10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

S1P1 Antibody
Catalog # ASC10770

Specification

S1P1 Antibody - Product Information

Application	**WB, IHC**
Primary Accession	P21453
Other Accession	NP_001391, 13027636
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**Predicted: 42 kDa** **Observed: 42 kDa KDa**
Application Notes	**S1P1 antibody can be used for detection of S1P1 by Western blot at 1 - 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 5 µg/mL.**

S1P1 Antibody - Additional Information

Gene ID **1901**

Target/Specificity
S1PR1; At least two isoforms of S1P1 are known to exist; this S1P1 antibody will only recognize the shorter isoform.

Reconstitution & Storage
S1P1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
S1P1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

S1P1 Antibody - Protein Information

Name S1PR1

Synonyms CHEDG1, EDG1

Function
G-protein coupled receptor for the bioactive lysosphingolipid sphingosine 1-phosphate (S1P) that seems to be coupled to the G(i) subclass of heteromeric G proteins. Signaling leads to the activation of RAC1, SRC, PTK2/FAK1 and MAP kinases. Plays an important role in cell migration, probably via its role in the reorganization of the actin cytoskeleton and the formation of lamellipodia in response to stimuli that increase the activity of the sphingosine kinase SPHK1.

Required for normal chemotaxis toward sphingosine 1-phosphate. Required for normal embryonic heart development and normal cardiac morphogenesis. Plays an important role in the regulation of sprouting angiogenesis and vascular maturation. Inhibits sprouting angiogenesis to prevent excessive sprouting during blood vessel development. Required for normal egress of mature T-cells from the thymus into the blood stream and into peripheral lymphoid organs. Plays a role in the migration of osteoclast precursor cells, the regulation of bone mineralization and bone homeostasis (By similarity). Plays a role in responses to oxidized 1-palmitoyl-2-arachidonoyl-sn-glycero-3- phosphocholine by pulmonary endothelial cells and in the protection against ventilator-induced lung injury.

Cellular Location
Cell membrane; Multi-pass membrane protein. Endosome. Membrane raft. Note=Recruited to caveolin-enriched plasma membrane microdomains in response to oxidized 1-palmitoyl-2-arachidonoyl-sn-glycero-3-phosphocholine. Ligand binding leads to receptor internalization

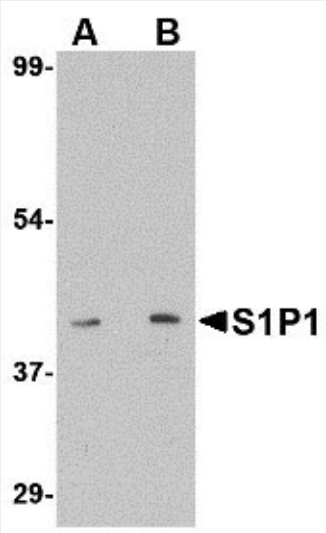
Tissue Location
Endothelial cells, and to a lesser extent, in vascular smooth muscle cells, fibroblasts, melanocytes, and cells of epithelioid origin

S1P1 Antibody - Protocols

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

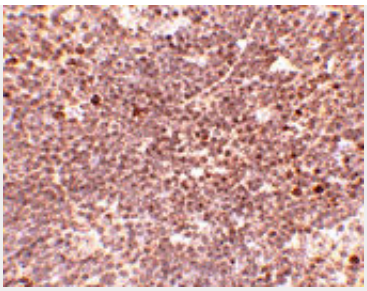
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

S1P1 Antibody - Images



Western blot analysis of S1P1 in mouse thymus lysate with S1P1 antibody at (A) 1 and (B) 2 µg/mL.

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Immunohistochemistry of S1P1 in mouse thymus tissue with S1P1 antibody at 5 µg/mL.

S1P1 Antibody - Background

S1P1 Antibody: Movement of lymphocytes through lymphoid organs is required for generating immunity. Their migration into lymph nodes follows a series of events including integrin activation through chemokine signaling, adhesion and diapedis. The release of lymphocytes from lymph nodes is regulated by the phospholipid sphingosine-1-phosphate (S1P). One of its receptors S1P1 binds S1P with high specificity and affinity; agonism of this receptor by the immunosuppressive agent FTY720 inhibits the entry of tissue T cells into afferent lymphatics in homeostatic and inflammatory conditions. Recent experiments have indicated that CCR7-deficient T cells left lymph nodes more rapidly than wild-type cells did and these cells where also less effectively retained after treatment with FTY720, and that egress competence could be restored by inactivating G alpha i-protein-coupled receptor signaling. These results suggest that S1P1 acts in the lymphocyte to promote lymph node egress by overcoming retention signals mediated by CCR7 and G alpha i-protein-coupled receptor signaling.

S1P1 Antibody - References

Miyasaka M and Tanaka T. Lymphocyte tracking across high endothelial venules: dogmas and enigmas. Nat. Rev. Immunol.2004; 3:360-70.
Mandala S, Hajdu R, Bergstrom J, et al. Alteration of lymphocyte tracking by sphingosine-1-phosphate receptor agonists. Science 2002; 296:346-9.
Ledgerwood LG, Lal G, Zhang N, et al. The sphingosine-1-phosphate receptor 1 causes tissue retention by inhibiting the entry of peripheral tissue T lymphocytes into afferent lymphatics. Nat. Immunol. 2008; 9:42-53.
Pham TH, Okada T, Matloubian M, et al. S1P1 receptor signaling overrides retention mediated by G alpha i-coupled receptors to promote T cell egress. Immunity 2008; 28:122-33.