

Supplementary Materials

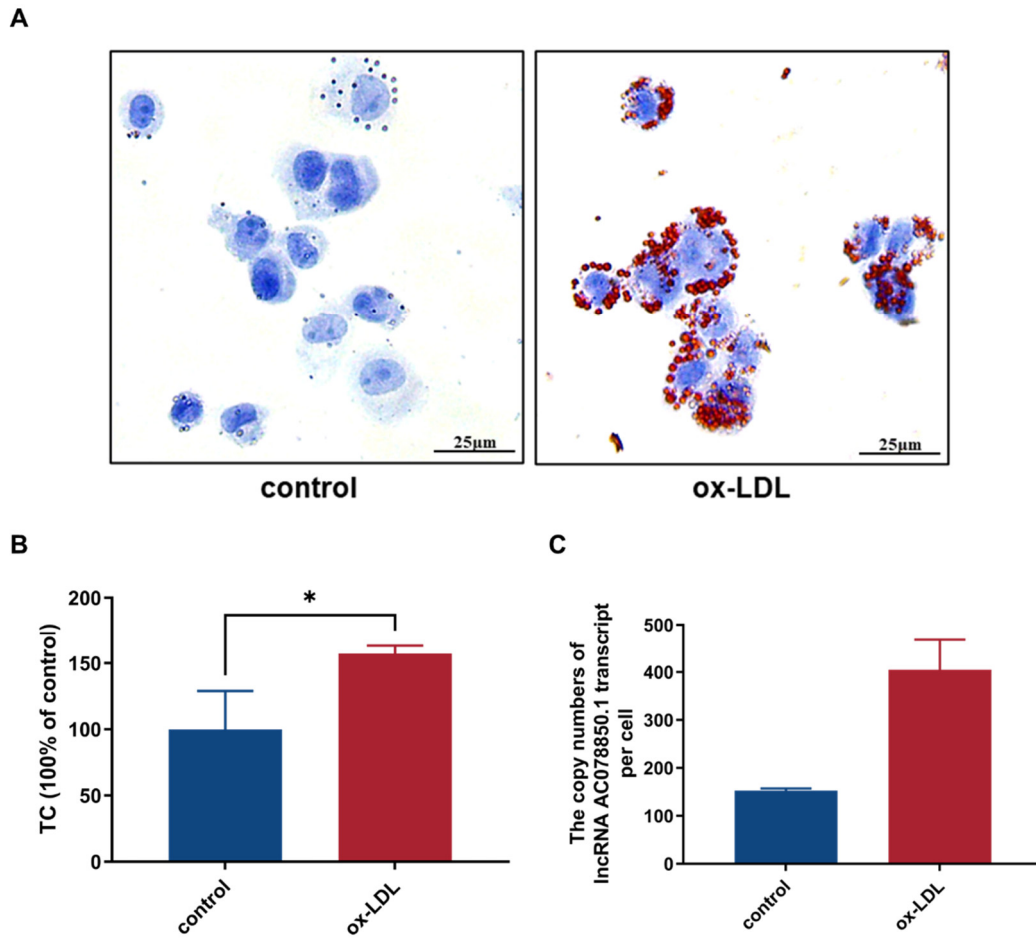


Figure S1. The establishment of foam cell model. **(A)** Intracellular lipid accumulation of THP-1 macrophage-derived foam cells were examined using oil red O staining ($n = 3$, scale bar: 25 μ m). **(B)** The TC level (100% of control) in THP-1-derived macrophages induced by ox-LDL ($n = 3$). **(C)** The copy numbers of lncRNA AC078850.1 transcript per cell in THP-1-derived macrophages with or without ox-LDL induction were quantified using qRT-PCR ($n = 3$). The results were obtained from three independent experiments. Measurement data were presented as mean \pm SD. Differences among groups were determined by Student's t-tests. * $p < 0.05$.

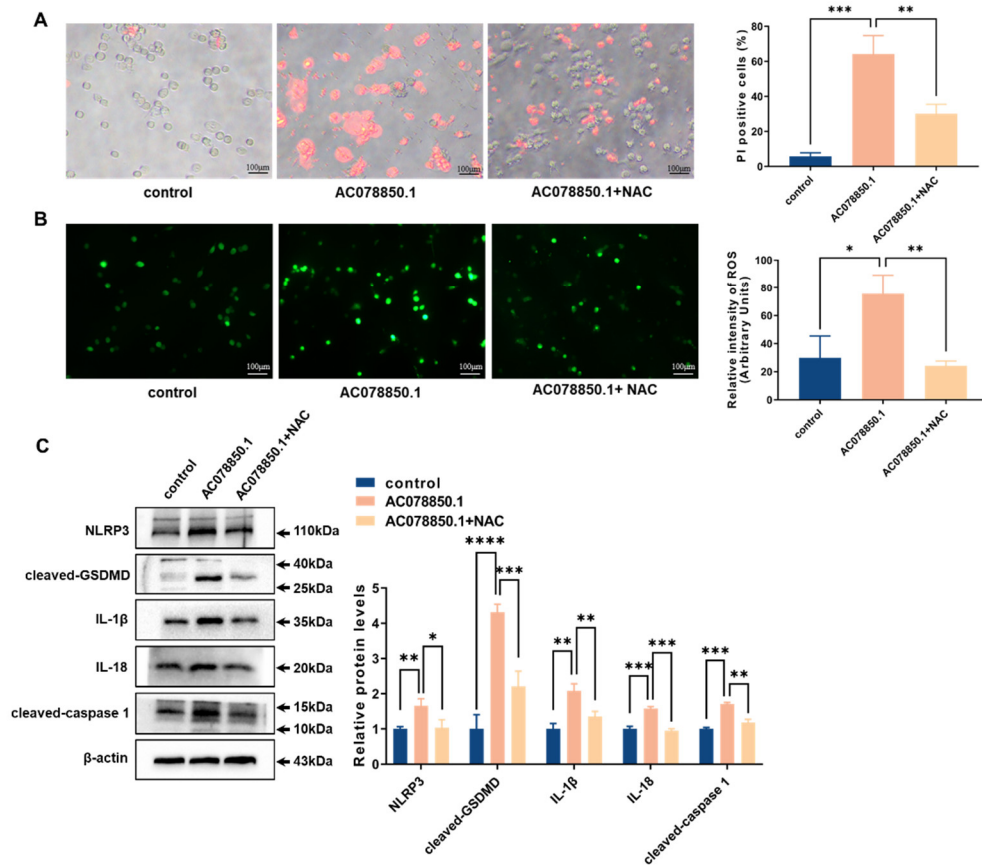


Figure S2. ROS inhibitor reversed lncRNA AC078850.1-induced pyroptosis in THP-1-derived macrophages. **(A)** Effect of NAC on cellular oxidative stress was examined using ROS production (n=3, scale bar=100μm). **(B)** Effect of NAC on pyroptotic cell death was performed by PI staining (n=3, scale bar=100μm). **(C)** The protein levels of NLRP3, cleaved-caspase 1, cleaved-GSDMD, IL-1β and IL-18 were determined by western blot in lncRNA AC078850.1 plasmids-induced THP-1-derived macrophages treated by NAC (n=3). The results were obtained from three independent experiments. Measurement data were presented as mean ± SD. Differences among groups were determined by Student's t-tests. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$, and ^{ns} $p > 0.05$.

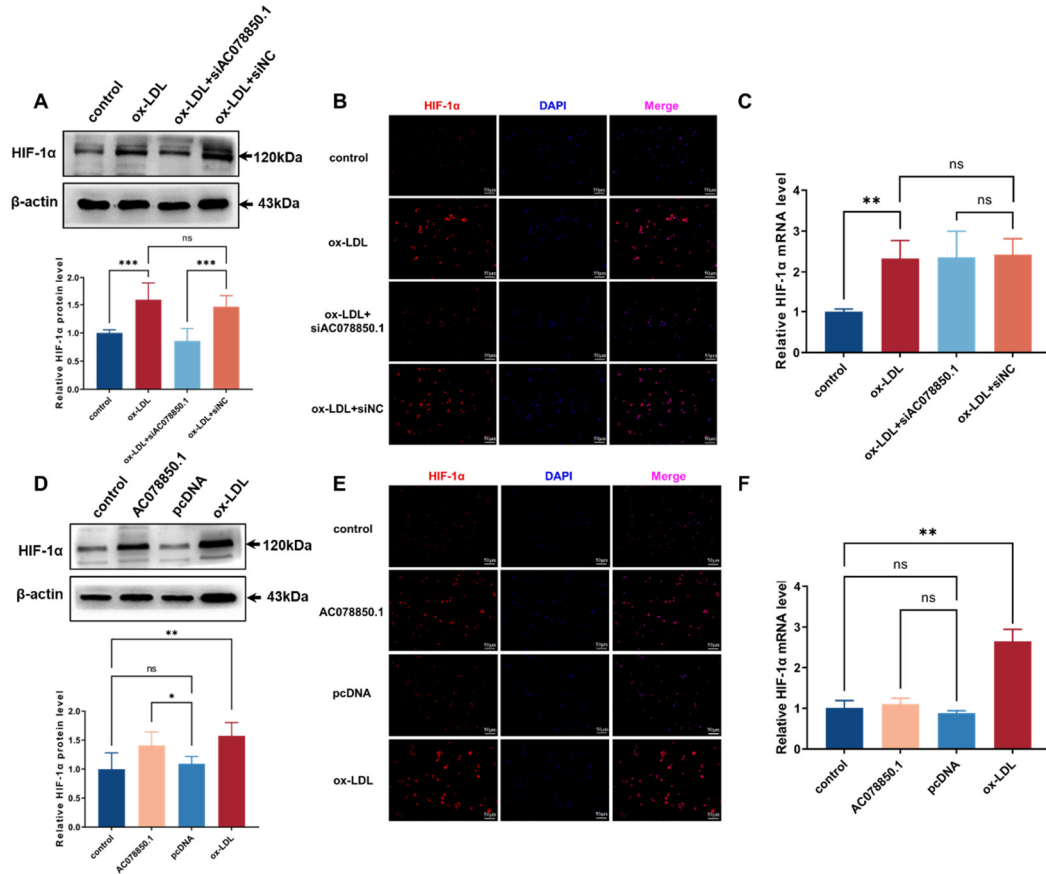


Figure S3. HIF-1 α Expression in THP-1 macrophages treated by siAC078850.1 or lncRNA AC078850.1 plasmids. **(A)** The protein level of HIF-1 α in THP-1 macrophage-derived foam cells treated by siAC078850.1 was determined by western blot (n = 6). **(B)** The expression level of HIF-1 α was detected by immunofluorescence in THP-1 macrophage-derived foam cells treated by siAC078850.1 (n = 3, scale bar: 50μm). **(C)** The mRNA expression of HIF-1 α in THP-1 macrophage-derived foam cells treated by siAC078850.1 was determined using qRT-PCR (n = 3). **(D)** The protein level of HIF-1 α in THP-1-derived macrophages treated by lncRNA AC078850.1 plasmids was determined by western blot (n = 6). **(E)** The expression level of HIF-1 α was detected by immunofluorescence in THP-1-derived macrophages treated by lncRNA AC078850.1 plasmids (n = 3, scale bar: 50μm). **(F)** The mRNA expression of HIF-1 α in THP-1-derived macrophages treated by lncRNA AC078850.1 plasmids was determined using qRT-PCR (n = 3). The results were obtained from three independent experiments at least. Measurement data were presented as mean \pm SD. Differences among groups were determined by Student's t-tests. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, and ^{ns} $p > 0.05$.

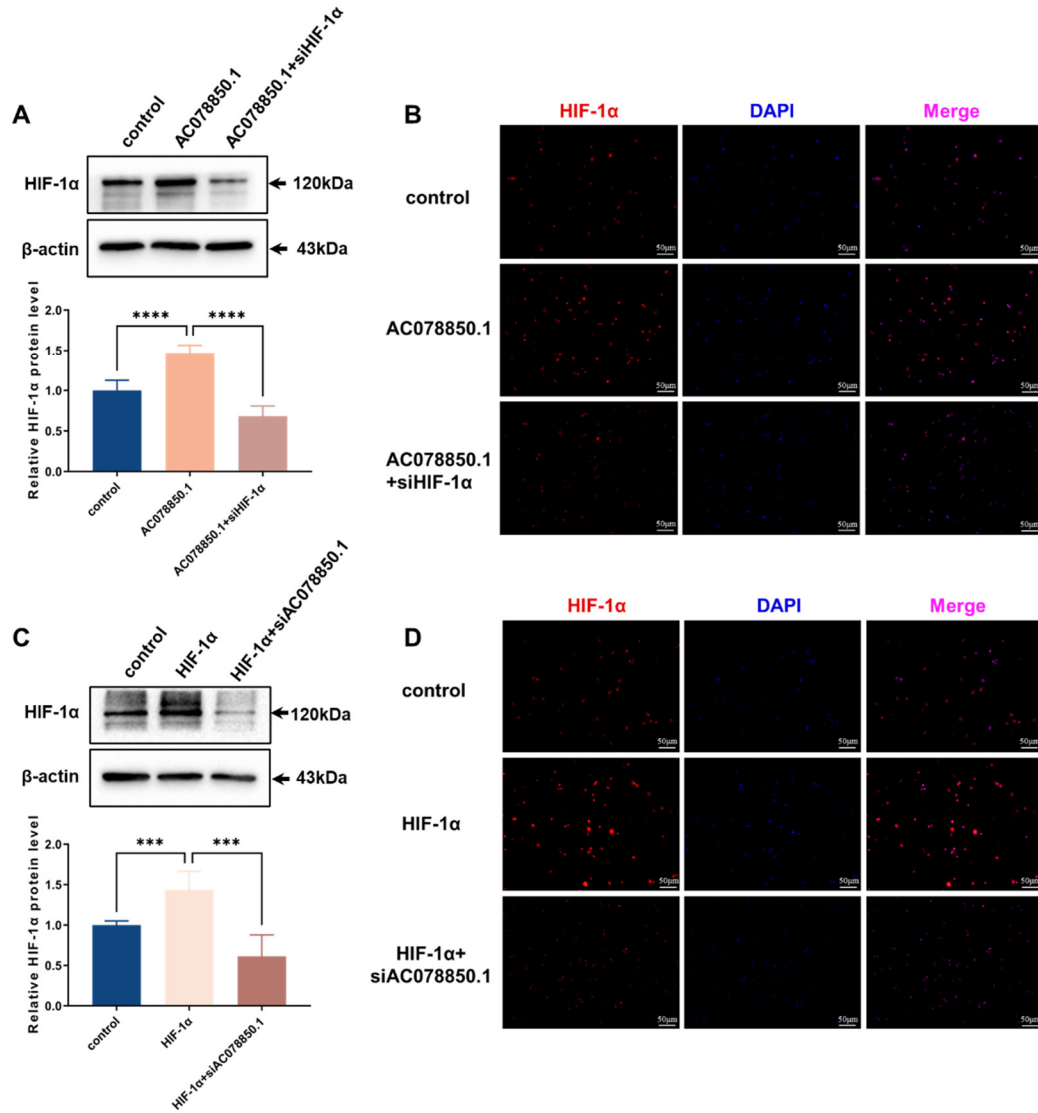


Figure S4. HIF-1 α Expression in the co-transfection experiments. **(A)** The protein level of HIF-1 α in the co-transfection of lncRNA AC078850.1 plasmids and siHIF-1 α group was determined by western blot (n = 6). **(B)** The expression level of HIF-1 α in the co-transfection of lncRNA AC078850.1 plasmids and siHIF-1 α group was detected by immunofluorescence (n = 3, scale bar: 50 μ m). **(C)** The protein level of HIF-1 α in the co-transfection of HIF-1 α plasmids and siAC078850.1 group was determined by western blot (n = 6). **(D)** The expression level of HIF-1 α in the co-transfection of HIF-1 α plasmids and siAC078850.1 group was detected by immunofluorescence (n = 3, scale bar: 50 μ m). The results were obtained from three independent experiments at least. Measurement data were presented as mean \pm SD. Differences among groups were determined by Student's t-tests. *** p < 0.001, and **** p < 0.0001.

Table S1. Baseline characteristics of healthy controls or patients with carotid plaque involved in this research. Data were presented as mean \pm SD or percentage. Differences among groups were determined by one-way ANOVA or fisher exact test. * $p < 0.05$. LDL: low density lipoprotein. HDL: high density lipoprotein. AST: aspartate transaminase. ALT: alanine transaminase. GGT: γ -glutamyl transpeptidase.

Characteristics	Healthy control N=9	Patients with single carotid plaque N=6	Patients with multiple and stable carotid plaque N=6	Patients with multiple and unstable carotid plaque N=6	F	P Value
Age, years	72.00 \pm 12.75	75.67 \pm 10.69	71.17 \pm 10.52	74.67 \pm 7.92	0.24	0.87
Male sex, n (%)	55.56	50.00	50.00	50.00	/	1.00
Systolic blood pressure, mmHg	122.67 \pm 8.50	134.00 \pm 17.62	129.33 \pm 14.45	132.67 \pm 17.04	0.98	0.42
Diastolic blood pressure, mmHg	72.11 \pm 6.53	86.83 \pm 11.34	80.50 \pm 7.04	79.67 \pm 8.14	3.98	0.02*
Mean arterial pressure, mmHg	88.96 \pm 5.73	102.56 \pm 12.89	96.78 \pm 9.38	97.33 \pm 9.90	2.7	0.07
Hypertension	33.33	66.67	50.00	66.67	/	0.53
Diabetes mellitus	33.33	50.00	33.33	33.33	/	0.95
Hyperlipemia	55.56	83.33	83.33	100.00	/	0.32
Coronary heart disease	11.11	50.00	66.67	50.00	/	0.12
Erythrocytes (%)	5.73 \pm 1.21	5.72 \pm 1.01	5.63 \pm 1.69	5.65 \pm 0.96	0.12	1.00
Neutrophils (%)	3.31 \pm 0.98	3.18 \pm 0.86	2.86 \pm 0.97	3.00 \pm 0.96	0.35	0.79
Lymphocytes (%)	1.78 \pm 0.47	2.07 \pm 0.46	2.27 \pm 1.00	2.11 \pm 0.61	0.74	0.54
Neutrophils/Lymphocytes	1.95 \pm 0.69	1.60 \pm 0.53	1.61 \pm 0.97	1.56 \pm 0.69	0.49	0.69
Glucose	5.44 \pm 0.80	5.81 \pm 0.49	5.97 \pm 0.83	5.33 \pm 0.33	1.28	0.30
Total cholesterol, mg/dL	4.45 \pm 0.91	5.14 \pm 1.07	4.28 \pm 0.83	4.11 \pm 0.66	1.57	0.22
LDL cholesterol, mg/dL	2.35 \pm 0.55	2.83 \pm 0.78	2.27 \pm 0.56	2.16 \pm 0.53	1.42	0.26
HDL cholesterol, mg/dL	1.24 \pm 0.28	1.38 \pm 0.19	1.16 \pm 0.28	1.26 \pm 0.21	0.81	0.50
ALT (U/L)	17.46 \pm 5.89	21.85 \pm 13.56	21.15 \pm 10.29	18.72 \pm 5.88	0.37	0.78
AST (U/L)	20.10 \pm 2.59	20.33 \pm 3.85	22.90 \pm 8.56	21.32 \pm 5.28	0.39	0.76
AST/ALT	1.25 \pm 0.33	1.09 \pm 0.34	1.12 \pm 0.16	1.20 \pm 0.37	0.40	0.76
GGT (U/L)	29.93 \pm 14.79	35.18 \pm 23.43	27.62 \pm 11.03	24.33 \pm 5.21	0.55	0.58

Table S2. The abundance of lncRNA AC078850.1 in THP-1-derived macrophages with or without ox-LDL induction.

Samples	LncRNA AC078850.1 copies/cell
control_1	148.91
control_2	157.53
control_3	151.88
ox-LDL_1	377.86
ox-LDL_2	359.75
ox-LDL_3	476.64