SANTA CRUZ BIOTECHNOLOGY, INC.

TIM (BB-7): sc-100541

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glycolysis is an evolutionarily conserved series of ten chemical reactions that utilizes eleven enzymes to concomitantly generate pyruvate and ATP from glucose. Triosephosphate isomerase, known as TIM or TPI, is ubiquitously expressed and catalyzes the interconversion of dihydroxyacetone phosphate (DHAP) and glyceraldehyde-3-phosphate in the glycolitic pathway. The human TIM gene spans 3.5 kilobase pairs, contains seven exons and encodes a 249 amino acid protein. The TIM promoter element contains a TATA box (positions -27 to -21) and multiple GC boxes (positions -126 to -48) that variably conform to the consensus Sp1-binding site. The GC boxes function in *cis* to the TATA box to control both the frequency and position of transcription initiation. Deficiencies in TIM results in a rare autosomal recessive condition where a metabolic block in glycolysis and accumulating DHAP in erythrocytes can lead to non-spherocytic hemolytic anemia, recurrent infections, cardiomyopathy and neuromuscular dysfunctions.

REFERENCES

1. Boyer, T.G., et al. 1989. Transcriptional regulatory sequences of the housekeeping gene for human triosephosphate isomerase. J. Biol. Chem. 264: 5177-5187.
2. Ansari-Lari, M.A., et al. 1996. A gene-rich cluster between the CD4 and triose-phosphate isomerase genes at human chromosome 12p13. Genome Res. 6: 314-326.
3. Ansari-Lari, M.A., et al. 1997. Large-scale sequencing in human chromosome 12p13: experimental and computational gene structure determination. Genome Res. 7: 268-280.
4. Ationu, A. and Humphries, A. 1998. The feasibility of replacement therapy for inherited disorder of glycolysis: triosephosphate isomerase deficiency (review). Int. J. Mol. Med. 2: 701-704.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 190450. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: TPI1 (human) mapping to 12p13.31; Tpi1 (mouse) mapping to 6 F2.

SOURCE

TIM (BB-7) is a mouse monoclonal antibody raised against recombinant TIM of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 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

TIM (BB-7) is recommended for detection of TIM 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).

Suitable for use as control antibody for TIM siRNA (h): sc-37172, TIM siRNA (m): sc-37173, TIM shRNA Plasmid (h): sc-37172-SH, TIM shRNA Plasmid (m): sc-37173-SH, TIM shRNA (h) Lentiviral Particles: sc-37172-V and TIM shRNA (m) Lentiviral Particles: sc-37173-V.

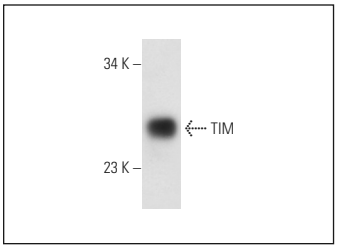
Molecular Weight of TIM: 30 kDa.

Positive Controls: Sol8 cell lysate: sc-2249, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

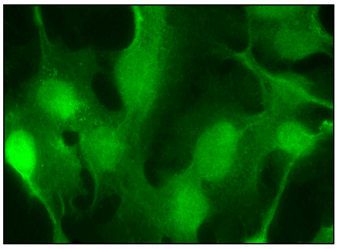
RECOMMENDED SUPPORT REAGENTS

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.

DATA



TIM (BB-7): sc-100541. Western blot analysis of TIM expression in Sol8 whole cell lysate.



TIM (BB-7): sc-100541. Immunofluorescence staining of methanol-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Duan, Y., et al 2021. Protein modifications throughout the lung cancer proteome unravel the cancer-specific regulation of glycolysis. Cell Rep. 37: 110137.

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.