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LAG3 Antibody

Catalog # ASC12109

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	P18627
Other Accession	NP_002277
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Clone Names	LAG3
Calculated MW	57449

Additional Information

Gene ID	3902
Alias Symbol	LAG3
Other Names	LAG3 Antibody: lymphocyte activating 3, LAG-3, CD223
Target/Specificity	At least two antibodies are known to exist; this antibody will only detect the largest isoform.
Reconstitution & Storage	LAG3 antibody can be stored at 4˚C for three months and -20˚C, 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	LAG3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	LAG3 {ECO:0000303|PubMed:35761082, ECO:0000312|HGNC:HGNC:6476}
Function	[Lymphocyte activation gene 3 protein]: Inhibitory receptor on antigen activated T-cells (PubMed:20421648, PubMed:35761082, PubMed:7805750, PubMed:8647185). Delivers inhibitory signals upon binding to ligands, such as MHC class II, its main ligand present at the surface of antigen-presenting cells (APCs), and FGL1, which is secreted by hepatocytes and certain types of tumor cells (PubMed:30580966, PubMed:32920841, PubMed:35761082, PubMed:39671469, PubMed:7589152, PubMed:8647185, PubMed:9159144). Ligand-binding initiates a signaling that inhibits the T-cell receptor (TCR) in the immunological synapse, preventing T-cell activation (PubMed:40101708). Mechanistically, ligand-binding promotes (1) ubiquitination of the KIEELE motif, unleashing the RRFSALE motif from the membrane and (2) leading to the formation of condensates with the TCR component CD3E, thereby disrupting the association between CD3E and LCK and preventing TCR

	activation (PubMed:40101708, PubMed:40592325). May inhibit antigen-specific T-cell activation in synergy with PDCD1/PD-1 (By similarity). Negatively regulates the proliferation, activation, effector function and homeostasis of both CD8(+) and CD4(+) T-cells (PubMed:20421648, PubMed:7805750, PubMed:8647185). Also mediates immune tolerance: constitutively expressed on a subset of regulatory T-cells (Tregs) and contributes to their suppressive function (By similarity). Also acts as a negative regulator of plasmacytoid dendritic cell (pDCs) activation (By similarity).
Cellular Location	[Lymphocyte activation gene 3 protein]: Cell membrane; Single-pass type I membrane protein. Note=Clusters on the T-cell surface following ligand-binding
Tissue Location	Primarily expressed in activated T-cells and a subset of natural killer (NK) cells.

Background

The lymphocyte activation gene-3 (LAG3) is a member of the immunoglobulin superfamily and binds MHC class II with high affinity (1), negatively regulating T-cell function and homeostasis (2). It is expressed in B, T, and NK cells, monocytes, and dendritic cells (3), and acts to regulate T cell expansion (4). LAG3 is also an important immune checkpoint protein, with anti-LAG3 antibodies activating T effector cells and affecting regulatory T cell functions. Furthermore LAG3 appears to act in a synergistic fashion with PD-1/PD-L1, suggesting that a dual antibody approach may prove useful in cancer immunotherapy (5).

References

Huard B, Tournier M, Hercend T, et al. Lymphocyte-activation gene 3/major histocompatibility complex class II interaction modulates the antigenic response of CD4+ T lymphocytes. Eur J Immunol 1994; 24:3216–21.Triebel F. LAG-3: a regulator of T-cell and DC responses and its use in therapeutic vaccination. Trends Immunol 2003; 24:619–22.Workman CJ, Wang Y, El Kasmi KC, et al. LAG-3 regulates plasmacytoid dendritic cell homeostasis. J Immunol. 2009; 182:1885–91.Workman CJ, Vignali DA. The CD4-related molecule, LAG-3 (CD223), regulates the expansion of activated T cells. Eur J Immunol 2003; 33:970–9.

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