SANTA CRUZ BIOTECHNOLOGY, INC.

NRAMP 2 (H-108): sc-30120

BACKGROUND

Natural resistance associated macrophage proteins (NRAMPs) belong to a super-family 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. Mutations in the gene for NRAMP 2 in mice and rats result in severe anemia.

REFERENCES

1. Cellier, M., et al. 1994. Human natural resistance-associated macrophage protein: cDNA cloning, chromosomal mapping, genomic organization, and tissue-specific expression. J. Exp. Med. 180: 1741-1752.
2. Vidal, S,. et al. 1995. Cloning and characterization of a second human NRAMP gene on chromosome 12q13. Mamm. Genome 6: 224-230.
3. Abel, L., et al. 1998. Susceptiblity to leprosy is linked to the human NRAMP1 gene. J. Infect. Dis. 177: 133-145.
4. Lee, P.L., et al. 1998. The human NRAMP2 gene: characterization of the gene structure, alternative splicing, promoter region and polymorphisms. Blood Cells Mol. Dis. 24: 199-215. 4. Bellamy, R., et al. 1998. Variations in the NRAMP1 gene and susceptibility to tuberculosis in West Africans. N. Eng. J. Med. 338: 640-644.
5. Canonne-Hergaux, F., et al. 1999. Cellular and subcellular localization of the NRAMP2 iron transporter in the intestinal brush border and regulation by dietary iron. Blood 93: 4406-4417.
6. Cervino, A.C., et al. 2000. Allelic association between the NRAMP1 gene and susceptibility to tuberculosis in Guinea-Conakry. Ann. Hum. Genet. 64: 507-512.
7. Goswami, T., et al. 2001. Natural-resistance-associated marcorphage protein 1 is an H+/bivalent cation antiporter. Biochem. J. 354: 511-519.

SOURCE

NRAMP 2 (H-108) is a rabbit polyclonal 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 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

NRAMP 2 (H-108) is recommended for detection of NRAMP 2 of mouse, rat and human 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of NRAMP 2: 64 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.