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Anti-NADPH oxidase 4/NOX4 Antibody Picoband®

Catalog Number: PA1929

About Nox4

NADPH oxidase 4 is an enzyme that in humans is encoded by the NOX4 gene, and is a member of the NOX family of NADPH oxidases. This gene encodes a member of the NOX-family of enzymes that functions as the catalytic subunit the NADPH oxidase complex. The encoded protein is localized to non-phagocytic cells where it acts as an oxygen sensor and catalyzes the reduction of molecular oxygen to various reactive oxygen species (ROS). The ROS generated by this protein have been implicated in numerous biological functions including signal transduction, cell differentiation and tumor cell growth. A pseudogene has been identified on the other arm of chromosome 11. Alternative splicing results in multiple transcript variants.

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Overview

Product Name	Anti-NADPH oxidase 4/NOX4 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-NADPH oxidase 4/NOX4 Antibody catalog # PA1929. Tested in IHC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	IHC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	Q9JHI8

Technical Details

Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of mouse NADPH oxidase 4, identical to the related rat sequence and different from the related human sequence by two amino

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	acids.
Recommended Detection Systems	Boster recommends ECL Plus Western Blotting Substrate (Catalog # AR1196-200) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P).
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 2-5ug/ml, Human

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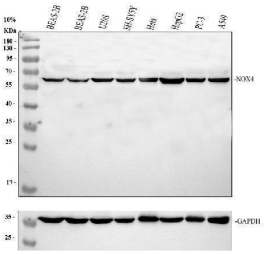
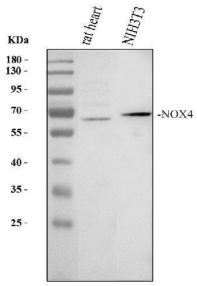
Anti-NADPH oxidase 4/NOX4 Antibody Picoband® (PA1929) Images



Western blot analysis of NOX4 using anti-NOX4 antibody (PA1929). Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human BEAS-2B whole cell lysates, Lane 2: human BEAS-2B whole cell lysates, Lane 3: human U2OS whole cell lysates, Lane 4: human SH-SY5Y whole cell lysates, Lane 5: human Hela whole cell lysates, Lane 6: human HepG2 whole cell lysates, Lane 7: human PC-3 whole cell lysates, Lane 8: human A549 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-NOX4 antigen affinity purified polyclonal antibody (PA1929) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody (Catalog # BA1054) at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substrate (Catalog # AR1196-200) with Tanon 5200 system. A specific band was detected for NOX4 at approximately 67 kDa. The expected band size for NOX4 is at 67 kDa.



Western blot analysis of NOX4 using anti-NOX4 antibody (PA1929). Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: rat heart tissue lysates, Lane 2: mouse NIH/3T3 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-NOX4 antigen affinity purified polyclonal antibody (PA1929) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody (Catalog # BA1054) at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substrate (Catalog # AR1196-200) with Tanon 5200 system. A specific band was detected for NOX4 at approximately 67 kDa. The expected band size for NOX4 is at 67 kDa.

IHC analysis of NOX4 using anti-NOX4 antibody (PA1929). NOX4 was detected in a paraffin-embedded section of human kidney tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-NOX4 Antibody (PA1929) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as

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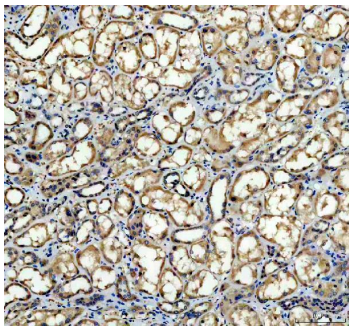
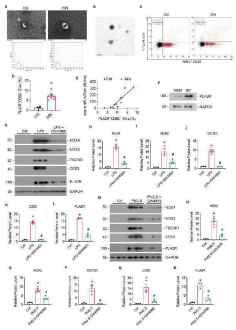
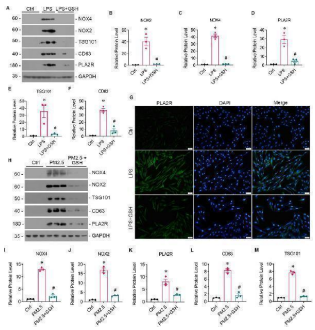


secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



Patients with IMN exhibited increased serum levels of EVs, and oxidative stress enhanced EVs production in vitro . (A) TEM images displayed the morphology of EVs isolated from the serum of IMN patients. Scale bar = 100 nm. Patients with MCD served as controls. NTA images showed the distribution of EVs. (B) Representative images of immune colloidal gold electron microscopy demonstrated the presence of PLA2R on the surface of EVs, indicated by black dots. Scale bar = 200 nm. (C, D) Images from nano-flow cytometry and a corresponding statistical bar chart illustrated the proportion of PLA2R + EVs in the serum of IMN patients compared to those with MCD. (E) A positive correlation was observed between the proportion of PLA2R + EVs and serum aPLA2Rab levels. (F) Representative Western blot analyses showed the PLA2R expression levels of EVs isolated from the lung tissue of smokers and non-smokers. (G) The levels of oxidative stress, PLA2R expression, and EVs production in Beas-2B cells were examined after stimulation with LPS, with or without GW4869 intervention. Representative Western blot (G) and quantitative data (H–L) are presented. The expression levels of NOX4 (H) , NOX2 (I) , TSG101 (J) , CD63 (K) , and PLA2R (L) were significantly upregulated by LPS, while GSH reversed this upregulation. (* $p < 0.05$ versus control; # $p < 0.05$ versus LPS). (M–R) The levels of oxidative stress, PLA2R expression, and EVs production in Beas-2B cells stimulated by RM8785 were analyzed, with or without GW4869 intervention. Representative Western blot (M) and quantitative data (N–R) are presented. The expression levels of NOX4 (N) , NOX2 (O) , TSG101 (P) , CD63 (Q) , and PLA2R (R) were significantly upregulated by RM8785, while GW4869 effectively reversed this upregulation. (* $p < 0.05$ versus control; # $p < 0.05$ versus PM2.5).Index in PubMed under a CC BY license. PMID: 39744137



PM2.5 induces oxidative stress and PLA2R overexpression in bronchial epithelium. (A–F) Levels of oxidative stress, PLA2R expression, and EVs production in Beas-2B cells stimulated by LPS, with or without GSH intervention. Western blot (A) and quantitative data (B–F) are presented. (B, C) NOX2 and NOX4 are oxidative stress markers from the NADPH oxidase family. (D) PLA2R expression levels. (E, F) TSG101 and CD63 are markers for EVs. All are significantly upregulated by LPS, while GSH effectively reverses this upregulation. (* $p < 0.05$ versus control; #$P < 0.05$ versus LPS). (G) Representative micrographs show immunofluorescence staining of PLA2R in

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Beas-2B cells treated with LPS, with or without GSH. Scale bar = 100 um. (H–M) Levels of oxidative stress, PLA2R expression, and EVs production in Beas-2B cells stimulated by RM8785, with or without GSH intervention. Representative Western blot (H) and quantitative data (I–M) are provided. The expression levels of NOX4 (I) , NOX2 (J) , PLA2R (K) , CD63 (L) , and TSG101 (M) are all significantly upregulated by RM8785, while GSH effectively reverses this upregulation. (* $p < 0.05$ versus control; #$P < 0.05$ versus PM2.5).Index in PubMed under a CC BY license. PMID: 39744137

2 Publications Citing This Product

1. PubMed ID: 27803283, Obligatory role for GPER in cardiovascular aging and disease^

2. PubMed ID: 29963902, Deficiency of NOX1 or NOX4 Prevents Liver Inflammation and Fibrosis in Mice through Inhibition of Hepatic Stellate Cell Activation

Visit bosterbio.com/anti-nadph-oxidase-4-antibody-pa1929-boster.html to see all 2 publications.

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