PRODUCT INFORMATION

2B4/CD244 Extracellular Domain (human, recombinant)

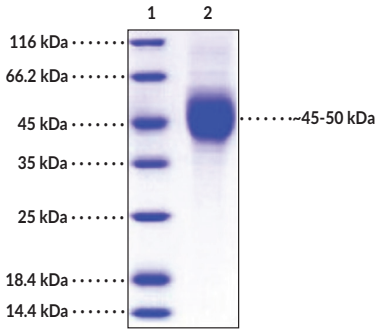
Item No. 31820

Overview and Properties

Synonyms:	Cluster of Differentiation 244, NAIL, Natural Killer Cell Receptor 2B4, NK Cell Activation-inducing Ligand, NKR2B4, Nmrk, SLAM Family Member 4, SLAMF4
Source:	Active recombinant human C-terminal His-tagged 2B4 expressed in HEK293 cells
Amino Acids:	22-221
Uniprot No.:	Q9BZW8
Molecular Weight:	23.8 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
Bioactivity:	See figure for details

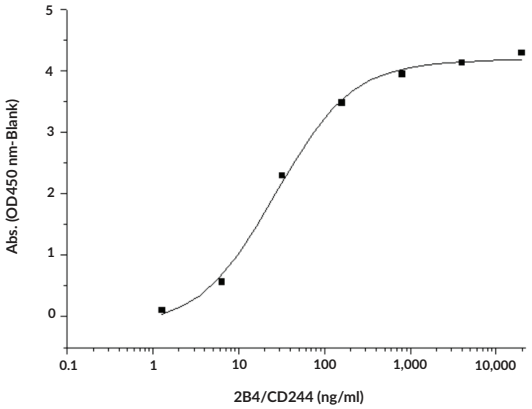
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: 2B4/CD244

SDS-PAGE Analysis of 2B4/CD244. This protein has a calculated molecular weight of 23.8 kDa. It has an apparent molecular weight of approximately 45 to 50 kDa by SDS-PAGE under reducing conditions due to apparent glycosylation.



2B4/CD244 Functional ELISA. Immobilized human 2B4/CD244 Extracellular Domain (human, recombinant) at 2 µg/ml (100 µl/well) can bind human CD48. The EC_{50} value of human CD48 is 0.39 µg/ml.

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Description

2B4, also known as CD244, is a cell surface receptor and a member of the signaling lymphocytic activation molecule (SLAM) receptor family (SLAMF).[1] It is comprised of an extracellular domain containing immunoglobulin (Ig) variable-like (IgV) and Ig constant 2-like (IgC2) motifs and several glycosylation sites, a membrane-spanning region, and a cytoplasmic domain containing serine, tyrosine, and threonine phosphorylation sites.[2] It is expressed on natural killer (NK) cells, certain T cells, monocytes, basophils, and eosinophils. 2B4 has an activating role when the adapter protein SLAM-associated protein (SAP) is present and bound to intracellular tyrosine-based switch motifs (ITSM) on the cytoplasmic domain.[1] When SAP is absent, SHP-1, SHP-2, SHIP-1, or CsK are able to bind, which leads to inhibitory signaling. 2B4 has *cis*- and *trans*-interactions with the cell surface receptor CD48 during the initiation and continuation of allergic reactions. It has a complex role in cancer, with male, but not female, *CD244*$^{-/-}$ mice rejecting tumor cells in a xenograft model, however, its role is primarily inhibitory in tumor-associated immune cells.[2] The expression of *CD244* is decreased in NK cells from patients with multiple myeloma or systemic lupus erythematosus (SLE).[1] 2B4 is associated with X-linked lymphoproliferative disease (XLPD), which is characterized by a mutation in SAP that prevents it from binding to 2B4.[3] Cayman's 2B4/CD244 Extracellular Domain (human, recombinant) protein can be used for ELISA. This protein consists of 211 amino acids, has a calculated molecular weight of 23.8 kDa, and a predicted N-terminus of Cys22 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is approximately 45-50 kDa due to glycosylation.

References

1. Pahima, H., Puzzovio, P.G., and Levi-Schaffer, F. 2B4 and CD48: A powerful couple of the immune system. *Clin. Immunol.* **204**, 64-68 (2019).
2. Buller, C.W., Mathew, P.A., and Mathew, S.O. Roles of NK cell receptors 2B4 (CD244), CS1 (CD319), and LLT1 (CLEC2D) in cancer. *Cancers (Basel)* **12(7)**, 1755 (2020).
3. Mathew, P.A. Regulation of NK cell function by 2B4 (CD244) receptor. *Trends Immunol.* **9**, 25-32 (2008).

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