

4.LncRNA AC096664.3/ PPAR- γ / ABCG1-dependent signal transduction pathway contributes to the regulation of cholesterol homeostasis

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文章简介

动脉粥样硬化(atherosclerosis, AS)是一种脂质代谢紊乱相关疾病, 其发生发展涉及细胞内胆固醇水平紊乱以及泡沫细胞形成。近年来发现 lncRNA 可以通过影响细胞内胆固醇代谢平衡, 从而影响泡沫细胞形成, 并最终在动脉粥样硬化发生发展中发挥作用。腺苷三磷酸结合盒转运体 G1(ABCG1)能够调控胆固醇逆向转运, 在维持细胞内胆固醇稳态中发挥重要作用。本研发信 lncRNA AC096664.3 能通过 PPAR- γ /ABCG1 途径介导 OX-LDL 调控细胞内胆固醇平衡。

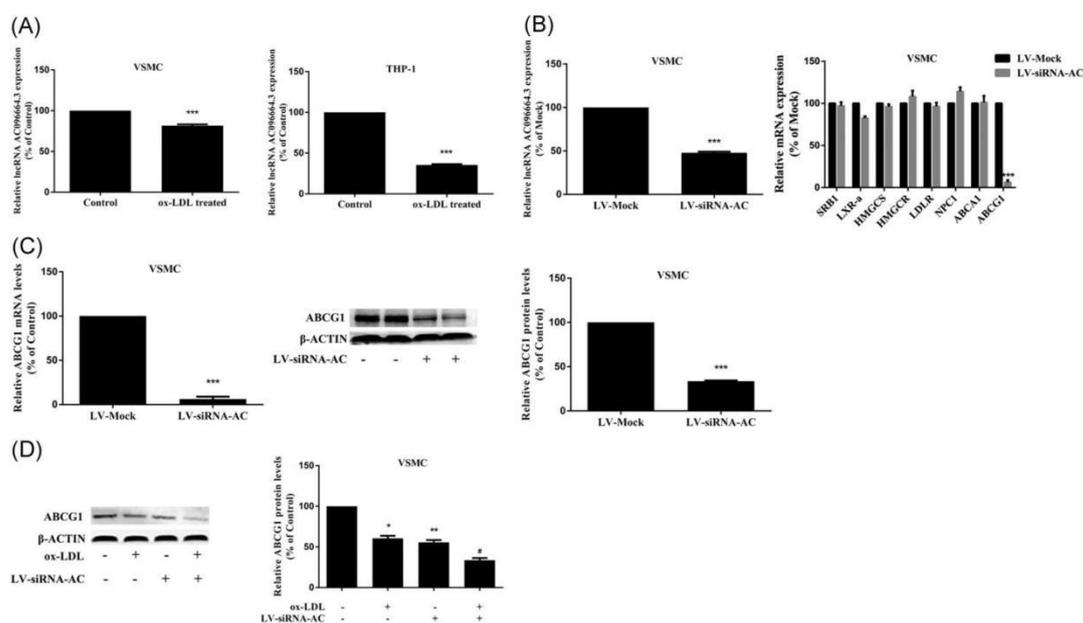


Fig. 4. A, VSMCs and THP-1 macrophages were treated with 50 μ g/mL of ox-LDL for 48 hours, and then lncRNA AC096664.3 level was measured by qRT-PCR. B, VSMCs were treated with empty lentivirus vectors (LV-Mock), LV-siRNA-AC096664.3, and then lncRNA AC096664.3 level was measured by qRT-PCR. SRB1, LXR α , HMGCS, HMGCR, LDLR, NPC1, ABCA1, ABCG1 mRNA levels were measured by qRT-PCR. C, VSMCs were treated with empty lentivirus vectors (LV-Mock), LV-siRNA-AC096664.3, and then ABCG1 mRNA and protein levels were measured by qRT-PCR and Western blot analysis, respectively. D, VSMCs were treated with LV-siRNA-AC096664.3 and then incubated with or without 50 μ g/mL of ox-LDL for 48 hours. ABCG1 protein level was measured by Western blot analysis. The results are presented as mean \pm SD of three independent experiments, each performed in triplicate. *P < 0.05 vs control

group; **P < 0.01 vs control group; ***P < 0.001 vs control group; #P < 0.05 vs ox-LDL group. Comparisons of parameters were performed with the independent-sample t test in panels A-C. Comparisons of parameters were performed with one-way ANOVA for comparing more than two groups in panel D. ABCG1, ATP-binding cassette G1; ANOVA, analysis of variance; HMGCR, 3-hydroxy-3-methyl-glutaryl-coenzyme A reductase; 3-HMGCS, 3-Hydroxy-3-Methylglutaryl-Coenzyme A Synthase; LDLR, Low density lipoprotein receptor; lncRNA, long noncoding RNA; LV-siRNA-AC, lentivirus siRNA AC096664.3; LXR α , Liver X Receptor α ; mRNA, messenger RNA; NPC1, NPC intracellular cholesterol transporter 1; ox-LDL, oxidized low-density lipoprotein; qRT-PCR, real-time quantitative polymerase chain reaction; siRNA, small interfering RNA; SRB1, Scavenger receptor class B type I; VSMCs, vascular smooth muscle cells