SANTA CRUZ BIOTECHNOLOGY, INC.

HSCARG (D-1): sc-514369

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

HSCARG, also known as NMRAL1 (NmrA-like family domain-containing protein 1), is a 299 amino acid redox sensor protein that belongs to the NmrA-type oxidoreductase family. Localizing primarily to the cytoplasm and perinuclear region, HSCARG localization to the nucleus may occur with increased intracellular nitric oxide and reduced NADPH/NADP+ ratios. Existing as a homodimer, HSCARG interacts with ASS1, inhibiting ASS1 activity in the presence of low NADPH/NADP+ ratios. HSCARG gets induced by nitric oxide, cGMP and proinflammatory cytokines. The gene encoding HSCARG maps to human chromosome 16p13.3 and mouse chromosome 16 A1. Overexpression of the gene encoding HSCARG results in increased cell viability.

REFERENCES

1. Martin, J., et al. 2004. The sequence and analysis of duplication-rich human chromosome 16. Nature 432: 988-994.
2. Dai, X., et al. 2006. Protein expression, crystallization and preliminary X-ray crystallographic studies on HSCARG from *Homo sapiens*. Protein Pept. Lett. 13: 955-957.
3. Zheng, X., et al. 2007. Restructuring of the dinucleotide-binding fold in an NADP(H) sensor protein. Proc. Natl. Acad. Sci. USA 104: 8809-8814.
4. Zhao, Y., et al. 2008. An NADPH sensor protein (HSCARG) down-regulates nitric oxide synthesis by association with argininosuccinate synthetase and is essential for epithelial cell viability. J. Biol. Chem. 283: 11004-11013.
5. Lian, M., et al. 2009. HSCARG regulates NFκB activation by promoting the ubiquitination of RelA or COMMD1. J. Biol. Chem. 284: 17998-18006.

CHROMOSOMAL LOCATION

Genetic locus: NMRAL1 (human) mapping to 16p13.3; Nmral1 (mouse) mapping to 16 A1.

SOURCE

HSCARG (D-1) is a mouse monoclonal antibody raised against amino acids 129-299 mapping at the C-terminus of HSCARG 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.

HSCARG (D-1) is available conjugated to agarose (sc-514369 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514369 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514369 PE), fluorescein (sc-514369 FITC), Alexa Fluor® 488 (sc-514369 AF488), Alexa Fluor® 546 (sc-514369 AF546), Alexa Fluor® 594 (sc-514369 AF594) or Alexa Fluor® 647 (sc-514369 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514369 AF680) or Alexa Fluor® 790 (sc-514369 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

HSCARG (D-1) is recommended for detection of HSCARG of human origin, NMRAL1 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 HSCARG siRNA (h): sc-93304, NMRAL1 siRNA (m): sc-150010, HSCARG shRNA Plasmid (h): sc-93304-SH, NMRAL1 shRNA Plasmid (m): sc-150010-SH, HSCARG shRNA (h) Lentiviral Particles: sc-93304-V and NMRAL1 shRNA (m) Lentiviral Particles: sc-150010-V.

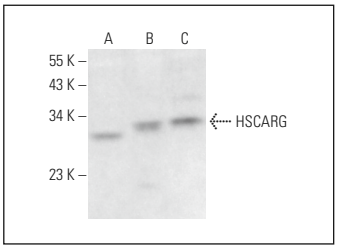
Molecular Weight of HSCARG: 33 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, c4 whole cell lysate: sc-364186 or A-375 cell lysate: sc-3811.

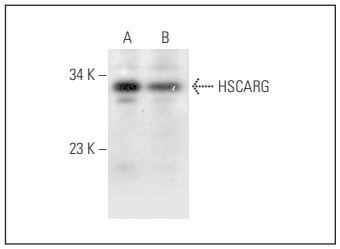
RECOMMENDED SUPPORT REAGENTS

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



HSCARG (D-1): sc-514369. Western blot analysis of HSCARG expression in PC-12 (**A**), c4 (**B**) and M1 (**C**) whole cell lysates.



HSCARG (D-1): sc-514369. Western blot analysis of HSCARG expression in HeLa (**A**) and A-375 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wu, Y.H., et al. 2021. Upregulation of miR-210-5p impairs dead cell clearance by macrophages through the inhibition of Sp1-and HSCARG-dependent NADPH oxidase pathway. Free Radic. Biol. Med. 172: 441-450.

RESEARCH USE

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