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Alirocumab

Cat. No.:	HY-P9928
CAS No.:	1245916-14-6
Target:	Ser/Thr Protease
Pathway:	Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description

Alirocumab (REGN 727) is a human monoclonal antibody inhibitor of PCSK9. Alirocumab is a monoclonal antibody. Alirocumab has anti-inflammatory, antiangiogenic and antioxidant effects. Alirocumab can be used in the study of hypercholesterolemia[1][2][3][4][5].

In Vitro

Alirocumab (0.01, 0.1, 1, 2 and 10 μM, 24-72 h) does not affect cell viability and function in hiPSC-CMs and hESC-CMs, and can be used to evaluate drug safety in lipid-lowering cardiovascular cells[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[3]

Cell Line:	hiPSC-CMs, hESC-CMs
Concentration:	0.01, 0.1, 1, 2, 10 μM
Incubation Time:	24-72 h
Result:	Exhibited normal cell viability and did not affect the level of LDH release.

In Vivo

Alirocumab (3 or 10 mg/kg, subcutaneous injection weekly for 18 weeks) inhibits atherosclerosis, improves the plaque morphology, and enhances the effects of a statin[4].

Alirocumab (10 mg/kg, intraperitoneal injection at day 0, 10, 20) inhibits PCSK9 in rats and improves systemic oxidative stress and hyperlipidemia in BDL-induced cirrhosis rats[5].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	CETP mice model[4]
Dosage:	3 or 10 mg/kg
Administration:	s.c.
Result:	Decreased total cholesterol dose-dependently. Increased hepatic LDL receptor protein levels but did not affect hepatic cholesterol and TG content. Decreased atherosclerotic lesion size and improved plaque morphology.

Animal Model:	Rat model (240-280 g) [5]
Dosage:	10 mg/kg
Administration:	i.p.
Result:	Elevated ammonia, total cholesterol, LDL and ox-LDL levels. Decreased plasma levels of total cholesterol, LDL, and oxidative stress markers.

REFERENCES

[1]. Tavori H, et al. Alirocumab: PCSK9 inhibitor for LDL cholesterol reduction. Expert Rev Cardiovasc Ther. 2014 Oct;12(10):1137-44.

[2]. Ni X, et al. Establishment of an in vitro safety assessment model for lipid-lowering drugs using same-origin human pluripotent stem cell-derived cardiomyocytes and endothelial cells. Acta Pharmacol Sin. 2022 Jan;43(1):240-250.

[3]. Kühnast S, et al. Alirocumab inhibits atherosclerosis, improves the plaque morphology, and enhances the effects of a statin. J Lipid Res. 2014 Oct;55(10):2103-12.

[4]. Huang HC, et al. Effects of PCSK-9 Inhibition by Alirocumab Treatments on Biliary Cirrhotic Rats. Int J Mol Sci. 2022 Jul 2;23(13):7378.

[5]. Markham A. Alirocumab: First Global Approval. Drugs. 2015;75(14):1699-1705.

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