

Trehalase (D-2): sc-390034

BACKGROUND

Trehalase, also known as TREH, TREA or α,α -trehalose glucohydrolase, is a 583 amino acid protein belonging to the glycosyl hydrolase 37 family. Localizing to cell membrane and lipid-anchor, Trehalase is expressed in kidney, liver, and small intestine. Trehalase hydrolyses ingested trehalose, a disaccharide formed by two glucose molecules found mainly in insects, fungi, and plants, into cellular substrate glucose. Isolated trehalose intolerance due to deficiencies of Trehalase can result in gastrointestinal symptoms. Trehalase may also be a marker for renal tubular damage, and may contain an N-terminal signal peptide, five potential N-glycosylation sites, and a C-terminal hydrophobic region for glycosylphosphatidylinositol (GPI) attachment. Existing as two alternatively spliced isoforms, the gene encoding Trehalase maps to human chromosome 11q23.3.

REFERENCES

1. Ruf, J., et al. 1990. Rabbit small intestinal Trehalase. Purification, cDNA cloning, expression, and verification of glycosylphosphatidylinositol anchoring. *J. Biol. Chem.* 265: 15034-15039.
2. Sasai-Takedatsu, M., et al. 1996. Human Trehalase: characterization, localization, and its increase in urine by renal proximal tubular damage. *Nephron* 73: 179-185.
3. Ishihara, R., et al. 1997. Molecular cloning, sequencing and expression of cDNA encoding human Trehalase. *Gene* 202: 69-74.
4. Oesterreicher, T.J., et al. 2001. Cloning, characterization and mapping of the mouse Trehalase (Treh) gene. *Gene* 270: 211-220.
5. Forcella, M., et al. 2010. A membrane-bound Trehalase from *Chironomus riparius* larvae: purification and sensitivity to inhibition. *Glycobiology* 20: 1186-1195.

CHROMOSOMAL LOCATION

Genetic locus: TREH (human) mapping to 11q23.3; Treh (mouse) mapping to 9 A5.2.

SOURCE

Trehalase (D-2) is a mouse monoclonal antibody raised against amino acids 181-405 mapping within an internal region of Trehalase of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Trehalase (D-2) is available conjugated to agarose (sc-390034 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390034 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390034 PE), fluorescein (sc-390034 FITC), Alexa Fluor[®] 488 (sc-390034 AF488), Alexa Fluor[®] 546 (sc-390034 AF546), Alexa Fluor[®] 594 (sc-390034 AF594) or Alexa Fluor[®] 647 (sc-390034 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390034 AF680) or Alexa Fluor[®] 790 (sc-390034 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Trehalase (D-2) is recommended for detection of Trehalase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 Trehalase siRNA (h): sc-96445, Trehalase siRNA (m): sc-154626, Trehalase shRNA Plasmid (h): sc-96445-SH, Trehalase shRNA Plasmid (m): sc-154626-SH, Trehalase shRNA (h) Lentiviral Particles: sc-96445-V and Trehalase shRNA (m) Lentiviral Particles: sc-154626-V.

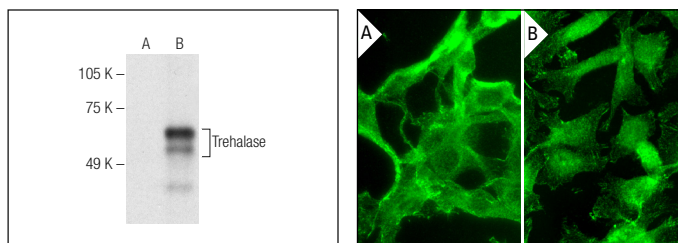
Molecular Weight of Trehalase isoforms 1/2: 67/63 kDa.

Positive Controls: Trehalase (m): 293T Lysate: sc-124274.

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



Trehalase (D-2): sc-390034. Western blot analysis of Trehalase expression in non-transfected: sc-117752 (A) and mouse Trehalase transfected: sc-124274 (B) 293T whole cell lysates.

Trehalase (D-2): sc-390034. Immunofluorescence staining of methanol-fixed NIH/3T3 (A) and SW480 (B) cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Halbe, L. and Rami, A. 2019. Trehalase localization in the cerebral cortex, hippocampus and cerebellum of mouse brains. *J. Adv. Res.* 18: 71-79.

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.