Retatrutide TFA

LY3437943 (TFA salt)

Cat. No.: HY-P3506A

Molecular Formula: $C_{223}H_{343}F_3N_{46}O_{70}$

Molecular Weight: 4845.35

Sequence: Tyr-{Aib}-Gln-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Ile-{α-Me-Leu}-Leu-Asp-Lys-{diacid-C20-gamma-Glu-(AEEA)-Lys}-Ala-Gln-{Aib}-Ala-Phe-Ile-Glu-Tyr-Leu-Leu-Glu-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-NH2

Target: GLP Receptor; GCGR

Pathway: GPCR/G Protein

Storage: Sealed storage, away from moisture

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (10.32 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (ultrasonic) (insoluble)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	0.2064 mL	1.0319 mL	2.0638 mL
	5 mM	0.0413 mL	0.2064 mL	0.4128 mL
	10 mM	0.0206 mL	0.1032 mL	0.2064 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1.25 mg/mL (0.26 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 1.25 mg/mL (0.26 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (0.26 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Retatrutide (LY3437943) TFA is a triple agonist peptide of the glucagon receptor (GCGR), glucosedependent insulinotropic polypeptide receptor (GIPR), and glucagon-like peptide-1 receptor (GLP-1R). Retatrutide TFA inhibits for human GCGR, GIPR, and GLP-1R with EC_{50} values of 5.79, 0.0643 and 0.775 nM, respectively. Retatrutide TFA can be used for the research of obesity[1].

IC_{50} & Target	EC50 (for human): 5.79 (GCGR), 0.0643 (GIPR), 0.775 nM (GLP-1R)[1]. EC50 (for mouse): 2.32 (GCGR), 0.191 (GIPR), 0.794 nM (GLP-1R) [1]. Ki (for human): 5.6 (GCGR), 0.057 (GIPR), 7.2 nM (GLP-1)[1].
In Vitro	Retatrutide (LY3437943) TFA has efficacy for human GCGR, GIPR, and GLP-1R with EC_{50} values of 5.79, 0.0643 and 0.775 nM, respectively[1]. Retatrutide has efficacy for mouse GCGR, GIPR, and GLP-1R with EC_{50} values of 2.32, 0.191 and 0.794 nM, respectively[1]. Retatrutide has binding affinity for human GCGR, GIPR, and GLP-1R with K_i values of 5.6, 0.057 and 7.2 nM, respectively[1]. Retatrutide has binding affinity for mouse GCGR, GIPR, and GLP-1R with K_i values of 73, 2.8 and 1.3 nM, respectively[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Retatrutide (LY3437943) TFA (s.c.; 0.47 mg/kg; single) engages GCGR in vivo and can improve glucose tolerance in an ipGTT through either the GIP or GLP-1 receptors[1]. Retatrutide (s.c.; 10 mL/kg; cycle every 3 days; for 21 days) causes great body weight loss and increases energy expenditure through glucagon receptor activatio[1]. Retatrutide has safety and tolerability[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Tamer Coskun, et al. LY3437943, a novel triple glucagon, GIP, and GLP-1 receptor agonist for glycemic control and weight loss: From discovery to clinical proof of concept. Cell Metab. 2022 Sep 6;34(9):1234-1247.e9.

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