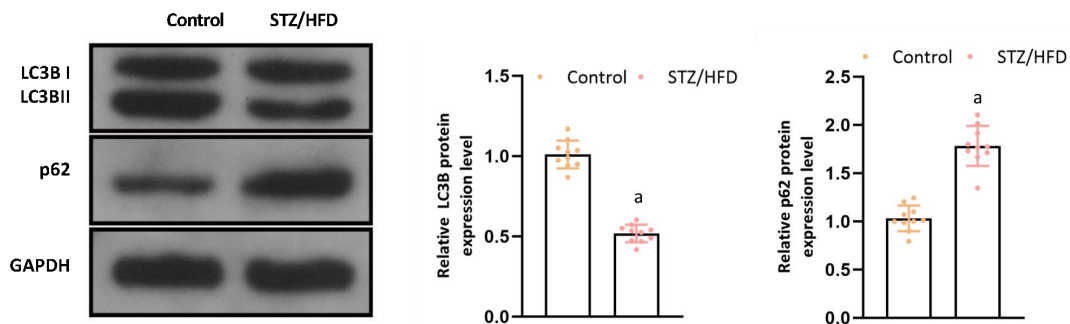


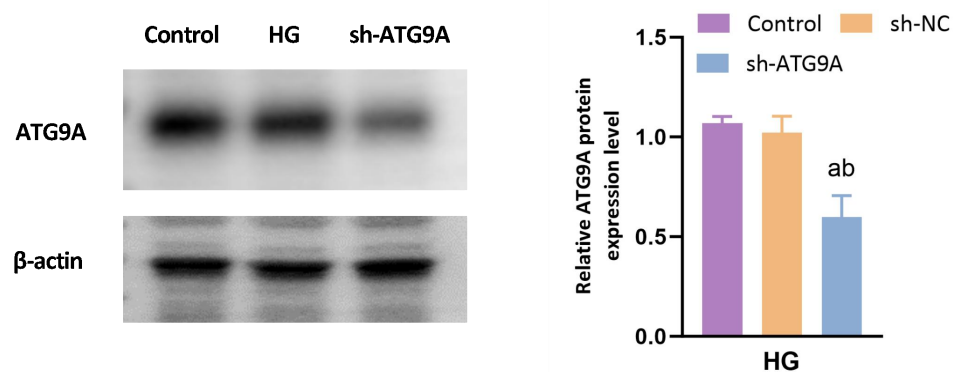
**Supplementary Figure 1. TERT, FOXO1 and ATG9A expression in HG-treated MIN6 cells**

A-B, RT-qPCR and western blotting were used to analyze TERT, FOXO1 and ATG9A mRNA and protein expression. The data are expressed as means  $\pm$  standard deviations. Each experiment was conducted in triplicate. a  $P < 0.05$ , b  $P < 0.05$ , compared with the control group. HG, high glucose.



**Supplementary Figure 2. Detection of autophagy-related proteins in the pancreas of T2DM mice**

Mice were fed a high-fat diet and injected with STZ. Western blotting was used to assess the protein expression of LC3B and p62. The data are expressed as means  $\pm$  standard deviations. N=10 for in vivo experiments. a  $P < 0.05$ , compared with the control group.



**Supplementary Figure 3. ATG9A protein expression level in HG-treated MIN6 cells.**

Western blotting were used to analyze ATG9A protein expression. The data are expressed as means  $\pm$  standard deviations. Each experiment was conducted in triplicate. a  $P < 0.05$ , compared with the control group. b  $P < 0.05$ , compared with the sh-NC group .HG, high glucose.

**Supplementary Table 1.** List of antibodies

Protein	Batch number	Concentration	Company
TERT	MA5-16034	1:500	Thermo Scientific
FOXO1	MA5-17078	1:1000c	Thermo Scientific
ATG9A	ab108338	1:1000	abcam, Cambridge, MA, USA
p62	ab109012	1:1000	abcam, Cambridge, MA, USA
LC3A/B	ab62721	1:2000	abcam, Cambridge, MA, USA
GAPDH	ab8245	1:1000	abcam, Cambridge, MA, USA
Secondary antibody	ab205718/ ab205719	1:2000	abcam, Cambridge, MA, USA