

HSP 40-4 (A-9): sc-376544

BACKGROUND

DnaJ-like proteins interact with HSP 70 molecular chaperones and function to facilitate protein folding and mitochondrial protein import. HSP 40-4, also known as HDJ2, is the human DnaJ homolog that functions as a co-chaperone with a cysteine-rich zinc finger domain. The cellular redox enzyme thioredoxin interacts with HSP 40-4, and oxidation and reduction reversibly regulate HSP 40-4 function in response to the changing redox states of the cell. The zinc finger domain of HSP 40-4 may act as a redox sensor of chaperone-mediated protein-folding machinery, since HSP 40-4 inactivation leads to the oxidation of cysteine thiols and a simultaneous release of coordinated zinc. Loss of the HSP 40-4 protein may be linked to severe defects in spermatogenesis that involve aberrant androgen signaling.

REFERENCES

- Chellaiyah, A., et al. 1993. Cloning of a unique human homologue of the *Escherichia coli* DnaJ heat shock protein. *Biochim. Biophys. Acta* 1174: 111-113.
- Kanazawa, M., et al. 1997. HSDJ, a human homolog of DnaJ, is farnesylated and is involved in protein import into mitochondria. *J. Biochem.* 121: 890-895.
- Hoe, K.L., et al. 1998. Isolation of a new member of DnaJ-like heat shock protein 40 (Hsp40) from human liver. *Biochim. Biophys. Acta* 1383: 4-8.
- Ohtsuka, K., et al. 2000. Mammalian HSP40/DnaJ homologs: cloning of novel cDNAs and a proposal for their classification and nomenclature. *Cell Stress Chaperones* 5: 98-112.
- Terada, K., et al. 2000. Human DnaJ homologs dj2 and dj3, and bag-1 are positive cochaperones of hsc70. *J. Biol. Chem.* 275: 24728-24734.
- Nakanishi, K., et al. 2004. Localization and function in endoplasmic reticulum stress tolerance of ERdj3, a new member of Hsp40 family protein. *Cell Stress Chaperones* 9: 253-264.
- SWISS-PROT/TrEMBL (P25685). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: DNAJA1 (human) mapping to 9p21.1; Dnaja1 (mouse) mapping to 4 A5.

SOURCE

HSP 40-4 (A-9) is a mouse monoclonal antibody raised against amino acids 308-360 mapping near the C-terminus of HSP 40 protein 4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

HSP 40-4 (A-9) is recommended for detection of HSP 40-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

HSP 40-4 (A-9) is also recommended for detection of HSP 40-4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for HSP 40-4 siRNA (h): sc-60816, HSP 40-4 siRNA (m): sc-60817, HSP 40-4 shRNA Plasmid (h): sc-60816-SH, HSP 40-4 shRNA Plasmid (m): sc-60817-SH, HSP 40-4 shRNA (h) Lentiviral Particles: sc-60816-V and HSP 40-4 shRNA (m) Lentiviral Particles: sc-60817-V.

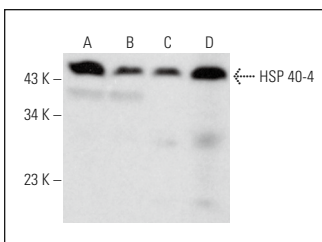
Molecular Weight of HSP 40-4: 44/46 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Jurkat whole cell lysate: sc-2204 or F9 cell lysate: sc-2245.

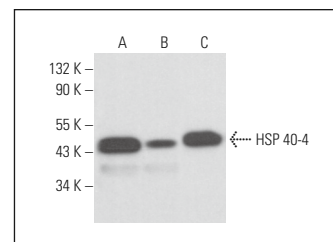
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



HSP 40-4 (A-9): sc-376544. Western blot analysis of HSP 40-4 expression in Jurkat (A), ALL-SIL (B) and c4 (C) whole cell lysates and rat testis tissue extract (D).



HSP 40-4 (A-9): sc-376544. Western blot analysis of HSP 40-4 expression in Jurkat (A), Hep G2 (B) and F9 (C) 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.