Product Data Sheet

Cat# **SP-56586-1**

Description: BNP (1-32), Human [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(Cys10-Cys26); MW: 3464.1]

Size: 0.5 mg

Purity: >95%

Store: Desiccated at -20oC.

Description:

Brain natriuretic peptide (BNP), now known as B-type natriuretic peptide or Ventricular Natriuretic Peptide is a 32-amino acid polypeptide secreted by the ventricles of the heart in response to excessive stretching of heart muscle cells (cardiomyocytes). The release of BNP is modulated by calcium ions. In humans it is produced mainly in the cardiac ventricles.

The natriuretic peptide family and encodes a secreted protein which functions as a cardiac hormone. The protein undergoes two cleavage events, one within the cell and a second after secretion into the blood. The protein's biological actions include natriuresis, diuresis, vasorelaxation, inhibition of renin and aldosterone secretion, and a key role in cardiovascular homeostasis. A high concentration of this protein in the bloodstream is indicative of heart failure. Mutations in this gene have been associated with postmenopausal osteoporosis.

BNP is synthesized as a 134-amino acid preprohormone (preproBNP), encoded by the human gene NPPB. Removal of the 25-residue N-terminal signal peptide generates the prohormone, proBNP, which is stored intra cellularly as an O-linked glycoprotein; proBNP is subsequently cleaved between arginine-102 and serine-103 by a specific convertase (probably furin or corin) into NT-proBNP and the biologically active 32-amino acid polypeptide BNP-32, which are secreted into the blood in equimolar amounts. Cleavage at other sites produces shorter BNP peptides with unknown biological activity. Processing of proBNP may be regulated by O-glycosylation of residues near the cleavage sites.

Either BNP or NT-proBNP can also be used for screening and prognosis of heart failure. Both are also typically increased in patients with left ventricular dysfunction, with or without symptoms. The BNP test is used as an aid in the diagnosis and assessment of severity of heart failure. BNP can be elevated in renal failure. BNP is cleared by binding to natriuretic peptide receptors (NPRs) and neutral endopeptidase (NEP). Less than 5% of BNP is cleared renally. NT-proBNP is the inactive molecule resulting from cleavage of the prohormone Pro-BNP and is reliant solely on the kidney for excretion.

Reference: Bhalla V (2004).Congest Heart Fail 10 (1 Suppl 1): 3–27. Atisha D(2004) Am. Heart J. 148 (3): 518–23. Austin WJ (2006) Am. J. Clin. Pathol. 126 (4): 506–12. Daniels LB (2006) Am. Heart J. 151 (5): 999–1005.

Related items:

Catalog#	ProdDescription
SP-55422-1	BNP (1-32), Rat peptide [H-Asn-Ser-Lys-Met-Ala-His-Ser-Ser-Ser-Cys-Phe-Gly-Gln-Lys-Ile-Asp-Arg-Ile-Gly-Ala-Val-Ser-Arg-Ley-Gly-Cys-Asp-Gly-Leu-Arg-Leu-Phe-OH(Cys10-Cys26); MW: 3453.01]
SP-72959-1	NTproBNP (1-76)
SP-87476-1	BNP (1-21), Pro (Human) (AA: His-Pro-Leu-Gly-Ser-Pro-Gly-Ser-Ala-Ser-Asp-Leu-Glu-Thr-Ser-Gly-Leu-Gln-Glu-Gln-Arg) (MW: 2166.31)
SP-89383-1	"BNP-26 (porcine) (AA: Asp-Ser-Gly-Cys-Phe-Gly-Arg-Arg-Leu-Asp-Arg-Ile-Gly-Ser-Leu-Ser-Gly-Leu-Gly-Cys-Asn-Val-Leu-Arg-Arg-Tyr (Disulfide bridge:Cys4-Cys5)) (MW: 2869.30)"
SP-89384-1	"[Tyr0]-BNP-32 (human) [Tyr-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: Cys11-Cys27); MW 3627.28]"
SP-89385-05	"BNP-32 ,porcine (AA: Ser-Pro-Lys-Thr-Met-Arg-Asp-Ser-Gly-Cys-Phe-Gly-Arg-Arg-Leu-Asp-Arg-Ile-Gly-Ser-Leu-Ser-Gly-Leu-Gly-Cys-Asn-Val-Leu-Arg-Arg-Tyr (Disulfide bridge:Cys10-Cys26)) (MW: 3570.17)"
SP-56586-1	140603P

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