

NCB5OR (D-2): sc-390569

BACKGROUND

NCB5OR, also referred to as CYB5R4 (cytochrome b5 reductase 4), is a flavohemoprotein that contains cytochrome b5 and chrome b5 reductase cytodomains. A member of the flavoprotein pyridine nucleotide cytochrome reductase family, NCB5OR is widely expressed and colocalizes with calreticulin to the endoplasmic reticulum (ER). NCB5OR has a cytochrome b5 heme-binding domain as well as one CS domain, two FAD and two iron binding motifs. NCB5OR reduces cytochrome c, methemoglobin, ferricyanide and molecular oxygen *in vitro*. NCB5OR is involved in the ER stress response pathway and plays a critical role in protecting pancreatic β -cells against oxidative stress by preventing excess buildup of reactive oxygen species (ROS). The absence of NCB5OR may cause Insulin-deficient diabetes.

REFERENCES

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- Zhu, H., et al. 2004. NCB5OR is a novel soluble NAD(P)H reductase localized in the endoplasmic reticulum. *J. Biol. Chem.* 279: 30316-30325.
- Kurian, J.R., et al. 2004. NADH cytochrome b5 reductase and cytochrome b5 catalyze the microsomal reduction of xenobiotic hydroxylamines and amidoximes in humans. *J. Pharmacol. Exp. Ther.* 311: 1171-1178.
- Xie, J., et al. 2004. Absence of a reductase, NCB5OR, causes Insulin-deficient diabetes. *Proc. Natl. Acad. Sci. USA* 101: 10750-10755.
- Larade, K. and Bunn, H.F. 2006. Promoter characterization and transcriptional regulation of NCB5OR, a novel reductase necessary for pancreatic β -cell maintenance. *Biochim. Biophys. Acta* 1759: 257-262.
- Larade, K., et al. 2007. The reductase NCB5OR is responsive to the redox status in β -cells and is not involved in the ER stress response. *Biochem. J.* 404: 467-476.

CHROMOSOMAL LOCATION

Genetic locus: CYB5R4 (human) mapping to 6q14.2.

SOURCE

NCB5OR (D-2) is a mouse monoclonal antibody raised against amino acids 331-521 mapping at the C-terminus of NCB5OR of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NCB5OR (D-2) is available conjugated to agarose (sc-390569 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390569 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390569 PE), fluorescein (sc-390569 FITC), Alexa Fluor[®] 488 (sc-390569 AF488), Alexa Fluor[®] 546 (sc-390569 AF546), Alexa Fluor[®] 594 (sc-390569 AF594) or Alexa Fluor[®] 647 (sc-390569 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390569 AF680) or Alexa Fluor[®] 790 (sc-390569 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

NCB5OR (D-2) is recommended for detection of NCB5OR of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NCB5OR siRNA (h): sc-75883, NCB5OR shRNA Plasmid (h): sc-75883-SH and NCB5OR shRNA (h) Lentiviral Particles: sc-75883-V.

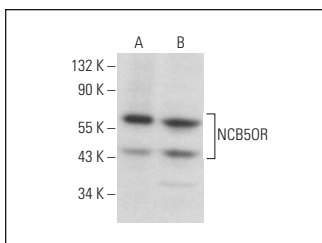
Molecular Weight of NCB5OR: 59 kDa.

Positive Controls: NCB5OR (h2): 293T Lysate: sc-173674, Jurkat whole cell lysate: sc-2204 or HL-60 whole cell lysate: sc-2209.

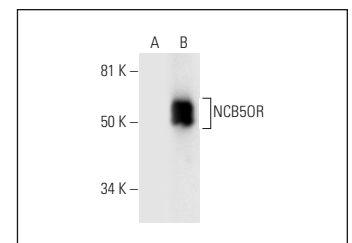
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



NCB5OR (D-2): sc-390569. Western blot analysis of NCB5OR expression in Jurkat (A) and HL-60 (B) whole cell lysates.



NCB5OR (D-2): sc-390569. Western blot analysis of NCB5OR expression in non-transfected: sc-117752 (A) and human NCB5OR transfected: sc-173674 (B) 293T whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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