Cotadutide

Cat. No.:	HY-P2231
CAS No.:	1686108-82-6
Molecular Formula:	$C_{167}H_{252}N_{42}O_{55}$
Molecular Weight:	3728.09
Sequence:	1'-{palmtoyl-Glu}; His-Ser-Gln-Gly-Thr-Phe-Thr-Ser-Asp-Lys-Ser-Glu-Tyr-Leu-Asp-Ser-Glu-Arg-Ala-Arg-Asp-Phe-Val-Ala-Trp-Leu-Glu-Ala-Gly-Gly (Amide bridge: Glu1'-Lys10)
Sequence Shortening:	1'-{palmtoyl-Glu}; HSQGTFTSDKSEYLDSERARDFVAWLEAGG (Amide bridge: Glu1'-Lys10)
Target:	GCGR
Pathway:	GPCR/G Protein
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	Cotadutide (MEDI0382) is a potent dual agonist of glucagon-like peptide-1 (GLP-1) and GCGR with EC_{50} values of 6.9 pM and 10.2 pM, respectively. Cotadutide exhibits ability to facilitate both weight loss and glycaemic control, and alleviate fibrosis. Cotadutide can be used in the research of obesity and type 2 diabetes (T2D)[1][2][3].
IC_{50} & Target	EC50: 6.9 pM (GLP-1); 10.2 pM (GCGR)[1]
In Vitro	Cotadutide stimulates a concentration-dependent increase in cAMP accumulation in rat (INS-1 832/3) and human (EndoC-βH1) β-cell lines (EC_{50}: 226 pM and 1051 pM, respectively), as well as rat, mouse and human hepatocytes (EC_{50}: 462 pM, 840 pM, 1447 pM, respectively)[1]. Cotadutide (100 pM-1 μM) potentiates glucose-stimulated insulin secretion in the rat (INS-1 832/3) pancreatic β□cell line and increases glucose output in rat hepatocytes[1]. Cotadutide (100 nM, 2 h) induces mitochondrial turnover and enhances mitochondrial function in mouse primary hepatocytes[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Cotadutide (10 nmol/kg, s.c., once) suppresses food intake in DIO mice relative to vehicle□treated controls[1]. Cotadutide (10 or 30 nmol/kg, s.c., once daily for 14-16 weeks) reduces body weight in DIO mice[1]. Cotadutide (30 nmol/kg, s.c., once a day for 6 weeks) reduces hepatic fibrosis and inflammation in in ob/ob AMLN NASH mice[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Diet-induced obesity (DIO) mice[1]
Dosage:	10 nmol/kg
Administration:	Subcutaneousinjection (s.c.)
Result:	Showed a redction of food intake in mice after an acute administration.

Animal Model:	Diet-induced obesity (DIO) mice[1]
Dosage:	10 or 30 nmol/kg
Administration:	Subcutaneousinjection (s.c.)
Result:	Reduced body weight and food intake, and improved glucose tolerance in DIO mice.

REFERENCES

[1]. Henderson SJ,et al. Robust anti-obesity and metabolic effects of a dual GLP-1/glucagon receptor peptide agonist in rodents and non-human primates.Diabetes Obes Metab. 2016 Dec;18(12):1176-1190.

[2]. Resolution of NASH and hepatic fibrosis by the GLP-1R/GcgR dual-agonist Cotadutide via modulating mitochondrial function and lipogenesis. Nat Metab. 2020 May;2(5):413-431.

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