

NPPA Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8534A

Product Information

Application	IHC-P, WB, FC, E
Primary Accession	P01160
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	16396
Antigen Region	30-56

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	IHC-P~1:100~500 WB~1:1000 FC~1:25 E~Use at an assay dependent concentration.
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.

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](#)).

Background

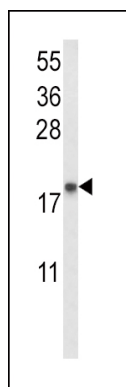
NPPA belongs to the natriuretic peptide family. Natriuretic peptides are implicated in the control of extracellular fluid volume and electrolyte homeostasis. This protein is synthesized as a large precursor(containing a signal peptide), which is processed to release a peptide from the N-terminus with

similarity to vasoactive peptide, cardiodilatin, and another peptide from the C-terminus with natriuretic-diuretic activity.

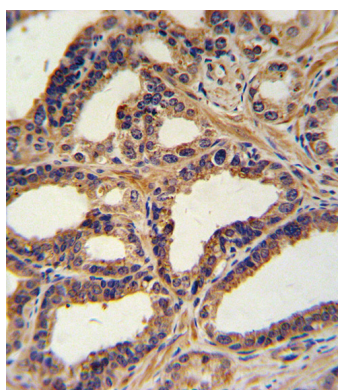
References

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

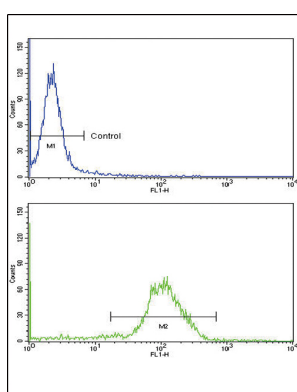
Images



Western blot analysis of NPPA Antibody (N-term) (Cat. #AP8534a) in mouse heart tissue lysates (35ug/lane). NPPA (arrow) was detected using the purified Pab.



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.



Flow cytometric analysis of MDA-231 cells using NPPA Antibody (N-term)(bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

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.](#)
- [Induction of diverse cardiac cell types by reprogramming fibroblasts with cardiac transcription factors.](#)
- [High content analysis identifies unique morphological features of reprogrammed cardiomyocytes.](#)

- [Assessing Cardiomyocyte Subtypes Following Transcription Factor-mediated Reprogramming of Mouse Embryonic Fibroblasts.](#)

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.