SANTA CRUZ BIOTECHNOLOGY, INC.

BNP (R-19): sc-18818

The Power to Question

BACKGROUND

Natriuretic peptides comprise a family of three structurally related molecules: atrial natriuretic peptide (ANP), brain natriuretic peptide (BNP) and C-type natriuretic peptide (CNP). ANP and BNP act mainly as cardiac hormones, produced primarily by the atrium and ventricle, respectively, while the gene encoding C-type natriuretic peptide is expressed mainly in the brain. These peptides possess potent natriuretic, diuretic and vasodilating activities and are implicated in body fluid homeostasis and blood pressure control. ANP, BNP and CNP are highly homologous within the 17-residue ring structure formed by an intramolecular disulfide linkage. The genes which encode for ANP and BNP map to human chromosome 1p36.22. The gene which encodes for CNP maps to human chromosome 2q24-qter.

REFERENCES

1. Saito, T. 1975. Proceedings: systemic-pulmonary arteriovenous fistula—a report of a case. Jpn. Circ. J. 39: 723.
2. Mair, J., et al. 2001. The impact of cardiac natriuretic peptide determination on the diagnosis and management of heart failure. Clin. Chem. Lab. Med. 39: 571-88.
3. Cowie, M.R., et al. 2002. BNP and congestive heart failure. Prog. Cardiovasc. Dis. 44: 293-321.
4. Hobbs, F.D., et al. 2002. Reliability of N-terminal pro-brain natriuretic peptide assay in diagnosis of heart failure: cohort study in representative and high risk community populations. BMJ 324: 1498.
5. Hall, C., 2004. Essential biochemistry and physiology of NT-proBNP. Eur. J. Heart Fail. 6: 257-260.
6. Pfister, R., et al. 2004. Use of NT-proBNP in routine testing and comparison to BNP. Eur. J. Heart Fail. 6: 289-293.
7. Lellouche, N., et al. 2007. Usefulness of preimplantation B-type natriuretic peptide level for predicting response to cardiac resynchronization therapy. Am. J. Cardiol. 99: 242-246.
8. Sheen, V., et al. 2007. The use of B-type natriuretic peptide to assess volume status in patients with end-stage renal disease. Am. Heart J. 153: 244.

CHROMOSOMAL LOCATION

Genetic locus: Nppb (rat) mapping to 5q36.

SOURCE

BNP (R-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of BNP of rat origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18818 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

BNP (R-19) is recommended for detection of precursor and mature γ-BNP and BNP 45, and to a lesser extent mature natriuretic peptide of rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of glycosylated BNP precursor: 25-36 kDa.

Molecular Weight of deglycosylated mature BNP: 12 kDa.

Positive Controls: C6 whole cell lysate: sc-364373.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Oyama, J., et al. 2012. Repetitive hyperthermia attenuates progression of left ventricular hypertrophy and increases telomerase activity in hypertensive rats. Am. J. Physiol. Heart Circ. Physiol. 302: H2092-H2101.
2. Zou, J., et al. 2013. Fenofibrate ameliorates cardiac hypertrophy by activation of peroxisome proliferator-activated receptor-α partly via preventing p65-NFκB binding to NFATc4. Mol. Cell. Endocrinol. 370: 103-112.
3. Chen, W.K., et al. 2014. Cardiac hypertrophy-related pathways in obesity. Chin. J. Physiol. 57: 111-120.
4. Hsieh, Y.L., et al. 2014. Effects of garlic oil on interleukin-6 mediated cardiac hypertrophy in hypercholesterol-fed hamsters. Chin. J. Physiol. 57: 320-328.
5. Hu, W.S., et al. 2014. Gelsolin (GSN) induces cardiomyocyte hypertrophy and BNP expression via p38 signaling and GATA-4 transcriptional factor activation. Mol. Cell. Biochem. 390: 263-270.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.