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Goat Anti-SAR1B / SARA2 Antibody
Peptide-affinity purified goat antibody
Catalog # AF1958a

Specification

Goat Anti-SAR1B / SARA2 Antibody - Product Information

Application	**WB, E**
Primary Accession	Q9Y6B6
Other Accession	NP_057187, 51128, 66397 (mouse), 287276 (rat)
Reactivity	**Mouse, Rat**
Predicted	**Human**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**22410**

Goat Anti-SAR1B / SARA2 Antibody - Additional Information

Gene ID 51128

Other Names
GTP-binding protein SAR1b, GTP-binding protein B, GTBPB, SAR1B, SARA2, SARB

Dilution
WB~~1:1000
E~~N/A

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-SAR1B / SARA2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-SAR1B / SARA2 Antibody - Protein Information

Name SAR1B {ECO:0000303|PubMed:33186557, ECO:0000312|HGNC:HGNC:10535}

Function
Small GTPase that cycles between an active GTP-bound and an inactive GDP-bound state and

mainly functions in vesicle-mediated endoplasmic reticulum (ER) to Golgi transport. The active GTP-bound form inserts into the endoplasmic reticulum membrane where it recruits the remainder of the coat protein complex II/COPII (PubMed:23433038, PubMed:32358066, PubMed:33186557, PubMed:36369712). The coat protein complex II assembling and polymerizing on endoplasmic reticulum membrane is responsible for both the sorting of cargos and the deformation and budding of membranes into vesicles destined to the Golgi (PubMed:23433038, PubMed:32358066, PubMed:33186557). In contrast to SAR1A, SAR1B specifically interacts with the cargo receptor SURF4 to mediate the transport of lipid-carrying lipoproteins including APOB and APOA1 from the endoplasmic reticulum to the Golgi and thereby, indirectly regulates lipid homeostasis (PubMed:32358066, PubMed:33186557). In addition to its role in vesicle trafficking, can also function as a leucine sensor regulating TORC1 signaling and more indirectly cellular metabolism, growth and survival. In absence of leucine, interacts with the GATOR2 complex via MIOS and inhibits TORC1 signaling. The binding of leucine abrogates the interaction with GATOR2 and the inhibition of the TORC1 signaling. This function is completely independent of the GTPase activity of SAR1B (PubMed:34290409).

Cellular Location
Endoplasmic reticulum membrane; Peripheral membrane protein {ECO:0000250|UniProtKB:Q9QVY3}. Golgi apparatus, Golgi stack membrane {ECO:0000250|UniProtKB:Q9QVY3}; Peripheral membrane protein {ECO:0000250|UniProtKB:Q9QVY3}. Cytoplasm, cytosol. Lysosome membrane. Note=Active at endoplasmic reticulum exit sites (ERES) where it inserts into the membrane and recruits the remainder of the coat protein complex II/COPII (PubMed:23433038). Upon leucine deprivation, associates with lysosomal membranes to repress TORC1 signaling (PubMed:34290409).

Tissue Location
Expressed in many tissues including small intestine, liver, muscle and brain.

Goat Anti-SAR1B / SARA2 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Goat Anti-SAR1B / SARA2 Antibody - Images

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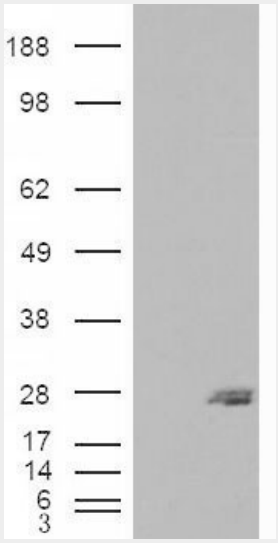
AF1958a (0.03 µg/ml) staining of Mouse Liver lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.



HEK293 overexpressing SAR1B (RC210593) and probed with AF1958a (mock transfection in first lane), tested by Origene.

Goat Anti-SAR1B / SARA2 Antibody - Background

The protein encoded by this gene is a small GTPase that acts as a homodimer. The encoded protein is activated by the guanine nucleotide exchange factor PREB and is involved in protein transport from the endoplasmic reticulum to the Golgi. This protein is part of the COPII coat complex. Defects in this gene are a cause of chylomicron retention disease (CMRD), also known as Anderson disease (ANDD). Two transcript variants encoding the same protein have been found for this gene.

Goat Anti-SAR1B / SARA2 Antibody - References

Variable phenotypic expression of chylomicron retention disease in a kindred carrying a mutation of the Sara2 gene. Cefal AB, et al. Metabolism, 2010 Apr. PMID 19846172.
Anderson's disease (chylomicron retention disease): a new mutation in the SARA2 gene associated with muscular and cardiac abnormalities. Silvain M, et al. Clin Genet, 2008 Dec. PMID 18786134.
Toward a confocal subcellular atlas of the human proteome. Barbe L, et al. Mol Cell Proteomics, 2008 Mar. PMID 18029348.
Anderson or chylomicron retention disease: molecular impact of five mutations in the SAR1B gene on the structure and the functionality of Sar1b protein. Charcosset M, et al. Mol Genet Metab, 2008 Jan. PMID 17945526.
Expression of Sara2 human gene in erythroid progenitors. Jardim DL, et al. J Biochem Mol Biol, 2005

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