

HSPC300 (G-4): sc-390459

BACKGROUND

HSPC300 (hematopoietic stem cell protein 300) is also known as probable protein BRICK1 or C3orf10 (chromosome 3 open reading frame 10) and is a 75 amino acid protein that is expressed as two isoforms and localizes to both the cytoplasm and the cytoskeleton. HSPC300 is thought to regulate cytoskeletal organization and Actin polymerization. Free HSPC300 exists as homotrimers prior to its incorporation into the WAVE complex. The WAVE complex includes five proteins, one of which is HSPC300, that regulate the ARC (Arp2/3 complex) which is responsible for Actin nucleation and is Rac 1-dependent. Because HSPC300 is a highly conserved subunit of the WAVE complex across many species, it is thought to have the same or similar functions in many different organisms. In *Drosophila*, the WAVE/ARC pathway may affect the development of the nervous system. HSPC300 is thought to localize to axons of the central nervous system of *Drosophila* embryos and thus may also be involved in axonogenesis. In addition, HSPC300 is thought to be necessary for synaptic morphogenesis by motoneurons. In mice, the knockout of the WAVE complex leads to learning and memory defects, and it is therefore hypothesized that HSPC300 may also be involved in cognitive functions. Genetic depletion of HSPC300 results in cytoskeletal abnormalities and prevents cytokinesis of cells, suggesting that decreased levels of HSPC300 may be associated with tumor suppression.

REFERENCES

- Eden, S., et al. 2002. Mechanism of regulation of WAVE1-induced Actin nucleation by Rac1 and Nck. *Nature* 418: 790-793.
- Gautreau, A., et al. 2004. Purification and architecture of the ubiquitous Wave complex. *Proc. Natl. Acad. Sci. USA* 101: 4379-4383.
- Maranchie, J.K., et al. 2004. Solid renal tumor severity in von Hippel Lindau disease is related to germline deletion length and location. *Hum. Mutat.* 23: 40-46.

CHROMOSOMAL LOCATION

Genetic locus: BRK1 (human) mapping to 3p25.3; Brk1 (mouse) mapping to 6 E3.

SOURCE

HSPC300 (G-4) is a mouse monoclonal antibody raised against amino acids 1-75 representing full length HSPC300 of human origin.

PRODUCT

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

HSPC300 (G-4) is available conjugated to agarose (sc-390459 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390459 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390459 PE), fluorescein (sc-390459 FITC), Alexa Fluor® 488 (sc-390459 AF488), Alexa Fluor® 546 (sc-390459 AF546), Alexa Fluor® 594 (sc-390459 AF594) or Alexa Fluor® 647 (sc-390459 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390459 AF680) or Alexa Fluor® 790 (sc-390459 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

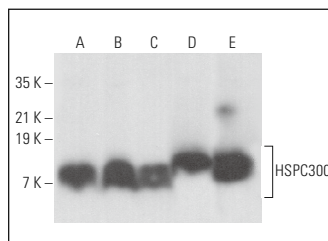
HSPC300 (G-4) is recommended for detection of HSPC300 of human origin, 6720456B07Rik of mouse origin and the corresponding rat homolog by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HSPC300 siRNA (h): sc-78028, 6720456B07Rik siRNA (m): sc-140474, HSPC300 shRNA Plasmid (h): sc-78028-SH, 6720456B07Rik shRNA Plasmid (m): sc-140474-SH, HSPC300 shRNA (h) Lentiviral Particles: sc-78028-V and 6720456B07Rik shRNA (m) Lentiviral Particles: sc-140474-V.

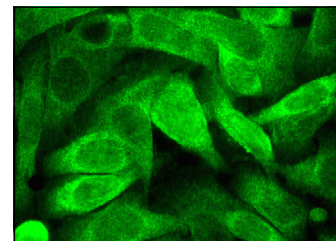
Molecular Weight of HSPC300: 8 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HEL 92.1.7 cell lysate: sc-2270 or H4 cell lysate: sc-2408.

DATA



HSPC300 (G-4): sc-390459. Western blot analysis of HSPC300 expression in K-562 (A), HEL 92.1.7 (B), H4 (C) and Neuro-2A (D) whole cell lysates and mouse postnatal brain tissue extract (E).



HSPC300 (G-4): sc-390459. Immunofluorescence staining of formalin-fixed SW480 cells showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

- Ghaffari, K., et al. 2021. NCK-associated protein 1 like (nckap1l) minor splice variant regulates intrahepatic biliary network morphogenesis. *PLoS Genet.* 17: e1009402.
- Stahnke, S., et al. 2021. Loss of Hem1 disrupts macrophage function and impacts migration, phagocytosis, and integrin-mediated adhesion. *Curr. Biol.* 31: 2051-2064.e8.
- Liu, X., et al. 2023. Actin cytoskeleton vulnerability to disulfide stress mediates disulfidptosis. *Nat. Cell Biol.* 25: 404-414.

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.

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