

HSP 40-4 (KA2A5.6): sc-59554

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 cochaperone 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.

CHROMOSOMAL LOCATION

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

SOURCE

HSP 40-4 (KA2A5.6) is a mouse monoclonal antibody raised against amino acids 1-179 of HSP 40-4 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HSP 40-4 (KA2A5.6) is available conjugated to agarose (sc-59554 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-59554 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59554 PE), fluorescein (sc-59554 FITC), Alexa Fluor[®] 488 (sc-59554 AF488), Alexa Fluor[®] 546 (sc-59554 AF546), Alexa Fluor[®] 594 (sc-59554 AF594) or Alexa Fluor[®] 647 (sc-59554 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-59554 AF680) or Alexa Fluor[®] 790 (sc-59554 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

HSP 40-4 (KA2A5.6) is recommended for detection of HSP 40-4 of mouse, rat, human and porcine 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 flow cytometry (1 µg per 1 x 10⁶ cells); non cross-reactive with HSP 40 protein 1.

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.

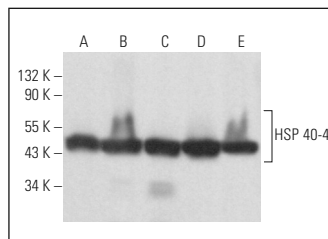
Molecular Weight of HSP 40-4: 44/46 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, PC-12 cell lysate: sc-2250 or F9 cell lysate: sc-2245.

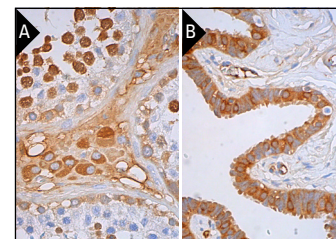
STORAGE

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

DATA



HSP 40-4 (KA2A5.6): sc-59554. Western blot analysis of HSP 40-4 expression in SK-BR-3 (A), NIH/3T3 (B), PC-12 (C), F9 (D) and KNRK (E) whole cell lysates.



HSP 40-4 (KA2A5.6): sc-59554. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in seminiferous ducts and cytoplasmic staining of Leydig cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Gao, Y., et al. 2013. Distinct roles of molecular chaperones HSP90α and HSP90β in the biogenesis of KCNQ4 channels. *PLoS ONE* 8: e57282.
- Parralès, A., et al. 2016. DNAJA1 controls the fate of misfolded mutant p53 through the mevalonate pathway. *Nat. Cell Biol.* 18: 1233-1243.
- Lopes-Pacheco, M., et al. 2017. Combination of correctors rescues CFTR transmembrane-domain mutants by mitigating their interactions with proteostasis. *Cell. Physiol. Biochem.* 41: 2194-2210.
- Bergbower, E., et al. 2018. The CFTR-associated ligand arrests the trafficking of the mutant ΔF508 CFTR channel in the ER contributing to cystic fibrosis. *Cell. Physiol. Biochem.* 45: 639-655.
- Li, J., et al. 2019. DjA1 maintains Golgi integrity via interaction with GRASP65. *Mol. Biol. Cell* 30: 478-490.
- Kim Chiaw, P., et al. 2019. HSP 70 and DNAJA2 limit CFTR levels through degradation. *PLoS ONE* 14: e0220984.
- Chou, C.W., et al. 2019. Therapeutic effects of statins against lung adenocarcinoma via p53 mutant-mediated apoptosis. *Sci. Rep.* 9: 20403.
- Cuddy, L.K., et al. 2022. Farnesyltransferase inhibitor LNK-754 attenuates axonal dystrophy and reduces amyloid pathology in mice. *Mol. Neurodegener.* 17: 54.

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.