SANTA CRUZ BIOTECHNOLOGY, INC.

Tim50 (D-8): sc-515268

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 neuro-degenerative 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. and Neupert, W. 2001. Import of proteins into mitochondria: a novel pathomechanism for progressive neurodegeneration. J. Inherit. Metab. Dis. 24: 166-180.

CHROMOSOMAL LOCATION

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

SOURCE

Tim50 (D-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 203-217 within an internal region of Tim50 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Tim50 (D-8) is available conjugated to agarose (sc-515268 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515268 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515268 PE), fluorescein (sc-515268 FITC), Alexa Fluor® 488 (sc-515268 AF488), Alexa Fluor® 546 (sc-515268 AF546), Alexa Fluor® 594 (sc-515268 AF594) or Alexa Fluor® 647 (sc-515268 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515268 AF680) or Alexa Fluor® 790 (sc-515268 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Tim50 (D-8) is recommended for detection of Tim50 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 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.

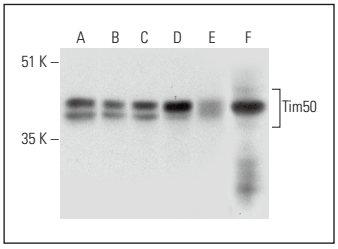
Molecular Weight of Tim50: 40 kDa.

Positive Controls: rat heart extract: sc-2393, HeLa whole cell lysate: sc-2200 or human heart extract: sc-363763.

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



Tim50 (D-8): sc-515268. Western blot analysis of Tim50 expression in Caki-1 (**A**), SH-SY5Y (**B**), Hep G2 (**C**) and HeLa (**D**) whole cell lysates and human heart (**E**) and rat heart (**F**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Alula, K.M., et al. 2023. Inner mitochondrial membrane protein Prohibitin 1 mediates Nix-induced, Parkin-independent mitophagy. Sci. Rep. 13: 18.

STORAGE

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

RESEARCH USE

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