



LD Biopharma, Inc.
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Tel: 858-876-8266
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human CD158a Protein
Catalog Number: hRP-2304
Manufacturer: LD Biopharma, Inc.

Introduction

The protein encoded by human CD158a gene is a Killer cell immunoglobulin-like receptors (KIRs) which are trans-membrane glycoproteins expressed by natural killer cells and subsets of T cells. The KIR genes are polymorphic and highly homologous and they are found in a cluster on chromosome 19q13.4 within the 1 Mb leukocyte receptor complex (LRC). The gene content of the KIR gene cluster varies among haplotypes, although several 'framework' genes are found in all haplotypes (KIR3DL3, KIR3DP1, KIR3DL4, KIR3DL2). The KIR proteins are classified by the number of extracellular immunoglobulin domains (2D or 3D) and by whether they have a long (L) or short (S) cytoplasmic domain. KIR proteins with the long cytoplasmic domain transduce inhibitory signals upon ligand binding via an immune tyrosine-based inhibitory motif (ITIM), while KIR proteins with the short cytoplasmic domain lack the ITIM motif and instead associate with the TYRO protein tyrosine kinase binding protein to transduce activating signals. The ligands for several KIR proteins are subsets of HLA class I molecules; thus, KIR proteins are thought to play an important role in regulation of the immune response.

Full-length extracellular domain of human CD158a cDNA (22 – 245aa, derived from BC032422) was constructed with codon optimization gene synthesis and expressed with a human alpha Fetal Protein N-terminal (AFPn) -His-TEV cleavage site Tag (217aa) fusion at its N-terminal. This protein was expressed in *E. coli* as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: CD158a (KIR2DL1; KIR-K64; KIR221; NKAT; p58.1)
Accession Number: NP_055033.2
Species: Human
Size: 40 µg / Vial
Composition: 0.4 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.



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Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Littera R, et al., *KIR and their HLA Class I ligands: Two more pieces towards completing the puzzle of chronic rejection and graft loss in kidney transplantation*. PLoS ONE 12 (7), E0180831 (2017)

Isitman G, et al., *NK Cells Expressing the Inhibitory Killer Immunoglobulin-Like Receptors (iKIR) KIR2DL1, KIR2DL3 and KIR3DL1 Are Less Likely to Be CD16+ than Their iKIR Negative Counterparts*. PLoS ONE 11 (10), E0164517 (2016)

Gooneratne SL, et al., *Functional advantage of educated KIR2DL1(+) natural killer cells for anti-HIV-1 antibody-dependent activation*. Clin. Exp. Immunol. 184 (1), 101-109 (2016)

Applications

1. May be used for in vitro CD158a mediated TYRO protein tyrosine kinase signaling pathway regulation study for both Kill or T cells with this protein either as soluble factor or as coating matrix protein.
2. May be used for protein-protein interaction assay.
3. Potential Therapeutic, which may be used as regulator for immune-modulating in vivo (recombinant CD158a protein or anti-CD158a antibody) for various diseases.
4. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MTLHRNEYGIASILDSYQCTAEISLADLATIFFAQFVQEATYKEVSKMVKDALTAIEKPTGDEQ
SSGCLLENQLPAFLLEELCHEKEILEKYGHSDCCSQSEGRHNCFLAHKKPTPASIPLFQVPEPVT
SCEAYEEDRETFMKNFIYEIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT
KELRESSGGSHHHHHHGS^{ENLYFQGGFHEGVHRKPSLLAHPGPLVKSEETVILQCWSDVMFEHF}
LLHREGMFNDTLRLIGEHHDGVSKANFSISRMTQDLAGTYRCYGSVTHSPYQVSAPSDPLDIVI
IGLYEKPSLSAQPGPTVLAGENVTLSCSSRSSYDMYHLSREGEAHERRLPAGPKVNGTFQADFP
LGPATHGGTYRCFGSFHDSPEYWSKSSDPLLVSVTGNPNSNSWPSPTPEPSSKTGNPRHLH