Contents

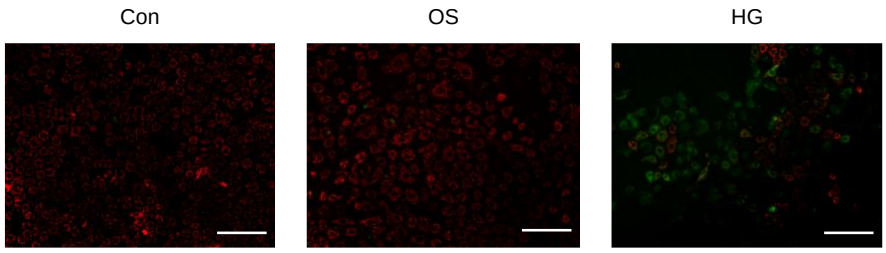
ESM Table S1

Body weight, KI, and biochemical indicators from the normal control (Con), STZ induced diabetic groups (STZ), and rats infected with AAV-VE or AAV-TRAP1 at 12 weeks

Parameters	Con	STZ	STZ+AAV-VE	STZ+AAV-TRAP1
Body weight (g)	484.33±4.22	274.00±22.22 ^{aaa}	168.67±13.84^{aaa}	179.00±14.75^{aaa}
RI (g/kg)	3.88±0.06	7.04±0.32^{aa}	8.49±0.34^{aa}	7.55±0.51^{aa}
Urine output (ml/24h)	12±0.84	65.6±16.27	67±11.52^{a}	61.4±3.56^{aaa}
TC (mmol/L)	1.57±0.02	2.45±0.26^{aa}	2.47±0.19^{aa}	2.32±0.25^{a}
TG (mmol/L)	1.22±0.05	7.13±2.28	8.44±1.42^{a}	5.80±0.64^{aa}
LDL (mmol/L)	0.33±0.02	0.44±0.03^{a}	0.58±0.03^{aaa}	0.53±0.04^{aaa}
HDL (mmol/L)	1.27±0.02	1.11±0.03^{a}	0.86±0.08^{a}	1.00±0.02^{aaa}

RI (KW/BW) = [left kidney weight (mg)+ right kidney weight (mg)]/(2*body weight)(g) ; TC, total cholesterol; TG, total triglyceride; LDL-C, low density lipoprotein; HDL, high density lipoprotein. Values in the table are presented as means ± SEM (n=5-6). ^{a} $p < 0.05$, ^{aa} $p < 0.01$ and ^{aaa} $p < 0.001$ compared to normal rats respectively.

ESM Fig.S1

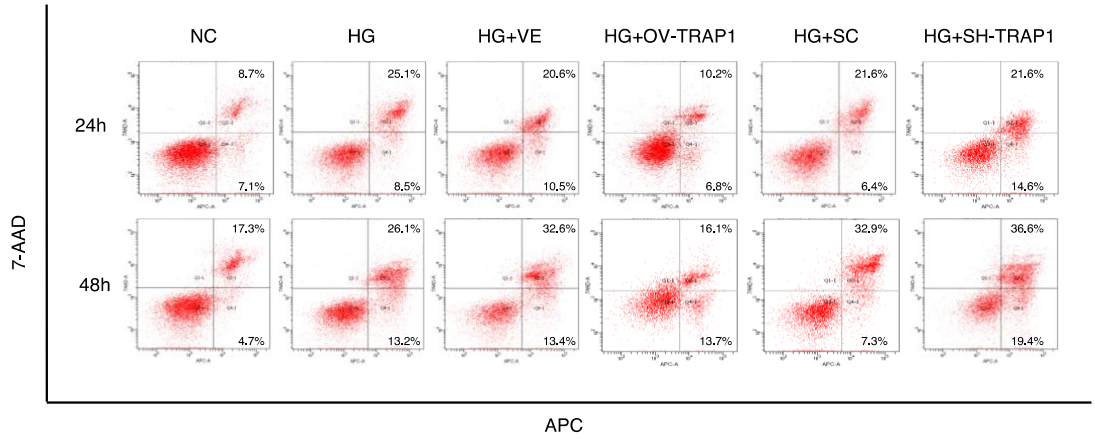


ESM Fig.S1. Effects of high glucose on mitochondria membrane potential in NRK-52e cells at 48h.

Typical fluorescence photomicrographs of mitochondrial membrane potential after JC-1 staining.

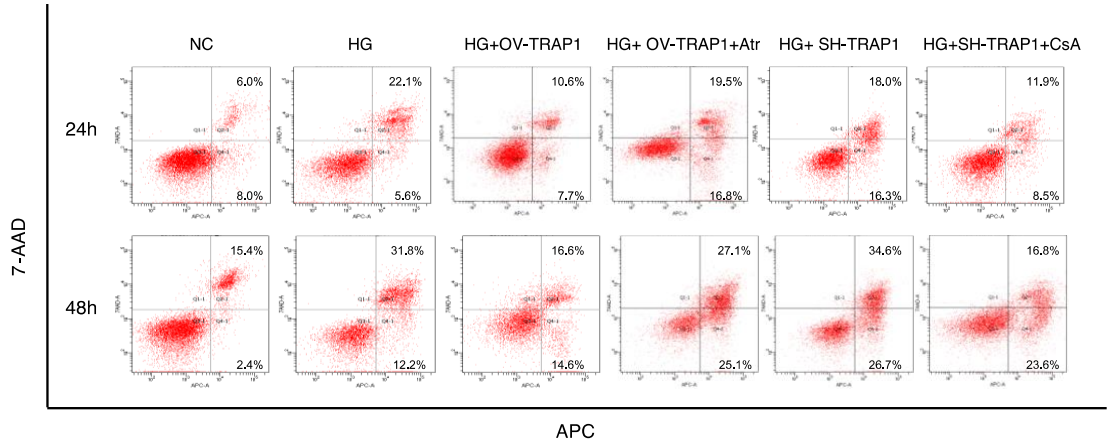
Scale bar =250 μm.

ESM Fig.S2



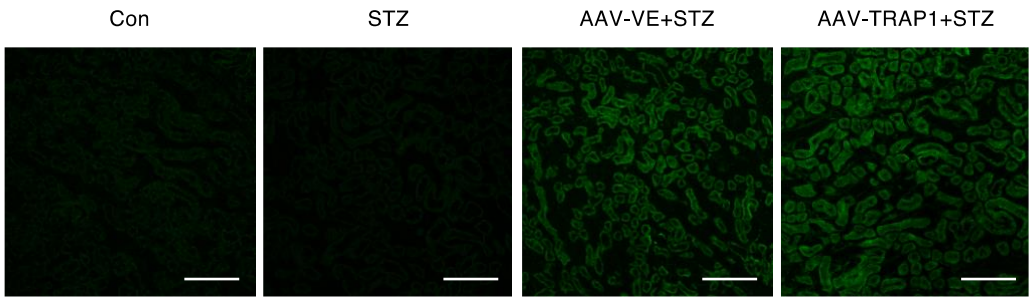
ESM Fig.S2. Effects of TRAP1 on apoptosis exposed to high glucose in NRK-52e cells. TRAP1 overexpression and knockdown cells were cultured under high glucose conditions. Typical graphs of apoptosis were detected by flow cytometry after APC/7AAD dual staining.

ESM Fig.S3



ESM Fig.S3. Effects of mPTP opening regulator on apoptosis of TRAP1 overexpression and knockdown cells. Typical graphs of apoptosis were detected by flow cytometry after APC/7AAD staining.

ESM Fig.S4



ESM Fig.S4. The efficiency of AAV 2/9 infection in vivo. Typical fluorescence photomicrographs of GFP in rat renal tubular epithelial cells. Scale bar = 250 μm.