

HSC 70 (K-19): sc-1059

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 (heat shock cognate protein 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 (K-19) is available as either goat (sc-1059) or rabbit (sc-1059-R) affinity purified polyclonal antibody raised against a peptide mapping at the C-terminus of HSC 70 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HSC 70 (K-19) is available conjugated to agarose (sc-1059 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to phycoerythrin (sc-1059 PE, 200 µg/ml), for IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-1059 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

PROTOCOLS

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

APPLICATIONS

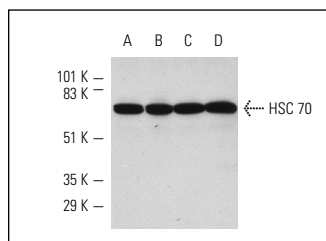
HSC 70 (K-19) is recommended for detection of HSC 70 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HSC 70 (K-19) is also recommended for detection of HSC 70 in additional species, including equine, canine, bovine, porcine and avian.

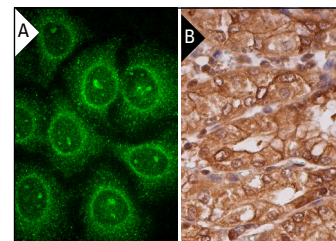
Suitable for use as control antibody for HSC 70 siRNA (h): sc-29349, HSC 70 siRNA (m): sc-35593, HSC 70 shRNA Plasmid (h): sc-29349-SH, HSC 70 shRNA Plasmid (m): sc-35593-SH, HSC 70 shRNA (h) Lentiviral Particles: sc-29349-V and HSC 70 shRNA (m) Lentiviral Particles: sc-35593-V.

Molecular Weight of HSC 70: 70 kDa.

DATA



HSC 70 (K-19): sc-1059. Western blot analysis of HSC 70 expression in untreated (A,C) and heat shock-activated (B,D) NIH/3T3 (A,B) and HeLa (C,D) whole cell lysates.



HSC 70 (K-19): sc-1059. Immunofluorescence staining of methanol-fixed HeLa cells showing nucleolar and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic, membrane and nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Gebauer, M., et al. 1998. Interference between proteins HAP46 and Hop/p60, which bind to different domains of the molecular chaperone HSP 70/HSC 70. *Mol. Cell. Biol.* 18: 6238-6244.
- Lenassi, M., et al. 2010. HIV Nef is secreted in exosomes and triggers apoptosis in bystander CD4⁺ T cells. *Traffic* 11: 110-122.
- Mason, S.B., et al. 2011. Differential expression of renal proteins in a rodent model of meckel syndrome. *Nephron Exp. Nephrol.* 117: e31-e38.
- Machado, P., et al. 2011. Heat shock cognate protein 70 regulates gephyrin clustering. *J. Neurosci.* 31: 3-14.

MONOS
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Try **HSC 70 (B-6): sc-7298** or **HSC 70 (1B5): sc-59560**, our highly recommended monoclonal alternatives to HSC 70 (K-19). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **HSC 70 (B-6): sc-7298**.