

PRODUCT INFORMATION



FcγRIIb/CD32B (human, recombinant)

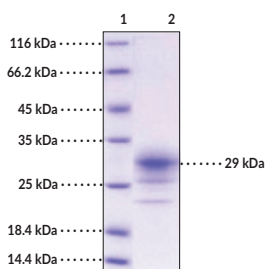
Item No. 31830

Overview and Properties

Synonyms:	CDw32, Fc-γ RII-b, FcγRIIB, FcRII-b, IgG Fc Receptor II-b, Low Affinity Immunoglobulin Gamma Fc Region Receptor II-b
Source:	Active recombinant human C-terminal His-tagged FcγRIIb expressed in CHO cells
Amino Acids:	46-217
Uniprot No.:	P31994-1
Molecular Weight:	20.8 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥97% 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 figures for details

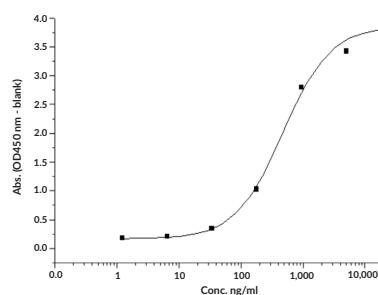
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images

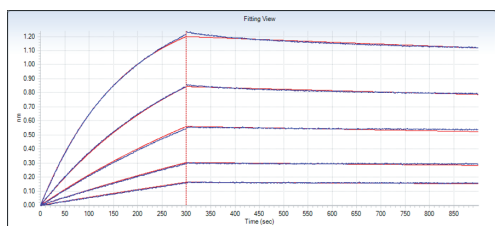


Lane 1: MW Markers
Lane 2: FcγRIIb/CD32B

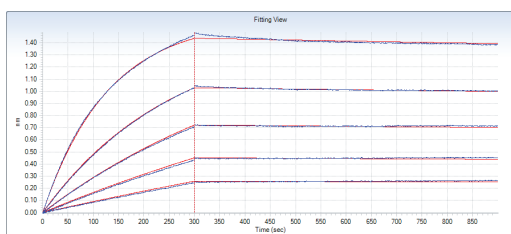
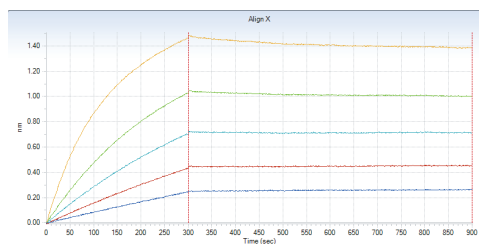
SDS-PAGE Analysis of FcγRIIb/CD32B. This protein has a calculated molecular weight of 20.8 kDa. It has an apparent molecular weight of approximately 29 kDa by SDS-PAGE under reducing conditions due to glycosylation.



Measured by its binding ability in a functional ELISA. Immobilized human FcγRIIb/CD32B at 10 μg/ml (100 μl/well) can bind biotinylated human IgG1. The EC₅₀ of biotinylated human IgG1 is 0.18-0.42 μg/ml.



Using the Octet RED System, the affinity constant (Kd) of FcγRIIb/CD32B (human, recombinant) (Item No. 31830) bound to Conceptor was 0.3 nM.



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

FcγRIIb, also known as CD32B, is a low-affinity IgG receptor that binds the Fc region of IgG.^{1,2} It is composed of two immunoglobulin-like (Ig-like) extracellular domains, a transmembrane domain, and a cytoplasmic tail domain containing an immunoreceptor tyrosine-based inhibitory motif (ITIM), which is important for its signaling activity.¹ The FcγRIIb isoform is generated *via* alternative splicing and has a shorter cytoplasmic tail than the FcγRIIa isoform, which allows the FcγRIIb isoform to be endocytosed. FcγRIIb is predominantly expressed on myeloid-derived cells, whereas the FcγRIIa isoform is primarily expressed on B cells. FcγRIIb is a co-inhibitory receptor that, when phosphorylated at the ITIM region, inhibits the activation of activating FcγRs on myeloid cells and of B cell receptors but can also inhibit B cell receptor activation in the absence of ITIM phosphorylation. It inhibits the pathogen clearing activity mediated by activating FcγRs, including reducing phagocytosis and cytokine release by myeloid cells, and reduces immune complex-mediated cellular activation, such as inhibiting B cell activation or inducing apoptosis of self-reactive B cells.² A SNP in *FCGR2B*, the gene encoding FcγRIIb, is associated with susceptibility to systemic lupus erythematosus (SLE), and SNPs in *FCGR2B* are also associated with rheumatoid arthritis and immune thrombocytopenic purpura (ITP).³ Cayman's FcγRIIb/CD32B (human, recombinant) protein can be used for binding assay applications. This protein consists of 183 amino acids and has a calculated molecular weight of 20.8 kDa. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is approximately 29 kDa due to glycosylation.

References

1. Roghanian, A., Stopforth, R.J., Dahal, L.N., *et al.* New revelations from an old receptor: Immunoregulatory functions of the inhibitory Fc gamma receptor, FcγRIIB (CD32B). *J. Leukoc. Biol.* **103(6)**, 1077-1088 (2018).
2. Espéli, M., Smith, K.G.C., and Clatworthy, M.R. FcγRIIB and autoimmunity. *Immunol. Rev.* **269(1)**, 194-211 (2016).
3. Zhu, X.-W., Wang, Y., Wei, Y.-H., *et al.* Comprehensive assessment of the association between FCGRs polymorphisms and the risk of systemic lupus erythematosus: Evidence from a meta-analysis. *Sci. Rep.* **6**, 31617 (2016).

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