

Tim50 (G-20): sc-55338

BACKGROUND

The majority of mitochondrial-directed proteins are encoded by the nuclear genome and are transported to the mitochondria via regulated processes involving the mitochondrial Tom and Tim proteins. The mitochondrial Tim protein family is comprised of a large group of evolutionarily conserved proteins that are found in most eukaryotes. Import of nuclear-encoded precursor proteins into and across the mitochondrial inner membrane is mediated by two distinct complexes, the Tim23 complex and the Tim22 complex, which differ in their substrate specificities. Defects in Tim proteins are implicated in several neurodegenerative diseases, suggesting important roles for Tim proteins in development and health. Tim50, also known as Tim50L or TIMM50, is ubiquitously expressed and functions as an important component of the Tim23 complex. Two isoforms of Tim50 are produced by alternative splicing. Isoform 1 localizes to the inner mitochondrial membrane, whereas isoform 2 localizes to nuclear speckles.

REFERENCES

1. Jin, H., et al. 1999. The human family of deafness/dystonia peptide (DDP) related mitochondrial import proteins. *Genomics* 61: 259-267.
2. Bauer, M.F., et al. 1999. The mitochondrial Tim22 preprotein translocase is highly conserved throughout the eukaryotic kingdom. *FEBS Lett.* 464: 41-47.
3. Rassow, J., et al. 1999. The preprotein translocase of the mitochondrial inner membrane: function and evolution. *J. Mol. Biol.* 286: 105-120.
4. Bauer, M.F., et al. 2001. Import of proteins into mitochondria: a novel pathomechanism for progressive neurodegeneration. *J. Inherit. Metab. Dis.* 24: 166-180.
5. Mokranjac, D., et al. 2003. Tim50, a novel component of the Tim23 preprotein translocase of mitochondria. *EMBO J.* 22: 816-825.
6. Guo, Y., et al. 2004. Tim50, a component of the mitochondrial translocator, regulates mitochondrial integrity and cell death. *J. Biol. Chem.* 279: 24813-24825.

CHROMOSOMAL LOCATION

Genetic locus: TIMM50 (human) mapping to 19q13.2; Timm50 (mouse) mapping to 7 A3.

SOURCE

Tim50 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Tim50 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-55338 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

Tim50 (G-20) is recommended for detection of Tim50 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).

Tim50 (G-20) is also recommended for detection of Tim50 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Tim50 siRNA (h): sc-63129, Tim50 siRNA (m): sc-63130, Tim50 shRNA Plasmid (h): sc-63129-SH, Tim50 shRNA Plasmid (m): sc-63130-SH, Tim50 shRNA (h) Lentiviral Particles: sc-63129-V and Tim50 shRNA (m) Lentiviral Particles: sc-63130-V.

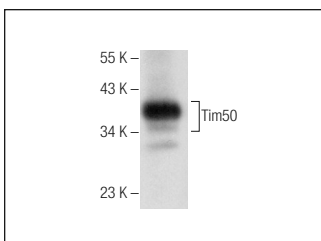
Molecular Weight of Tim50: 40 kDa.

Positive Controls: Rat heart extract: sc-2393.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Tim50 (G-20): sc-55338. Western blot analysis of Tim50 expression in rat heart tissue extract.

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 **Tim50 (C-9): sc-393678** or **Tim50 (D-8): sc-515268**, our highly recommended monoclonal alternatives to Tim50 (G-20).