

NCB5OR (h2): 293T Lysate: sc-173674

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

- Andersen, G., et al. 2004. Variation in NCB5OR: studies of relationships to type 2 diabetes, maturity-onset diabetes of the young, and gestational diabetes mellitus. *Diabetes* 53: 2992-2997.
- 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.
- Kurian, J.R., et al. 2007. Discovery and characterization of a cytochrome b5 variant in humans with impaired hydroxylamine reduction capacity. *Pharmacogenet. Genomics* 17: 597-603.

CHROMOSOMAL LOCATION

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

PRODUCT

NCB5OR (h2): 293T Lysate represents a lysate of human NCB5OR transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

NCB5OR (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive NCB5OR antibodies. Recommended use: 10-20 μ l per lane.

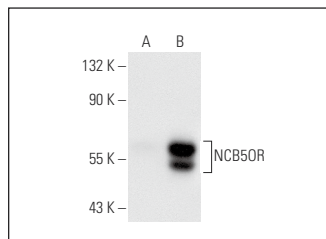
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

NCB5OR (L-7): sc-100529 is recommended as a positive control antibody for Western Blot analysis of enhanced human NCB5OR expression in NCB5OR transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

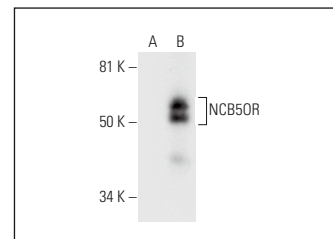
RECOMMENDED SUPPORT REAGENTS

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.

DATA



NCB5OR (L-7): sc-100529. Western blot analysis of NCB5OR expression in non-transfected: sc-117752 (A) and human NCB5OR transfected: sc-173674 (B) 293T whole cell lysates.



NCB5OR (D-4): sc-390570. Western blot analysis of NCB5OR expression in non-transfected: sc-117752 (A) and human NCB5OR transfected: sc-173674 (B) 293T whole cell lysates.

RESEARCH USE

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