

Supplementary Materials

Data description

This supplementary material contains three supplementary figures and its figure legends as following:

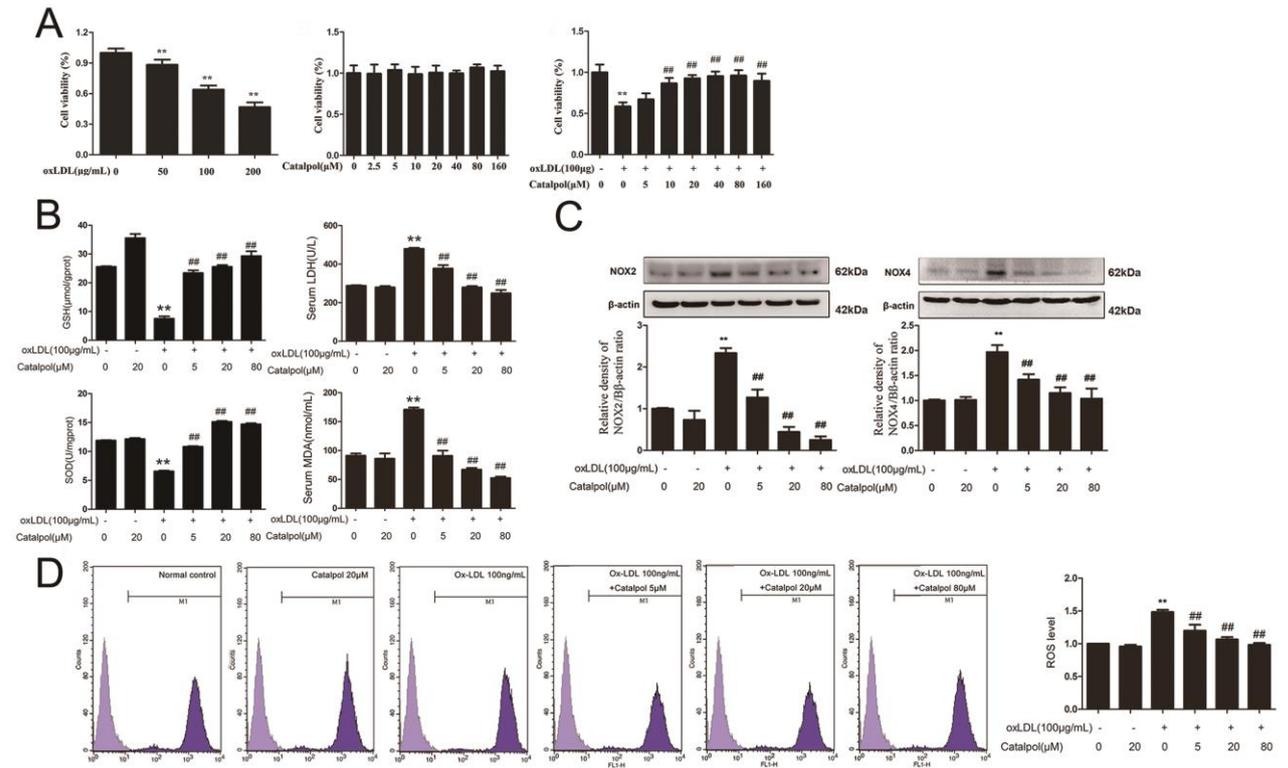


Fig S1. Catalpol reduced oxidative stress in oxLDL-treated macrophages.

THP-1 cells were exposed to PMA (100 ng/mL) for 72 h to induce macrophage formation. Then, macrophages were addressed with oxLDL (0, 100 μg/mL) or catalpol (0, 5, 20, 80 μM) for 24 h. (A) Effect of catalpol and oxLDL on cell viability, n=10. (B) Effect of Catalpol on GSH, SOD, MDA, LDH in oxLDL-treated macrophages, n=10. (C) Effect of catalpol on NOX2, NOX4 protein expression in oxLDL-treated macrophages, n=10. (D) Effect of catalpol on ROS production in oxLDL-treated macrophages, n=10. ** p<0.05 compared to control group; ### p<0.05 compared to oxLDL group. Error bars depict the standard deviation.

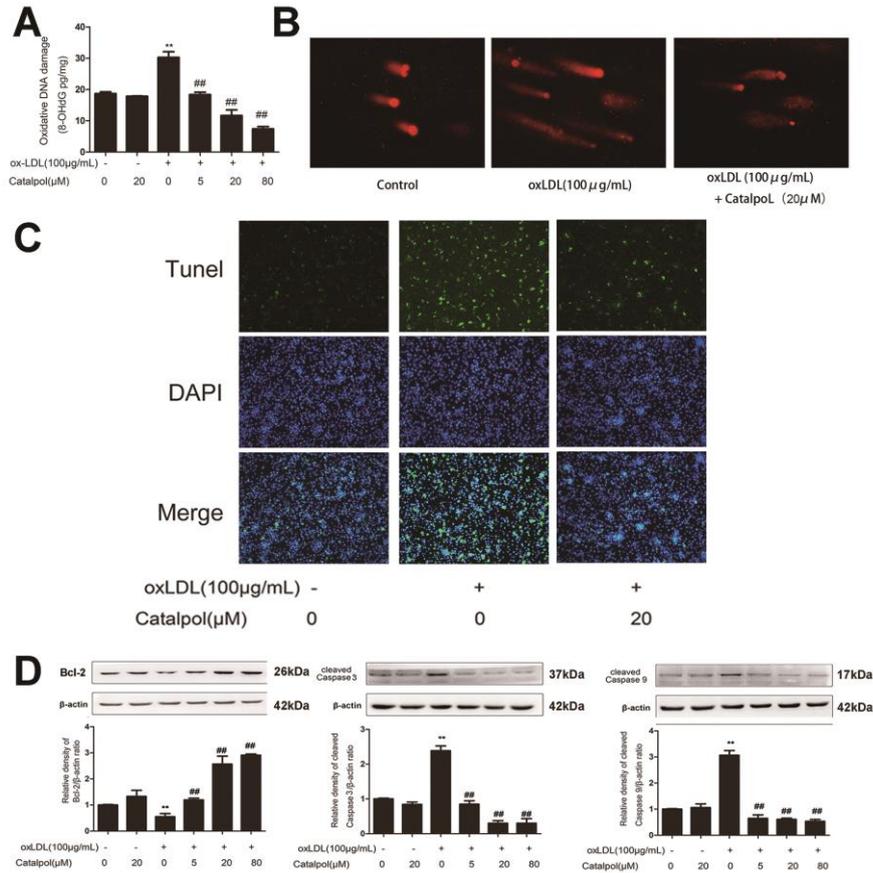


Fig. S2 Catalpol inhibited cell DNA oxidative damage, apoptosis, DNA damage in oxLDL-treated macrophages.

THP-1 cells were exposed to PMA (100 ng/mL) for 72 h to induce macrophage formation. Then, macrophages were treated with oxLDL (0, 100 μg/mL) or catalpol (0, 5, 20, 80 μM) for 24 h. (A) Catalpol inhibited oxidative DNA damage in oxLDL-treated macrophages, n=10. (B) Catalpol inhibited DNA damage in oxLDL-treated macrophages, n=10. (C) Catalpol inhibited cell apoptosis in oxLDL-treated macrophages, n=10. (D) Catalpol inhibited cleaved caspase 3, caspase 9 expression and increased bcl-2 protein expression in oxLDL-treated macrophages, n=10. ** p<0.05 compared to control group; ## p<0.05 compared to oxLDL group. Error bars depict the standard deviation.

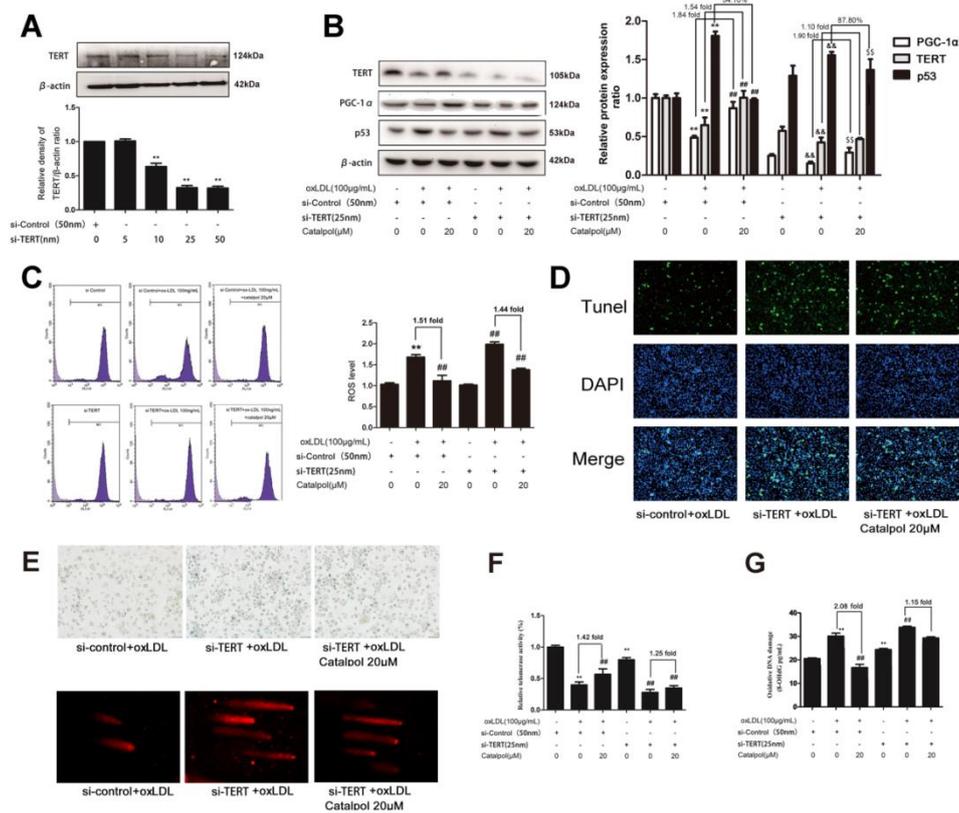


Fig. S3 Catalpol decreases ROS accumulation, DNA damage and ameliorate telomere function through up-regulating TERT expression. THP-1 cells were exposed to PMA (100 ng/mL) for 72 h to induce macrophage formation, and then transfected with small non-targeting RNA for si-control or si-TERT for 12 h. Then, treated with oxLDL or catalpol for additional 24 h, and harvested and analyzed by western blot analysis. (A) Knockdown TERT by its specific siRNA, n=10. (B) Effect of catalpol on increasing PGC-1 α , TERT protein expression and decreasing p53 protein expression was attenuated with TERT siRNA, n=10. (C) Effect of catalpol on ROS production with TERT siRNA, n=10. (D) Effects of catalpol on cell apoptosis with TERT siRNA, n=10. (E) Effects of catalpol on cell senescence and DNA damage, n=10. (F) Telomerase activity, n=10. (G) Oxidative DNA damage, n=10. ** $p < 0.05$

compared to control group; ^{##}p<0.05 compared to oxLDL group; ^{&&}p < 0.05

compared with si-TERT group, ^{\$\$}p < 0.05 compared with oxLDL-treated si-TERT

group. Error bars depict the standard deviation.