Supplementary Data

Long-Term Protection of Retinal Ganglion Cells and Visual Function by Brain-derived Neurotrophic Factor in Mice with Ocular Hypertension

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Supplementary Figure Legends

S-Fig. 1. Overexpression of BDNF did not change the overall morphology of the mouse retina. (A) Retinal sections stained with DAPI (blue) from mice injected with tamoxifen or overexpressing BDNF. (B) Retinal sections immuno-stained by PKCα (green) and calretinin (red) antibodies. ONL: outer nuclear layer; INL: inner nuclear layer; GCL: ganglion cell layer. Scale bar: 50 µm. This figure is related to Figs. 1-2.

S-Fig. 2. Visual acuity was comparable in BS/+, BS/BS, BS/+::Cre transgenic mice with or without tamoxifen injection. Red arrow marks the BS/BS or BS/+::Cre transgenic mice injected with tamoxifen, i.e. BDNF_OE mice. Sample numbers are given in the bar graph. This figure is related to Fig. 3.

S-Fig. 3. Overexpression of BDNF reduced the dendritic degeneration of ON RGCs in mice with sustained ocular hypertension. Left: Projected images of confocal Z-stacks for an ON RGC. Z-stack images of YFP-expressing RGCs were projected onto a two-dimensional plane to measure the field size of RGC arbors as described in Feng et al., 2013 [28]. Right: The cumulative distributions of the dendritic field sizes of ON and ON-OFF cells from control and BDNF_OE mice. This figure is related to Fig. 7.
S-Fig. 1

A

\begin{tabular}{cccc}
BS/+ & No Cre & BS/+ & Cre (BDNF_OE) \\
| No Injection | Tam Injected | Tam Injected | \\
| Yes | Yes | Yes | \\
\end{tabular}

B

\begin{tabular}{cccc}
Control & BDNF_OE & \\
| Left Eye | Right Eye (OHT) | Left Eye | Right Eye (OHT) | \\
| Yes | Yes | Yes | Yes | \\
\end{tabular}

Calretinin

PKC
S-Fig. 2

Visual Acuity (cpd)

C57bl/6          BS/+ or BS/BS
Cre                No Cre     Cre
No Injection       Tam Injected

BDNF OE

21 16 18 29
S-Fig. 3