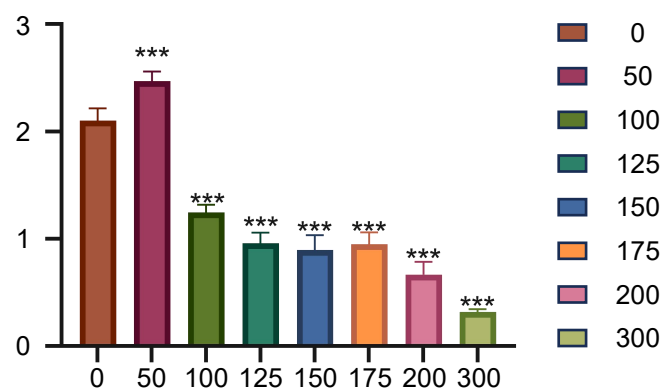


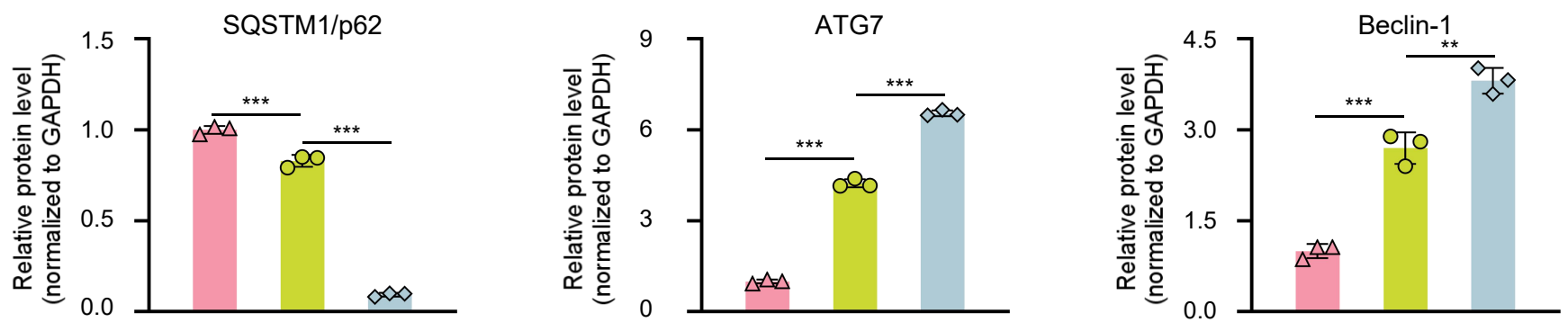
Supplementary Fig. S1 pGL6 firefly luciferase reporter vectors were used to clone the complete promoter sequences of ATG7.



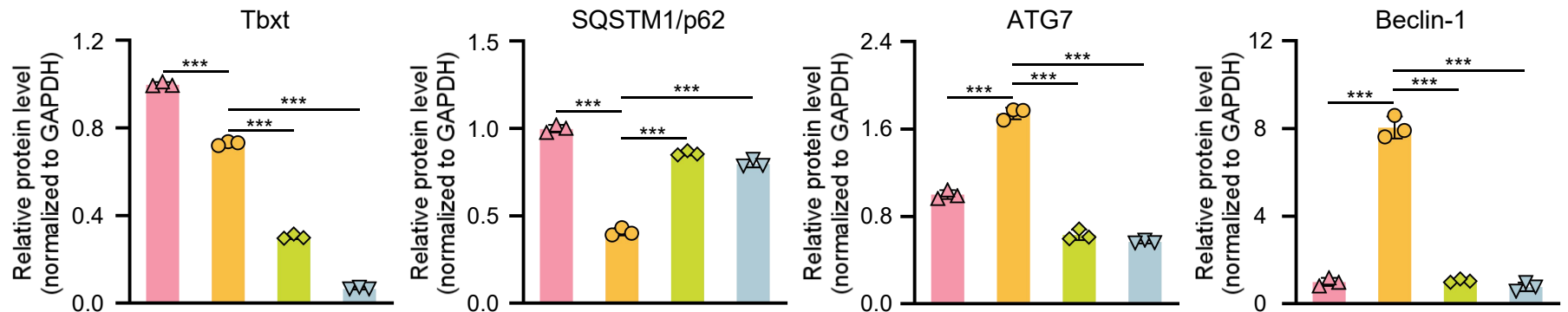
Supplementary Fig. S2 The cell viability of NPCs treated with different concentrations of H₂O₂ for 12 h (n=6). All data are shown as the mean ± SD. ***p< .001

A

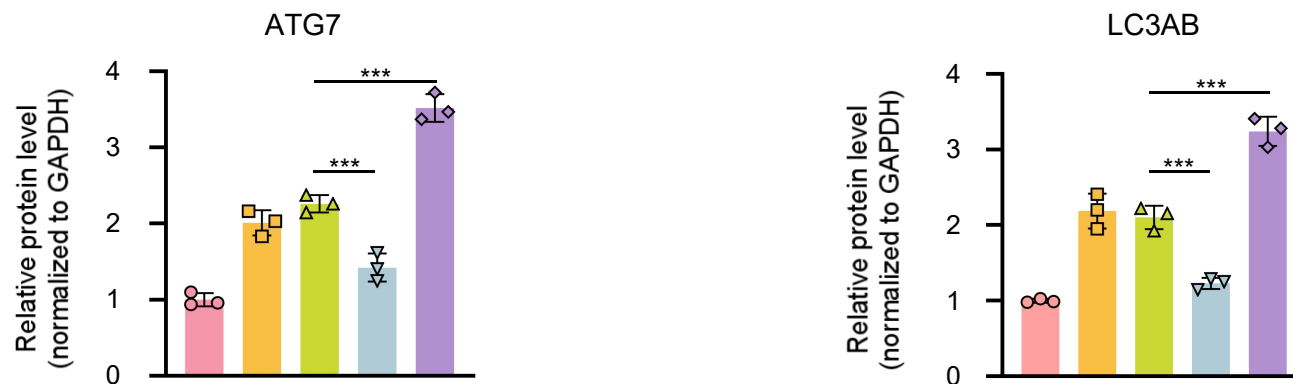
△ OE-EV ● OE-EV+H₂O₂ ◆ OE-T+H₂O₂

**B**

△ Si-NC ● Si-NC+H₂O₂ ◆ Si-Tbxt 1#+H₂O₂ ▽ Si-Tbxt 2#+H₂O₂

**C**

○ Ctr □ Vehicle ▲ LV-NC ▽ LV-shTbxt ◆ LV-Tbxt

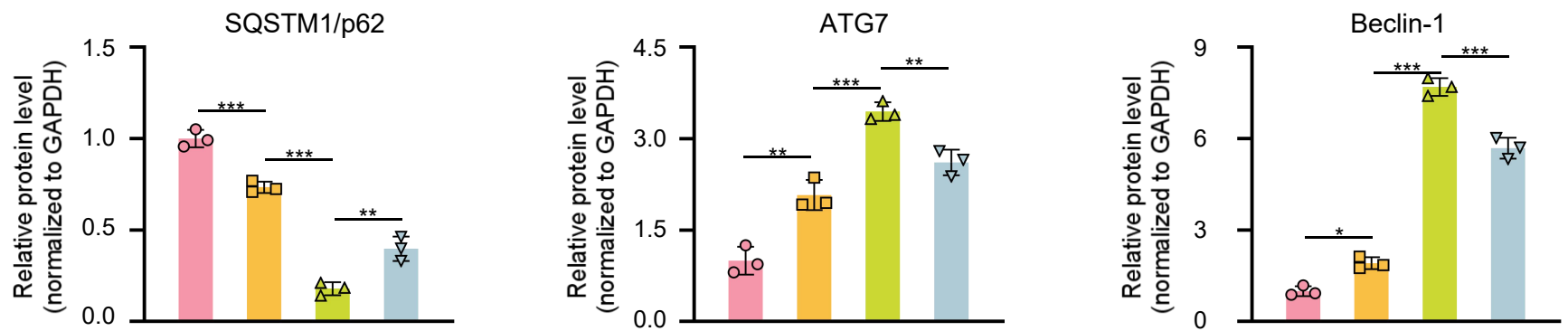


Supplementary Fig. S3

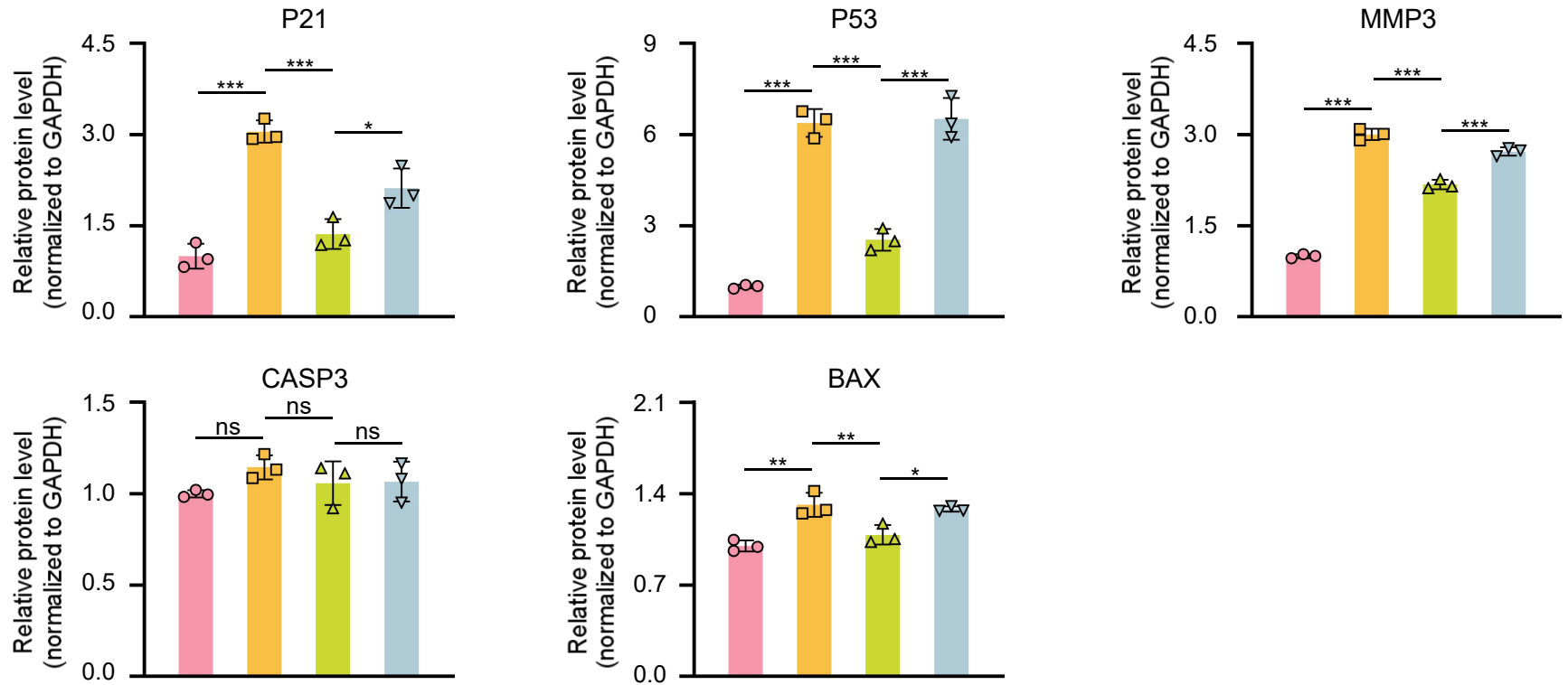
A Densitometric analysis of SQSTM1/p62 ,ATG7and Beclin-1 proteins in rat NPCs transfected with empty vector (1μg/mL) or plasmids encoding Tbxt (1 μg/mL) for 48 hours and treated with or without 100 μM H₂O₂ for 12 hours.(n=3) **B** Densitometric analysis of Tbxt,SQSTM1/p62 ,ATG7and Beclin-1 proteins in rat NPCs transfected with Si-NC (50nM) or Si-Tbxt (50nM) for 48 hours and treated with or without 100 μM H₂O₂ for 12 hours. (n=3) **C** The expression of ATG7and LC3AB proteins was detected by western blot in rat NP tissue at postoperative day 3 (n= 3). All data are shown as the mean ± SD. **p < .01, ***p< .001

A

● OE-EV ■ OE-EV+H₂O₂ ▲ OE-Tbxt+H₂O₂ ▼ OE-Tbxt+H₂O₂+3-MA

**B**

● OE-EV ■ OE-EV+H₂O₂ ▲ OE-Tbxt+H₂O₂ ▼ OE-Tbxt+H₂O₂+3-MA



Supplementary Fig. S4

A Densitometric analysis of SQSTM1/p62, ATG7 and Beclin-1 proteins in rat NPCs transfected with empty vector (1 μ g/mL) or plasmids encoding Tbxt (1 μ g/mL) for 48 h, treated with or without 100 μ M H₂O₂, and treated with or without 3-MA (10 mM for 4 h) prior to H₂O₂ (n=3). **B** Densitometric analysis of senescence and apoptosis-related proteins in rat NPCs transfected as described above. (n=3). All data are shown as the mean $\pm$ SD. *p < .05, **p < .01, ***p < .001.