

# HSP 70/HSC 70 (H-300): sc-33575

## 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: HSPA1A/HSPA1B (human) mapping to 6p21.33, HSPA8 (human) mapping to 11q24.1; Hspa1a (mouse) mapping to 17 B1, Hspa8 (mouse) mapping to 9 A5.1.

## SOURCE

HSP 70/HSC 70 (H-300) is a rabbit polyclonal antibody raised against amino acids 342-641 mapping at the C-terminus of HSP 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.

## APPLICATIONS

HSP 70/HSC 70 (H-300) is recommended for detection of HSP 70 and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HSP 70/HSC 70 (H-300) is also recommended for detection of HSP 70 and HSC 70 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of HSP 70/HSC 70: 70 kDa.

Positive Controls: HeLa + heat shock cell lysate: sc-2272, HeLa whole cell lysate: sc-2200 or NIH/3T3 whole cell lysate: sc-2210.

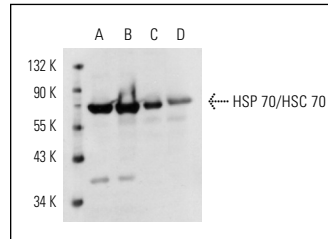
## RESEARCH USE

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

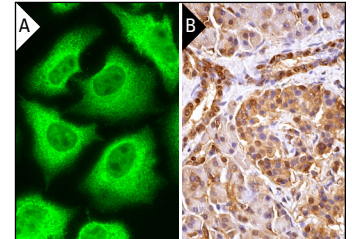
## STORAGE

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

## DATA



HSP 70/HSC 70 (H-300): sc-33575. Western blot analysis of HSP 70 expression in HeLa (A), HeLa heat shock treated (B), NIH/3T3 (C) and NIH/3T3 heat shock treated (D) whole cell lysates.



HSP 70/ HSC 70 (H-300): sc-33575. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic and nuclear staining of Islets of Langerhans and glandular cells (B).

## SELECT PRODUCT CITATIONS

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- Clement, C.C., et al. 2013. Protein expression profiles of human lymph and plasma mapped by 2D-DIGE and 1D SDS-PAGE coupled with nanoLC-ESI-MS/MS bottom-up proteomics. *J. Proteomics* 78: 172-187.



Try **HSP 70/HSC 70 (W27): sc-24** or **HSP 70/HSC 70 (H-2): sc-137211**, our highly recommended monoclonal alternatives to HSP 70/ HSC 70 (H-300). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **HSP 70/HSC 70 (W27): sc-24**.