

Tom20 (29): sc-136211



The Power to Question

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 both 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 thereby forms a stable interaction between the two core complexes to facilitate the fluid movement of preproteins into the mitochondria. The insertion of Tom40 into the Tom machinery requires the initial binding of Tom40 to Tom20 and leads to the efficient incorporation of Tom40 precursors into preexisting Tom complexes.

CHROMOSOMAL LOCATION

Genetic locus: TOMM20 (human) mapping to 1q42.3; Tomm20 (mouse) mapping to 8 E2.

SOURCE

Tom20 (29) is a mouse monoclonal antibody raised against amino acids 47-145 of Tom20 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Tom20 (29) is recommended for detection of Tom20 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Tom20 (29) is also recommended for detection of Tom20 in additional species, including canine.

Suitable for use as control antibody for Tom20 siRNA (h): sc-36691, Tom20 siRNA (m): sc-36692, Tom20 shRNA Plasmid (h): sc-36691-SH, Tom20 shRNA Plasmid (m): sc-36692-SH, Tom20 shRNA (h) Lentiviral Particles: sc-36691-V and Tom20 shRNA (m) Lentiviral Particles: sc-36692-V.

Molecular Weight of Tom20: 20 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or MDA-MB-231 cell lysate: sc-2232.

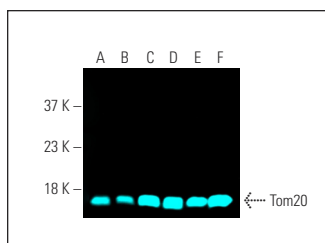
STORAGE

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

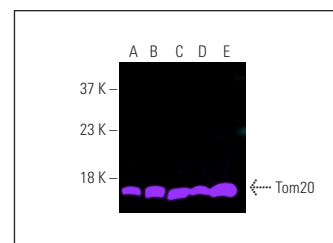
RESEARCH USE

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

DATA



Tom20 (29): sc-136211. Fluorescent western blot analysis of Tom20 expression in HeLa (A), Jurkat (B), Raji (C), CCRF-CEM (D), MDA-MB-231 (E) and TT (F) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG₁ BP-CFL 647: sc-533664.



Tom20 (29): sc-136211. Fluorescent western blot analysis of Tom20 expression in Jurkat (A), Raji (B), CCRF-CEM (C), MDA-MB-231 (D) and TT (E) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG₁ BP-CFL 555: sc-533662.

SELECT PRODUCT CITATIONS

- Kuroda, Y., et al. 2012. Parkin interacts with Klokin1 for mitochondrial import and maintenance of membrane potential. *Hum. Mol. Genet.* 21: 991-1003.
- Selfridge, J.E., et al. 2015. Effect of one month duration ketogenic and non-ketogenic high fat diets on mouse brain bioenergetic infrastructure. *J. Bioenerg. Biomembr.* 47: 1-11.
- Shuang, W., et al. 2017. Mcl-1 stabilization confers resistance to taxol in human gastric cancer. *Oncotarget* 8: 82981-82990.
- De, R., et al. 2018. Macrophage migration inhibitory factor regulates mitochondrial dynamics and cell growth of human cancer cell lines through CD74-NFκB signaling. *J. Biol. Chem.* 293: 19740-19760.
- Mazumder, S., et al. 2019. Indomethacin impairs mitochondrial dynamics by activating the PKCζ-p38-DRP1 pathway and inducing apoptosis in gastric cancer and normal mucosal cells. *J. Biol. Chem.* 294: 8238-8258.
- Maio, N., et al. 2019. Dimeric ferrochelatase bridges ABCB7 and ABCB10 homodimers in an architecturally defined molecular complex required for heme biosynthesis. *Haematologica* 104: 1756-1767.
- Hingert, D., et al. 2020. Extracellular vesicles from human mesenchymal stem cells expedite chondrogenesis in 3D human degenerative disc cell cultures. *Stem Cell Res. Ther.* 11: 323.
- Yuan, Q., et al. 2021. Inhibition of mitochondrial carrier homolog 2 (MTCH2) suppresses tumor invasion and enhances sensitivity to temozolomide in malignant glioma. *Mol. Med.* 27: 7.



See **Tom20 (F-10): sc-17764** for Tom20 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.