Calcitonin (salmon)

Cat. No.: HY-P0090

CAS No.: 47931-85-1

Molecular Formula: $C_{145}H_{240}N_{44}O_{48}S_2$

Molecular Weight: 3431.85

CSNLSTCVLGKLSQELHKLQTYPRTNTGSGTP-NH_2(Disulfide bridge: Cys1-Cys7)

Sequence: Cys-Ser-Asn-Leu-Ser-Thr-Cys-Val-Leu-Gly-Lys-Leu-Ser-Gln-Glu-Leu-His-Lys-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asn-Thr-Gly-Ser-Gly-Thr-Pro-NH2 (Disulfide bridge: Cys1-Cys7)

Sequence Shortening: CSNLSTCVLGKLSQELHKLQTYPRTNTGSGTP-NH2 (Disulfide bridge: Cys1-Cys7)

Target: CGRP Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

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

H_2O : 100 mg/mL (29.14 mM; Need ultrasonic)

DMSO : 50 mg/mL (14.57 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.2914 mL	1.4569 mL	2.9139 mL
	5 mM	0.0583 mL	0.2914 mL	0.5828 mL
	10 mM	0.0291 mL	0.1457 mL	0.2914 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 50 mg/mL (14.57 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (0.73 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (0.73 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (0.73 mM); Clear solution

BIOLOGICAL ACTIVITY

Description Calcitonin salmon, a calcium regulating hormone, is a dual-action amylin and calcitonin receptor agonist, could stimulate

	bone formation and inhibit bone resorption.
IC_{50} & Target	Amylin, Calcitonin receptor[1].
In Vivo	Oral Calcitonin salmon treatment dose-dependently attenuates fasting and non-fasted hyperglycaemia during the intervention period. At the end of the study period, oral Calcitonin salmon treatment by dose decreases diabetic hyperglycaemia by ~9 mM and reduces HbA1c levels by 1.7%. Furthermore, a pronounced reduction in glucose excursions is dose-dependently observed for oral Calcitonin salmon treatment during oral glucose tolerance test. In addition, oral Calcitonin salmon treatment sustains hyperinsulinaemia and attenuates hyperglucagonaemia and hypersecretion of total glucagon-like peptide-1 predominantly in the basal state. Lastly, oral Calcitonin salmon treatment dose-dependently improves pancreatic beta-cell function and beta-cell area at study end[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [1]	Rats[1] Male ZDF rats are treated with oral Calcitonin salmon (sCT: 0.5, 1.0 or 2 mg/kg) or oral vehicle twice daily from age 8 to 18 weeks. Zucker lean rats serve as control group. Fasting and non-fasted blood glucose, glycosylated haemoglobin (HbA1c) and levels of pancreas and incretin hormones are determined. Oral glucose tolerance test and i.p. glucose tolerance test were compared, and beta-cell area and function were evaluated[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Cell Mol Med. 2020 Aug;24(15):8650-8661.

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REFERENCES

[1]. Feigh M, et al. Oral salmon calcitonin attenuates hyperglycaemia and preserves pancreatic beta-cell area and function in Zucker diabetic fatty rats. Br J Pharmacol. 2012 Sep;167(1):151-63.

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