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NPPA Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8534A

Specification

NPPA Antibody (N-term) - Product Information

Application	**WB, IHC-P, FC,E**
Primary Accession	P01160
Reactivity	**Human, Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**30-56**

NPPA Antibody (N-term) - Additional Information

Gene ID 4878

Other Names
Natriuretic peptides A, CDD-ANF, Prepronatriodilatin, Cardiodilatin-related peptide, CDP, Atrial natriuretic factor, ANF, Atrial natriuretic peptide, ANP, NPPA, ANP, PND

Target/Specificity
This NPPA antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 30-56 amino acids from the N-terminal region of human NPPA.

Dilution
WB~~1:1000
IHC-P~~1:10~50
FC~~1:25

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
NPPA Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

NPPA Antibody (N-term) - Protein Information

Name NPPA

Synonyms ANP, PND

Function [Atrial natriuretic peptide]: Hormone that plays a key role in mediating cardio-renal homeostasis, and is involved in vascular remodeling and regulating energy metabolism (PubMed:8653797, PubMed:7595132, PubMed:2825692, PubMed:7720651, PubMed:8087923, PubMed:2532366, PubMed:22307324, PubMed:18835931, PubMed:21672517, PubMed:15741263, PubMed:16875975). Acts by specifically binding and stimulating NPR1 to produce cGMP, which in turn activates effector proteins, such as PRKG1, that drive various biological responses (PubMed:25401746, PubMed:9893117, PubMed:1672777, PubMed:1660465, PubMed:2162527, PubMed:2825692, PubMed:7720651, PubMed:22307324, PubMed:8384600, PubMed:21098034). Regulates vasodilation, natriuresis, diuresis and aldosterone synthesis and is therefore essential for regulating blood pressure, controlling the extracellular fluid volume and maintaining the fluid-electrolyte balance (PubMed:8653797, PubMed:7595132, PubMed:2825692, PubMed:7720651, PubMed:2532366, PubMed:8087923). Also involved in inhibiting cardiac remodeling and cardiac hypertrophy by inducing cardiomyocyte apoptosis and attenuating the growth of cardiomyocytes and fibroblasts (PubMed:16875975). Plays a role in female pregnancy by promoting trophoblast invasion and spiral artery remodeling in uterus, and thus prevents pregnancy-induced hypertension (By similarity). In adipose tissue, acts in various cGMP- and PKG-dependent pathways to regulate lipid metabolism and energy homeostasis (PubMed:22307324, PubMed:18835931, PubMed:21672517, PubMed:15741263). This includes up-regulating lipid metabolism and mitochondrial oxygen utilization by activating the AMP-activated protein kinase (AMPK), and increasing energy expenditure by acting via MAPK11 to promote the UCP1-dependent thermogenesis of brown adipose tissue (PubMed:22307324, PubMed:18835931, PubMed:21672517, PubMed:15741263). Binds the clearance receptor NPR3 which removes the hormone from circulation (PubMed:1672777).

Cellular Location
[Long-acting natriuretic peptide]: Secreted. Note=Detected in blood. [Kaliuretic peptide]: Secreted. Note=Detected in blood [Atrial natriuretic peptide]: Secreted. Perikaryon. Cell projection. Note=Detected in blood (PubMed:8351194, PubMed:8779891, PubMed:7955907, PubMed:8653797, PubMed:15741263, PubMed:18835931, PubMed:2532366, PubMed:7984506). Detected in urine in one study (PubMed:8351194). However, in another study, was not detected in urine (PubMed:7984506). Detected in cytoplasmic bodies and neuronal processes of pyramidal neurons (layers II-VI) (PubMed:30534047) Increased secretion in response to the vasopressin AVP (By similarity) Likely to be secreted in response to an increase in atrial pressure or atrial stretch (PubMed:2532366). In kidney cells, secretion increases in response to activated guanylyl cyclases and increased intracellular cAMP levels (PubMed:9893117). Plasma levels increase 15 minutes after a high-salt meal, and decrease back to normal plasma levels 1 hr later (PubMed:8779891). {ECO:0000250|UniProtKB:P01161, ECO:0000269|PubMed:15741263, ECO:0000269|PubMed:18835931, ECO:0000269|PubMed:2532366, ECO:0000269|PubMed:30534047, ECO:0000269|PubMed:7955907, ECO:0000269|PubMed:7984506, ECO:0000269|PubMed:8351194, ECO:0000269|PubMed:8653797, ECO:0000269|PubMed:8779891, ECO:0000269|PubMed:9893117}

Tissue Location
[Urodilatin]: Detected in the kidney distal tubular cells (at protein level) (PubMed:9794555, PubMed:8384600). Present in urine (at protein level) (PubMed:2972874, PubMed:9794555, PubMed:8351194, PubMed:8779891).

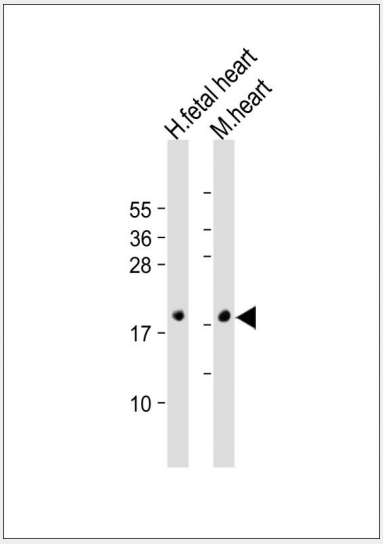
NPPA Antibody (N-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

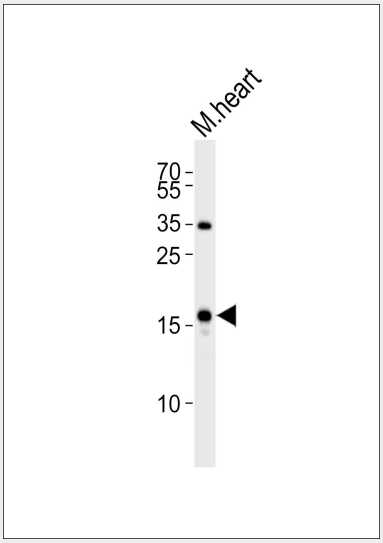
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry

- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

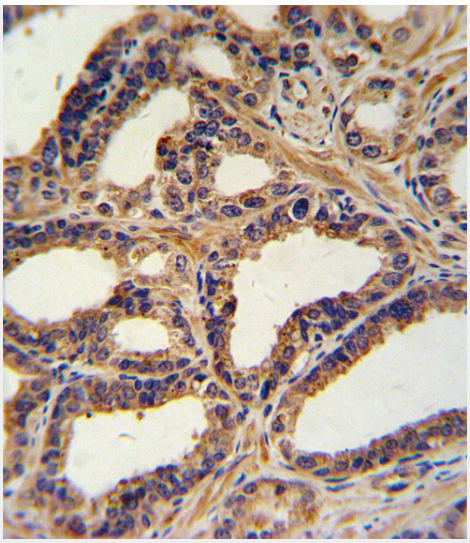
NPPA Antibody (N-term) - Images



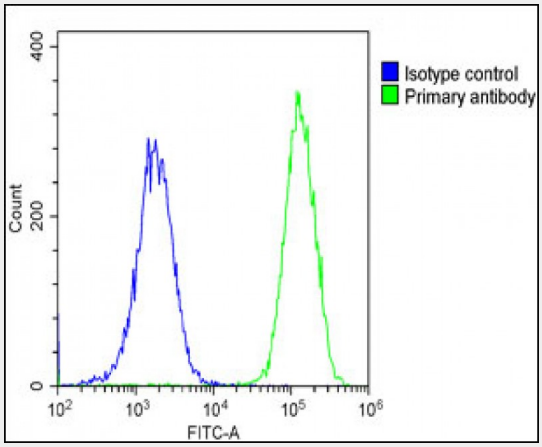
All lanes : Anti-NPPA Antibody (N-term) at 1:2000 dilution Lane 1: Human fetal heart lysate Lane 2: Mouse heart lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 17 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Western blot analysis of lysate from mouse heart tissue, using NPPA Antibody (N-term)(Cat. #AP8534a). AP8534a was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysate at 20ug.



Formalin-fixed and paraffin-embedded human prostate carcinoma with NPPA Antibody (N-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Overlay histogram showing RD cells stained with AP8534a(green line). The cells were fixed with 2% paraformaldehyde and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (1:25 dilution) for 60 min at 37ºC. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed at 1/200 dilution for 40 min at Room temperature. Isotype control antibody (blue line) was rabbit IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.

NPPA Antibody (N-term) - Background

NPPA belongs to the natriuretic peptide family. Natriuretic peptides are implicated in the control of extracellular fluid volume and electrolyte homeostasis. This protein is synthesized as a large precursor(containing a signal peptide), which is processed to release a peptide from the N-terminus with similarity to vasoactive peptide, cardiodilatin, and another peptide from the C-terminus with natriuretic-diuretic activity.

NPPA Antibody (N-term) - References

Watanabe,Y., et.al., Biochem. Mol. Med. 61 (1), 47-51 (1997)
Suga,S., et.al., Endocrinology 130 (1), 229-239 (1992)

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NPPA Antibody (N-term) - Citations

- Hand2 Selectively Reorganizes Chromatin Accessibility to Induce Pacemaker-like Transcriptional Reprogramming.
- Generation of Nppa-tagBFP reporter knock-in mouse line for studying cardiac chamber specification.
- High content analysis identifies unique morphological features of reprogrammed cardiomyocytes.
- Assessing Cardiomyocyte Subtypes Following Transcription Factor-mediated Reprogramming of Mouse Embryonic Fibroblasts.
- Induction of diverse cardiac cell types by reprogramming fibroblasts with cardiac transcription factors.