

Tim23 (C-19): sc-13298

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 preproteins 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-terminal 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 HSP 70 to the site where the preprotein emerges from the Tim channel.

REFERENCES

1. Neupert, W. 1997. Protein import into mitochondria. *Annu. Rev. Biochem.* 66: 863-917.
2. Yano, M., et al. 1998. Functional analysis of human mitochondrial receptor Tom20 for protein import into mitochondria. *J. Biol. Chem.* 273: 26844-26851.
3. 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.
4. Bauer, M.F., et al. 1999. Genetic and structural characterization of the human mitochondrial inner membrane translocase. *J. Mol. Biol.* 289: 69-82.

CHROMOSOMAL LOCATION

Genetic locus: TIMM23 (human) mapping to 10q11.23; Timm23 (mouse) mapping to 14 B.

SOURCE

Tim23 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Tim23 of human origin.

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-13298 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

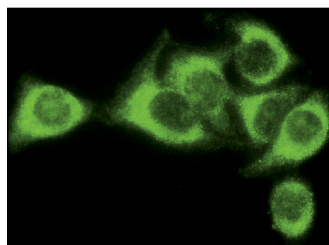
Tim23 (C-19) is recommended for detection of Tim23 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Tim23 (C-19) is also recommended for detection of Tim23 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Tim23 siRNA (h): sc-44155, Tim23 siRNA (m): sc-155972, Tim23 shRNA Plasmid (h): sc-44155-SH, Tim23 shRNA Plasmid (m): sc-155972-SH, Tim23 shRNA (h) Lentiviral Particles: sc-44155-V and Tim23 shRNA (m) Lentiviral Particles: sc-155972-V.

Positive Controls: HeLa whole cell lysate: sc-2200.

DATA



Tim23 (C-19): sc-13298. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Goemans, C.G., et al. 2008. Intra-mitochondrial degradation of Tim23 curtails the survival of cells rescued from apoptosis by caspase inhibitors. *Cell Death Differ.* 15: 545-554.
2. Imaizumi, N. and Aniya, Y. 2011. The role of a membrane-bound glutathione transferase in the peroxynitrite-induced mitochondrial permeability transition pore: formation of a disulfide-linked protein complex. *Arch. Biochem. Biophys.* 516: 160-172.
3. Zhu, Y., et al. 2013. Modulation of serines 17 and 24 in the LC3-interacting region of Bnip3 determines pro-survival mitophagy versus apoptosis. *J. Biol. Chem.* 288: 1099-1113.

STORAGE

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

MONOS
Satisfaction
Guaranteed

Try **Tim23 (H-8): sc-514463**, our highly recommended monoclonal alternative to Tim23 (C-19).