SANTA CRUZ BIOTECHNOLOGY, INC.

vanin-1 (N-20): sc-16776

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Hematopoietic precursor cells migrate to the thymus, where they differentiate into mature T lymphocytes. GPI-anchored vanin-1 protein regulates the late adhesion steps of thymus homing of bone marrow precursor cells. Vanin-1 is ubiquitously expressed as a pantetheinase enzyme and catalyzes the hydrolysis of pantetheine for vitamin B5 recycling. The hydrolytic activity of vanin-1 generates the potent antioxidant cysteamine as a metabolite. As a membrane bound pantetheinase, vanin-1 provides the main source of cysteamine under normal physiological conditions. In mice, vanin-1 is expressed specifically in male Sertoli cells of the developing testis, where it aids in cell migration. Vanin-1 is also expressed in human spleen, liver and small intestine, where it may be involved in salvaging vitamin B5. The gene encoding human vanin-1 maps to chromosome 6q23.2. Other members of the vanin family include vanin-2 and vanin-3.

REFERENCES

1. Dupre, S., et al 1970. The enzymatic breakdown of pantethine to pantothenic acid and cystamine. Eur. J. Biochem. 16: 571-578.
2. Aurrand-Lions, M., et al. 1996. Vanin-1, a novel GPI-linked perivascular molecule involved in thymus homing. Immunity 5: 391-405.
3. Galland, F., et al. 1998. Two human genes related to murine vanin-1 are located on the long arm of human chromosome 6. Genomics 53: 203-213.
4. Bowles, J., et al. 2000. A subtractive gene expression screen suggests a role for vanin-1 in testis development in mice. Genesis 27: 124-135.
5. Pitari, G., et al. 2000. Pantetheinase activity of membrane-bound vanin-1: lack of free cysteamine in tissues of vanin-1 deficient mice. FEBS Lett. 483: 149-154.
6. Grimmond, S., et al. 2000. Sexually dimorphic expression of protease nexin-1 and vanin-1 in the developing mouse gonad prior to overt differentiation suggests a role in mammalian sexual development. Hum. Mol. Genet. 9: 1553-1560.

CHROMOSOMAL LOCATION

Genetic locus: VNN1 (human) mapping to 6q23.2.

SOURCE

vanin-1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of vanin-1 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.

Blocking peptide available for competition studies, sc-16776 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

vanin-1 (N-20) is recommended for detection of vanin-1 of 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)], 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).

vanin-1 (N-20) is also recommended for detection of vanin-1 in additional species, including equine.

Suitable for use as control antibody for vanin-1 siRNA (h): sc-36807, vanin-1 shRNA Plasmid (h): sc-36807-SH and vanin-1 shRNA (h) Lentiviral Particles: sc-36807-V.

Molecular Weight of vanin-1: 70 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Allen, C.E., et al. 2010. Cell-specific gene expression in Langerhans cell histiocytosis lesions reveals a distinct profile compared with epidermal Langerhans cells. J. Immunol. 184: 4557-4567.

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.