SANTA CRUZ BIOTECHNOLOGY, INC.

Tom22 (J-31): sc-101286

SANTA CRUZ BIOTECHNOLOGY

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 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.

CHROMOSOMAL LOCATION

Genetic locus: TOMM22 (human) mapping to 22q13.1; Tomm22 (mouse) mapping to 15 E1.

SOURCE

Tom22 (J-31) is a mouse monoclonal antibody raised against recombinant Tom22 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

Tom22 (J-31) is recommended for detection of Tom22 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 Tom22 siRNA (h): sc-41265, Tom22 siRNA (m): sc-41266, Tom22 shRNA Plasmid (h): sc-41265-SH, Tom22 shRNA Plasmid (m): sc-41266-SH, Tom22 shRNA (h) Lentiviral Particles: sc-41265-V and Tom22 shRNA (m) Lentiviral Particles: sc-41266-V.

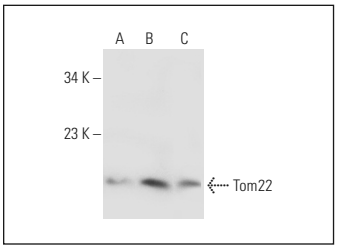
Molecular Weight of Tom22: 22 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210 or Tom22 (h): 293T Lysate: sc-129995.

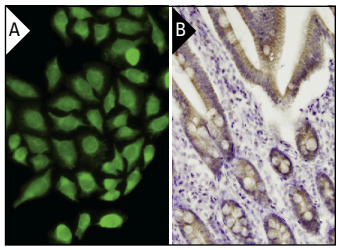
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Tom22 (J-31): sc-101286. Western blot analysis of Tom22 expression in non-transfected 293T: sc-117752 (**A**), human Tom22 transfected 293T: sc-129995 (**B**) and NIH/3T3 (**C**) whole cell lysates.



Tom22 (J-31): sc-101286. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human small Intestine tissue showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Choi, H.K., et al. 2015. PINK1 positively regulates HDAC3 to suppress dopaminergic neuronal cell death. Hum. Mol. Genet. 24: 1127-1141.
2. Patterson, H.C., et al. 2015. A respiratory chain controlled signal transduction cascade in the mitochondrial intermembrane space mediates hydrogen peroxide signaling. Proc. Natl. Acad. Sci. USA 112: E5679-E5688.
3. Zeitlow, K., et al. 2017. The biological foundation of the genetic association of TOMM40 with late-onset Alzheimer's disease. Biochim. Biophys. Acta Mol. Basis Dis 1863: 2973-2986.
4. Shah, S.S., et al. 2019. APOL1 kidney risk variants induce cell death via mitochondrial translocation and opening of the mitochondrial permeability transition pore. J. Am. Soc. Nephrol. 30: 2355-2368.
5. Gordon, D.E., et al. 2020. Comparative host-coronavirus protein interaction networks reveal pan-viral disease mechanisms. Science 370: eabe9403.
6. Shalaby, R., et al. 2022. Visualization of BOK pores independent of BAX and BAK reveals a similar mechanism with differing regulation. Cell Death Differ. E-published.

STORAGE

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