SANTA CRUZ BIOTECHNOLOGY, INC.

Tim8A (T-40): sc-101282

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 compex, which differ in their substrate specificit. Defects in Tim proteins are implicated in several neuro-degenerative diseases, suggesting important roles for Tim proteins in development and health. Tim8A and Tim8B, which map to human chromosomes Xq22.1 and 11q23.1-q23.2, respectively, are conserved proteins of the mitochondrial intermembrane space, which are organized in hetero-oligomeric complex with Tim13. Tim8A is highly expressed in fetal and adult brain. Tim8A is mutated in deafness dystonia syndrome, a novel type of disease that causes severe neurological defects, thought to be caused by a defective mitochondrial protein transport system.

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. Koehler, C.M., et al. 1999. Human deafness dystonia syndrome is a mitochondrial disease. Proc. Natl. Acad. Sci. USA 96: 2141-2146.
5. Paschen, S.A., et al. 2000. The role of the Tim8-13 complex in the import of Tim23 into mitochondria. EMBO J. 19: 6392-6400.
6. 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.
7. LocusLink Report (LocusID: 1678). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: TIMM8A (human) mapping to Xq22.1; Timm8a1 (mouse) mapping to X E3.

SOURCE

Tim8A (T-40) is a mouse monoclonal antibody raised against recombinant Tim8A of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} 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

Tim8A (T-40) is recommended for detection of Tim8A 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), immunohistochemistry (including paraffin-embedded sections) (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 Tim8A siRNA (h): sc-41247, Tim8A siRNA (m): sc-41248, Tim8A shRNA Plasmid (h): sc-41247-SH, Tim8A shRNA Plasmid (m): sc-41248-SH, Tim8A shRNA (h) Lentiviral Particles: sc-41247-V and Tim8A shRNA (m) Lentiviral Particles: sc-41248-V.

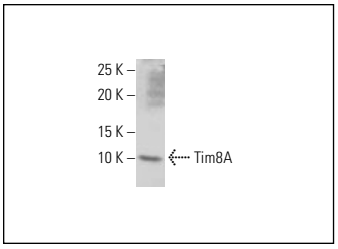
Molecular Weight of Tim8A: 11 kDa.

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

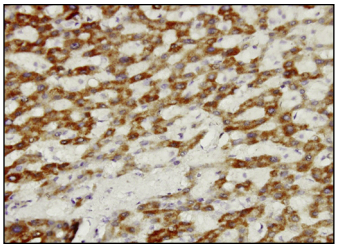
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Tim8A (T-40): sc-101282. Western blot analysis of Tim8A expression in HeLa whole cell lysate.



Tim8A (T-40): sc-101282. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human liver tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Habich, M., et al. 2019. Vectorial import via a metastable disulfide-linked complex allows for a quality control step and import by the mitochondrial disulfide relay. Cell Rep. 26: 759-774.e5.

RESEARCH USE

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