SANTA CRUZ BIOTECHNOLOGY, INC.

NPR-C (H-300): sc-25487

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The natriuretic peptides are a group of structurally similar peptides that are genetically distinct and play a role in several processes, including cardiovascular, renal and endocrine homeostasis. The atrial natriuretic peptide (ANP) and brain natriuretic peptide (BNP) are derived from myocardial cell origin and are cardiac hormones secreted from the atrium and ventricle of the heart, respectively. The C-type natriuretic peptide (CNP) is derived from endothelial cell origin and acts as an endothelium-derived relaxing factor (EDRF). These peptides mediate their effects through three receptors. NPR-A (also designated GC-A) binds both ANP and BNP, which stimulates 3', 5'-cyclic guanosine monophosphate (cGMP) to mediate natriuresis, vasodilation, renin inhibition, antimitogenesis and lusitropic properties. NPR-B (also designated GC-B) binds CNP and also stimulates cGMP to facilitate vasodilation and growth inhibition. NPR-C, also designated the "clearance" receptor, clears all three peptides, which are subsequently degraded by the ectoenzyme neutral endopeptidase. The natriuretic peptide system plays an important role in hypertension, congestive heart failure, atherosclerosis and renal diseases, and may be therapeutic targets in the treatment of these diseases.

REFERENCES

1. Itoh, H., et al. 1993. Molecular biology and pharmacology of natriuretic peptide system. Nippon Rinsho 51: 1548-1556.
2. Itoh, H. and Nakao, K. 1997. Natriuretic peptide system. Nippon Rinsho 55: 1923-1936.
3. Anand-Srivastava, M.B. 1997. Atrial natriuretic peptide-C receptor and membrane signalling in hypertension. J. Hypertens. 15: 815-826.
4. Chen, H.H. and Burnett, J.C. 1999. The natriuretic peptides in heart failure: diagnostic and therapeutic potentials. Proc. Assoc. Am. Physicians 111: 406-416.
5. Coupal, M., et al. 1999. Development of p-benzoylbenzoylated [N,C,rANP(1-28)]pBNP32 (pBNP1) derivatives and affinity photolabeling of the bovine NPR-A receptor. Biochem. Biophys. Res. Commun. 258: 81-86.
6. Chen, H.H. and Burnett, J.C. 2000. Natriuretic peptides in the pathophysiology of congestive heart failure. Curr. Cardiol. Rep. 2: 198-205.
7. Muller, D., et al. 2000. Guanylyl cyclase-B represents the predominant natriuretic peptide receptor expressed at exceptionally high levels in the pineal gland. Brain Res. Mol. Brain Res. 75: 321-339.

CHROMOSOMAL LOCATION

Genetic locus: NPR3 (human) mapping to 5p13.3; Npr3 (mouse) mapping to 15 A1.

SOURCE

NPR-C (H-300) is a rabbit polyclonal antibody raised against amino acids 141-440 of NPR-C of human origin.

PRODUCT

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

APPLICATIONS

NPR-C (H-300) is recommended for detection of NPR-C of mouse, rat and human 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).

NPR-C (H-300) is also recommended for detection of NPR-C in additional species, including bovine.

Suitable for use as control antibody for NPR-C siRNA (h): sc-40129, NPR-C siRNA (m): sc-40130, NPR-C shRNA Plasmid (h): sc-40129-SH, NPR-C shRNA Plasmid (m): sc-40130-SH, NPR-C shRNA (h) Lentiviral Particles: sc-40129-V and NPR-C shRNA (m) Lentiviral Particles: sc-40130-V.

Molecular Weight of NPR-C: 64-66 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Iwuchukwu, O.F. and Naga, S. 2008. Resveratrol *(trans*-resveratrol, 3,5,4'-trihydroxy-*trans*-stilbene) glucuronidation exhibits atypical enzyme kinetics in various protein sources. Drug Metab. Dispos. 36: 322-330.
2. Wu, Y.S., et al. 2013. Diabetes-induced loss of gastric ICC accompanied by up-regulation of natriuretic peptide signaling pathways in STZ-induced diabetic mice. Peptides 40: 104-111.

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.