SANTA CRUZ BIOTECHNOLOGY, INC.

HSP 75 (TR-1A): sc-73604

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The heat shock proteins (HSPs) comprise a group of highly conserved, abundantly expressed proteins with diverse functions, including the assembly and sequestering of multiprotein complexes, transportation of nascent polypeptide chains across cellular membranes and regulation of protein folding. Heat shock protein 75 mitochondrial precursor (HSP 75), also called tumor necrosis factor type 1 receptor-associated protein (TRAP1), is a 704 amino acid member of the heat shock protein 90 family. HSP 75 localizes to the mitochondrion and is expressed in a variety of tissues, including skeletal muscle, liver, heart, brain, pancreas, lung and placenta, functioning as a chaperone that expresses an ATPase activity.

REFERENCES

1. Heinen, R.C., et al. 2006. Identification of the divergent calmodulin binding motif in yeast Ssb1/HSP 75 protein and in other HSP 70 family members. Braz. J. Med. Biol. Res. 39: 1399-1408.
2. Blank, M., et al. 2006. Stress protein response in two sibling species of *Marenzelleria* (Polychaeta: Spionidae): is there an influence of acclimation salinity? Comp. Biochem. Physiol. B, Biochem. Mol. Biol. 144: 451-462.

CHROMOSOMAL LOCATION

Genetic locus: TRAP1 (human) mapping to 16p13.3; Trap1 (mouse) mapping to 16 A1.

SOURCE

HSP 75 (TR-1A) is a mouse monoclonal antibody raised against purified full length HSP 75 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HSP 75 (TR-1A) is recommended for detection of HSP 75 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HSP 75 siRNA (h): sc-72191, HSP 75 siRNA (m): sc-72192, HSP 75 shRNA Plasmid (h): sc-72191-SH, HSP 75 shRNA Plasmid (m): sc-72192-SH, HSP 75 shRNA (h) Lentiviral Particles: sc-72191-V and HSP 75 shRNA (m) Lentiviral Particles: sc-72192-V.

Molecular Weight of HSP 75: 75 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, HL-60 whole cell lysate: sc-2209 or Hep G2 cell lysate: sc-2227.

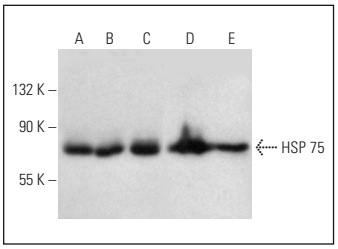
RESEARCH USE

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

STORAGE

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

DATA



HSP 75 (TR-1A): sc-73604. Western blot analysis of HSP 75 expression in HL-60 (**A**), Hep G2 (**B**), HeLa (**C**), NCI-H460 (**D**) and MCF7 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Condelli, V., et al. 2015. Targeting TRAP1 as a downstream effector of BRAF cytoprotective pathway: a novel strategy for human BRAF-driven colorectal carcinoma. Oncotarget 6: 22298-22309.
2. Lettini, G., et al. 2016. TRAP1 regulates stemness through Wnt/β-catenin pathway in human colorectal carcinoma. Cell Death Differ. 23: 1792-1803.
3. Maddalena, F., et al. 2017. TRAP1 protein signature predicts outcome in human metastatic colorectal carcinoma. Oncotarget 8: 21229-21240.
4. Li, C., et al. 2019. Ameliorative effect of ursolic acid on ochratoxin A-induced renal cytotoxicity mediated by Lonp1/Aco2/Hsp75. Toxicon 168: 141-146.
5. Sanchez-Martin, C., et al. 2020. Rational design of allosteric and selective inhibitors of the molecular chaperone TRAP1. Cell Rep. 31: 107531.
6. Lettini, G., et al. 2020. TRAP1 regulates Wnt/β-catenin pathway through LRP5/6 receptors expression modulation. Int. J. Mol. Sci. 21: 7526.
7. Sanchez-Martin, C., et al. 2021. Honokiol bis-dichloroacetate is a selective allosteric inhibitor of the mitochondrial chaperone TRAP1. Antioxid. Redox Signal. 34: 505-516.
8. Laquatra, C., et al. 2021. HIF1α-dependent induction of the mitochondrial chaperone TRAP1 regulates bioenergetic adaptations to hypoxia. Cell Death Dis. 12: 434.
9. Bruno, G., et al. 2022. TRAP1 regulates the response of colorectal cancer cells to hypoxia and inhibits ribosome biogenesis under conditions of oxygen deprivation. Int. J. Oncol. 60: 79.
10. Cannino, G., et al. 2022. The mitochondrial chaperone TRAP1 regulates F-ATP synthase channel formation. Cell Death Differ. E-published.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.