

CYB5R3 (H-60): sc-67284

BACKGROUND

CYB5R3 (NADH-cytochrome b₅ reductase 3, diaphorase-1) is a 301 amino acid protein encoded by the human gene CYB5R3. CYB5R3 belongs to the flavoprotein pyridine nucleotide cytochrome reductase family and has two naturally occurring isoforms. Isoform 1 is anchored to the cytoplasmic side of the endoplasmic reticulum membrane and mitochondrion outer membrane, while isoform 2 is the soluble form found in erythrocytes. CYB5R3 is involved in the desaturation and elongation of fatty acids, cholesterol biosynthesis, drug metabolism and, in erythrocytes, methemoglobin reduction. A serine residue at position 117 seems to only be found in persons of African origin. The allele frequency is 0.23 in African Americans. It is not found in Caucasians, Asians, Indo-Aryans or Arabs. This difference seems to have no effect on the enzyme activity. Defects in CYB5R3 are the cause of hereditary methemoglobinemia (HM). There are three forms of this disease: type 1 (HM1), in which the enzyme is only deficient in erythrocytes with a mild cyanosis; type 2 (HM2), in which the enzyme is completely deficient; and type 3 (HM3), where the deficiency is seen in all blood cells. Type 2 is a severe form accompanied by mental retardation and neurological impairment.

REFERENCES

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- Tonegawa, Y., Umeda, N., Hayakawa, T. and Ishibashi, T. 2005. Evaluation of data in terms of two-dimensional random walk model: interaction between NADH-cytochrome b₅ reductase and cytochrome b₅. *Biomed. Res.* 26: 207-212.
- Roma, G.W., Crowley, L.J., Davis, C.A. and Barber, M.J. 2005. Mutagenesis of Glycine 179 modulates both catalytic efficiency and reduced pyridine nucleotide specificity in cytochrome b₅ reductase. *Biochemistry* 44: 13467-13476.
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CHROMOSOMAL LOCATION

Genetic locus: CYB5R3 (human) mapping to 22q13.2; Cyb5r3 (mouse) mapping to 15 E1.

SOURCE

CYB5R3 (H-60) is a rabbit polyclonal antibody raised against amino acids 1-60 mapping at the N-terminus of CYB5R3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CYB5R3 (H-60) is recommended for detection of CYB5R3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

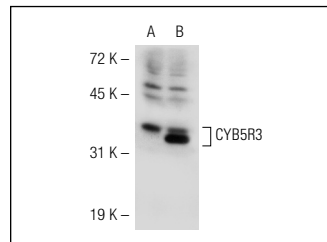
CYB5R3 (H-60) is also recommended for detection of CYB5R3 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for CYB5R3 siRNA (h): sc-62173, CYB5R3 siRNA (m): sc-62174, CYB5R3 shRNA Plasmid (h): sc-62173-SH, CYB5R3 shRNA Plasmid (m): sc-62174-SH, CYB5R3 shRNA (h) Lentiviral Particles: sc-62173-V and CYB5R3 shRNA (m) Lentiviral Particles: sc-62174-V.

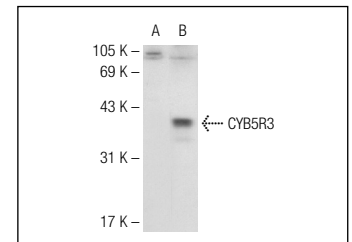
Molecular Weight of CYB5R3 isoforms: 32/34 kDa.

Positive Controls: CYB5R3 (m): 293T Lysate: sc-119542 or CYB5R3 (h2): 293T Lysate: sc-128379.

DATA



CYB5R3 (H-60): sc-67284. Western blot analysis of CYB5R3 expression in non-transfected: sc-117752 (A) and mouse CYB5R3 transfected: sc-119542 (B) 293T whole cell lysates.



CYB5R3 (H-60): sc-67284. Western blot analysis of CYB5R3 expression in non-transfected: sc-117752 (A) and human CYB5R3 transfected: sc-128379 (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 or our catalog for detailed protocols and support products.

MONOS
Satisfaction
Guaranteed

Try **CYB5R3 (G-11): sc-398043**, our highly recommended monoclonal alternative to CYB5R3 (H-60).