SANTA CRUZ BIOTECHNOLOGY, INC.

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

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 IgG_1 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.

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 10^6 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.

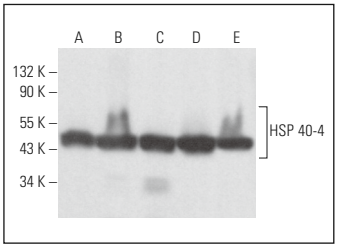
Molecular Weight of HSP 40-4: 44/46 kDa.

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

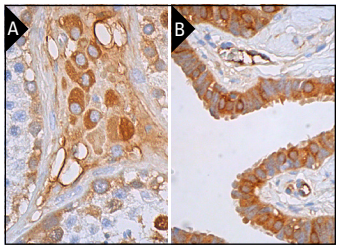
STORAGE

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

1. Gao, Y., et al. 2013. Distinct roles of molecular chaperones HSP90α and HSP90β in the biogenesis of KCNQ4 channels. PLoS ONE 8: e57282.
2. Parrales, A., et al. 2016. DNAJA1 controls the fate of misfolded mutant p53 through the mevalonate pathway. Nat. Cell Biol. 18: 1233-1243.
3. 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.
4. 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.
5. Li, J., et al. 2019. DjA1 maintains Golgi integrity via interaction with GRASP65. Mol. Biol. Cell 30: 478-490.
6. Kim Chiaw, P., et al. 2019. HSP 70 and DNAJA2 limit CFTR levels through degradation. PLoS ONE 14: e0220984.
7. Chou, C.W., et al. 2019. Therapeutic effects of statins against lung adenocarcinoma via p53 mutant-mediated apoptosis. Sci. Rep. 9: 20403.
8. Cuddy, L.K., et al. 2022. Farnesyltransferase inhibitor LNK-754 attenuates axonal dystrophy and reduces amyloid pathology in mice. Mol. Neurodegener. 17: 54.
9. Zhang, X., et al. 2023. Dysregulation and oncogenic activities of ubiquitin specific peptidase 2a in the pathogenesis of hepatocellular carcinoma. Am. J. Cancer Res. 13: 2392-2409.

RESEARCH USE

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