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LRRC8A Antibody(C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP19519b

Product Information

Application	WB, E
Primary Accession	Q8IWT6
Other Accession	Q4V8I7, Q80WG5, NP_062540.2
Reactivity	Human, Mouse
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB30632
Calculated MW	94199
Antigen Region	782-810

Additional Information

Gene ID	56262
Other Names	Volume-regulated anion channel subunit LRRC8A, Leucine-rich repeat-containing protein 8A, Swelling protein 1, LRRC8A, KIAA1437, LRRC8, SWELL1
Target/Specificity	This LRRC8A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 782-810 amino acids from the C-terminal region of human LRRC8A.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	LRRC8A Antibody(C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	LRRC8A {ECO:0000303|PubMed:22532330, ECO:0000312|HGNC:HGNC:19027}

Function	Essential component of the volume-regulated anion channel (VRAC, also named VSOAC channel), an anion channel required to maintain a constant cell volume in response to extracellular or intracellular osmotic changes (PubMed:24725410, PubMed:24790029, PubMed:26530471, PubMed:26824658, PubMed:28193731, PubMed:29769723). The VRAC channel conducts iodide better than chloride and can also conduct organic osmolytes like taurine (PubMed:24725410, PubMed:24790029, PubMed:26530471, PubMed:26824658, PubMed:28193731, PubMed:30095067). Mediates efflux of amino acids, such as aspartate and glutamate, in response to osmotic stress (PubMed:28193731). LRRC8A and LRRC8D are required for the uptake of the drug cisplatin (PubMed:26530471). In complex with LRRC8C or LRRC8E, acts as a transporter of immunoreactive cyclic dinucleotide GMP-AMP (2'-3'-cGAMP), an immune messenger produced in response to DNA virus in the cytosol: mediates both import and export of 2'-3'-cGAMP, thereby promoting transfer of 2'-3'-cGAMP to bystander cells (PubMed:33171122). In contrast, complexes containing LRRC8D inhibit transport of 2'-3'-cGAMP (PubMed:33171122). Required for in vivo channel activity, together with at least one other family member (LRRC8B, LRRC8C, LRRC8D or LRRC8E); channel characteristics depend on the precise subunit composition (PubMed:24790029, PubMed:26824658, PubMed:28193731). Can form functional channels by itself (in vitro) (PubMed:26824658). Involved in B-cell development: required for the pro-B cell to pre-B cell transition (PubMed:14660746). Also required for T-cell development (By similarity). Required for myoblast differentiation: VRAC activity promotes membrane hyperpolarization and regulates insulin-stimulated glucose metabolism and oxygen consumption (By similarity). Also acts as a regulator of glucose-sensing in pancreatic beta cells: VRAC currents, generated in response to hypotonicity- or glucose-induced beta cell swelling, depolarize cells, thereby causing electrical excitation, leading to increase glucose sensitivity and insulin secretion (PubMed:29371604). Also plays a role in lysosome homeostasis by forming functional lysosomal VRAC channels in response to low cytoplasmic ionic strength condition: lysosomal VRAC channels are necessary for the formation of large lysosome-derived vacuoles, which store and then expel excess water to maintain cytosolic water homeostasis (PubMed:31270356, PubMed:33139539). Acts as a key factor in NLRP3 inflammasome activation by modulating itaconate efflux and mitochondria function (PubMed:39909992).
Cellular Location	Cell membrane; Multi-pass membrane protein. Lysosome membrane; Multi-pass membrane protein. Note=Mainly localizes to the cell membrane, with some intracellular localization to lysosomes
Tissue Location	Expressed in brain, kidney, ovary, lung, liver, heart, and fetal brain and liver. Found at high levels in bone marrow; lower levels are detected in peripheral blood cells. Expressed on T- cells as well as on B-lineage cells.

Background

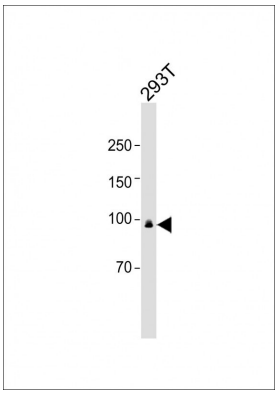
This gene encodes a protein belonging to the leucine-rich repeat family of proteins, which are involved in diverse biological processes, including cell adhesion, cellular trafficking, and hormone-receptor interactions. This family member is a putative four-pass transmembrane protein that plays a role in B cell development. Defects in this gene cause autosomal dominant non-Bruton type agammaglobulinemia, an immunodeficiency disease resulting from defects in B cell maturation. Multiple alternatively spliced transcript variants, which encode the same protein, have been identified for this gene.

References

Olsen, J.V., et al. Cell 127(3):635-648(2006)

Smits, G., et al. Mol. Immunol. 41(5):561-562(2004)
Kubota, K., et al. FEBS Lett. 564 (1-2), 147-152 (2004) :
Sawada, A., et al. J. Clin. Invest. 112(11):1707-1713(2003)
Conley, M.E. J. Clin. Invest. 112(11):1636-1638(2003)

Images



All lanes: Anti-LRRC8A Antibody(C-term) at 1:1000 dilution + 293T whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 94 KDa Blocking/Dilution buffer: 5% NFDM/TBST.