

عنوان مقاله:

miR-۳۳ inhibition attenuates the effect of liver X receptor agonist T۰۹۰۱۳۱۷ on expression of liver X receptor alpha in mice liver

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خلاصه مقاله:

BACKGROUND: microRNAs play pivotal roles in metabolism and other aspects of cell biology. microRNA-۳۳ and liver X receptor (LXR) affect lipid metabolism and cholesterol trafficking. In this study, we evaluated effects of co-administration of miR-۳۳ inhibitor and LXR activator on LXR- α and adenosine triphosphate-binding cassette transporter A₁ (ABCA₁) expression in mice liver. **METHODS:** Twenty-four mice were randomly allocated into four groups (n = ۶). Group ۱ mice received standard chow diet without any treatment, group ۲ received ۳۰ mg/kg/۴۸ hour LXR agonist (T۰۹۰۱۳۱۷), group ۳ received ۱ mg/kg/۴۸ hour in vivo locked nucleic acids (LNA) anti-miR-۳۳ and group ۴ received both T۰۹۰۱۳۱۷ and in vivo LNA anti-miR-۳۳. All treatments were administrated through intraperitoneal injection (IP). After ۷ days and at the end of the study, mice were sacrificed, liver tissues were excised and blood samples were collected. LXR- α and ABCA₁ genes and protein expression were quantified by real-time polymerase chain reaction (PCR) and western blotting, respectively. **RESULTS:** LXR activation caused LXR- α and ABCA₁ mRNA (P < ۰.۰۵۰) and protein elevation as compared to control (P < ۰.۰۰۱). miR-۳۳ inhibition attenuates T۰۹۰۱۳۱۷ effect on LXR- α expression in group IV. Co-administration of T۰۹۰۱۳۱۷ and anti-miR-۳۳ remarkably elevated high-density lipoprotein cholesterol (HDL-C) levels, compared to control group (P = ۰.۰۰۱). Separate administration of T۰۹۰۱۳۱۷ and anti-miR-۳۳ also elevated HDL-C levels (P < ۰.۰۱۰). **CONCLUSION:** Co-administration of T۰۹۰۱۳۱۷ and anti-miR-۳۳ can be considered as a good therapeutic alternative for atherosclerosis because miR-۳۳ inhibition reduced lipogenic effects of LXR- α activator and also helps LXR- α agonist to increase reverse cholesterol transport (RCT) and also HDL-C as antiatherogenic effects

کلمات کلیدی:

Atherosclerosis, mir-۳۳ Human, T۰۹۰۱۳۱۷, Liver X Receptor-Alpha, ABCA₁ Protein

