Compstatin

Cat. No.: HY-P1036

CAS No.: 206645-99-0

Molecular Formula: $C_{66}H_{99}N_{23}O_{17}S_2$

Molecular Weight: 1550.77

Sequence: Ile-Cys-Val-Val-Gln-Asp-Trp-Gly-His-His-Arg-Cys-Thr-NH2 (Disulfide bridge: Cys2-Cys12)

ICVVQDWGHHRCT-NH_2 (Disulfide bridge: Cys2-Cys12)

Sequence Shortening: ICVVQDWGHHRCT-NH2 (Disulfide bridge: Cys2-Cys12)

Target: Complement System

Pathway: Immunology/Inflammation

Storage: Sealed storage, away from moisture and light

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)

SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (64.48 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.6448 mL	3.2242 mL	6.4484 mL
	5 mM	0.1290 mL	0.6448 mL	1.2897 mL
	10 mM	0.0645 mL	0.3224 mL	0.6448 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (64.48 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Compstatin, a 13-residue cyclic peptide, is a potent inhibitor of the complement system C3 with species specificity. Compstatin binds to baboon C3 and is resistant to proteolytic cleavage in baboon blood (similar to humans). Compstatin inhibits only the activation of primates' complement system. Compstatin exhibits IC_{50} values of 63 μM and 12 μM for classical and alterative complement pathway, respectively[1][2][3][4].

In Vitro

Compstatin exhibits an in vitro half-life in human blood of about2 hr[2].
In solution, compstatin forms a β-turn at residues Gln-5–Gly-8 with the disulfide bridge Cys-2–Cys12, residues Ile-1–Val-4, and Thr-13, forming a hydrophobic cluster[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Compstatin (21 mg/kg) produces complete inhibition when given as a combination of bolus injection and infusion.
Compstatin completely inhibits in vivo heparin/protamine-induced complement activation without adverse effects on heart rate or systemic arterial, central venous, and pulmonary arterial pressures[1].
Compstatin is stable in baboon plasma for more than 24 h[1].
Pig xenografts survival is significantly longer in the Compstatin perfused group than in the control group[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Juvenile baboons (P. Anubis) weighing 10.5-28.8 kg[1].
Dosage:	50, 25 mg/kg 60 min after heparin and 2 min before protamine.
Administration:	A bolus injection.
Result:	Completely inhibited complement activation induced by heparin–protamine complexes.

CUSTOMER VALIDATION

- J Mater Chem B. 2019, 7, 4207-4216.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Soulika AM, et al. Inhibition of heparin/protamine complex-induced complement activation by Compstatin in baboons. Clin Immunol. 2000 Sep;96(3):212-21.

[2]. Fiane AE, et al. Compstatin, a peptide inhibitor of C3, prolongs survival of ex vivo perfused pig xenografts. Xenotransplantation. 1999 Feb;6(1):52-65.

[3]. Bert J C Janssen, et al. Structure of compstatin in complex with complement component C3c reveals a new mechanism of complement inhibition. J Biol Chem. 2007 Oct 5;282(40):29241-7.

[4]. A Sahu, et al. Inhibition of human complement by a C3-binding peptide isolated from a phage-displayed random peptide library. J Immunol. 1996 Jul 15;157(2):884-91.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA