

# HSC 70 (1B5): sc-59560

## BACKGROUND

The HSP 70 family is composed of four highly conserved proteins: HSP 70, HSC 70, GRP 75 and GRP 78. These proteins serve a variety of roles: they act as molecular chaperones facilitating the assembly of multi-protein complexes, participate in the translocation of polypeptides across cell membranes and to the nucleus and aid in the proper folding of nascent polypeptide chains. All members of the family, except HSP 70, are constitutively expressed in primate cells. HSP 70 expression is strongly induced in response to heat stress. HSP 70 and HSC 70 play key roles in the cytosolic endoplasmic reticulum and mitochondrial import machinery and are found in both the cytosol and nucleus of mammalian cells. Both HSP 70 and HSC 70 are involved in the chaperoning of nascent polypeptide chains and in protecting cells against the accumulation of improperly folded proteins. GRP 78 is localized in the endoplasmic reticulum, where it receives imported secretory proteins and is involved in the folding and translocation of nascent peptide chains. GRP 75 expression is restricted to the mitochondrial matrix and aids in the translocation and folding of nascent polypeptide chains of both nuclear and mitochondrial origin. GRP 75 and GRP 78 are unresponsive to heat stress and are induced by glucose deprivation. It has been postulated that members of the HSP 70 family act as force-generating motors, relying on the hydrolysis of ATP for their activity.

## CHROMOSOMAL LOCATION

Genetic locus: HSPA8 (human) mapping to 11q24.1; Hspa8 (mouse) mapping to 9 A5.1.

## SOURCE

HSC 70 (1B5) is a rat monoclonal antibody raised against full length native HSC 70 purified from sodium arsenite treated heat-resistant variants of Chinese hamster cells.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and 1% glycerol.

## APPLICATIONS

HSC 70 (1B5) is recommended for detection of HSC 70 of mouse, rat, human, Chinese hamster, bovine and canine 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 HSC 70 siRNA (h): sc-29349, HSC 70 siRNA (m): sc-35593, HSC 70 shRNA Plasmid (h): sc-29349-SH, HSC 70 shRNA Plasmid (m): sc-35593-SH, HSC 70 shRNA (h) Lentiviral Particles: sc-29349-V and HSC 70 shRNA (m) Lentiviral Particles: sc-35593-V.

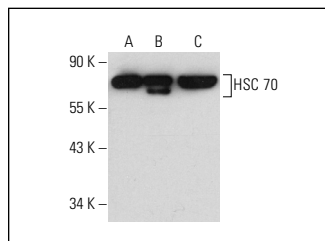
Molecular Weight of HSC 70: 70 kDa.

Positive Controls: HSC 70 (h2): 293T Lysate: sc-175268, HeLa whole cell lysate: sc-2200 or NIH/3T3 whole cell lysate: sc-2210.

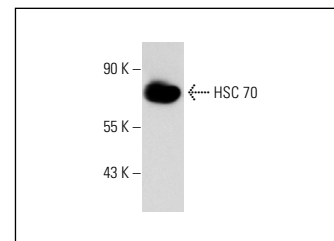
## STORAGE

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

## DATA



HSC 70 (1B5): sc-59560. Western blot analysis of HSC 70 expression in non-transfected 293T: sc-117752 (A), human HSC 70 transfected 293T: sc-117752 (B) and HeLa (C) whole cell lysates.



HSC 70 (1B5): sc-59560. Western blot analysis of HSC 70 expression in NIH/3T3 whole cell lysate.

## SELECT PRODUCT CITATIONS

- Parent, R., et al. 2009. The heat shock cognate protein 70 is associated with hepatitis C virus particles and modulates virus infectivity. *Hepatology* 49: 1798-1809.
- Peng, Z.G., et al. 2010. Small molecular compounds that inhibit hepatitis C virus replication through destabilizing heat shock cognate 70 messenger RNA. *Hepatology* 52: 845-853.
- Woo, S.K., et al. 2013. Complex N-glycosylation stabilizes surface expression of transient receptor potential melastatin 4b protein. *J. Biol. Chem.* 288: 36409-36417.
- Mehta, R.I., et al. 2017.  $\alpha$ -endosulfine (ARPP-19e) expression in a rat model of stroke. *J. Neuropathol. Exp. Neurol.* 76: 898-907.
- Russo, J., et al. 2018. Sequences encoding C<sub>2</sub>H<sub>2</sub> zinc fingers inhibit polyadenylation and mRNA export in human cells. *Sci. Rep.* 8: 16995.
- Wen, S., et al. 2019. Biodistribution of mesenchymal stem cell-derived extracellular vesicles in a radiation injury bone marrow murine model. *Int. J. Mol. Sci.* 20: 5468.
- Hardivillé, S., et al. 2020. TATA-box binding protein O-glcNAcylation at T114 regulates formation of the B-TFIID complex and is critical for metabolic gene regulation. *Mol. Cell* 77: 1143-1152.e7.
- Packialakshmi, B., et al. 2022. Tourniquet-induced lower limb ischemia/reperfusion reduces mitochondrial function by decreasing mitochondrial biogenesis in acute kidney injury in mice. *Physiol. Rep.* 10: e15181.

## RESEARCH USE

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



See **HSC 70 (B-6): sc-7298** for HSC 70 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.