SANTA CRUZ BIOTECHNOLOGY, INC.

HSP 70 (h): 293T Lysate: sc-116686

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

REFERENCES

1. Ingolia, T.D., Craig, E.A. and McCarthy, B.J. 1980. Sequence of three copies of the gene for the major *Drosophila* heat shock induced protein and their flanking regions. Cell 21: 669-679.
2. Topol, J., Ruden, D.M. and Parker, C.S. 1985. Sequences required for *in vitro* transcriptional activation of a *Drosophila* HSP 70 gene. Cell 42: 527-537.
3. Berger, S.L. and Meselson, M. 1994. Production and cleavage of *Drosophila* HSP 70 transcripts extending beyond the polyadenylation site. Nucleic Acids Res. 22: 3218-3225.
4. Adams, M.D., Celniker, S.E., Holt, R.A., Evans, C.A., Gocayne, J.D., Amana-tides, P., Scherer, S.E., Li, P.W., Hoskins, R.A., Galle, R.F., George, R.A., Lewis, S.E., Richards, S., Ashburner, M., Henderson, S.N., Sutton, G.G., Wortman, J.R., Yandell, M.D., Zhang, Q., Chen, L.X., Brandon, R.C., et al. 2000. The genome sequence of *Drosophila melanogaster*. Science 287: 2185-2195.

CHROMOSOMAL LOCATION

Genetic locus: HSPA1A/HSPA1B (human) mapping to 6p21.33.

PRODUCT

HSP 70 (h): 293T Lysate represents a lysate of human HSP 70 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

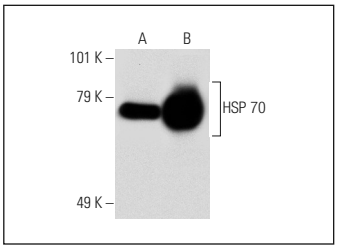
APPLICATIONS

HSP 70 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive HSP 70 antibodies. Recommended use: 10-20 µl per lane.

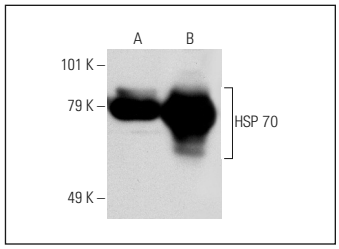
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

HSP 70 (C92F3A-5): sc-66048 is recommended as a positive control antibody for Western Blot analysis of enhanced human HSP 70 expression in HSP 70 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



HSP 70 (C92F3A-5): sc-66048. Western blot analysis of HSP 70 expression in non-transfected: sc-117752 (**A**) and human HSP 70 transfected: sc-116686 (**B**) 293T whole cell lysates.



HSP 70/HSC 70 (W27): sc-24. Western blot analysis of HSP 70 expression in non-transfected: sc-117752 (**A**) and human HSP 70 transfected: sc-116686 (**B**) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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