

# Transaldolase (B-11): sc-376203

## 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 spermatozoa 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.
3. Verhoeven, N.M., et al. 2001. Transaldolase deficiency: liver cirrhosis associated with a new inborn error in the pentose phosphate pathway. *Am. J. Hum. Genet.* 68: 1086-1092.
4. Verhoeven, N.M., et al. 2005. A newborn with severe liver failure, cardiomyopathy and Transaldolase deficiency. *J. Inher. Metab. Dis.* 28: 169-179.
5. Selivanov, V.A., et al. 2005. Rapid simulation and analysis of isotopomer distributions using constraints based on enzyme mechanisms: an example from HT29 cancer cells. *Bioinformatics* 21: 3558-3564.
6. Huang, J.B., et al. 2005. Transaldolase is part of a supramolecular complex containing glucose-6-phosphate dehydrogenase in human neutrophils that undergoes retrograde trafficking during pregnancy. *Metab. Clin. Exp.* 54: 1027-1033.

## CHROMOSOMAL LOCATION

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

## SOURCE

Transaldolase (B-11) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Transaldolase of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

Transaldolase (B-11) 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).

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.

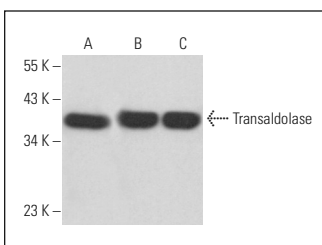
Molecular Weight of Transaldolase: 38 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, U-87 MG cell lysate: sc-2411 or RAW 264.7 whole cell lysate: sc-2211.

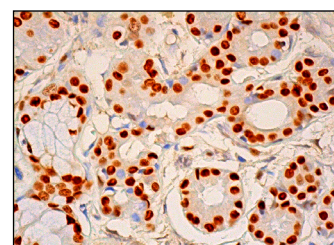
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Transaldolase (B-11): sc-376203. Western blot analysis of Transaldolase expression in U-87 MG (A), Hep G2 (B) and RAW 264.7 (C) whole cell lysates.



Transaldolase (B-11): sc-376203. Immunoperoxidase staining of formalin fixed, paraffin-embedded human salivary gland tissue showing nuclear staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Fornalewicz, K., et al. 2017. Silencing of the pentose phosphate pathway genes influences DNA replication in human fibroblasts. *Gene* 635: 33-38.

## RESEARCH USE

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