



Transaldolase (m): 293T Lysate: sc-127698

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., Halladay, D. and Perl, A. 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., Banki, K., Perl, A. and Schneider, G. 2000. The three-dimensional structure of human Transaldolase. *FEBS Lett.* 475: 205-208.
3. Verhoeven, N.M., Huck, J.H., Roos, B., Struys, E.A., Salomons, G.S., Douwes, A.C., van der Knaap, M.S. and Jakobs, C. 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., Wallot, M., Huck, J.H., Dirsch, O., Ballauf, A., Neudorf, U., Salomons, G.S., van der Knaap, M.S., Voit, T. and Jakobs, C. 2005. A newborn with severe liver failure, cardiomyopathy and Transaldolase deficiency. *J. Inher. Metab. Dis.* 28: 169-179.
5. Selivanov, V.A., Meshalkina, L.E., Solovjeva, O.N., Kuchel, P.W., Ramos-Montoya, A., Kochetov, G.A., Lee, P.W. and Cascante, M. 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., Espinoza, J., Romero, R. and Petty, H.R. 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.
7. Kleijn, R.J., van Winden, W.A., van Gulik, W.M. and Heijnen, J.J. 2005. Revisiting the ¹³C-label distribution of the non-oxidative branch of the pentose phosphate pathway based upon kinetic and genetic evidence. *FEBS J.* 272: 4970-4982.
8. Niland, B., Banki, K., Biddison, W.E. and Perl, A. 2005. CD8⁺ T cell-mediated HLA-A*0201-restricted cytotoxicity to Transaldolase peptide 168-176 in patients with multiple sclerosis. *J. Immunol.* 175: 8365-8378.

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.

CHROMOSOMAL LOCATION

Genetic locus: Taldo1 (mouse) mapping to 7 F5.

PRODUCT

Transaldolase (m): 293T Lysate represents a lysate of mouse Transaldolase transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Transaldolase (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive Transaldolase antibodies. Recommended use: 10-20 µl per lane.

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

RESEARCH USE

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

PROTOCOLS

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