

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~~1:2000
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:[15741263](#), PubMed:[16875975](#), PubMed:[18835931](#), PubMed:[21672517](#), PubMed:[22307324](#), PubMed:[2532366](#), PubMed:[2825692](#), PubMed:[7595132](#), PubMed:[7720651](#), PubMed:[8087923](#), PubMed:[8653797](#)). 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:[1660465](#), PubMed:[1672777](#), PubMed:[21098034](#), PubMed:[2162527](#), PubMed:[22307324](#), PubMed:[25401746](#), PubMed:[2825692](#), PubMed:[7720651](#), PubMed:[8384600](#), PubMed:[9893117](#)). 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:[2532366](#), PubMed:[2825692](#), PubMed:[7595132](#), PubMed:[7720651](#), PubMed:[8087923](#), PubMed:[8653797](#)). 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:[15741263](#), PubMed:[18835931](#), PubMed:[21672517](#), PubMed:[22307324](#)). 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:[15741263](#), PubMed:[18835931](#), PubMed:[21672517](#), PubMed:[22307324](#)). 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:[15741263](#), PubMed:[18835931](#), PubMed:[2532366](#), PubMed:[7955907](#), PubMed:[7984506](#), PubMed:[8351194](#), PubMed:[8653797](#), PubMed:[8779891](#)). 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

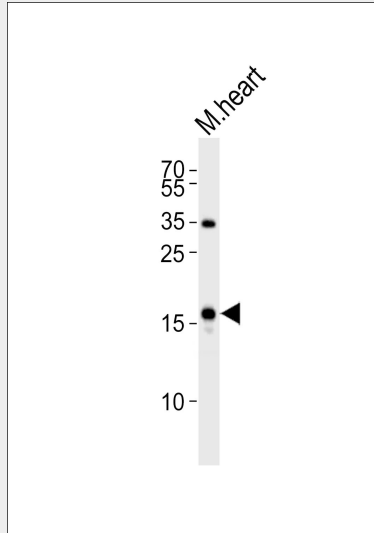
[Urodilatin]: Detected in the kidney distal tubular cells (at protein level) (PubMed:[8384600](#), PubMed:[9794555](#)). Present in urine (at protein level) (PubMed:[2972874](#), PubMed:[8351194](#), PubMed:[8779891](#), PubMed:[9794555](#)).

NPPA Antibody (N-term) - Protocols

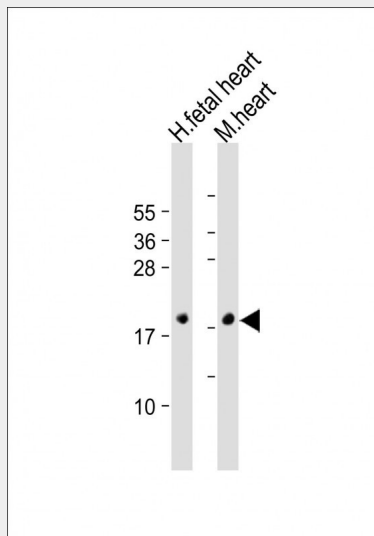
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)

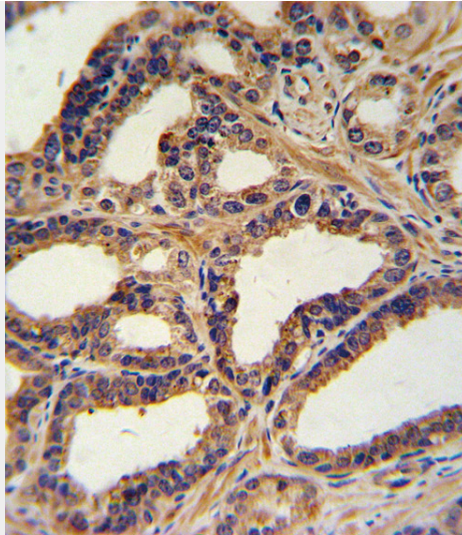
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

NPPA Antibody (N-term) - Images


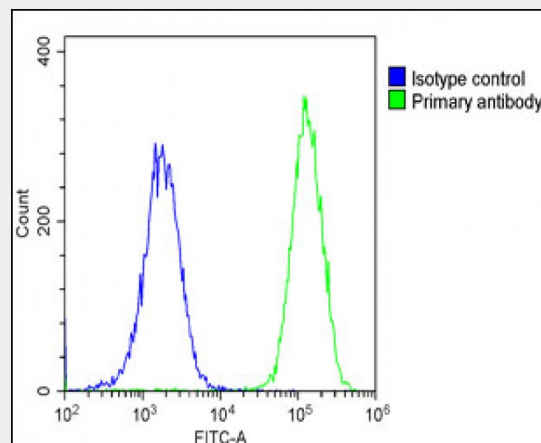
Western blot analysis of lysate from mouse heart tissue, using NPPA Antibody (N-term)(Cat. #AP8534a). AP8534a was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysate at 20ug.



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% NFD/MTBST.



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 incubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (1:25 dilution) for 60 min at 37°C. 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/1x10⁶ 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)

NPPA Antibody (N-term) - Citations

- [Liraglutide ameliorates TAC-induced cardiac hypertrophy and heart failure by upregulating expression level of ANP expression](#)
- [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](#)