

Rab 27a (E-8): sc-74586

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 18q21.1, 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.

REFERENCES

1. Ramalho, J.S., et al. 2001. Chromosomal mapping, gene structure and characterization of the human and murine Rab 27b gene. *BMC Genet.* 2: 2.
2. Barral, D.C., et al. 2002. Functional redundancy of Rab 27 proteins and the pathogenesis of Griscelli syndrome. *J. Clin. Invest.* 110: 247-257.

CHROMOSOMAL LOCATION

Genetic locus: RAB27A (human) mapping to 15q21.3; Rab27a (mouse) mapping to 9 D.

SOURCE

Rab 27a (E-8) is a mouse monoclonal 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_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Rab 27a (E-8) is available conjugated to agarose (sc-74586 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74586 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74586 PE), fluorescein (sc-74586 FITC), Alexa Fluor® 488 (sc-74586 AF488), Alexa Fluor® 546 (sc-74586 AF546), Alexa Fluor® 594 (sc-74586 AF594) or Alexa Fluor® 647 (sc-74586 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74586 AF680) or Alexa Fluor® 790 (sc-74586 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

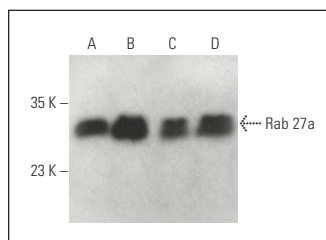
Rab 27a (E-8) is recommended for detection of Rab 27a of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 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.

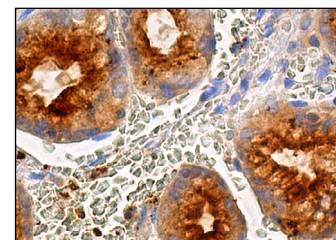
Molecular Weight of Rab 27a: 25 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HL-60 whole cell lysate: sc-2209 or SK-MEL-28 cell lysate: sc-2236.

DATA



Rab 27a (E-8) HRP: sc-74586 HRP. Direct western blot analysis of Rab 27a expression in HL-60 (A), SK-MEL-28 (B), K-562 (C) and U-937 (D) whole cell lysates.



Rab 27a (E-8): sc-74586. Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Poeter, M., et al. 2014. Annexin A8 controls leukocyte recruitment to activated endothelial cells via cell surface delivery of CD63. *Nat. Commun.* 5: 3738.
2. Boucher, J.M., et al. 2018. Rab 27a regulates human perivascular adipose progenitor cell differentiation. *Cardiovasc. Drugs Ther.* 32: 519-530.
3. Cossutta, M., et al. 2019. Weibel-Palade bodies orchestrate pericytes during angiogenesis. *Arterioscler. Thromb. Vasc. Biol.* 39: 1843-1858.
4. Jo, C.S., et al. 2020. A novel function of Prohibitin on melanosome transport in melanocytes. *Theranostics* 10: 3880-3891.
5. Lv, J., et al. 2021. The inhibitory effect of curcumin derivative J147 on melanogenesis and melanosome transport by facilitating ERK-mediated MITF degradation. *Front. Pharmacol.* 12: 783730.
6. Cao, Y., et al. 2022. Defective VWF secretion due to the expression of MYH9-RD E1841K mutant in endothelial cells disrupts hemostasis. *Blood Adv.* 6: 4537-4552.

RESEARCH USE

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