

# HSP 40-4 (C-13): sc-47050

## 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 (HSP 40) from human liver. *Biochim. Biophys. Acta* 1383: 4-8.
- Ohtsuka, K., et al. 2000. Mammalian HSP 40/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 DJ-2 and DJ-3, 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

HSP40-4 (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of HSP40 protein 4 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.

Blocking peptide available for competition studies, sc-47050 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

HSP 40-4 (C-13) is recommended for detection of HSP 40-4 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 (C-13) 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, SK-BR-3 cell lysate: sc-2218 or Jurkat whole cell lysate: sc-2204.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Try **HSP 40-4 (KA2A5.6): sc-59554** or **HSP 40-4 (A-9): sc-376544**, our highly recommended monoclonal alternatives to HSP 40-4 (C-13).