

PRODUCT INFORMATION



Brain Natriuretic Peptide (1-32) (human) (trifluoroacetate)

Item No. 24541

CAS Registry No.: 124584-08-3

Formal Name: L-seryl-L-prolyl-L-lysyl-L-methionyl-L-valyl-L-glutaminyglycyl-L-serylglycyl-L-cysteiny-L-phenylalanyglycyl-L-arginyl-L-lysyl-L-methionyl-L- α -aspartyl-L-arginyl-L-isoleucyl-L-seryl-L-seryl-L-seryl-L-serylglycyl-L-leucylglycyl-L-cysteiny-L-lysyl-L-valyl-L-leucyl-L-arginyl-L-arginyl-L-histidine, cyclic (10 \rightarrow 26)-disulfide, trifluoroacetate salt

Synonyms: BNP (1-32), Brain Natriuretic Polypeptide (1-32), B-type Natriuretic Peptide (1-32)

MF: C₁₄₃H₂₄₄N₅₀O₄₂S₄ • XCF₃COOH

FW: 3,464.0

Purity: \geq 95%

Supplied as: A lyophilized powder

Storage: -20°C

Stability: \geq 4 years

H—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—OH

• XCF₃COOH

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Brain natriuretic peptide (BNP) (1-32) (human) (trifluoroacetate salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the (BNP) (1-32) (human) (trifluoroacetate salt) in water. The solubility of (BNP) (1-32) (human) (trifluoroacetate salt) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

BNP (1-32) is an endogenous peptide that has cardiovascular functions and belongs to the family of natriuretic peptides, which includes atrial natriuretic peptide (ANP; Item Nos. 24276 | 24539 | 24540) and C-type natriuretic peptide (CNP; Item No. 24401).^{1,2} It is an agonist of natriuretic peptide receptors (NPRs) 1 and 3 with K_d values of 7.3 and 13 pM, respectively, for human chimeric extracellular receptors fused to the constant domain of IgG.² It also binds to human recombinant NPR1, also known as guanylyl cyclase-A (GC-A), and NPR3 with IC₅₀ values of 8 and 2.6 nM, respectively, in radioligand binding assays.³ It is selective for NPR1/GC-A and NPR3 over NPR2/GC-B (K_d = 30,000 pM). BNP (1-32) activates NPR1/GC-A and increases cGMP levels with an EC₅₀ value of 27 nM in HEK293 cells expressing the human receptor and stimulates cGMP accumulation in cultured bovine aortic endothelial and aortic smooth muscle cells (EC₅₀s = 9 and 17 nM, respectively).^{2,3} It also relaxes contractions induced by prostaglandin F_{2 α} (PGF_{2 α}) in isolated porcine coronary artery and rat aortic strips (IC₅₀s = 0.02 and 12.1 nM, respectively).⁴ In rats, BNP (1-32) (10 nmol/kg) increases mean urine flow and the sodium excretion rate. Formulations containing BNP (1-32) have been used in the treatment of acutely decompensated congestive heart failure.

References

1. Woodard, G.E., and Rosado, J.A. *Int. Rev. Cell. Mol. Biol.* **268**, 59-93 (2008).
2. Koller, K.J., and Goeddel, D.V. *Circulation* **86**(4), 1081-1088 (1992).
3. Dickey, D.M., and Potter, L.R. *Clin. Chem.* **57**(9), 1272-1278 (2011).
4. Kambayashi, Y., Nakao, K., Kimura, H., et al. *Biochem. Biophys. Res. Commun.* **173**(2), 599-605 (1990).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM