

Sar1B (AT1C7): sc-517425

BACKGROUND

There are a number of components involved in the secretory pathway of cells. Vesicular traffic within the early secretory pathway is mediated by COPI- and COPII-coated vesicles. The COPII vesicle coat protein promotes the formation of endoplasmic reticulum (ER) derived transport vesicles that carry secretory proteins to the Golgi complex. The SAR1 gene encodes two isoforms, Sar1a and Sar1B, in mammalian cells. These proteins are low-molecular-weight GTPases, which are essential for the formation of transport vesicles from the ER. Mutations in the SAR1 gene result in Anderson's disease (and/or chylomicron retention disease CMRD), a rare, autosomal recessive lipid malabsorption disorder characterized by chronic diarrhea, failure to thrive and hypocholesterolemia in childhood.

REFERENCES

1. Kuge, O., et al. 1994. Sar1 promotes vesicle budding from the endoplasmic reticulum but not Golgi compartments. *J. Cell Biol.* 125: 51-65.
2. Vahlensieck, Y., et al. 1995. Transcriptional studies on yeast SEC genes provide no evidence for regulation at the transcriptional level. *Yeast* 11: 901-911.
3. Salama, N.R., et al. 1997. Sec31 encodes an essential component of the COPII coat required for transport vesicle budding from the endoplasmic reticulum. *Mol. Biol. Cell* 8: 205-217.
4. Nickel, W., et al. 1998. Protein and lipid sorting between the endoplasmic reticulum and the Golgi complex. *Semin. Cell Dev. Biol.* 9: 493-501.
5. Saito, Y., et al. 1999. Identification of SEC12, SED4, truncated SEC16, and EKS1/HRD3 as multicopy suppressors of ts mutants of Sar1 GTPase. *J. Biochem.* 125: 130-137.
6. Shoulders, C.C., et al. 2004. The intracellular transport of chylomicrons requires the small GTPase, Sar1b. *Curr. Opin. Lipidol.* 15: 191-197.
7. Wang, X.M., et al. 2006. Sequence identification, tissue distribution, mapping and polymorphism of the porcine sar1b gene. *Anim. Biotechnol.* 17: 99-107.

CHROMOSOMAL LOCATION

Genetic locus: SAR1B (human) mapping to 5q31.1; Sar1b (mouse) mapping to 11 B1.3.

SOURCE

Sar1B (AT1C7) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 1-198 of Sar1B of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide, 1% glycerol 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

Sar1B (AT1C7) is recommended for detection of Sar1B 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), flow cytometry (1 µg per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Sar1B siRNA (h): sc-106532, Sar1B siRNA (m): sc-153222, Sar1B shRNA Plasmid (h): sc-106532-SH, Sar1B shRNA Plasmid (m): sc-153222-SH, Sar1B shRNA (h) Lentiviral Particles: sc-106532-V and Sar1B shRNA (m) Lentiviral Particles: sc-153222-V.

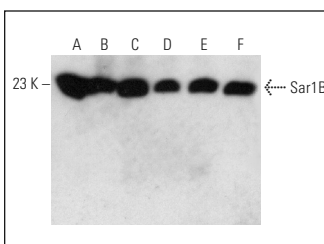
Positive Controls: NCI-H929 whole cell lysate: sc-364786, LNCaP cell lysate: sc-2231 or MCF7 whole cell lysate: sc-2206.

RECOMMENDED SUPPORT REAGENTS

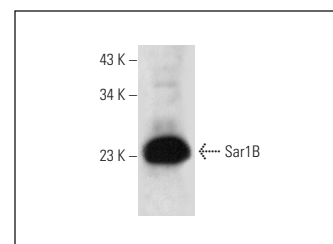
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Sar1B (AT1C7): sc-517425. Western blot analysis of Sar1B expression in NCI-H929 (A), LNCaP (B), MCF7 (C), SolB (D), c4 (E) and L8 (F) whole cell lysates.



Sar1B (AT1C7): sc-517425. Western blot analysis of Sar1B expression in human skeletal muscle tissue extract.

SELECT PRODUCT CITATIONS

1. Zellner, S., et al. 2021. Systematically defining selective autophagy receptor-specific cargo using autophagosome content profiling. *Mol. Cell* 81: 1337-1354.e8.
2. Bordat, C., et al. 2023. Validation of knock-out Caco-2 TC7 cells as models of enterocytes of patients with familial genetic hypobetalipoproteinemias. *Nutrients* 15: 505.

RESEARCH USE

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