

Rab 27a (E12A-1): sc-81914

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 Rab27b gene maps to chromosome 18q21.1, 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; Rab27a (mouse) mapping to 9 D.

SOURCE

Rab 27a (E12A-1) is a mouse monoclonal antibody raised against recombinant Rab 27a of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Rab 27a (E12A-1) is recommended for detection of Rab 27a 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), 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 Rab 27a siRNA (h): sc-41834, Rab 27a siRNA (m): sc-41835, Rab 27a shRNA Plasmid (h): sc-41834-SH, Rab 27a shRNA Plasmid (m): sc-41835-SH, Rab 27a shRNA (h) Lentiviral Particles: sc-41834-V and Rab 27a shRNA (m) Lentiviral Particles: sc-41835-V.

Molecular Weight of Rab 27a: 25 kDa.

Positive Controls: Rab 27a (h): 293T Lysate: sc-111961, HL-60 whole cell lysate: sc-2209 or SK-MEL-28 cell lysate: sc-2236.

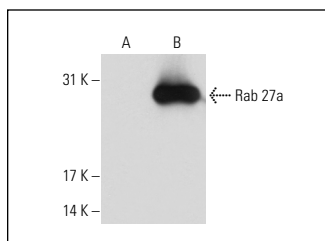
STORAGE

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

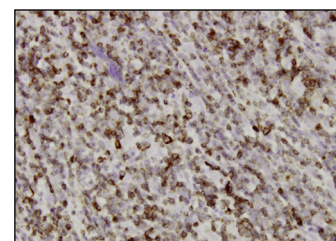
RESEARCH USE

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

DATA



Rab 27a (E12A-1): sc-81914. Western blot analysis of Rab 27a expression in non-transfected: sc-117752 (A) and human Rab 27a transfected: sc-111961 (B) 293T whole cell lysates.



Rab 27a (E12A-1): sc-81914. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lymphoma tissue showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Bultema, J.J., et al. 2014. Myosin vc interacts with Rab32 and Rab38 proteins and works in the biogenesis and secretion of melanosomes. *J. Biol. Chem.* 289: 33513-33528.
- Kim, S.B., et al. 2017. Caspase-8 controls the secretion of inflammatory lysyl-tRNA synthetase in exosomes from cancer cells. *J. Cell Biol.* 216: 2201-2216.
- Boucher, J.M., et al. 2018. Rab 27a regulates human perivascular adipose progenitor cell differentiation. *Cardiovasc. Drugs Ther.* 32: 519-530.
- Tagliatela, A.C., et al. 2020. Coronin 1C inhibits melanoma metastasis through regulation of MT1-MMP-containing extracellular vesicle secretion. *Sci. Rep.* 10: 11958.
- Mizushima, T., et al. 2020. Androgen receptor signaling reduces the efficacy of bacillus Calmette-Guérin therapy for bladder cancer via modulating Rab 27b-induced exocytosis. *Mol. Cancer Ther.* 19: 1930-1942.
- Huang, Q., et al. 2022. Identification of a novel MLPH missense mutation in a Chinese griscelli syndrome 3 patient. *Front. Med.* 9: 896943.
- Gargiulo, E., et al. 2022. Extracellular vesicle secretion by leukemia cells *in vivo* promotes CLL progression by hampering antitumor T-cell responses. *Blood Cancer Discov.* E-published.
- Iwagawa, T., et al. 2022. Evaluation of CRISPR/Cas9 exon-skipping vector for choroideremia using human induced pluripotent stem cell-derived RPE. *J. Gene Med.* E-published.

PROTOCOLS

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