

Cotadutide acetate

Cat. No.:	HY-P2231A		
Molecular Formula:	C ₁₆₉ H ₂₅₆ N ₄₂ O ₅₇		
Molecular Weight:	3788.14		
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) 1 ⁻ {palmtoyl-Glu}; HSQGTFTSDKSEYLDSEARDFVAWL EAGG (Amide bridge: Glu1 ⁻ -Lys10)		
Sequence Shortening:	1 ⁻ {palmtoyl-Glu}; HSQGTFTSDKSEYLDSEARDFVAWLEAGG (Amide bridge: Glu1 ⁻ -Lys10)		
Target:	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 (13.20 mM; Need ultrasonic)			
	H ₂ O : < 0.1 mg/mL (ultrasonic) (insoluble)			
		Solvent Concentration	Mass	
	Preparing Stock Solutions		1 mg	5 mg
	1 mM	0.2640 mL	1.3199 mL	2.6398 mL
	5 mM	0.0528 mL	0.2640 mL	0.5280 mL
	10 mM	0.0264 mL	0.1320 mL	0.2640 mL
Please refer to the solubility information to select the appropriate solvent.				
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: 1.25 mg/mL (0.33 mM); Suspended solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: 1.25 mg/mL (0.33 mM); Suspended solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 1.25 mg/mL (0.33 mM); Clear solution 			

BIOLOGICAL ACTIVITY

Description	Cotadutide (MEDI0382) acetate 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 acetate exhibits ability to facilitate both weight loss and glycaemic control, and alleviate fibrosis. Cotadutide acetate can be used in the research of obesity and type 2 diabetes (T2D) ^{[1][2][3]} .
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IC₅₀ & Target	EC50: 6.9 pM (GLP-1); 10.2 pM (GCGR) ^[1]																
In Vitro	<p>Cotadutide acetate stimulates a concentration-dependent increase in cAMP accumulation in rat (INS-1 832/3) and human (EndoC-βH1) β-cell lines (EC₅₀: 226 pM and 1051 pM, respectively), as well as rat, mouse and human hepatocytes (EC₅₀: 462 pM, 840 pM, 1447 pM, respectively)^[1].</p> <p>Cotadutide (100 pM-1 μM) acetate potentiates glucose-stimulated insulin secretion in the rat (INS-1 832/3) pancreatic β cell line and increases glucose output in rat hepatocytes^[1].</p> <p>Cotadutide (100 nM, 2 h) acetate induces mitochondrial turnover and enhances mitochondrial function in mouse primary hepatocytes^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>																
In Vivo	<p>Cotadutide (10 nmol/kg, s.c., once) acetate suppresses food intake in DIO mice relative to vehicle-treated controls^[1].</p> <p>Cotadutide (10 or 30 nmol/kg, s.c., once daily for 14-16 weeks) acetate reduces body weight in DIO mice^[1].</p> <p>Cotadutide (30 nmol/kg, s.c., once a day for 6 weeks) acetate reduces hepatic fibrosis and inflammation in ob/ob AMLN NASH mice^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>DIO mice^[1]</td> </tr> <tr> <td>Dosage:</td> <td>10 nmol/kg</td> </tr> <tr> <td>Administration:</td> <td>Subcutaneous injection (s.c.)</td> </tr> <tr> <td>Result:</td> <td>Showed a reduction of food intake in mice after an acute administration.</td> </tr> </table> <table border="1"> <tr> <td>Animal Model:</td> <td>Diet-induced obesity (DIO) mice^[1]</td> </tr> <tr> <td>Dosage:</td> <td>10 or 30 nmol/kg</td> </tr> <tr> <td>Administration:</td> <td>Subcutaneous injection</td> </tr> <tr> <td>Result:</td> <td>Reduced body weight and food intake, and improved glucose tolerance in DIO mice.</td> </tr> </table>	Animal Model:	DIO mice ^[1]	Dosage:	10 nmol/kg	Administration:	Subcutaneous injection (s.c.)	Result:	Showed a reduction of food intake in mice after an acute administration.	Animal Model:	Diet-induced obesity (DIO) mice ^[1]	Dosage:	10 or 30 nmol/kg	Administration:	Subcutaneous injection	Result:	Reduced body weight and food intake, and improved glucose tolerance in DIO mice.
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REFERENCES

[1]. 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.

[2]. 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.

Caution: Product has not been fully validated for medical applications. For research use only.

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