

**Supplementary Figure 3.** Effect of  $\alpha$ -synuclein deficiency and GBA overexpression on susceptibility of GBA<sup>+/L444P</sup> mice to MPTP-induced gliosis. **a**, **c** Representative images of immunohistochemistry data for GFAP with low (scale bar, 500 µm) and high magnification (scale bar, 50 µm). **b**, **d** Intensities of GFAP positive signals in the SNpc of mice treated with saline or MPTP were quantified and shown as a graph. Error bars represent the mean  $\pm$  S.E.M (n = four mice per group). Two-way ANOVA was used to test for statistical analysis followed by *post-hoc* Bonferroni test for multiple group comparison. \**P* < 0.05, \*\*\**P* < 0.001 vs. MPTP-treated WT or GBA<sup>+/L444P</sup> with AAV5-Con or MPTP-treated GBA<sup>+/L444P</sup> with AAV5-Con. n.s: not significant.