SANTA CRUZ BIOTECHNOLOGY, INC.

Rab 27a (H-60): sc-22756

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Rab family of low molecular weight GTPases are critical regulators of vesicular transport. Rab proteins cycle between an active GTP-bound state, which recruits specific effector proteins, and an inactive GDP-bound state. Two members of this family, Rab 27a and Rab 27b, have overlapping functions, but differ in tissue specificity. Rab 27a is widely expressed with significant expression in pancreatic islets and pituitary tissue, and low expression in brain. Rab 27b is also expressed in pituitary tissue, but is more significantly expressed in brain and spleen. Rab 27a regulates diverse processes involving lysosome-related organelles, including melanosome motility in melanocytes and lytic granule release in cytotoxic T lymphocytes. Mutations in the Rab 27a gene result in Griscelli syndrome (GS) or the corresponding mouse model ashen, a rare autosomal recessive disorder characterized by hypopigmentation, prolonged bleeding times, and platelet storage pool deficiency. In GS, Rab 27a is not available to mediate the recruitment of melanosomes via the actin motor, Myosin Va. The human Rab 27b gene maps to chromosome 18q21.2, and encodes a protein that is involved in pituitary hormone secretion. Rab 27b may be functionally redundant to Rab 27a, as it can rescue Rab 27a mutants.

CHROMOSOMAL LOCATION

Genetic locus: RAB27A (human) mapping to 15q21.3, RAB27B (human) mapping to 18q21.2; Rab27a (mouse) mapping to 9 D, Rab27b (mouse) mapping to 18 E2.

SOURCE

Rab 27a (H-60) is a rabbit polyclonal antibody raised against amino acids 162-221 mapping at the C-terminus of Rab 27a 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.

Available as agarose conjugate for immunoprecipitation, sc-22756 AC, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

Rab 27a (H-60) is recommended for detection of Rab 27a and, to a lesser extent, Rab 27b 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)], 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).

Rab 27a (H-60) is also recommended for detection of Rab 27a and, to a lesser extent, Rab 27b in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of Rab 27a: 25 kDa.

Positive Controls: Rab 27a (m): 293T Lysate: sc-122891, SK-MEL-28 cell lysate: sc-2236 or HL-60 whole cell lysate: sc-2209.

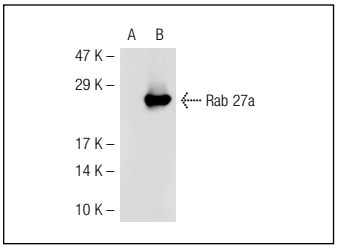
RESEARCH USE

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

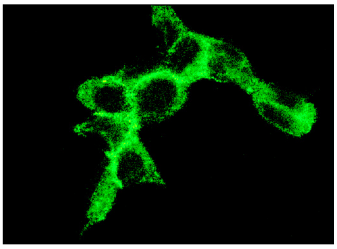
STORAGE

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

DATA



Rab 27a (H-60): sc-22756. Western blot analysis of Rab 27a expression in non-transfected: sc-117752 (**A**) and mouse Rab 27a transfected: sc-122891 (**B**) 293T whole cell lysates.



Rab27a (H-60): sc-22756. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Baldini, G., et al. 2005. Rabphilin localizes with the cell Actin cytoskeleton and stimulates association of granules with F-Actin cross-linked by α-actinin. J. Biol. Chem. 280: 34974-34984.
2. Kato, T., et al. 2006. Granuphilin is activated by SREBP-1c and involved in impaired Insulin secretion in diabetic mice. Cell Metab. 4: 143-154.
3. Hildebrand, M.S., et al. 2007. Molecular characterization of a novel X-linked syndrome involving developmental delay and deafness. Am. J. Med. Genet. A 143A: 2564-2575.
4. Ogiwara, K. and Hata, K. 2009. Melanoma cell differentiation induced by lupeol separates into two stages: morphological and functional changes. J. Nat. Med. 63: 323-326.
5. Dabrazhynetskaya, A., et al. 2011. Syntaxin 11 marks a distinct intracellular compartment recruited to the immunological synapse of NK cells to co-localize with cytotoxic granules. J. Cell. Mol. Med. 16: 129-141.

PROTOCOLS

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