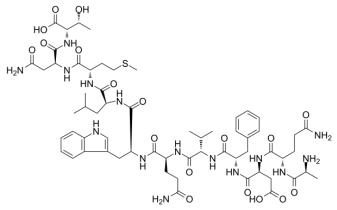
Glucagon (19-29), human

Cat. No.:	HY-P0150
CAS No.:	64790-15-4
Molecular Formula:	$C_{61}H_{89}N_{15}O_{18}S$
Molecular Weight:	1352.53
Sequence:	Ala-Gln-Asp-Phe-Val-Gln-Trp-Leu-Met-Asn-Thr
Sequence Shortening:	AQDFVQWLMNT
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 : ≥ 25 mg/mL (18.48 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.7394 mL	3.6968 mL	7.3936 mL
	5 mM	0.1479 mL	0.7394 mL	1.4787 mL
	10 mM	0.0739 mL	0.3697 mL	0.7394 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: ≥ 2.5 mg/mL (1.85 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (1.85 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (1.85 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Glucagon (19-29), human is a potent and efficient inhibitor of insulin secretion.
IC_{50} & Target	Insulin secretion[1]

In Vitro	Glucagon (19-29), from 0.1 pM to 1 nM, exerts a potent negative inotropic action. The most striking observation is a 45% increase in the amplitude of cell contractility elicited by the combination of 30 nM glucagon with 1 nM Glucagon (19-29)[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Glucagon (19-29), also named Miniglucagon, is the COOH-terminal (19-29) fragment processed from glucagon. Glucagon (19-29) dose-dependently inhibits insulin secretion stimulated by 8.3 M glucose, with no change in the perfusion flow rate. A concentration of 1 nM Glucagon (19-29) has a significant inhibitory effect on a 1 nM glucagon-like peptide 1 (7-36) amide–potentiated insulin secretion[1]. Glucagon (19-29) is a highly potent and efficient inhibitor of insulin release by closing, via hyperpolarization, voltage-dependent Ca^{2+} channels linked to a pathway involving a pertussis toxin-sensitive G protein[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [1]	Rats[1] To test the effect of miniglucagon (Glucagon (19-29)) on stimulated insulin secretion, 8.3 mM glucose is perfused during the experiments, including a 45-min equilibration period, followed by miniglucagon (1, 10, 100, and 1,000 pM) perfused with or without 1 nM tGLP-1. To study the glucagon and miniglucagon secretion, the glucose concentration is switched from 11 to 3 mM after a 45-min stabilization period, and the peptides secreted are measured by radioimmunoassay[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Dalle S, et al. Miniglucagon (glucagon 19-29), a potent and efficient inhibitor of secretagogue-induced insulin release through a Ca2+ pathway. J Biol Chem. 1999 Apr 16;274(16):10869-76.

[2]. Dalle S, et al. Miniglucagon (glucagon 19-29): a novel regulator of the pancreatic islet physiology. Diabetes. 2002 Feb;51(2):406-12.

[3]. Pavoine C, et al. Miniglucagon [glucagon-(19-29)] is a component of the positive inotropic effect of glucagon. Am J Physiol. 1991 May;260(5 Pt 1):C993-9.

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