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Rabbit Anti-NOX2/gp91phox Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP52079

Product Information

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	P04839
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	65336
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human NOX2
Epitope Specificity	501-570/570
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	Membrane.
SIMILARITY	Contains 1 FAD-binding FR-type domain. Contains 1 ferric oxidoreductase domain.
Post-translational modifications	Glycosylated.
DISEASE	Defects in CYBB are a cause of chronic granulomatous disease X-linked (XCGD) [MIM:306400]. Chronic granulomatous disease is a genetically heterogeneous disorder characterized by the inability of neutrophils and phagocytes to kill microbes that they have ingested. Patients suffer from life-threatening bacterial/fungal infections.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	NOX2/gp91phox is a critical component of the membrane-bound oxidase of phagocytes that generates superoxide. It is the terminal component of a respiratory chain that transfers single electrons from cytoplasmic NADPH across the plasma membrane to molecular oxygen on the exterior. It also functions as a voltage-gated proton channel that mediates the H(+) currents of resting phagocytes. It participates in the regulation of cellular pH and is blocked by zinc. Defects in CYBB are a cause of X-linked chronic granulomatous disease (X-CGD). X-CGD is characterized by the failure of activated phagocytes to generate superoxide. Patients suffer from life-threatening bacterial/fungal infections.

Additional Information

Gene ID	1536
Other Names	CGD; NOX2; IMD34; AMCBX2; GP91-1; GP91PHOX; p91-PHOX; GP91-PHOX; Cytochrome b-245 heavy chain; CGD91-phox; Cytochrome b(558) subunit

	beta; Cytochrome b558 subunit beta; Heme-binding membrane glycoprotein gp91phox; NADPH oxidase 2; Neutrophil cytochrome b 91 kDa polypeptide; Superoxide-generating NADPH oxidase heavy chain subunit; p22 phagocyte B-cytochrome; CYBB
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
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	CYBB (HGNC:2578)
Synonyms	NOX2
Function	Catalytic subunit of the phagocyte NADPH oxidase complex that mediates the transfer of electrons from cytosolic NADPH to O2 to produce the superoxide anion (O2(-)) (PubMed:15338276, PubMed:36241643, PubMed:36413210, PubMed:38355798). In the activated complex, electrons are first transferred from NADPH to flavin adenine dinucleotide (FAD) and subsequently transferred via two heme molecules to molecular oxygen, producing superoxide through an outer-sphere reaction (Probable) (PubMed:38355798). Activation of the NADPH oxidase complex is initiated by the assembly of cytosolic subunits of the NADPH oxidase complex with the core NADPH oxidase complex to form a complex at the plasma membrane or phagosomal membrane (PubMed:19028840, PubMed:38355798). This activation process is initiated by phosphorylation dependent binding of the cytosolic NCF1/p47-phox subunit to the C-terminus of CYBA/p22-phox (By similarity). NADPH oxidase complex assembly is impaired through interaction with NRROS (By similarity).
Cellular Location	Cell membrane; Multi-pass membrane protein. Note=As unassembled monomer may localize to the endoplasmic reticulum
Tissue Location	Detected in neutrophils (at protein level).

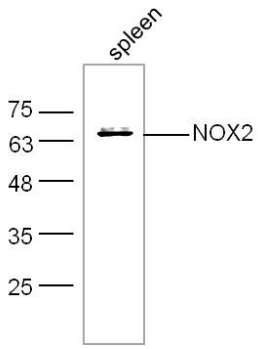
Background

Critical component of the membrane-bound oxidase of phagocytes that generates superoxide. It is the terminal component of a respiratory chain that transfers single electrons from cytoplasmic NADPH across the plasma membrane to molecular oxygen on the exterior. Also functions as a voltage-gated proton channel that mediates the H(+) currents of resting phagocytes. It participates in the regulation of cellular pH and is blocked by zinc.

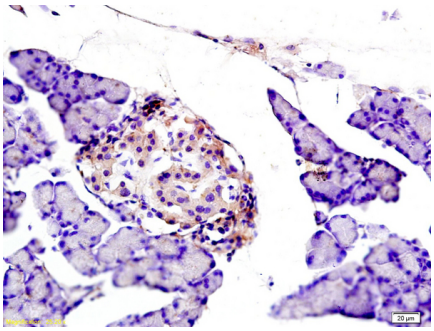
References

Royer-Pokora B.,et al.Nature 322:32-38(1986).
Jirapongsananuruk O.,et al.Clin. Immunol. 104:73-76(2002).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.
Dinauer M.C.,et al.Nature 327:717-720(1987).

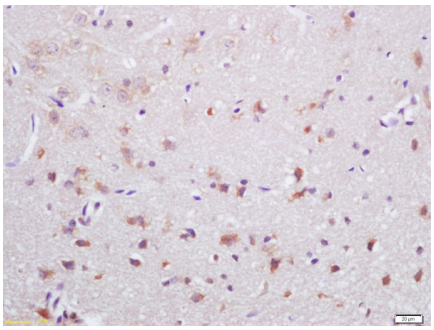
Images



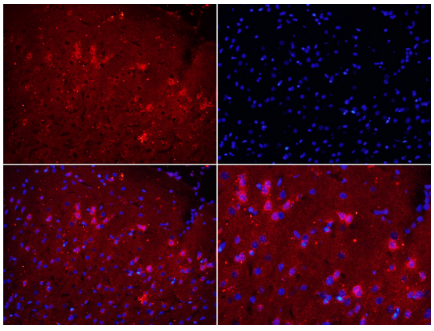
Mouse spleen lysates probed with NOX2/gp91phox Polyclonal Antibody, unconjugated (AP52079) at 1:300 overnight at 4°C followed by a conjugated secondary antibody at 1:10000 for 60 minutes at 37°C.



Formalin-fixed and paraffin embedded rat pancreas labeled with Anti NOX2/gp91phox Polyclonal Antibody, Unconjugated (AP52079) at 1:200 followed by conjugation to the secondary antibody and DAB staining



Formalin-fixed and paraffin embedded rat brain labeled with Rabbit Anti-NOX2/gp91phox Polyclonal Antibody, Unconjugated (AP52079) at 1:200 followed by conjugation to the secondary antibody and DAB staining



Formalin-fixed and paraffin embedded rat brain labeled with Rabbit Anti-NOX2/gp91phox Polyclonal Antibody, Unconjugated (AP52079) at 1:200 followed by conjugation to the secondary antibody Goat Anti-Rabbit IgG, Cy3 conjugated used at 1:200 dilution for 40 minutes at 37°C.