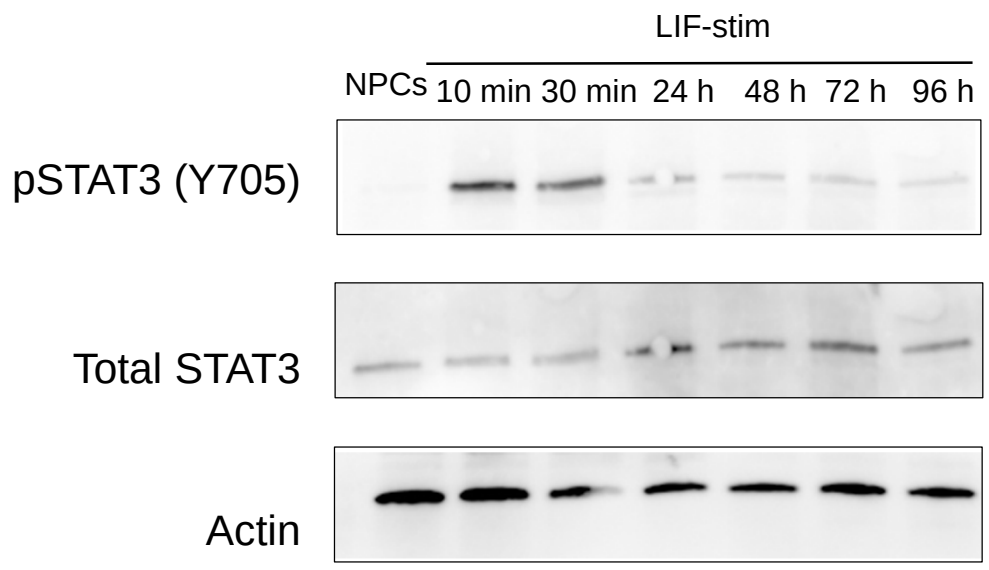
Supplemental Materials

Molecular Biology of the Cell

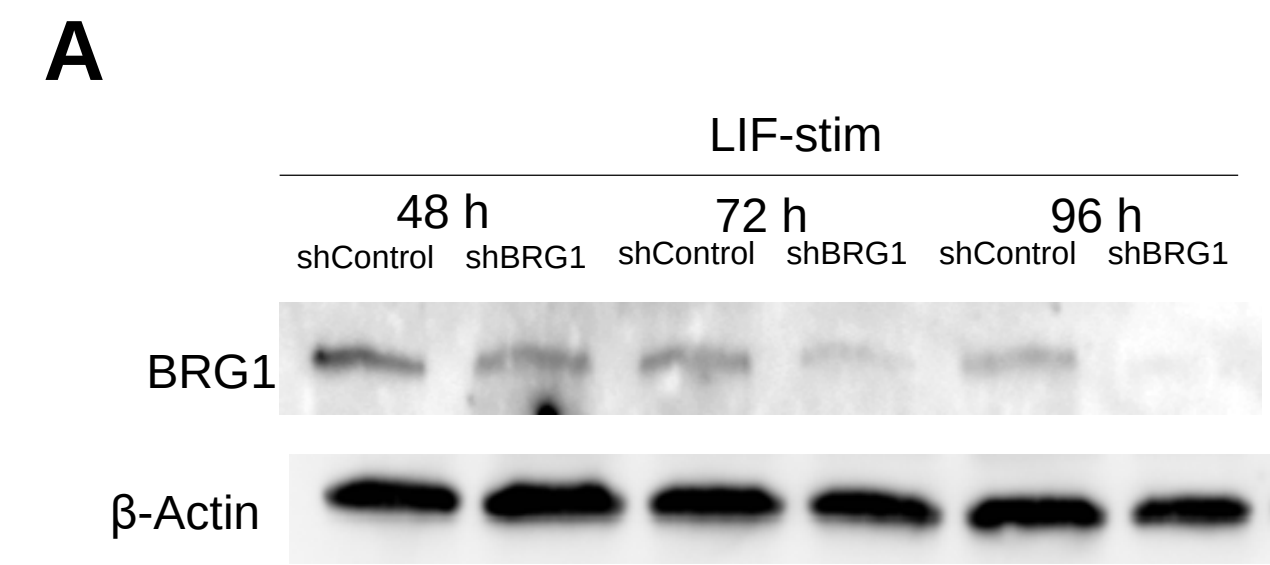
Ito et al.

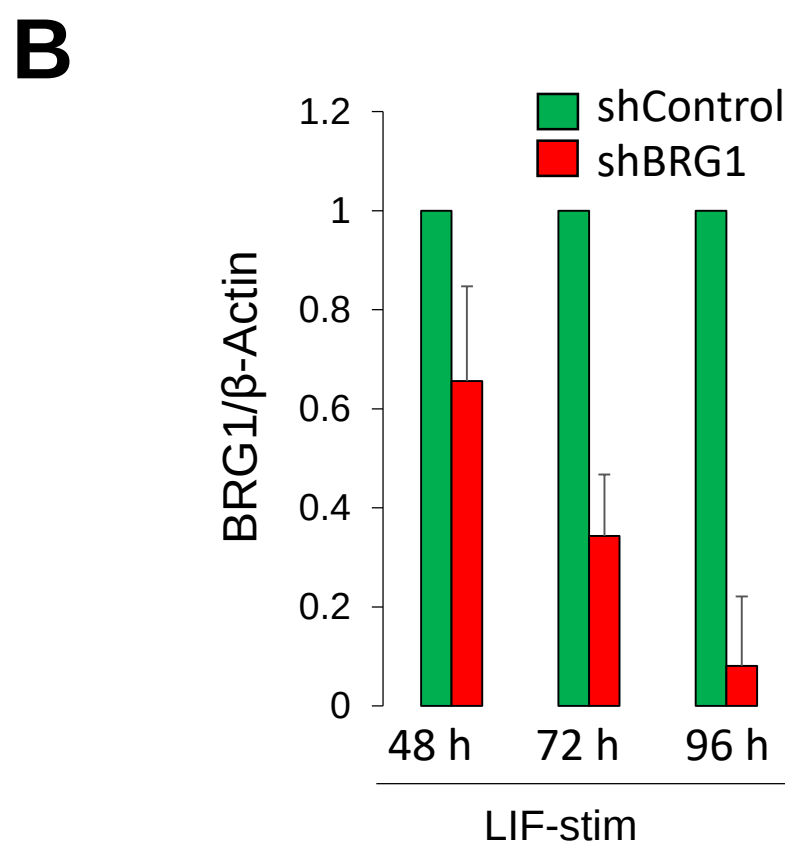
Supplementary Table 1. Primer sequences

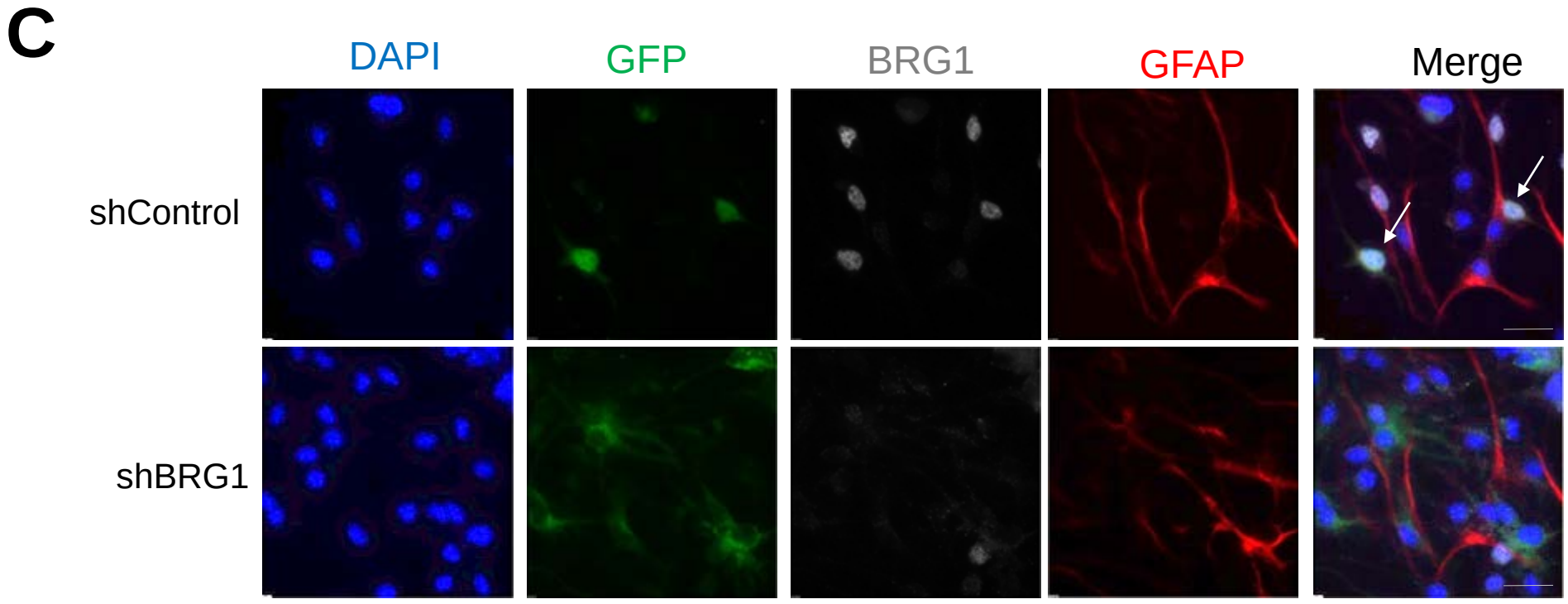
RT-qPCR		
Name	Fw or Rv	Sequence(5'→3')
Gfap mRNA, premRNA	Fw	ATCGAGATCGCCACCTACAG
Gfap mRNA	Rv	CTCACATCACCACGTCCTTG
Gfap pre mRNA	Rv	CTCACATCACCACGTCCTTG
Osmr mRNA, premRNA	Fw	ACACCAAGTCCCTTCCACAG
Osmr mRNA	Rv	ATGGTGACATTGGAGCCTTC
Osmr pre mRNA	Rv	TGGCAATCCAGTGTCTTTCA
Gapdh mRNA Fw	Fw	ACCACAGTCCATGCCATCAC
Gapdh mRNA Rv	Rv	TCCACCACCCTGTTGCTGTA
ChIP		
Name	Fw or Rv	Sequence(5'→3')
Gfap STB	Fw	GCCCACGAGTGACTCACCTTG
Gfap STB	Rv	CCAGGATGCCAGGATGTCAG
Osmr STB	Fw	CAGGAGTGCCAAAAGTGCTC
Osmr STB	Rv	ACGTCTGTCCAGGCGTGT
Pou3f4	Fw	CTGCCAAGGAAGCAGGATACAAATG
Pou3f4	Rv	TTCCATCAGAGGTCTCTCCACTATG
CD4	Fw	CTGCACTCGCCACTTCAGTA
CD4	Rv	GGTTGACAACTCGGGAGAAA
Socs3 SBS	Fw	GCACAGCCTTTCAGTGCAGAG
Socs3 SBS	Rv	GTATTTACCCGGCCAGTACGC
Gapdh	Fw	CTGCACCTGCTACAGTGCTC
Gapdh	Rv	GGAAGGGAGAAAAGGCATTC
RNA FISH		
Gfap Exon1	Fw	GCAGGATGGAGCGGAGAC
Gfap Exon6	Rv	GCTCTAGGGACTCGTTCGT
Gfap Exon6	Fw	GTTACCAGGAGGCACTTGCT
Gfap last Exon	Rv	CCTGCAGCCTAAGCAGAGA

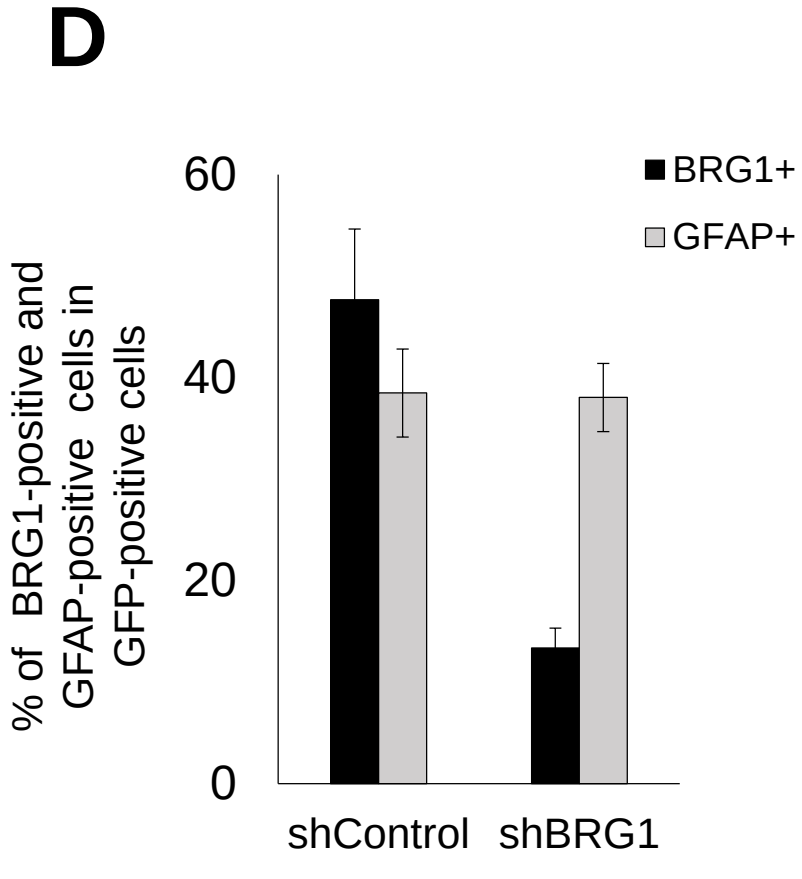


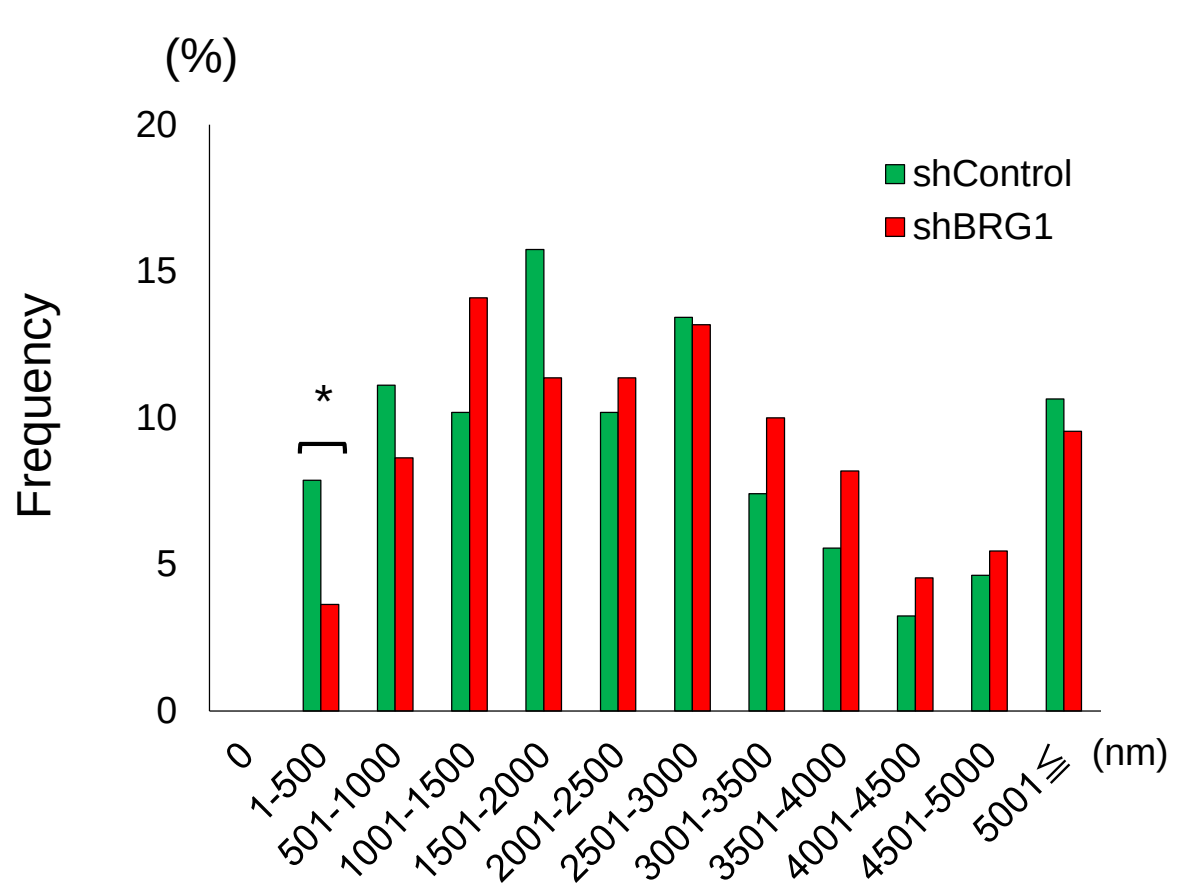
Supplementary Figure 1. STAT3 is immediately phosphorylated by LIF stimulation. Western blotting for pSTAT3 and total STAT3 in NPCs alone and stimulated with LIF for different periods of time (LIF-stim).



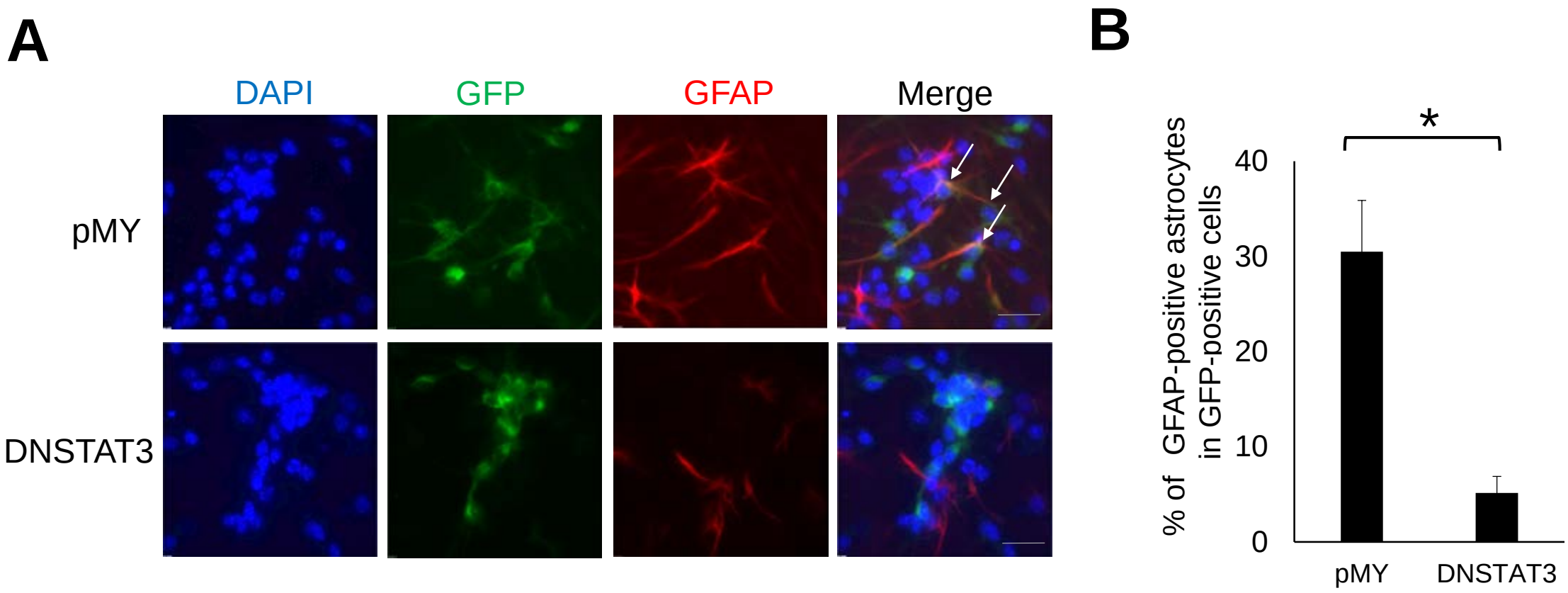


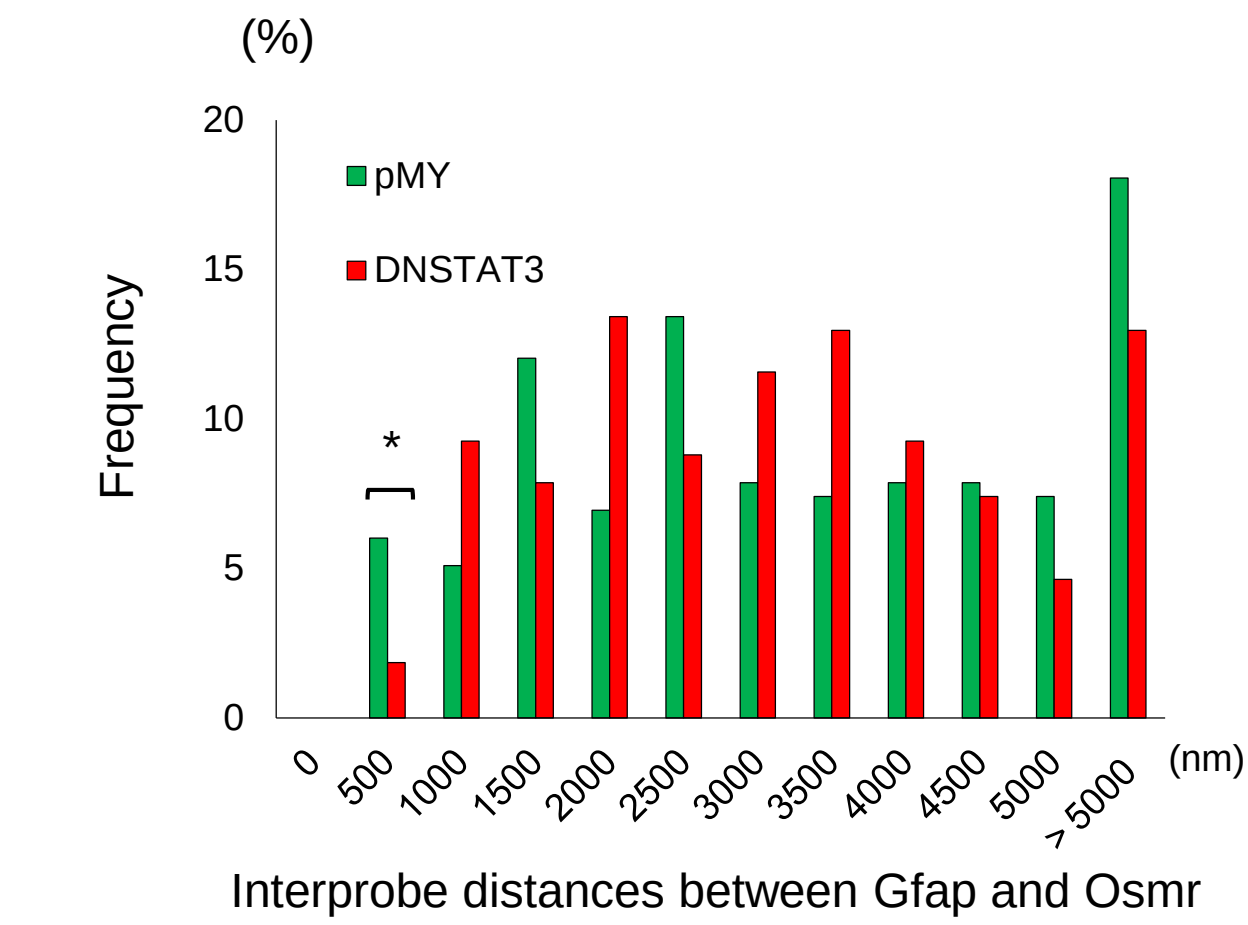




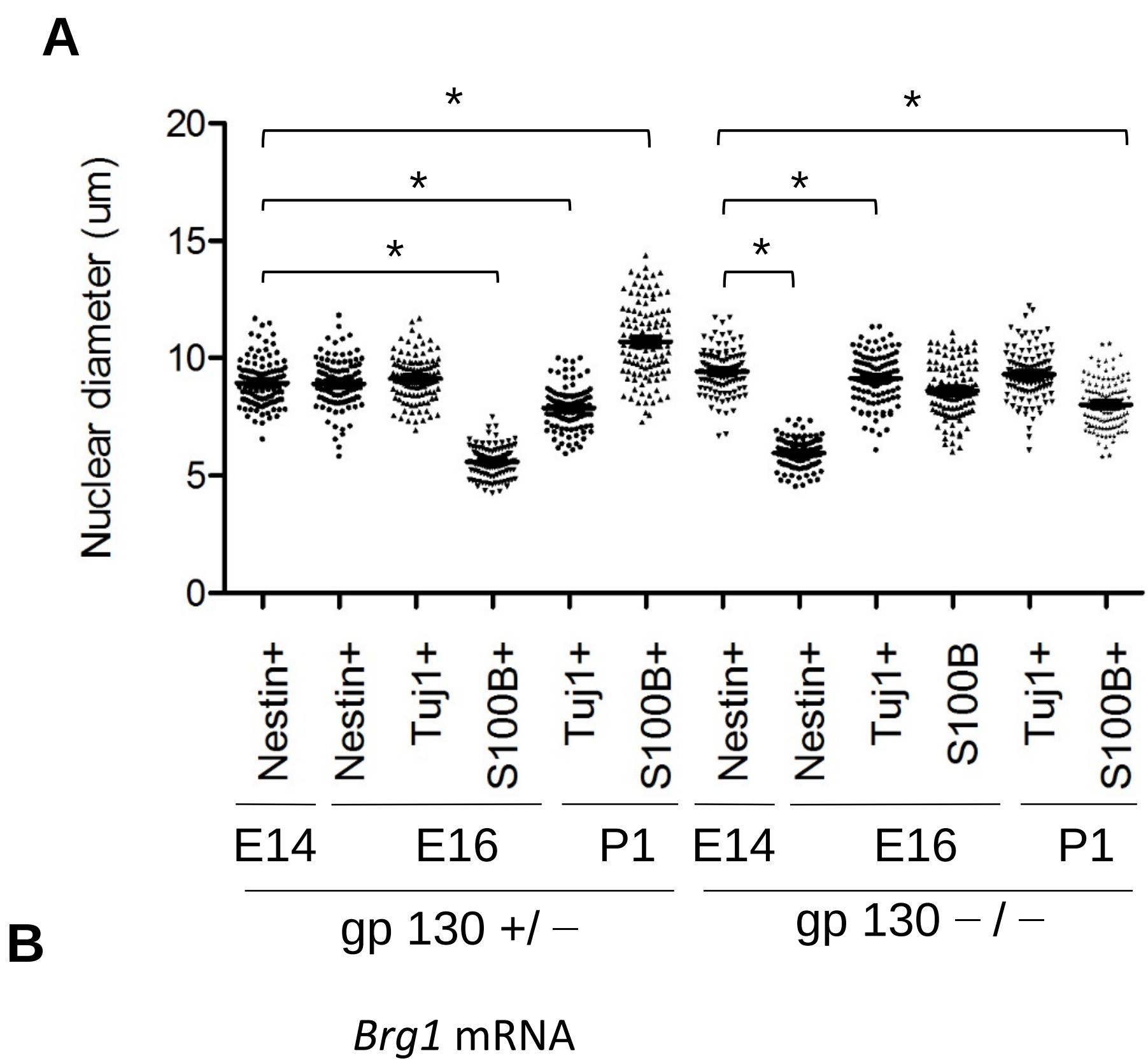


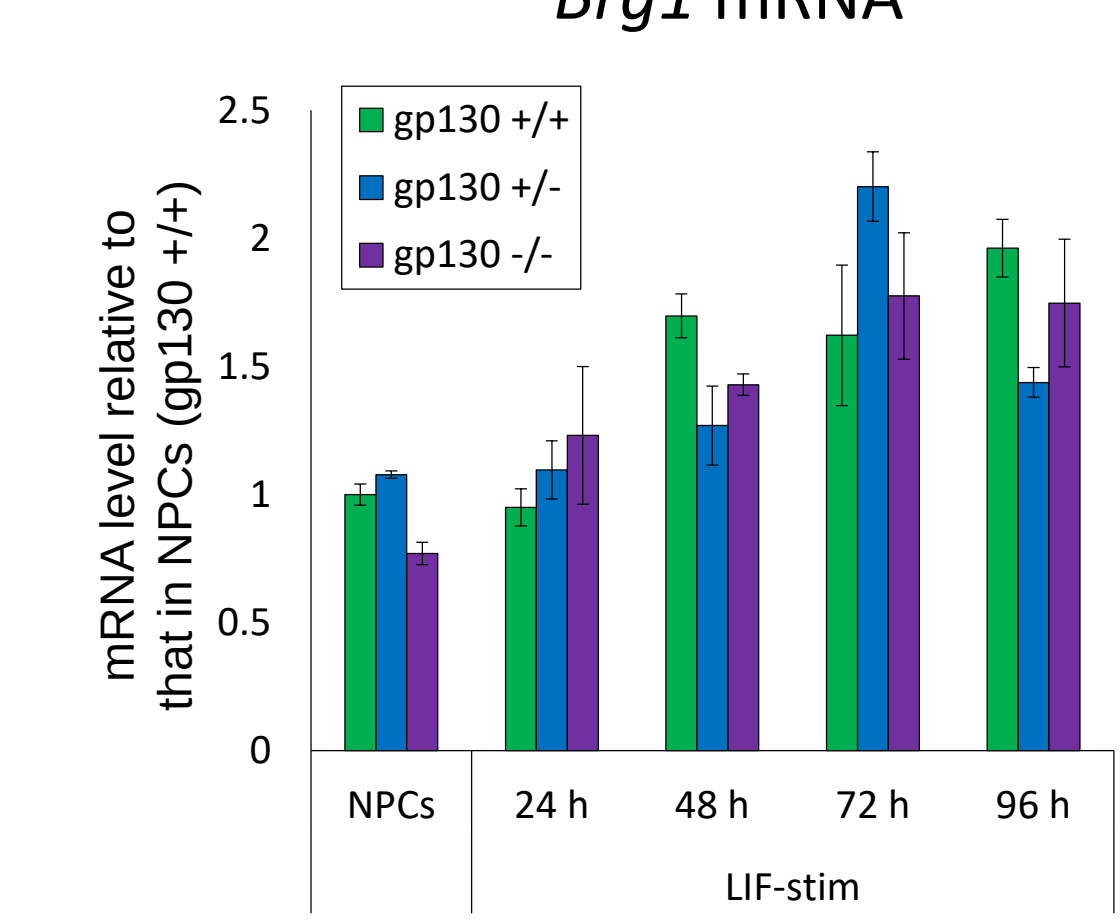
Supplementary Figure2. Confirmation of BRG1 knockdown in LIF-stimulated cells. (A) NPCs were infected with shControl or shBRG1 retrovirus; stimulated with LIF for 48, 72, or 96 h; and then collected and used for western blotting for BRG1. (B) Quantification of BRG1 expression, normalized against that of actin and described as a ratio to the expression in the control at each time point. (C) Cells stimulated with LIF for 96 h were stained with an anti-GFP antibody (green), anti-BRG1 antibody (gray), anti-GFAP antibody (red), and DAPI (blue). Scale bar = 20 μm. Arrows indicate GFP/BRG1 double-positive cells. (D) Quantification of the percentage of BRG1-positive and GFAP-positive cells among GFP-positive cells. Error bars represent the standard deviation with n = 3 biological replicates (means ± SEM). The Mann-Whitney U test was performed. *P < 0.05. (E) Distribution of interprobe distances between *Gfap* and *Osmr* in shControl- and shBRG1-expressing LIF-stimulated cells. Fisher's exact test was performed for each distance. N = 216 *P < 0.05.





Supplementary Figure 3. JAK-STAT signaling is inhibited in LIF-stimulated cells. (A) NPCs were infected with recombinant retroviruses engineered to express EGFP alone (pMY) or together with DN-STAT3 and stimulated with LIF for 96 h. The cells were then stained with an anti-GFP antibody (green), anti-GFAP antibody (red), and DAPI (blue). Scale bar = 20 μm. Arrows indicate GFP/GFAP double-positive cells. (B) Quantification of the percentage of GFAP-positive astrocytes among GFP-positive cells. Error bars represent the standard deviation with three biological replicates (means ± SEM). The Mann-Whitney U test was performed and *P < 0.05. (C) Distribution of interprobe distances between *Gfap* and *Osmr* in LIF-stimulated cells that were infected with recombinant retroviruses engineered to express EGFP alone (pMY) or together with DN-STAT3. Fisher's exact test was performed for each distance. N = 216. *P < 0.05.





Supplementary Figure 4. Confirmation of gp130 knockout. (A) Nuclear diameter of gp130 +/− and −/− cells. Nuclear size as measured by DAPI staining in E14 and E16 Nestin-positive NPCs, in E16 and P1 Tuj1-positive neurons, and in E16 and P1 S100β-positive astrocytes of gr130 +/− and −/− mice. The Steel test was performed, and * $P < 0.05$. n = 108. (B) Quantitative RT-PCR was performed on mRNA of *Brg1* in NPCs derived from gp130 +/+, +/− and −/− mice, either left untreated or stimulated with LIF for different periods of time (LIF-stim). The results were normalized to *Gapdh* expression. Each graph represents the mean (± SEM) relative to the amounts in NPCs derived from gp130 +/+ mice from at least three experiments.