

Tom40 (D-2): sc-365467



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: TOMM40 (human) mapping to 19q13.32; Tomm40 (mouse) mapping to 7 A3.

SOURCE

Tom40 (D-2) is a mouse monoclonal antibody raised against amino acids 62-361 of Tom40 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.

Tom40 (D-2) is available conjugated to agarose (sc-365467 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365467 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365467 PE), fluorescein (sc-365467 FITC), Alexa Fluor® 488 (sc-365467 AF488), Alexa Fluor® 546 (sc-365467 AF546), Alexa Fluor® 594 (sc-365467 AF594) or Alexa Fluor® 647 (sc-365467 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365467 AF680) or Alexa Fluor® 790 (sc-365467 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Tom40 (D-2) is recommended for detection of Tom40 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

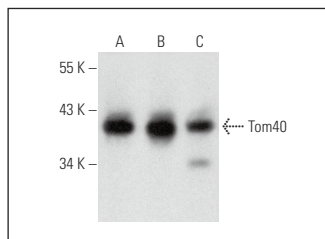
Suitable for use as control antibody for Tom40 siRNA (h): sc-61697, Tom40 siRNA (m): sc-61698, Tom40 shRNA Plasmid (h): sc-61697-SH, Tom40 shRNA Plasmid (m): sc-61698-SH, Tom40 shRNA (h) Lentiviral Particles: sc-61697-V and Tom40 shRNA (m) Lentiviral Particles: sc-61698-V.

Molecular Weight of Tom40: 40 kDa.

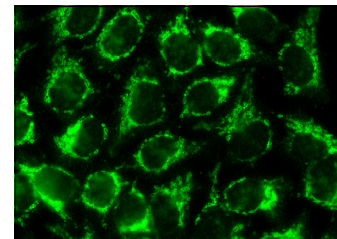
STORAGE

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

DATA



Tom40 (D-2): sc-365467. Western blot analysis of Tom40 expression in NIH/3T3 (A), CTL-2 (B) and RPE-J (C) whole cell lysates.



Tom40 (D-2): sc-365467. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

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- Lu, C.L., et al. 2015. Tumor cells switch to mitochondrial oxidative phosphorylation under radiation via mTOR-mediated hexokinase II inhibition—a Warburg-reversing effect. *PLoS ONE* 10: e0121046.
- Prieto, J., et al. 2016. Early ERK1/2 activation promotes DRP1-dependent mitochondrial fission necessary for cell reprogramming. *Nat. Commun.* 7: 11124.
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- Zhou, B., et al. 2018. Tom20 senses iron-activated Ros signaling to promote melanoma cell pyroptosis. *Cell Res.* 28: 1171-1185.
- Qi, H., et al. 2019. Succinylation-dependent mitochondrial translocation of PKM2 promotes cell survival in response to nutritional stress. *Cell Death Dis.* 10: 170.
- Heo, J.M., et al. 2019. Integrated proteogenetic analysis reveals the landscape of a mitochondrial-autophagosome synapse during PARK2-dependent mitophagy. *Sci. Adv.* 5: eaay4624.
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RESEARCH USE

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

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