PRODUCT INFORMATION

LAG-3 Extracellular Domain (human, recombinant)

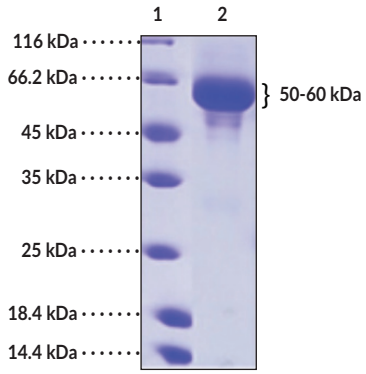
Item No. 32083

Overview and Properties

Synonyms:	CD223, Lymphocyte Activation Gene 3 Protein
Source:	Recombinant human C-terminal His-tagged LAG-3 expressed in HEK293 cells
Amino Acids:	29-450
Uniprot No.:	P18627
Molecular Weight:	47 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: LAG-3 Extracellular Domain

SDS-PAGE Analysis of LAG-3 Extracellular Domain. This protein has a calculated molecular weight of 47 kDa. It has an apparent molecular weight of approximately 50-60 kDa by SDS-PAGE under reducing conditions due to glycosylation.

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Description

Lymphocyte activation gene 3 (LAG-3) protein is a CD4-like protein and member of the immunoglobulin superfamily (IgSF) that binds with high affinity to MHC class II molecules.[1,2] *LAG3* is expressed in activated T cells and natural killer cells, and the protein functions as an inhibitory co-receptor that modulates T cell homeostasis, proliferation, expansion, activation, and function.[2-4] LAG-3 is comprised of an N-terminal extracellular domain with four IgSF domains, a transmembrane domain, and a C-terminal cytoplasmic domain with a KIEELE motif required for modulation of T cell function.[1-3] Elevated *LAG3* expression in chronic lymphocytic leukemia (CLL) cells is associated with reduced treatment-free survival in patients with CLL.[5] Co-administration of antibodies against both LAG-3 and PD-1 reduces the number and percentage of CLL cells in blood and spleen in a CLL-splenocyte adoptive transfer mouse model.[6] SNPs in *LAG3* are associated with susceptibility to multiple sclerosis.[7] Cayman's LAG-3 Extracellular Domain (human, recombinant) protein consists of 433 amino acids, has a calculated molecular weight of 47 kDa, and a predicted N-terminus of Val29 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 50 to 60 kDa due to glycosylation.

References

1. Baixeras, E., Huard, B., Miossec, C., *et al.* Characterization of the lymphocyte activation gene 3-encoded protein. A new ligand for human leukocyte antigen class II antigens. *J. Exp. Med.* **176(2)**, 327-337 (1992).
2. Goldberg, M.V. and Drake, C.G. LAG-3 in cancer immunotherapy. *Cancer Immunology and Immunotherapy*. Dranoff, G., editor, *Springer* (2011).
3. Triebel, F., Jitsukawa, S., Baixeras, E., *et al.* LAG-3, a novel lymphocyte activation gene closely related to CD4. *J. Exp. Med.* **171(5)**, 1393-1405 (1990).
4. Sierro, S., Romero, P., and Speiser, D.E. The CD4-like molecule LAG-3, biology and therapeutic applications. *Expert. Opin. Ther. Targets* **15(1)**, 91-101 (2011).
5. Kotaskova, J., Tichy, B., Trbusek, M., *et al.* High expression of *lymphocyte-activation gene 3* (*LAG3*) in chronic lymphocytic leukemia cells is associated with unmutated *immunoglobulin variable heavy chain region* (*IGHV*) gene and reduced treatment-free survival. *J. Mol. Diagn.* **12(3)**, 328-334 (2010).
6. Wierz, M., Pierson, S., Guyonnet, L., *et al.* Dual PD1/LAG3 immune checkpoint blockade limits tumor development in a murine model of chronic lymphocytic leukemia. *Blood* **131(14)**, 1617-1621 (2018).
7. Zhang, Z., Duvefelt, K., Svensson, F., *et al.* Two genes encoding immune-regulatory molecules (*LAG3* and *IL7R*) confer susceptibility to multiple sclerosis. *Genes Immun.* **6(2)**, 145-152 (2005).

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