

Nesiritide

Cat. No.:	HY-P0003
CAS No.:	124584-08-3
Molecular Formula:	C ₁₄₃ H ₂₄₄ N ₅₀ O ₄₂ S ₄
Molecular Weight:	3464.04
Sequence:	Ser-Pro-Lys-Met-Val-Gln-Gly-Ser-Gly-Cys-Phe-Gly-Arg-Lys-Met-Asp-Arg-Ile-Ser-Ser-Ser-Ser-Gly-Leu-Gly-Cys-Lys-Val-Leu-Arg-Arg-His (Disulfide bridge: Cys10-Cys26)
Sequence Shortening:	SPKMQGSGCFGRKMDRISSSSGLGCKVLRH (Disulfide bridge: Cys10-Cys26)
Target:	Others
Pathway:	Others
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)

SPKMQGSGCFGRKMDRISSSSGLGCKVLRH(Disulfide bridge: Cys10-Cys26)

SOLVENT & SOLUBILITY

In Vitro

H₂O : ≥ 40 mg/mL (11.55 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	0.2887 mL	1.4434 mL	2.8868 mL
	5 mM	0.0577 mL	0.2887 mL	0.5774 mL
	10 mM	0.0289 mL	0.1443 mL	0.2887 mL

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

BIOLOGICAL ACTIVITY

Description

Nesiritide (Brain Natriuretic Peptide-32 human) is an agonist of natriuretic peptide receptors (NPRs), with K_d values of 7.3 and 13 pM for NPR-A and NPR-C, respectively.

IC₅₀ & Target

Kd: 7.3 Pm (NPR-A), 13 pM (NPR-C)^[1].

In Vitro

Nesiritide (Brain Natriuretic Peptide-32 human) is an agonist of natriuretic peptide receptor (NPR), with K_d values of 7.3 and 13 pM for NPR-A and NPR-C, respectively^[1]. ProBNP1-108 stimulates guanylyl cyclase-A (GC-A) to near-maximum activities but is 13-fold less potent than Nesiritide (BNP1-32). ProBNP1-108 binds human GC-A 35-fold less tightly than Nesiritide. Neither proBNP1-108 nor Nesiritide activates GC-B. The natriuretic peptide clearance receptor binds proBNP1-108 3-fold less tightly than Nesiritide. The half time for degradation of proBNP1-108 by human kidney membranes is 2.7-fold longer

than for Nesiritide, and the time required for complete degradation is 6-fold longer. Nesiritide and proBNP1-108 are best fitted by first- and second-order exponential decay models, respectively^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Koller KJ, et al. Molecular biology of the natriuretic peptides and their receptors. *Circulation*. 1992 Oct;86(4):1081-8.
- [2]. Dickey DM, et al. ProBNP(1-108) is resistant to degradation and activates guanylyl cyclase-A with reduced potency. *Clin Chem*. 2011 Sep;57(9):1272-8.
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Caution: Product has not been fully validated for medical applications. For research use only.

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