

# Tom34 (S-05): sc-101284

## BACKGROUND

The mitochondrial preprotein translocases of the outer membrane (Tom) form a multisubunit 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 six 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., et al. 1997. HTom34: a novel translocase for the import of proteins into human mitochondria. *DNA Cell Biol.* 16: 1067-1074.
2. Chewawiwat, N., et al. 1999. Characterization of the novel mitochondrial protein import component, Tom34, in mammalian cells. *J. Biochem.* 125: 721-727.

## CHROMOSOMAL LOCATION

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

## SOURCE

Tom34 (S-05) is a mouse monoclonal antibody raised against recombinant Tom34 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Tom34 (S-05) is recommended for detection of Tom34 of 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).

Suitable for use as control antibody for Tom34 siRNA (h): sc-76712, Tom34 shRNA Plasmid (h): sc-76712-SH and Tom34 shRNA (h) Lentiviral Particles: sc-76712-V.

Molecular Weight of Tom34: 34 kDa.

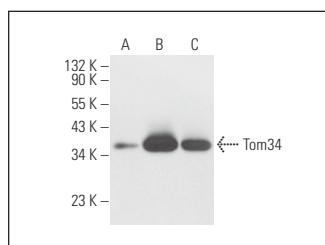
Positive Controls: Tom34 (h): 293 Lysate: sc-112254 or HeLa whole cell lysate: sc-2200.

## RECOMMENDED SUPPORT REAGENTS

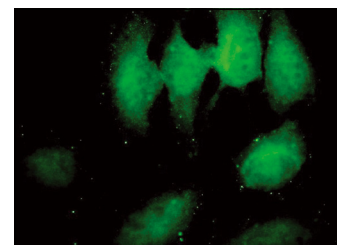
To ensure optimal results, the following support reagents are recommended:

- 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.

## DATA



Tom34 (S-05): sc-101284. Western blot analysis of Tom34 expression in non-transfected 293: sc-110760 (A), human Tom34 transfected 293: sc-112254 (B) and HeLa (C) whole cell lysates.



Tom34 (S-05): sc-101284. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Trcka, F., et al. 2014. The assembly and intermolecular properties of the Hsp70-Tomm34-Hsp90 molecular chaperone complex. *J. Biol. Chem.* 289: 9887-9901.
2. Hondius, D.C., et al. 2021. The proteome of granulovacuolar degeneration and neurofibrillary tangles in Alzheimer's disease. *Acta Neuropathol.* 141: 341-358.
3. Jiang, J., et al. 2022. Intraneuronal sortilin aggregation relative to granulovacuolar degeneration, Tau pathogenesis and sorfra plaque formation in human hippocampal formation. *Front. Aging Neurosci.* 14: 926904.
4. Poverennaya, E.V., et al. 2023. Exploiting multi-omics profiling and systems biology to investigate functions of TOMM34. *Biology* 12: 198.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.