

Glucagon

Chemical Properties

CAS No.:	16941-32-5
Formula:	C ₁₅₃ H ₂₂₅ N ₄₃ O ₄₉ S
Molecular Weight:	3482.75
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).

Biological Description

Description	Glucagon is a peptide hormone, produced by pancreatic α -cells. Glucagon reduces the activity of HNF-4. Glucagon stimulates gluconeogenesis. Glucagon enhances HNF4 α phosphorylation.
Targets(IC ₅₀)	Others: None
In vitro	Glucagon activates cAMP-PKA signaling to stimulate hepatic glucose production (HGP) and cause hyperglycemia, after binding to its receptor Gcgr. Glucagon stimulates both hepatic kisspeptin1 production and gluconeogenesis [1]. Glucagon (100 nM) represses CYP7A1 mRNA expression in human primary hepatocytes and that also increases phosphorylation of HNF4 α [3].
In vivo	Compared with PBS control, High-dose (1 mg/kg) Glucagon lowers glycemia and stimulates insulin secretion in ambient-fed mice. Low-dose (20 μ g/kg) Glucagon enhances glycemia and does not stimulate insulin secretion in ambient-fed mice [4].

Solubility Information

Solubility	DMSO: 50 mg/mL (14.36 mM) H ₂ O: 20 mg/mL (5.74 mM) (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.287 mL	1.436 mL	2.871 mL
5 mM	0.057 mL	0.287 mL	0.574 mL
10 mM	0.029 mL	0.144 mL	0.287 mL
50 mM	0.006 mL	0.029 mL	0.057 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

Reference

1. Song WJ, et al. Glucagon regulates hepatic kisspeptin to impair insulin secretion. *Cell Metab.* 2014 Apr 1;19(4):667-81.
2. Hirota K, et al. Hepatocyte nuclear factor-4 is a novel downstream target of insulin via FKHR as a signal-regulated transcriptional inhibitor. *J Biol Chem.* 2003 Apr 11;278(15):13056-60.
3. Song KH, et al. Glucagon and cAMP inhibit cholesterol 7 α -hydroxylase (CYP7A1) gene expression in human hepatocytes: discordant regulation of bile acid synthesis and gluconeogenesis. *Hepatology.* 2006 Jan;43(1):117-25.
4. Capozzi ME, et al. Glucagon lowers glycemia when β -cells are active. *JCI Insight.* 2019 Jul 23;5. pii: 129954.

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