SANTA CRUZ BIOTECHNOLOGY, INC.

Transaldolase (H-4): sc-166230

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Proper cell growth, differentiation and survival relies on a series of enzymes involved in complex redox and metabolic pathways. One of these enzymes, Transaldolase, contributes to the generation of NADPH in the nonoxidative phase of the pentose phosphate pathway (PPP) and is important for maintaining metabolite balance. In conjunction with several other enzymes, Transaldolase works to maintain the mitochondrial transmembrane potential by producing both ribose-5-phosphate and NADPH for use in nucleic acid and lipid biosynthesis. The role of Transaldolase in the PPP of spermatoza is of significant importance, as deficiencies in Transaldolase are directly related with male infertility due to loss of sperm structure and function. Mutations in the gene encoding Transaldolase are thought to play a role in multiple sclerosis and are the direct cause of hepatosplenomegaly and telangiectases of the skin.

REFERENCES

1. Banki, K., et al. 1994. Cloning and expression of the human gene for Transaldolase. A novel highly repetitive element constitutes an integral part of the coding sequence. J. Biol. Chem. 269: 2847-2851.
2. Thorell, S., et al. 2000. The three-dimensional structure of human Transaldolase. FEBS Lett. 475: 205-208.

CHROMOSOMAL LOCATION

Genetic locus: TALDO1 (human) mapping to 11p15.5; Taldo1 (mouse) mapping to 7 F5.

SOURCE

Transaldolase (H-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 24-60 near the N-terminus of Transaldolase of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Transaldolase (H-4) is available conjugated to agarose (sc-166230 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166230 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166230 PE), fluorescein (sc-166230 FITC), Alexa Fluor® 488 (sc-166230 AF488), Alexa Fluor® 546 (sc-166230 AF546), Alexa Fluor® 594 (sc-166230 AF594) or Alexa Fluor® 647 (sc-166230 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166230 AF680) or Alexa Fluor® 790 (sc-166230 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166230 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Transaldolase (H-4) is recommended for detection of Transaldolase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

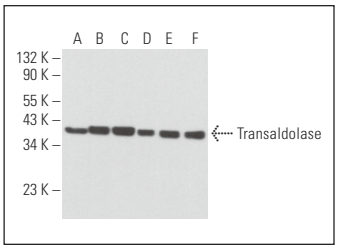
Transaldolase (H-4) is also recommended for detection of Transaldolase in additional species, including canine and bovine.

Suitable for use as control antibody for Transaldolase siRNA (h): sc-72369, Transaldolase siRNA (m): sc-72370, Transaldolase shRNA Plasmid (h): sc-72369-SH, Transaldolase shRNA Plasmid (m): sc-72370-SH, Transaldolase shRNA (h) Lentiviral Particles: sc-72369-V and Transaldolase shRNA (m) Lentiviral Particles: sc-72370-V.

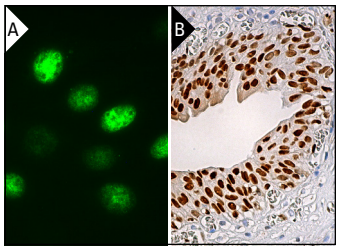
Molecular Weight of Transaldolase: 38 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, U-87 MG cell lysate: sc-2411 or A-431 whole cell lysate: sc-2201.

DATA



Transaldolase (H-4): sc-166230. Western blot analysis of Transaldolase expression in U-87 MG (**A**), C6 (**B**), U-251-MG (**C**), A-431 (**D**), Hep G2 (**E**) and K-562 (**F**) whole cell lysates.



Transaldolase (H-4): sc-166230. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nuclear staining of urothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Yoshida, K., et al. 2017. Effect of everolimus on the glucose metabolic pathway in mouse skeletal muscle cells (C2C12). Metabolomics 13: 98.
2. Aslan, M., et al. 2021. Oncogene-mediated metabolic gene signature predicts breast cancer outcome. NPJ Breast Cancer 7: 141.
3. Hambardikar, V., et al. 2022. Enzymatic depletion of mitochondrial inorganic polyphosphate (polyP) increases the generation of reactive oxygen species (ROS) and the activity of the pentose phosphate pathway (PPP) in mammalian cells. Antioxidants 11: 685.
4. Ercan, H., et al. 2023. A practical and analytical comparative study of gel-based top-down and gel-free bottom-up proteomics including unbiased proteoform detection. Cells 12: 747.

RESEARCH USE

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