

Tom34 (h): 293T Lysate: sc-174862

BACKGROUND

The mitochondrial preprotein translocases of the outer membrane (Tom) form a multi-subunit complex that facilitates the import of nuclear-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 mitochondrion. Tom34 (translocase of outer mitochondrial membrane 34), also known as TOMM34, URCC3 or HTOM34P, is a ubiquitously expressed 309 amino acid protein that contains 6 TPR repeats. Localized to the cytoplasmic side of the mitochondrion, Tom34 functions as a chaperone-like protein that binds the mature portion of unfolded proteins and guides their import into mitochondria. In addition, Tom34 is thought to have weak ATPase activity and may interact with other organelles within the cell. Expression of Tom34 is upregulated in colon cancer cells and is thought to be involved in tumor progression. Tom34 may, therefore, be a novel target for therapeutic anti-cancer drugs.

REFERENCES

1. Nuttall, S.D., Hanson, B.J., Mori, M. and Hoogenraad, N.J. 1997. HTom34: a novel translocase for the import of proteins into human mitochondria. *DNA Cell Biol.* 16: 1067-1074.
2. Chewawiwat, N., Yano, M., Terada, K., Hoogenraad, N.J. and Mori, M. 1999. Characterization of the novel mitochondrial protein import component, Tom34, in mammalian cells. *J. Biochem.* 125: 721-727.
3. Mukhopadhyay, A., Avramova, L.V. and Weiner, H. 2002. Tom34 unlike Tom20 does not interact with the leader sequences of mitochondrial precursor proteins. *Arch. Biochem. Biophys.* 400: 97-104.
4. Yang, C.S. and Weiner, H. 2002. Yeast two-hybrid screening identifies binding partners of human Tom34 that have ATPase activity and form a complex with Tom34 in the cytosol. *Arch. Biochem. Biophys.* 400: 105-110.
5. Blesa, J.R., Prieto-Ruiz, J.A. and Hernández-Yago, J. 2004. Conformation-sensitive gel electrophoresis as an ideal high-throughput strategy for accurate detection of sequence variations in DNA: screening hTomm and hTimm genes. *J. Biomol. Screen.* 9: 621-624.
6. Olsen, J.V., Blagoev, B., Gnad, F., Macek, B., Kumar, C., Mortensen, P. and Mann, M. 2006. Global, *in vivo*, and site-specific phosphorylation dynamics in signaling networks. *Cell* 127: 635-648.
7. Shimokawa, T., Matsushima, S., Tsunoda, T., Tahara, H., Nakamura, Y. and Furukawa, Y. 2006. Identification of TOMM34, which shows elevated expression in the majority of human colon cancers, as a novel drug target. *Int. J. Oncol.* 29: 381-386.
8. Blesa, J.R., Prieto-Ruiz, J.A., Abraham, B.A., Harrison, B.L., Hegde, A.A. and Hernández-Yago, J. 2008. NRF-1 is the major transcription factor regulating the expression of the human TOMM34 gene. *Biochem. Cell Biol.* 86: 46-56.

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.

CHROMOSOMAL LOCATION

Genetic locus: TOMM34 (human) mapping to 20q13.12.

PRODUCT

Tom34 (h): 293T Lysate represents a lysate of human Tom34 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Tom34 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Tom34 antibodies. Recommended use: 10-20 µl per lane.

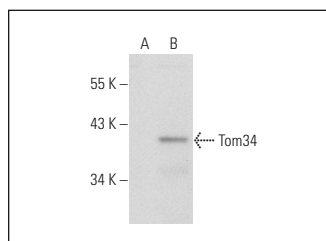
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Tom34 (S-05): sc-101284 is recommended as a positive control antibody for Western Blot analysis of enhanced human Tom34 expression in Tom34 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



Tom34 (S-05): sc-101284. Western blot analysis of Tom34 expression in non-transfected: sc-117752 (A) and human Tom34 transfected: sc-174862 (B) 293T whole cell lysates.

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.