

Supporting Information

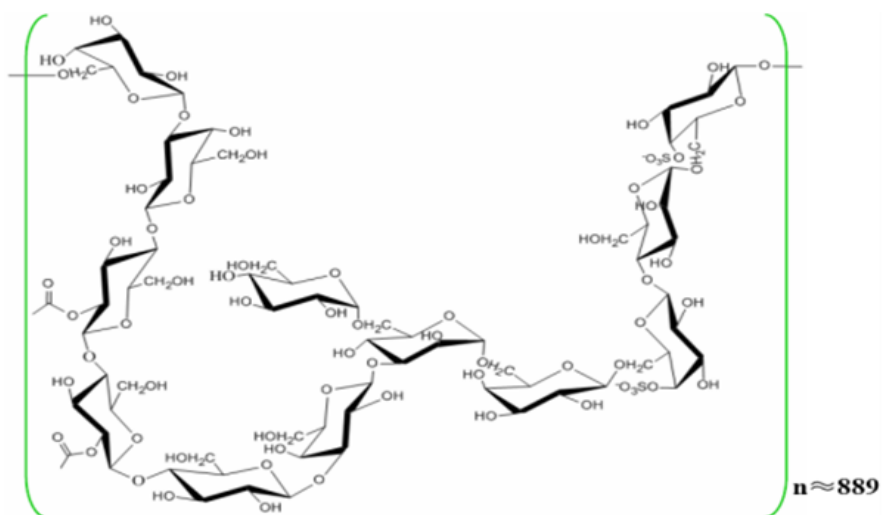


Figure S1 The chemical structure of LJP61A.

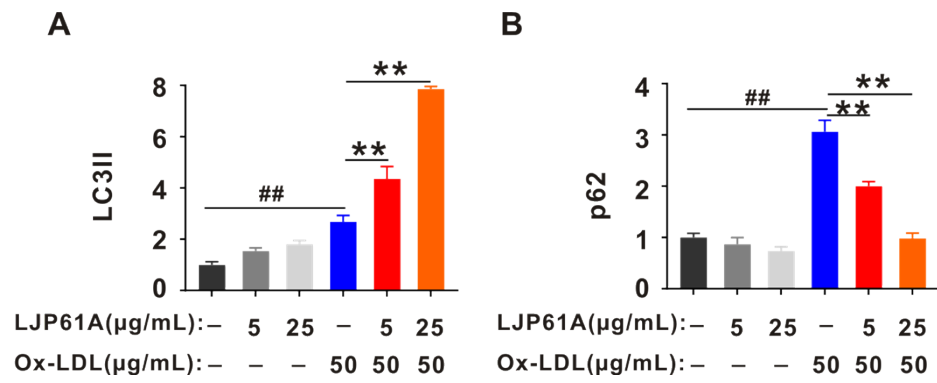


Figure S2 Quantitative analysis of LC3II and p62 protein levels. Results were presented as mean \pm SD (n=3/group). $##p < 0.01$ (versus control group); $*p < 0.05$, $**p < 0.01$ (versus Ox-LDL group).

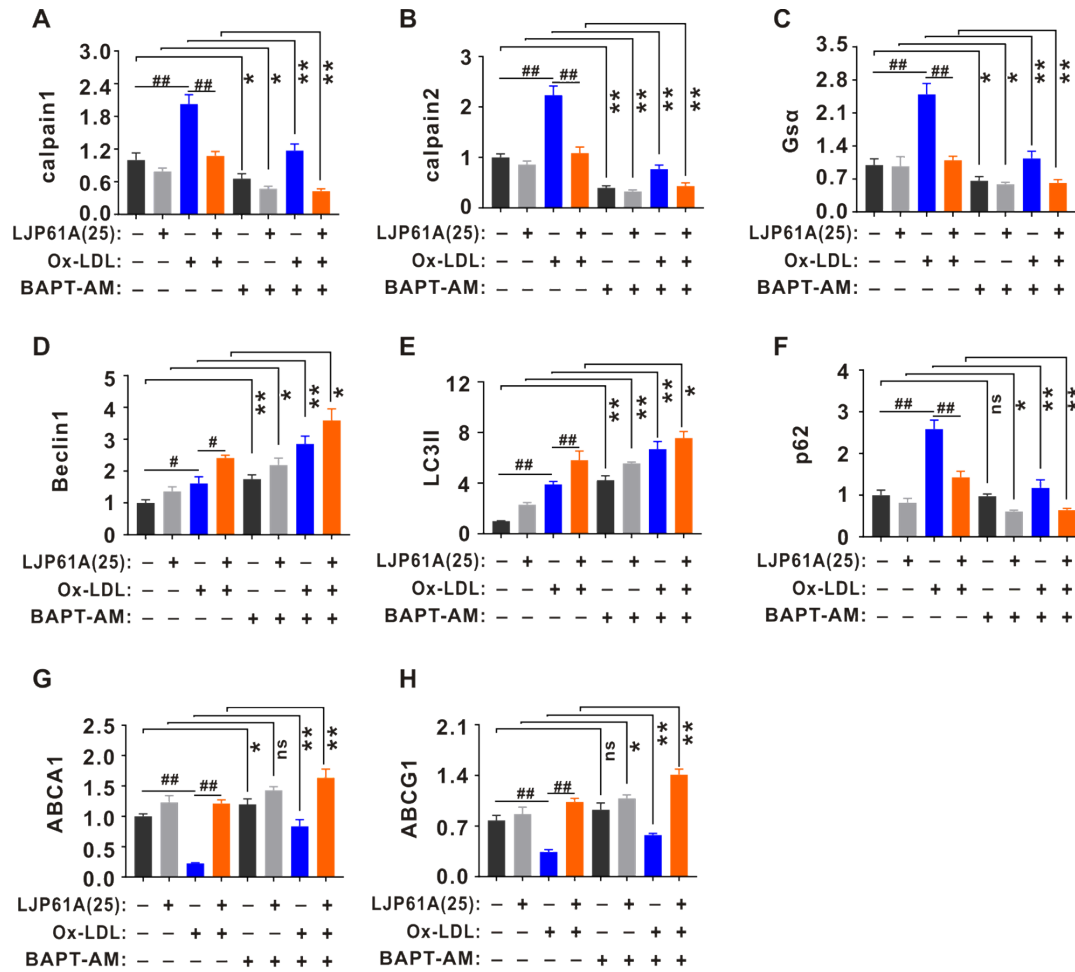


Figure S3 Quantitative analysis of calpain1, calpain2, Gα, Beclin1, LC3II, p62, ABCA1 and ABCG1 protein levels in RAW264.7 cells treated without or with BAPTA-AM, related to Figure 2. Results were presented as mean ± SD (n=3/group). #*p* < 0.05, ##*p* < 0.01 (versus control or Ox-LDL in BAPTA-AM-untreated macrophages); **p* < 0.05, ***p* < 0.01, ns.=not significant (versus corresponding BAPTA-AM-untreated macrophages).

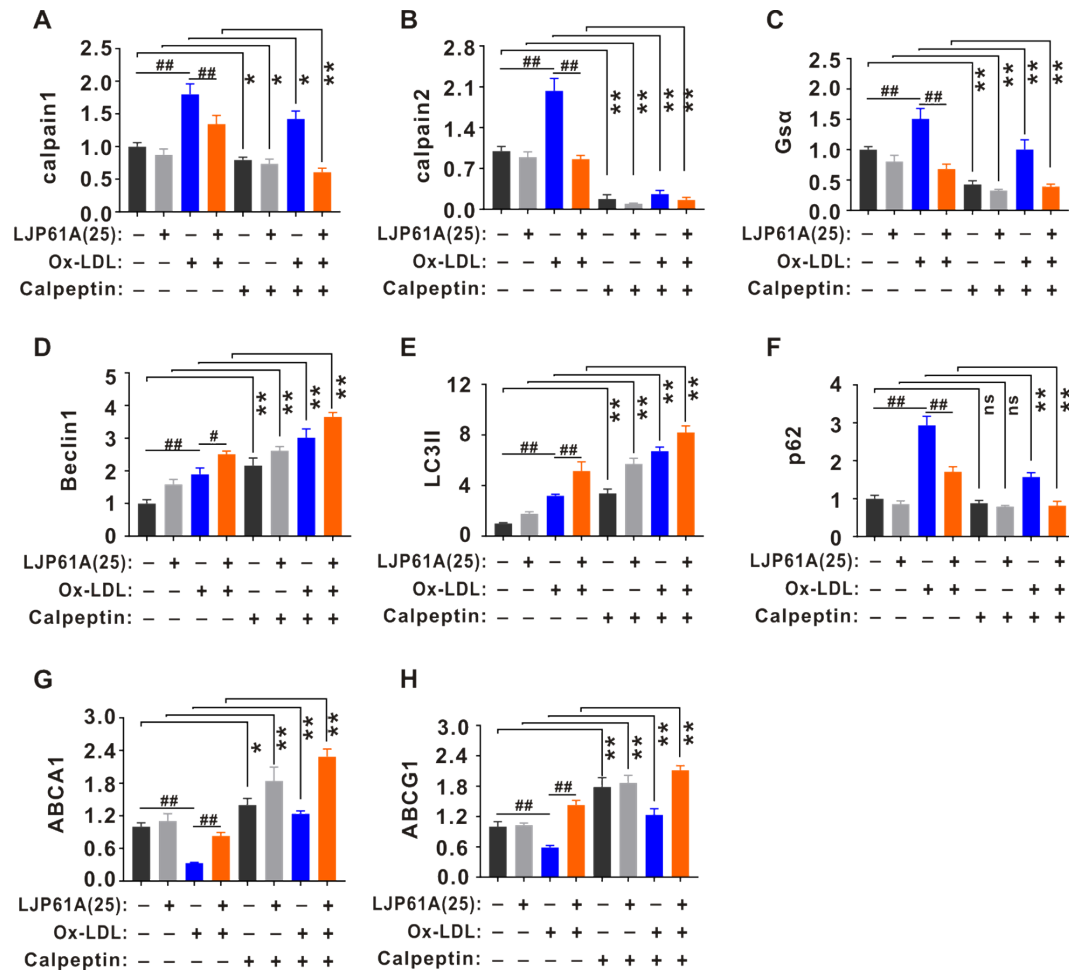


Figure S4 Quantitative analysis of calpain1, calpain2, Gα, Beclin1, LC3II, p62, ABCA1 and ABCG1 protein levels in RAW264.7 cells treated without or with Calpeptin, related to Figure 3. Results were presented as mean ± SD (n=3/group). #*p*< 0.05, ##*p*< 0.01 (versus control or Ox-LDL in Calpeptin-untreated macrophages); **p*< 0.05, ***p* < 0.01, ns.=not significant (versus corresponding Calpeptin-untreated macrophages).

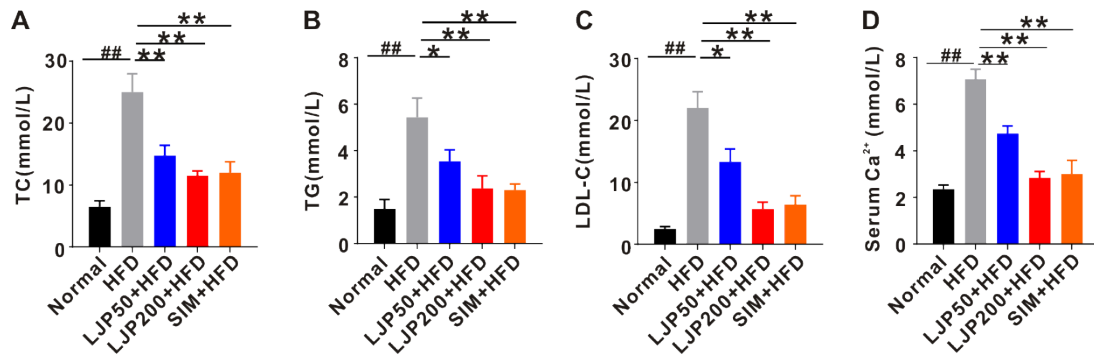


Figure S5 Effects of LJP61A on serum lipids and circulating Ca²⁺ in mice. Results were presented as mean \pm SD (n=5/group). ##*p* < 0.01 (versus Normal group); **p* < 0.05, ***p* < 0.01 (versus HFD group).

It was reported that the atherogenic dyslipidemia was characterized by elevated levels of TC, TG and LDL-C. Abnormal Ca²⁺ homeostasis has also been associated with an augmented risk of atherosclerosis. As shown in Fig. S5A-D, compared with the normal group, HFD could significantly enhance the levels of serum TC, TG, LDL-C and circulating Ca²⁺ of mice. However, the changes of serum TC, TG, LDL-C and circulating Ca²⁺ could be obviously reversed by LJP61A. The results indicated that LJP61A could regulate dyslipidemia and Ca²⁺ homeostasis in mice.

Table S1 Compositions of high fat diet

Ingredient	HFD (g)
Casein	200
L-cystine	3
Corn starch	212
Maltodextrin	71
Sucrose	113
Cellulose	50
Soy oil	25
Cholesterol	11.25
Cocoa butter	155
Mineral mixtures	10
Calcium hydrogen phosphate	13
Calcium carbonate	5.5
Potassium citrate	16.5
Vitamin mixtures	10
Choline bistartrate	2