

Tim17 (N-15)-R: sc-13291-R

BACKGROUND

Translocation of nuclear encoded preproteins into the mitochondrial matrix requires the coordinated action of the translocases Tom and Tim, which are located in the outer mitochondrial membrane and the inner membrane, respectively. The mitochondrial preprotein translocases of the outer membrane (Tom) is a multi-subunit protein that contains at least eight proteins: four import receptor subunits (Tom70, Tom37, Tom22, and Tom20), three small proteins (Tom7, Tom6, and Tom5), and a structural component of the outer membrane channel (Tom40). The Tom machinery involves the import receptors, which initiate the binding of cytosolically synthesized preproteins to the outer membrane, and a general import pore (GIP), which promotes the translocation of various pre-proteins into the mitochondria. The TIM channel imports nuclear-encoded mitochondrial preproteins, and it involves three proteins, Tim17, Tim23 and Tim44, which are represented at equimolar ratios. Tim17 is expressed as two isoforms Tim17a and Tim17b, which differ only in their C termini sequences, and like Tim23, these proteins are ubiquitously expressed in fetal and adult tissues. Tim17 and Tim23 are integral membrane proteins that comprise the structural elements of the inner membrane channel by which the preproteins are transferred. The Tim44, on the other hand, is a largely hydrophilic protein that recruits the matrix located Hsp70 to the site where the preprotein emerges from the Tim channel.

REFERENCES

- Neupert, W. 1997. Protein import into mitochondria. *Annu. Rev. Biochem.* 66: 863-917.
- Yano, M., et al. 1998. Functional analysis of human mitochondrial receptor Tom20 for protein import into mitochondria. *J. Biol. Chem.* 273: 26844-26851.
- Brix, J., et al. 1999. Distribution of binding sequences for the mitochondrial import receptors Tom20, Tom22 and Tom70 in a presequence-carrying preprotein and a non-cleavable preprotein. *J. Biol. Chem.* 274: 16522-16530.
- Bauer, M.F., et al. 1999. Genetic and structural characterization of the human mitochondrial inner membrane translocase. *J. Mol. Biol.* 289: 69-82.
- Schulke, N., et al. 1999. A multisubunit complex of outer and inner mitochondrial membrane protein translocases stabilized *in vivo* by translocation intermediates. *J. Biol. Chem.* 274: 22847-22854.
- Moro, F., et al. 1999. The Tim17.23 preprotein translocase of mitochondria: composition and function in protein transport into the matrix. *EMBO J.* 18: 3667-3675.

CHROMOSOMAL LOCATION

Genetic locus: TIMM17A (human) mapping to 1q32.1; Timm17a (mouse) mapping to 1 E4.

SOURCE

Tim17 (N-15)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the N-terminus of Tim17 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-13291 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Tim17 (N-15)-R is recommended for detection of Tim17 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 Tim17 siRNA (h): sc-41261, Tim17 siRNA (m): sc-41262, Tim17 shRNA Plasmid (h): sc-41261-SH, Tim17 shRNA Plasmid (m): sc-41262-SH, Tim17 shRNA (h) Lentiviral Particles: sc-41261-V and Tim17 shRNA (m) Lentiviral Particles: sc-41262-V.

Molecular Weight of Tim17: 17 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Lima, G.A., et al. 2009. Contractile activity per se induces transcriptional activation of SLC2A4 gene in soleus muscle: involvement of MEF2D, HIF-1α, and TRα transcriptional factors. *Am. J. Physiol. Endocrinol. Metab.* 296: E132-E138.

STORAGE

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

PROTOCOLS

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


 MONOS
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Try **Tim17 (H-1): sc-271152**, our highly recommended monoclonal alternative to Tim17 (N-15).