

## SUPPLEMENTARY FIGURES

### Supplemental Figure Legends

#### **Supplementary Figure 1. Passage of ECFCs through experimental needles**

**used for injection does not alter cell viability.** (A) Cell viability quantified and expressed as % live ECFCs as evaluated by Trypan blue staining and CASY electrical current exclusion. (B) Representative photomicrographs of Calcein green labelled ECFCs following passage through an experimental microneedle. Control samples were not passed through a needle. Scale bars: 50  $\mu$ m. Abbreviations: ECFCs, endothelial colony forming cells.

#### **Supplementary Figure 2. Intravitreal delivery of low dose ECFCs reduces pathological neovascularization with similar efficacy to higher cell doses in the murine OIR model.**

Neovascular areas were quantified from P12 and P17 retina flatmounts stained with isolectinB4 (Alexa488). Quantification of neovascular area expressed as a percentage of total retina area. P12 control data shown in green, P17 experimental control data shown in red, and data from ECFC injected retinas shown in blue. Figure shows individual data points with mean, interquartiles, and range. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . One-way ANOVA with Bonferroni's post-test. Figure shows statistical significance compared to vehicle treated retinas.

Abbreviations: ECFCs, endothelial colony forming cells; OIR, oxygen induced retinopathy; P12, postnatal day 12; P17, postnatal day 17.

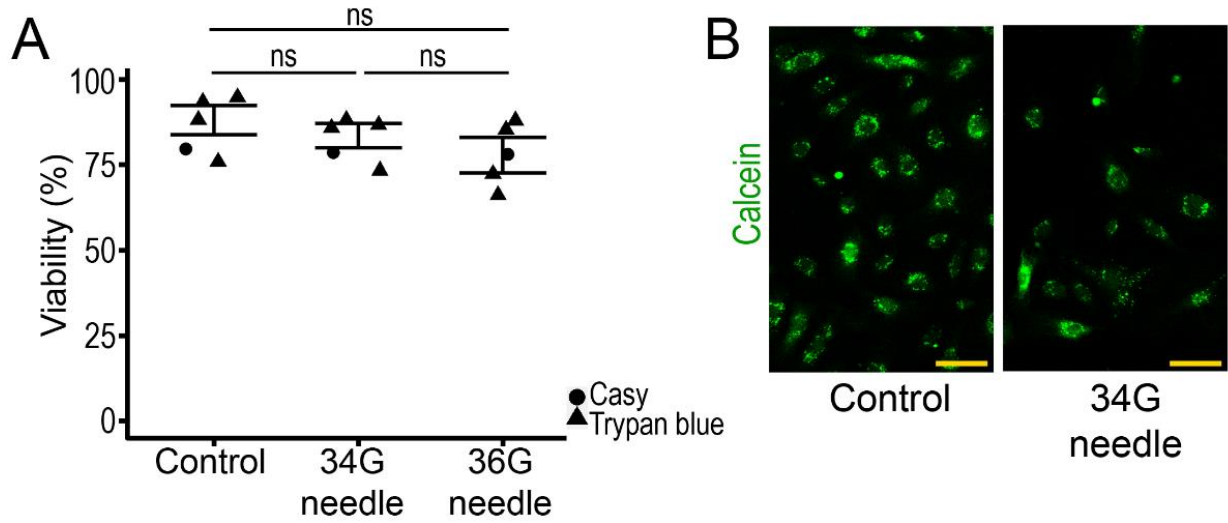
**Supplementary Figure 3. Cell based therapy administered via the left common carotid artery shows therapeutic efficacy in the ipsilateral retina only.**

Quantification of neovascular areas (A) and normovascular areas (B) on isolectinB4 stained P17 retina flatmounts of vehicle (red) and ECFC (green) treated mice. Data presented as individual data points with mean, interquartiles, and range. \*\* $p < 0.01$ , paired t-test. Abbreviations: P17, postnatal day 17; ECFC, endothelial colony forming cells.

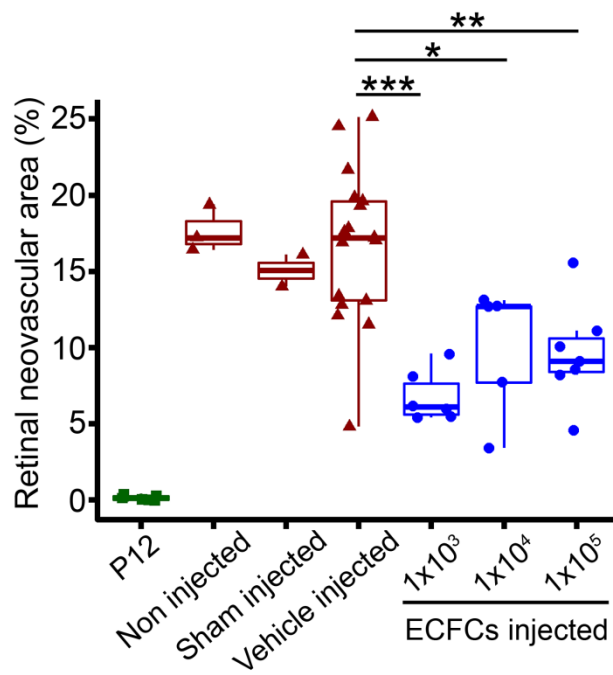
**Supplementary Figure 4. ECFCs incorporate into the retinal vasculature when injected directly into the vitreous, and following systemic delivery via intracarotid injection.**

Representative confocal photomicrographs of isolectinB4 stained retina flatmounts from P17 mice showing the vasculature in green and Q-dot labelled ECFCs (red). White arrows highlight ECFCs within the retinal vasculature. Scale bars: 100  $\mu\text{m}$ . Abbreviations: ECFCs, endothelial colony forming cells; P17, postnatal day 17.

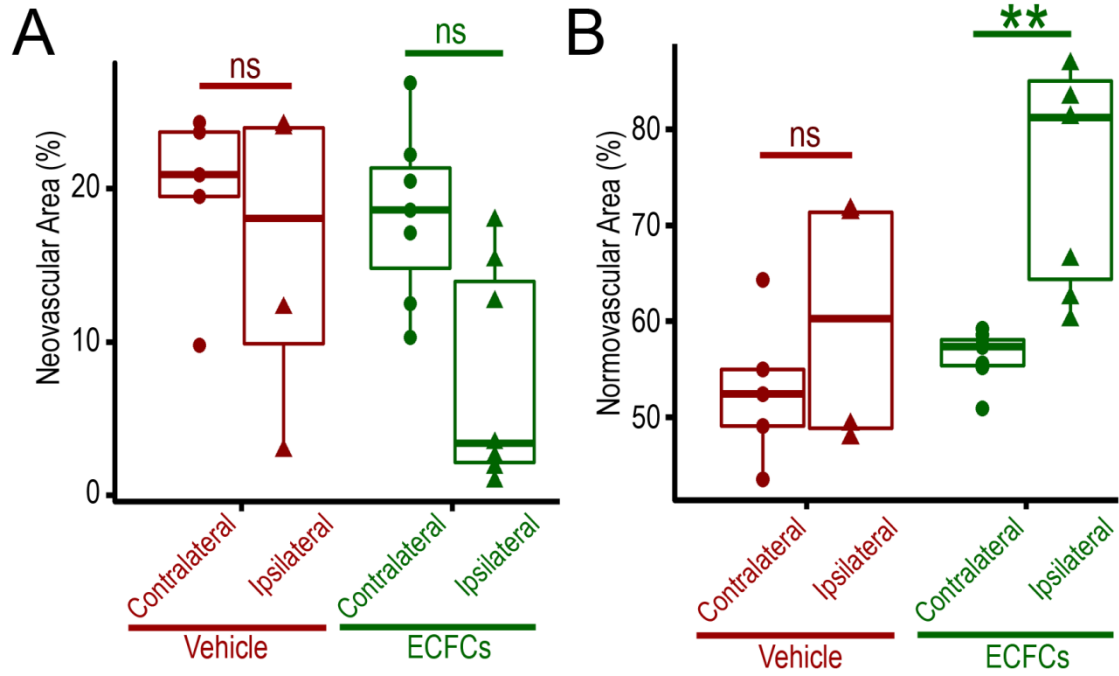
Supplementary Figure 1



Supplementary Figure 2



Supplementary Figure 3



Supplementary Figure 4

