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NOX2 Antibody

Catalog # ASC11833

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P04839
Other Accession	NP_000388, 6996021
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	65336
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	NOX2 antibody can be used for detection of NOX2 by Western blot at 1 - 2 g/ml. Antibody can also be used for Immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	1536
Other Names	Cytochrome b-245 heavy chain, 1.-.-.-, 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, gp91-1, gp91-phox, p22 phagocyte B-cytochrome, CYBB, NOX2
Target/Specificity	CYBB; NOX2 antibody is human, mouse and rat reactive. At least two isoforms are known to exist; this antibody will detect both isoforms. NOX2 is predicted to not cross-react with other NOX proteins.
Reconstitution & Storage	NOX2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	NOX2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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).

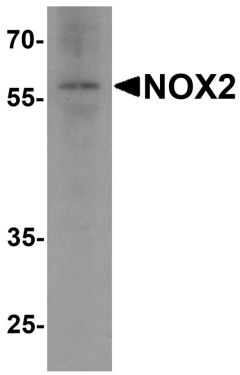
Background

The NOX family of NAPDH oxidases is comprised of seven transmembrane proteins that oxidize intracellular NAPDH/NADH, causing electron transport across the membrane and the reduction of molecular oxygen to superoxide (1). NOX2, also known as cytochrome b beta (CYBB) is one of two proteins that make up Cytochrome b-245, thought to be a primary component of the microbicidal oxidase system of phagocytes. NOX2 deficiency is one of five described biochemical defects associated with chronic granulomatous disease (CGD) (2). Activation of the NOX2 enzyme complex in microglia is thought to be neurotoxic and may play a role in Alzheimer's and Parkinson's disease (3).

References

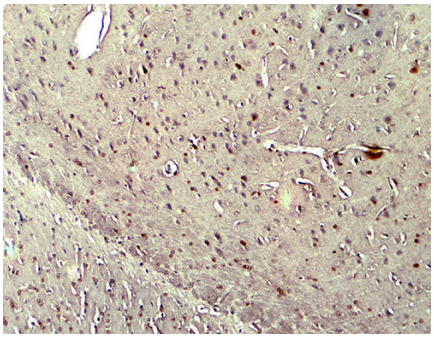
Bedard K and Krause KH. The Nox family of ROS-generating NAPDH oxidases: physiology and pathophysiology. Physiol. Rev. 2007; 87:245-313.
Segal AW. Cytochrome b-245 and its involvement in the molecular pathology of chronic granulomatous disease. Hematol. Oncol. North Am. 1988; 2:213-23.
Surace MJ and Block ML. Targeting microglia-mediated neurotoxicity: the potential of NOX2 inhibitors. Cell Mol. Life Sci. 2012; 69:2409-27.

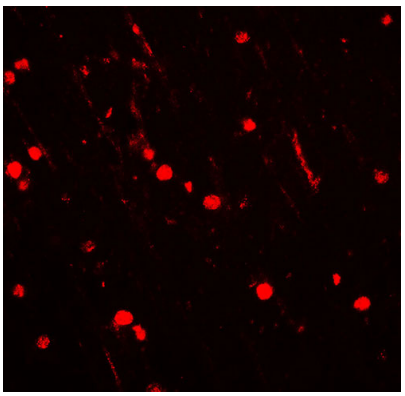
Images



Western blot analysis of NOX2 in rat brain tissue lysate with NOX2 antibody at 1 µg/ml.

Immunohistochemistry of NOX2 in rat brain tissue with NOX2 antibody at 5 µg/ml.





Immunofluorescence of NOX2 in rat brain tissue with NOX2 antibody at 20 µg/ml.