



HSP 40 (h): 293T Lysate: sc-114001

BACKGROUND

Heat shock protein 40 (HSP 40) family proteins bind to HSP 70 through their J-domain and regulate the function of HSP 70 by stimulating HSP 70 ATPase activity. HSP 40, also known as DnaJ, functions together with DnaK (HSP 70) and GrpE as a molecular chaperone, involving them in assembly and disassembly of protein complexes, protein folding, renaturation of denatured proteins, prevention of protein aggregation and protein export. HSP 40 stimulates the association between HSC 70 and HIP and translocates rapidly from the cytoplasm to the nuclei, and especially to the nucleoli, upon heat shock. There are five known HSP 40 family proteins.

REFERENCES

1. Ohtsuka, K., Utsumi, K.R., Kaneda, T. and Hattori, H. 1993. Effect of ATP on the release of HSP 70 and HSP 40 from the nucleus in heat-shocked HeLa cells. *Exp. Cell Res.* 209: 357-366.
2. Yamane, M., Hattori, H., Sugito, K., Hayashi, Y., Tohnai, I., Ueda, M., Nishizawa, K. and Ohtsuka, K. 1995. Cotranslocation and colocalization of HSP 40 (DnaJ) with HSP 70 (DnaK) in mammalian cells. *Cell Struct. Funct.* 20: 157-166.
3. Kaneko, R., Hattori, H., Hayashi, Y., Tohnai, I., Ueda, M. and Ohtsuka, K. 1995. Heat-shock protein 40, a novel predictor of thermotolerance in murine cells. *Radiat. Res.* 142: 91-97.
4. Hoe, K.L., Won, M., Chung, K.S., Jang, Y.J., Lee, S.B., Kim, D.U., Lee, J.W., Yun, J.H. and Yoo, H.S. 1998. Isolation of a new member of DnaJ-like heat shock protein 40 (HSP 40) from human liver. *Biochim. Biophys. Acta* 1383: 4-8.
5. Michels, A.A., Kanon, B., Bensaude, O. and Kampinga, H.H. 1999. Heat shock protein (HSP) 40 mutants inhibit HSP 70 in mammalian cells. *J. Biol. Chem.* 274: 36757-36763.
6. Suzuki, T., Usuda, N., Murata, S., Nakazawa, A., Ohtsuka, K. and Takagi, H. 1999. Presence of molecular chaperones, heat shock cognate (HSC) 70 and heat shock proteins (HSP) 40, in the postsynaptic structures of rat brain. *Brain Res.* 816: 99-110.
7. Ohtsuka, K. and Hata, M. 2000. Mammalian HSP 40/DnaJ homologs: cloning of novel cDNAs and a proposal for their classification and nomenclature. *Cell Stress Chaperones* 5: 98-112.
8. Lopez, N., Aron, R. and Craig, E.A. 2003. Specificity of class II HSP 40 Sis1 in maintenance of yeast prion [RNQ⁺]. *Mol. Biol. Cell* 14: 1172-1181.
9. Kanazawa, Y., Isomoto, H., Oka, M., Yano, Y., Soda, H., Shikuwa, S., Takeshima, F., Omagari, K., Mizuta, Y., Murase, K., Nakagoe, T., Ohtsuka, K. and Kohno, S. 2003. Expression of heat shock protein (HSP) 70 and HSP 40 in colorectal cancer. *Med. Oncol.* 20: 157-164.

CHROMOSOMAL LOCATION

Genetic locus: DNAJB1 (human) mapping to 19p13.12.

PRODUCT

HSP 40 (h): 293T Lysate represents a lysate of human HSP 40 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

HSP 40 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive HSP 40 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.

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.

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.