

# NPR-C (E-5): sc-515449

## 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 a therapeutic target in the treatment of these diseases.

## REFERENCES

1. Itoh, H., et al. 1993. Molecular biology and pharmacology of natriuretic peptide system. *Nihon Rinsho* 51: 1548-1556.
2. Itoh, H., et al. 1997. Natriuretic peptide system. *Nihon 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

NPR-C (E-5) is a mouse monoclonal antibody raised against amino acids 141-440 of NPR-C of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NPR-C (E-5) is available conjugated to agarose (sc-515449 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515449 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515449 PE), fluorescein (sc-515449 FITC), Alexa Fluor® 488 (sc-515449 AF488), Alexa Fluor® 546 (sc-515449 AF546), Alexa Fluor® 594 (sc-515449 AF594) or Alexa Fluor® 647 (sc-515449 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515449 AF680) or Alexa Fluor® 790 (sc-515449 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

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

## APPLICATIONS

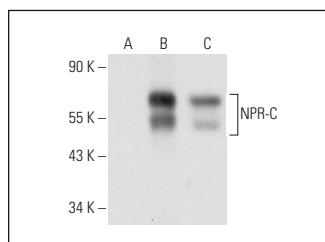
NPR-C (E-5) is recommended for detection of NPR-C of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

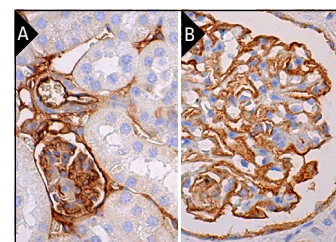
Molecular Weight of NPR-C: 64-66 kDa.

Positive Controls: NPR-C (m): 293T Lysate: sc-122112 or HeLa whole cell lysate: sc-2200.

## DATA



NPR-C (E-5): sc-515449. Western blot analysis of NPR-C expression in non-transfected 293T: sc-117752 (A), mouse NPR-C transfected 293T: sc-122112 (B) and HeLa (C) whole cell lysates.



NPR-C (E-5): sc-515449. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse kidney tissue showing cytoplasmic staining of cells in glomeruli (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane staining of cells in glomeruli (B).

## SELECT PRODUCT CITATIONS

1. Tan, R., et al. 2018. Atrial secretion of ANP is suppressed in renovascular hypertension: shifting of ANP secretion from atria to the left ventricle. *Am. J. Physiol. Heart Circ. Physiol.* 315: H590-H601.
2. Hu, P., et al. 2018. Single-nucleus transcriptomic survey of cell diversity and functional maturation in postnatal mammalian hearts. *Genes Dev.* 32: 1344-1357.
3. Handa, T., et al. 2021. Osteocrin ameliorates adriamycin nephropathy via p38 mitogen-activated protein kinase inhibition. *Sci. Rep.* 11: 21835.
4. Lu, P., et al. 2021. Perinatal angiogenesis from pre-existing coronary vessels via DLL4-NOTCH1 signalling. *Nat. Cell Biol.* 23: 967-977.
5. Ryan, R.M., et al. 2022. Oxygen and steroids affect the regulatory role of natriuretic peptide receptor-C on surfactant secretion by type II cells. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 322: L13-L22.

## STORAGE

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