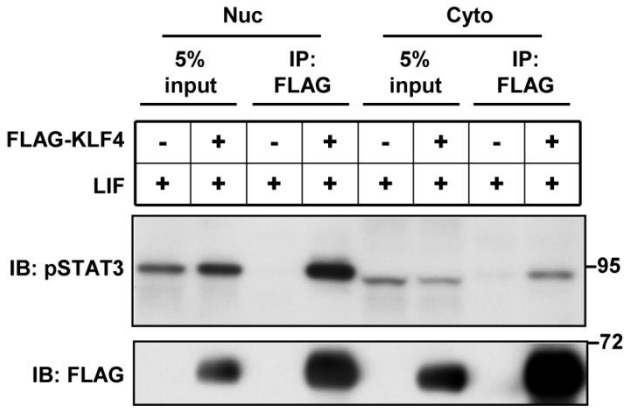
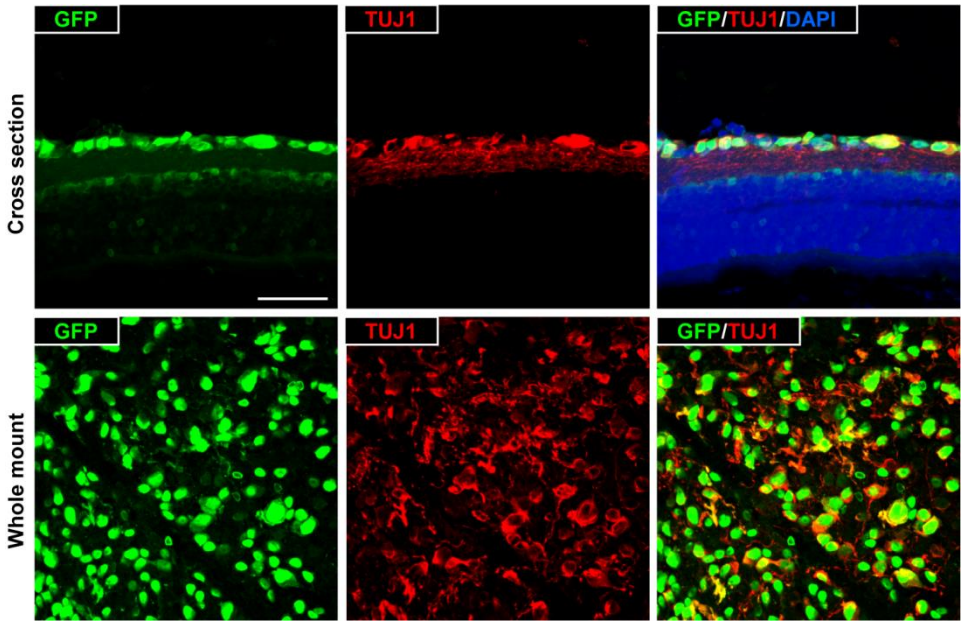
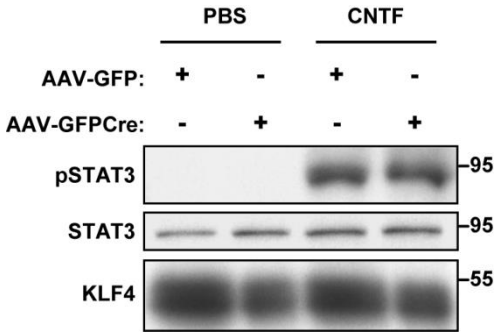


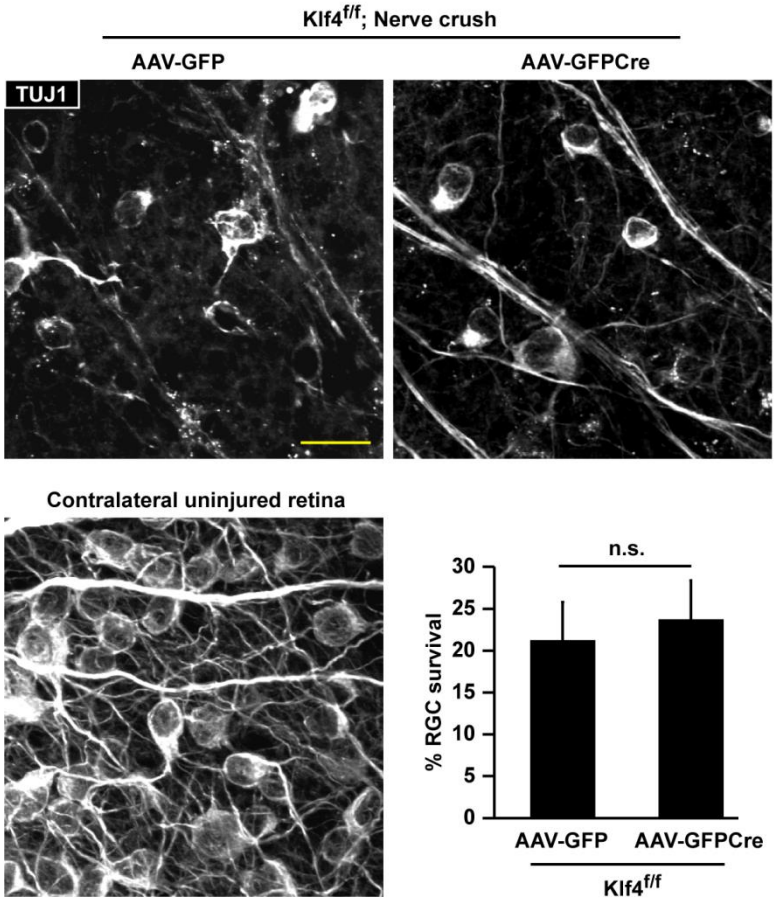
Supplementary Figure S1 KLF4 binds to modified STAT3 in both the nucleus and cytoplasm. FLAG-tagged KLF4 was immunoprecipitated from either the nuclear or cytoplasmic fractions of LIF-treated COS7 cells. Endogenous phosphorylated STAT3 was examined by Western blotting. Nuc, nuclear extracts; Cyto, cytoplasmic extracts. Molecular size markers are in kDa.



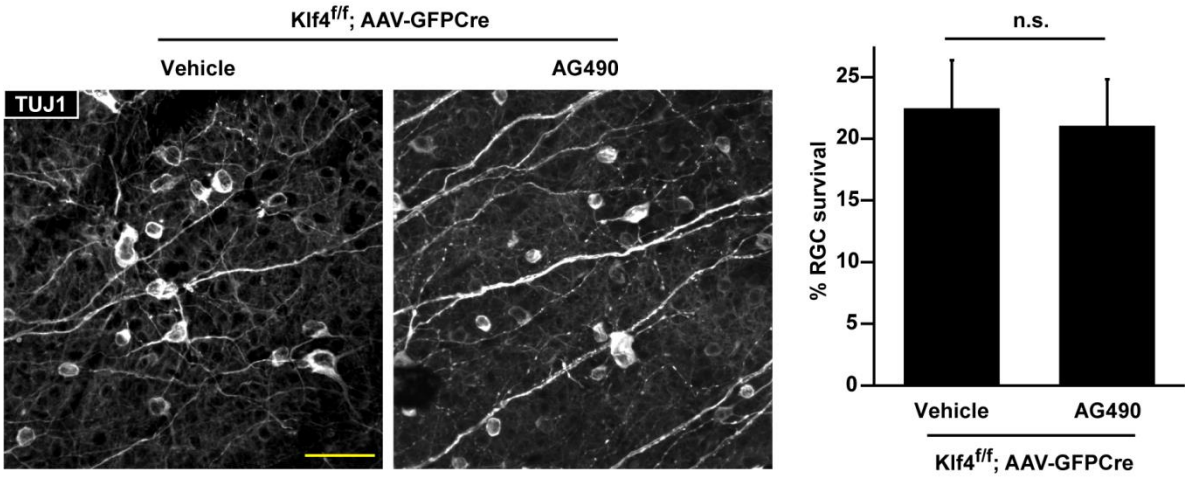
Supplementary Figure S2 Targeting adult retinal ganglion cells by AAV. Adult mice were injected intravitreally with AAV2/9.hSynI.GFPCre, which expresses GFP and Cre fusion protein under the human synapsin I promoter. Confocal images of cross section or whole mount retinas are shown. RGCs were stained with an antibody against neuronal class III β-tubulin (TUJ1). Scale, 20 μm.



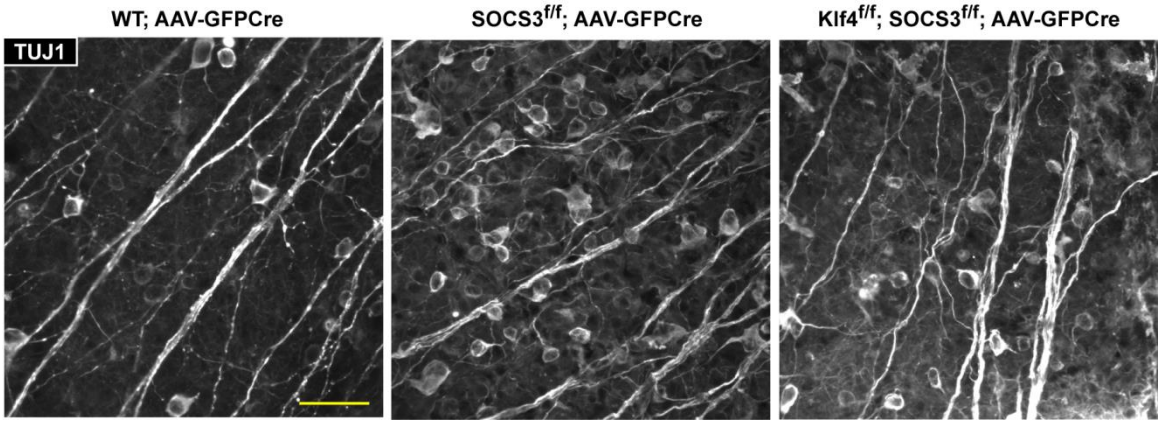
Supplementary Figure S3 Deletion of KLF4 does not alter the endogenous expression of either total STAT3 or phospho-Y705-STAT3 (pSTAT3) in mouse retinas. Twelve days post intravitreal injection of AAV, CNTF or PBS was applied for 5 hrs before collecting the whole retina for western blot analysis. Molecular size markers are in kDa.



Supplementary Figure S4 Acute deletion of KLF4 has no effect on RGC survival after nerve crush. Confocal images of TUJ1+ RGCs are shown. RGC survival was quantified by normalizing the number of TUJ1+ RGCs in the injured retina to that in the contralateral uninjured control retina within the same animal (means $\pm$ s.e.m.; n = 5; n.s., not significant by Student's t-test). Scale, 20 μm.



Supplementary Figure S5 Treatment with AG490 has no significant effect on RGC survival after injury (means ± s.e.m.; n = 3; n.s., not significant by Student's t-test). Scale, 40 µm.



Supplementary Figure S6 Removal of KLF4 expression has no added effect on survival of RGCs with SOCS3-deletion. Confocal images of TUJ1+ RGCs are shown. Scale, 40 µm.

Fig. 1a

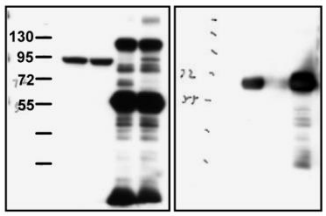


Fig. 1b

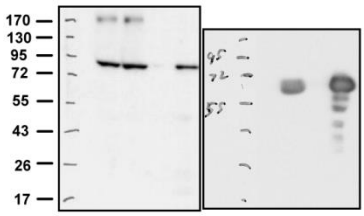


Fig. 1c

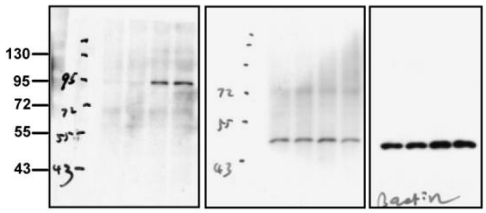


Fig. 1d

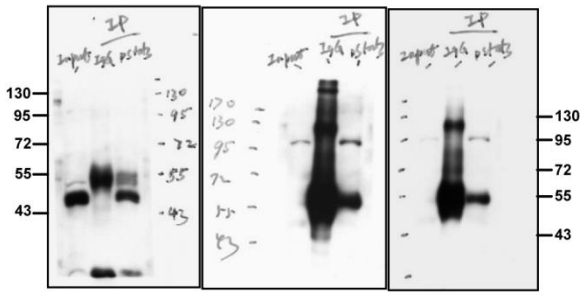


Fig. 1e

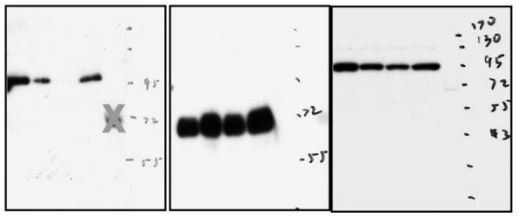
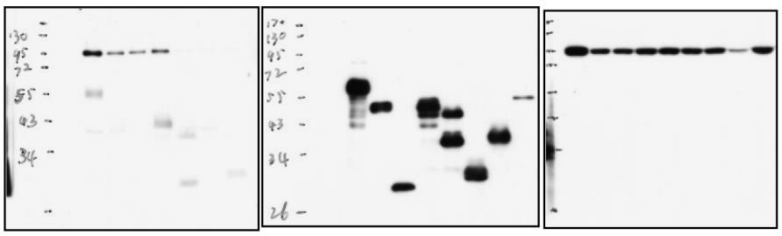
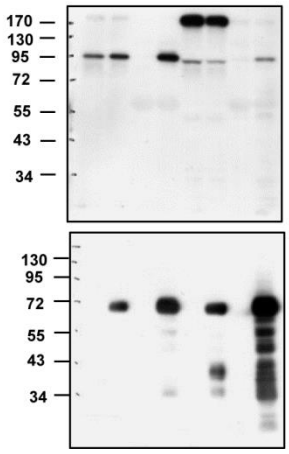


Fig. 1g

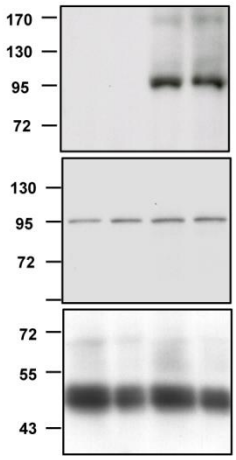


Supplementary Figure S7 Full size scans of western blots presented in Figure 1. Molecular size markers are in kDa.

Supplementary Figure S1



Supplementary Figure S3



Supplementary Figure S8 Full size scans of western blots presented in supplementary figures. Molecular size markers are in kDa.

Supplementary Table S1 Primer sequences for qRT-PCR and ChIP experiments

Items	Direction	Sequences
Sprr1a-stat3BS-chip (P1)	Forward	TGTGTTTCCTGGAGGTGTTC
	Reverse	GGTAGTCATAGGCAGCCACAGTCA
Sprr1a-ex2-chip (P2)	Forward	GAGCCCTGCCAACCTAAG
	Reverse	CTCGGGAACAACAGGGTG
Nrcam-stat3BS-chip (P1)	Forward	CATCACACTCACACGGAAATC
	Reverse	GCCAGGAACTCAGGACTTG
Nrcam-Ex31-chip (P2)	Forward	TCTGGTTGACTATGGAGAGGG
	Reverse	TTGCGTTGACAGGAGAAGG
Elavl4	Forward	CTCAGACTCCAGACCAAAACC
	Reverse	TCTGCCTCAATCCTCTTATCAAAG
Kcnb2	Forward	GAAACTTTGGGACTTGCTGG
	Reverse	AACGATGAACAGGATAGACACG
Nrcam	Forward	TGGAAGGACTAGGGACAGAG
	Reverse	TCAGGTATGGGACAAAGGTTG
Serpine2	Forward	ATCTGAAGGAGCCACTGAAAG
	Reverse	TCGGATGGAAAACAGGAAAGG
Sprr1a	Forward	GAACCTGCTCTTCTCTGAGTATTAG
	Reverse	AGGGATCCTTGGTTTTGGG
Stmn2	Forward	ACATCAACATCTACACCTACGAC
	Reverse	TCTCTGCCAACTGCTTCAG
Ubxn2a	Forward	CCCATTACCAGGATCCAGATC
	Reverse	CAATGTGAGCGTTTCATCCAG
Gap43	Forward	GAGAAGAACCAAACAGGTTGAAAAG
	Reverse	TCGCAGCCTTATGAGCCTTATC
Klf6	Forward	ACTGTCTTTTCCAACCCGAC
	Reverse	AAGATAGCGTTCCAACTCCAG