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Tom22 (h): 293T Lysate: sc-129995

BACKGROUND

The mitochondrial preprotein translocases of the outer membrane (Tom) is a multisubunit protein complex that facilitates the import of nucleus-encoded precursor proteins across the mitochondrial outer membrane. The Tom machinery consists of import receptors for the initial binding of cytosolically synthesized preproteins and a general import pore (GIP) for the membrane translocation of various preproteins into the mitochondria. The import receptors include Tom20 and Tom22, which form a heteromeric receptor complex that initiates the insertion of newly synthesized proteins into the outer membrane and then directs the precursor protein into the GIP. In yeast, Tom22 is the essential component of the import receptor complex, as it functions as a receptor for the preproteins and serves as a docking point for both Tom20 and the GIP. Tom22 directly associates with Tom40, the major component of the GIP, and forms a stable interaction between the two core complexes. This interaction facilitates the fluid movement of preproteins into the mitochondria. Structural features of Tom22 include an N-terminal negatively charged region exposed to the cytosol, a C-terminal innermembrane space region with little negative charge, and a putative transmembrane region. The gene encoding human Tom22 maps to chromosome 22q13.1.

REFERENCES

1. Rapaport, D., et al. 1997. Mitochondrial protein import. Tom40 plays a major role in targeting and translocation of preproteins by forming a specific binding site for the presequence. *J. Biol. Chem.* 272: 18725-18731.
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. Rapaport, D. and Neupert, W. 1999. Biogenesis of Tom40, core component of the TOM complex of mitochondria. *J. Cell Biol.* 146: 321-331.
4. Ahting, U., et al. 1999. The TOM core complex: the general protein import pore of the outer membrane of mitochondria. *J. Cell Biol.* 147: 959-968.
5. van Wilpe, S., et al. 1999. Tom22 is a multifunctional organizer of the mitochondrial preprotein translocase. *Nature* 401: 485-489.

CHROMOSOMAL LOCATION

Genetic locus: TOMM22 (human) mapping to 22q13.1.

PRODUCT

Tom22 (h): 293T Lysate represents a lysate of human Tom22 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Tom22 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Tom22 antibodies. Recommended use: 10-20 µl per lane.

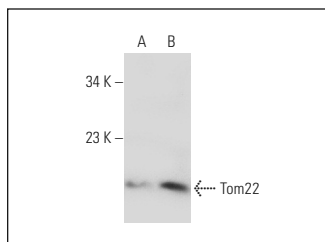
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Tom22 (J-31): sc-101286 is recommended as a positive control antibody for Western Blot analysis of enhanced human Tom22 expression in Tom22 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



Tom22 (J-31): sc-101286. Western blot analysis of Tom22 expression in non-transfected: sc-117752 (A) and human Tom22 transfected: sc-129995 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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