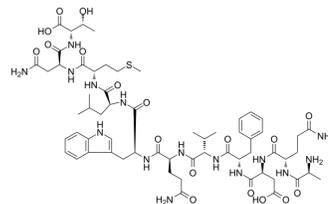


Glucagon (19-29), human

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.				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	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	<ol style="list-style-type: none"> 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 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 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.
IC₅₀ & 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.

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

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