SANTA CRUZ BIOTECHNOLOGY, INC.

NRAMP 2 (G-5): sc-166884

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Natural resistance associated macrophage proteins (NRAMPs) belong to a superfamily of highly conserved integral membrane proteins. NRAMP 1 is an intracellular macrophage protein located at the phagosomal membrane, where it functions as a divalent cation transporter for Fe^{2+}, Zn^{2+} and Mn^{2+}. NRAMP 1 is a pH-dependent antiporter that transports metal ions either into or out of the phagosome against a proton gradient. The gene encoding human NRAMP 1 maps to chromosome 2q35. In humans, polymorphisms in the NRAMP 1 gene are linked to susceptibility to *M. tuberculosis* and leprosy. NRAMP 2 is another divalent cation transporter ubiquitously expressed as two splice variants, which are distinguished by the presence (isoform 1) or absence (isoform 2) of an iron response element. In the duodenum of the small intestine, dietary iron regulates NRAMP 2 expression at the brush border. The gene encoding human NRAMP 2 maps to chromosome 12q13.12. Mutations in the gene for NRAMP 2 in mice and rats result in severe anemia.

CHROMOSOMAL LOCATION

Genetic locus: SLC11A2 (human) mapping to 12q13.12; Slc11a2 (mouse) mapping to 15 F1.

SOURCE

NRAMP 2 (G-5) is a mouse monoclonal antibody raised against amino acids 461-568 mapping at the C-terminus of NRAMP 2 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.

NRAMP 2 (G-5) is available conjugated to agarose (sc-166884 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166884 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166884 PE), fluorescein (sc-166884 FITC), Alexa Fluor® 488 (sc-166884 AF488), Alexa Fluor® 546 (sc-166884 AF546), Alexa Fluor® 594 (sc-166884 AF594) or Alexa Fluor® 647 (sc-166884 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166884 AF680) or Alexa Fluor® 790 (sc-166884 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

NRAMP 2 (G-5) is recommended for detection of NRAMP 2 of mouse, rat and human origin 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

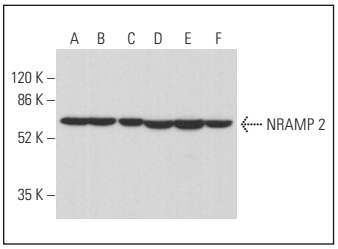
Suitable for use as control antibody for NRAMP 2 siRNA (h): sc-40776, NRAMP 2 siRNA (m): sc-40777, NRAMP 2 shRNA Plasmid (h): sc-40776-SH, NRAMP 2 shRNA Plasmid (m): sc-40777-SH, NRAMP 2 shRNA (h) Lentiviral Particles: sc-40776-V and NRAMP 2 shRNA (m) Lentiviral Particles: sc-40777-V.

Molecular Weight of NRAMP 2: 64 kDa.

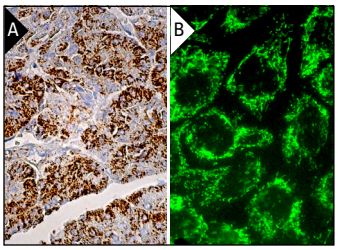
STORAGE

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

DATA



NRAMP 2 (G-5): sc-166884. Western blot analysis of NRAMP 2 expression in IMR-32 (**A**), BJAB (**B**), Ramos (**C**), WEHI-231 (**D**), MM-142 (**E**) and Neuro-2A (**F**) whole cell lysates.



NRAMP 2 (G-5): sc-166884. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells (**A**). Immunofluorescence staining of formalin-fixed A-431 cells showing mitochondrial localization (**B**).

SELECT PRODUCT CITATIONS

1. Zarjou, A., et al. 2013. Proximal tubule H-ferritin mediates iron trafficking in acute kidney injury. J. Clin. Invest. 123: 4423-4434.
2. Bertinato, J., et al. 2014. Diet-induced obese rats have higher iron requirements and are more vulnerable to iron deficiency. Eur. J. Nutr. 53: 885-895.
3. Lin, C., et al. 2015. Copper uptake by DMT1: a compensatory mechanism for CTR1 deficiency in human umbilical vein endothelial cells. Metallomics 7: 1285-1289.
4. Grillo, A.S., et al. 2017. Restored iron transport by a small molecule promotes absorption and hemoglobinization in animals. Science 356: 608-616.
5. Li, L., et al. 2018. Ferroptosis is associated with oxygen-glucose deprivation/reoxygenation-induced Sertoli cell death. Int. J. Mol. Med. 41: 3051-3062.
6. Yu, X., et al. 2019. Iron transport from ferrous bisglycinate and ferrous sulfate in DMT1-knockout human intestinal Caco-2 cells. Nutrients 11: 485.
7. Liu, Z., et al. 2020. Fostered Nrf2 expression antagonizes iron overload and glutathione depletion to promote resistance of neuron-like cells to ferroptosis. Toxicol. Appl. Pharmacol. 407: 115241.
8. Liang, Z.L., et al. 2021. The impact of ZIP8 disease-associated variants G38R, C113S, G204C, and S335T on selenium and cadmium accumulations: the first characterization. Int. J. Mol. Sci. 22: 11399.
9. Rossi, F., et al. 2022. Alteration of osteoclast activity in childhood cancer survivors: role of iron and of CB2/TRPV1 receptors. PLoS ONE 17: e0271730.

RESEARCH USE

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