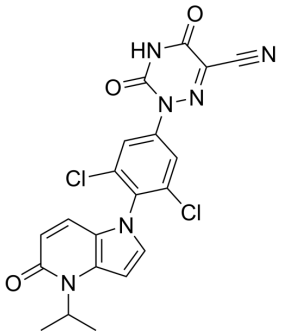
THR-β agonist 6

Cat. No.:	HY-149218
CAS No.:	2791290-58-7
Molecular Formula:	$C_{20}H_{14}Cl_2N_6O_3$
Molecular Weight:	457.27
Target:	Thyroid Hormone Receptor
Pathway:	Vitamin D Related/Nuclear Receptor
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	THR-β agonist 6 is an orally active, selective thyroid hormone receptor β (THR-β) agonist with EC_{50}s of 0.03 μM and 0.22 μM for THR-β and THR-α, respectively. THR-β agonist 6 exhibits an xcellent liver-to-serum ratio of 93:1 in mice. THR-β agonist 6 has the potential for nonalcoholic steatohepatitis (NASH) research[1].
IC_{50} & Target	IC50: 0.03 μM (THR-β) and 0.22 μM (THR-α)[1]

In Vivo

THR-β agonist 6 (3, 10 mg/kg; Orally; once daily for 6 weeks) prominently reduces HFD-CCl4-induced (CCl4; ip; 0.05 mL/kg) serum total cholesterol and LDL-cholesterol levels in a dose-dependent manner[1].

THR-β agonist 6 (3, 10 mg/kg; po; single dose) displays over 30% reduction of TC and potently decreases serum LDL-C (LDL-cholesterol) levels by 62.1 and 53.6% at both 10 and 3 mg/kg with efficacy in ICR mice[1].

THR-β agonist 6 (3, 10 mg/kg; po; single dose) significantly upregulates the Dio1, Thrsp, and Me1 mRNA levels by above 19-, 16-, and 3-fold[1].

Pharmacokinetic Parameters of THR-β agonist 6 in mice[1].

	PO (30 mg/kg)
T_{max} (h)	8.7
C_{max} (ng/mL)	2830
AUC_{last} (h*ng/mL)	37536
$t_{1/2}$ (h)	8.7

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

Animal Model:	Male C57BL/6J mice (4-5 weeks) fed a high-fat diet (HFD) for 10 weeks[1]
Dosage:	3, 10 mg/kg
Administration:	Orally; once daily for 6 weeks

Result:	Prominently reduced HFD-CCl4-induced (CCl4; ip; 0.05 mL/kg) serum total cholesterol and LDL-cholesterol levels in a dose-dependent manner. Markedly reduced the liver steatosis and inflammation score.

REFERENCES

[1]. Liuyu Hu, et al. Discovery of Highly Potent and Selective Thyroid Hormone Receptor β Agonists for the Treatment of Nonalcoholic Steatohepatitis. J Med Chem. 2023 Mar 9;66(5):3284-3300.

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