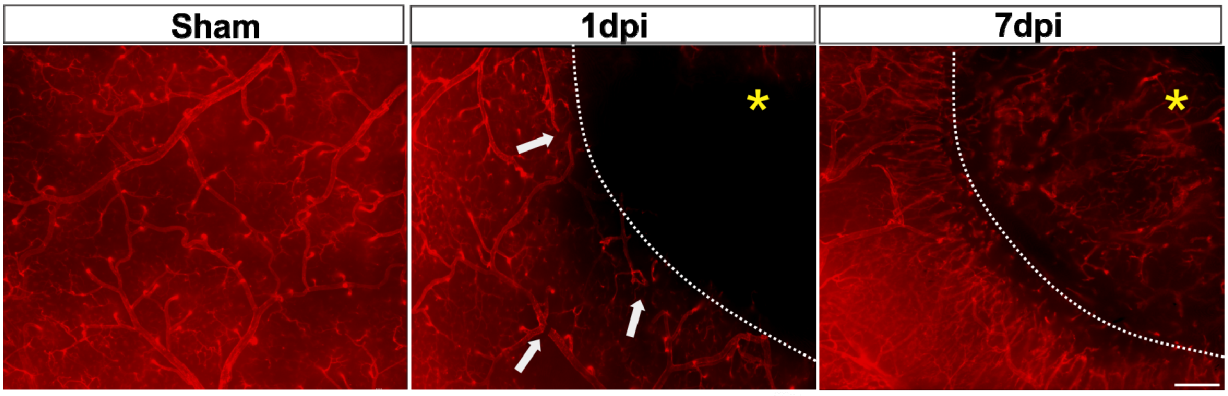

Figure S1. Temporal evolution of vascular repair in the peri-lesional tissues after TBI.

Representative axial images from Sham, 1 dpi, and 7 dpi groups. We observed that a moderate TBI elicits a loss of the vasculature that extended beyond the impact site (yellow asterisk). Note the fragmented vessels in the peri-lesional tissue at 1 dpi (arrows). Over the ensuing 7 dpi there is repair of the injured vessels along with new vessels radiating toward the impact site. New vessels are also evident in the base of the impact site. White dotted line is the lesion border. Scale bar = 200μm

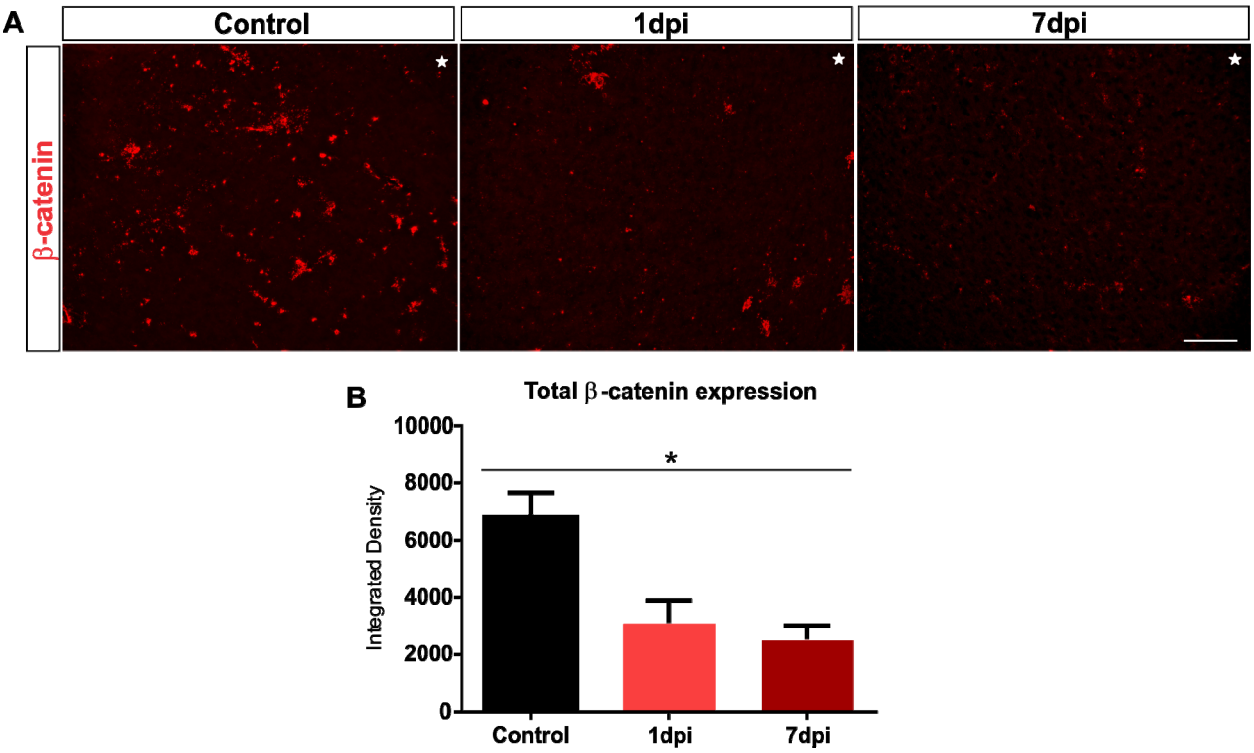

Figure S2. β-catenin expression was reduced in the peri-lesional tissue in TCF/LEF:H2B-GFP mice.

A) Immunohistochemistry of brain sections labeled with β-catenin from control, 1 and 7 dpi TCF/LEF:H2B-GFP mice. The control group exhibited high β-catenin expression while the 1 and 7 dpi groups revealed a dramatic reduction in β-catenin expression. Star indicates region of impact. Scale bar = 100μm. B) Densitometric analysis revealed a significant reduction in β-catenin expression at 7 dpi compared to controls (one-way ANOVA, * $p < 0.05$).

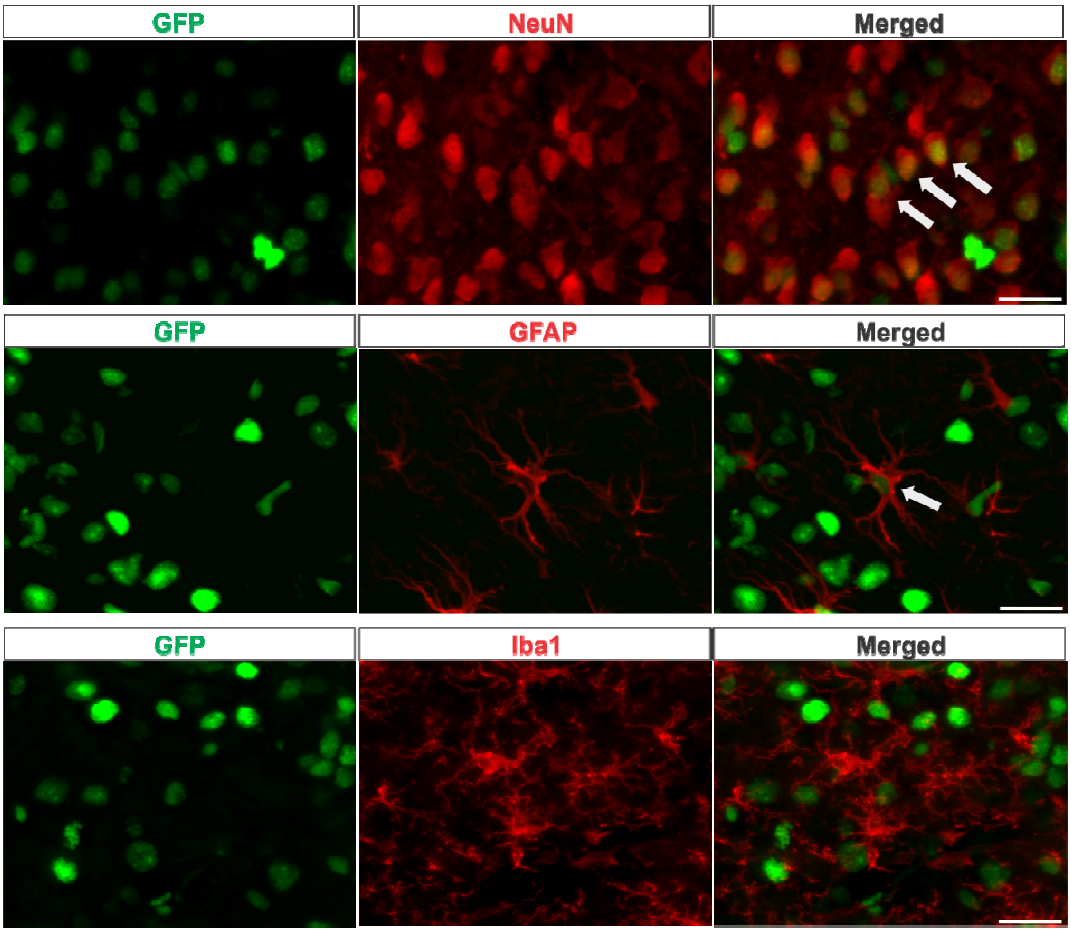

Figure S3. Astrocytes and neurons but not microglia have high Wnt-GFP expression after TBI.

Characterization of the Wnt-GFP expressing cells outside the vessels by staining with a neuronal (NeuN), astrocyte (GFAP), and microglia (Iba1) marker. TBI 1 and 7 dpi groups revealed the presence of GFP+/NeuN+ cells throughout the injured cortex (arrows). A small subset of GFP+/GFAP+ cells were also evident (arrow). No GFP+/Iba-1+ cells were observed. Scale bar = 25μm