

NADPH oxidase 4 Rabbit pAb

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Product Information

Application WB, IHC-P, IHC-F, IF

Primary Accession Q9NPH5

Reactivity Human, Mouse

Host Rabbit
Clonality Polyclonal
Calculated MW 66932
Physical State Liquid

Immunogen KLH conjugated synthetic peptide derived from human Nox-4

Epitope Specificity 81-180/578

Isotype IgG

Purity affinity purified by Protein A

Buffer 0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.

SUBCELLULAR LOCATION Endoplasmic reticulum membrane; Multi-pass membrane protein. Cell

junction, focal adhesion. Cell membrane. Note=May localize to plasma

membrane and focal adhesions.

SIMILARITY Contains 1 FAD-binding FR-type domain.Contains 1 ferric oxidoreductase

domain.

SUBUNIT Interacts with, relocalizes and stabilizes CYBA/p22phox. Interacts with TLR4.

Interacts with protein disulfide isomerase.

Post-translational modifications Important Note

modifications

human, therapeutic or diagnostic applications.

Background Descriptions Nox4 is a renal gp91-phox homolog highly expressed at the site of

erythropoietin production in the proximal convoluted tubule epithelial cells of

the renal cortex. Nox4 is also expressed in fetal tissues, placenta,

N-glycosylation is required for the function (By similarity).

glioblastoma and vascular cells. Like gp91-phox, the enzymatic activity of Nox4 produces superoxide anions. In vascular cells, the addition of

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angiotensin II increases Nox4 expression, which suggests a role for Nox-4 in

vascular oxidative stress response.

Additional Information

Gene ID 50507

Other Names NADPH oxidase 4, 1.6.3.1, Kidney oxidase-1, KOX-1, Kidney

superoxide-producing NADPH oxidase, Renal NAD(P)H-oxidase, NOX4, RENOX

Target/Specificity EXpressed in brain, in all layers of the cerebellum, in pyramidal cells of the

Ammon horn and in Purkinje cells (at protein level). Expressed in osteoclasts,

leukocytes, kidney, liver and lung.

Dilution WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=1

□g/Test

Storage Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When

reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody

is stable for at least two weeks at 2-4 °C.

Protein Information

Name NOX4

Synonyms RENOX

Function NADPH oxidase that catalyzes predominantly the reduction of oxygen to

H2O2 (PubMed: 14966267, PubMed: 15356101, PubMed: 15927447,

PubMed: 21343298, PubMed: 25062272). Can also catalyze to a smaller extent,

the reduction of oxygen to superoxide (PubMed: <u>10869423</u>, PubMed: <u>11032835</u>, PubMed: <u>15155719</u>, PubMed: <u>15572675</u>, PubMed: <u>15927447</u>, PubMed: <u>16019190</u>, PubMed: <u>16179589</u>,

PubMed: 16230378, PubMed: 16324151, PubMed: 25062272). May function as an oxygen sensor regulating the KCNK3/TASK-1 potassium channel and HIF1A

activity (PubMed: 16019190). May regulate insulin signaling cascade (PubMed: 14966267). May play a role in apoptosis, bone resorption and

lipolysaccharide-mediated activation of NFKB (PubMed: 15356101,

PubMed: 15572675). May produce superoxide in the nucleus and play a role in regulating gene expression upon cell stimulation (PubMed: 16324151). Promotes ferroptosis, reactive oxygen species production and reduced

glutathione (GSH) levels by activating NLRP3 inflammasome activation and

cytokine release (PubMed:39909992).

Cellular Location Cytoplasm. Endoplasmic reticulum membrane; Multi-pass membrane protein.

Cell membrane; Multi-pass membrane protein. Cell junction, focal adhesion {ECO:0000250|UniProtKB:Q924V1}. Nucleus [Isoform 3]: Cytoplasm.

Cytoplasm, perinuclear region [Isoform 6]: Cytoplasm. Cytoplasm, perinuclear

region

Tissue Location Expressed by distal tubular cells in kidney cortex and in endothelial cells (at

protein level). Widely expressed. Strongly expressed in kidney and to a lower extent in heart, adipocytes, hepatoma, endothelial cells, skeletal muscle,

brain, several brain tumor cell lines and airway epithelial cells

Background

Nox4 is a renal gp91-phox homolog highly expressed at the site of erythropoietin production in the proximal convoluted tubule epithelial cells of the renal cortex. Nox4 is also expressed in fetal tissues, placenta, glioblastoma and vascular cells. Like gp91-phox, the enzymatic activity of Nox4 produces superoxide anions. In vascular cells, the addition of angiotensin II increases Nox4 expression, which suggests a role for Nox-4 in vascular oxidative stress response.

References

Geiszt M., et al. Proc. Natl. Acad. Sci. U.S.A. 97:8010-8014(2000).

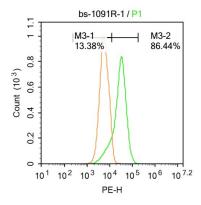
Shiose A., et al.J. Biol. Chem. 276:1417-1423(2001).

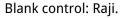
Yang S., et al.J. Biol. Chem. 276:5452-5458(2001).

Banfi B., et al. Submitted (JUN-2000) to the EMBL/GenBank/DDBI databases.

Carninci P., et al. Science 309:1559-1563(2005).

Images





Primary Antibody (green line): Rabbit Anti-NADPH oxidase

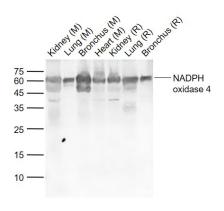
4 antibody (AP52323) Dilution: 1 µg /10^6 cells;

Isotype Control Antibody (orange line): Rabbit IgG . Secondary Antibody : Goat anti-rabbit IgG-PE

Dilution: 1 µg /test.

Protocol

The cells were fixed with 4% PFA (10min at room temperature) and then permeabilized with PBST for 20 min at room temperature. The cells were then incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at at room temperature. Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.



Sample:

Lane 1: Kidney (Mouse) Lysate at 40 ug

Lane 2: Lung (Mouse) Lysate at 40 ug

Lane 3: Bronchus (Mouse) Lysate at 40 ug

Lane 4: Heart (Mouse) Lysate at 40 ug

Lane 5: Kidney (Rat) Lysate at 40 ug

Lane 6: Lung (Rat) Lysate at 40 ug

Lane 7: Bronchus (Rat) Lysate at 40 ug

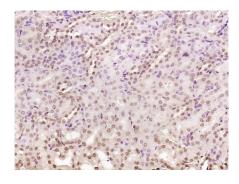
Primary: Anti-NADPH oxidase 4 (AP52323) at 1/1000

dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000

dilution

Predicted band size: 64 kD Observed band size: 62 kD



Paraformaldehyde-fixed, paraffin embedded (Mouse kidney); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (NADPH oxidase 4) Polyclonal Antibody, Unconjugated (AP52323) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.

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