



LD Biopharma, Inc.
7384 Trade Street, Suite B
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human CD158d Protein
Catalog Number: hRP-2374
Manufacturer: LD Biopharma, Inc.

Introduction

Killer cell immunoglobulin-like receptors (KIRs) 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. *Human KIR2DL4*, (also named as *CD158d*) gene is one of the 'framework' loci that is present on all haplotypes. Alternate alleles of this gene are represented on multiple alternate reference loci (ALT_REF_LOCs). CD158d play an important role as receptor on NK cell for HLA-C alleles, and it inhibits the activity of NK thus preventing cell lysis.

Full-length extracellular domain of human CD158d cDNA (22 – 242aa, derived from BC041611) 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: CD158d (KIR2DL4; G9P; KIR-103AS; KIR103)
Accession Number: NP_002246
Species: Human



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Size:	25 µg / Vial
Composition:	0.25 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.
Storage:	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Takayuki Chikata, et al. *Control of HIV-1 by an HLA-B*52:01-C*12:02 Protective Haplotype*. *Journal of Infectious Diseases*, 12 December, 216(11):1415-1424, (2017)

Albayati Z, et al., *The Influence of Cytomegalovirus on Expression of HLA-G and its Ligand KIR2DL4 by Human Peripheral Blood Leucocyte Subsets*. *Scand. J. Immunol.* 86 (5), 396-407 (2017)

Nowak I, et al., *Possible Role of HLA-G, LILRB1 and KIR2DL4 Gene Polymorphisms in Spontaneous Miscarriage*. *Arch. Immunol. Ther. Exp. (Warsz.)* 64 (6), 505-514 (2016)

Wang D. et al. *KIR2DL4 expression rather than its single nucleotide polymorphisms correlates with pre-eclampsia*. *Int J Clin Exp Pathol* 8 (11), 14535-14541 (2015)

Wisniewski A, et al., *Genetic polymorphisms and expression of HLA-G and its receptors, KIR2DL4 and LILRB1, in non-small cell lung cancer* *JOURNAL Tissue Antigens* 85 (6), 466-475 (2015)

Applications

1. May be used for in vitro CD158d mediated immune-modulator activities regulation study for various 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/diagnostic protein, which may be used as immune-modulator (recombinant CD158d or anti-CD158d antibody) for NK activity related diseases.
4. As immunogen for specific antibody production.

Quality Control



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Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MTLHRNEYGIASILDSYQCTAEISLADLATIFFAQFVQEATYKEVSKMVKDALTAIEKPTGDEQ
SSGCLLENQLPAFLEELCHEKEILEKYGHSDCCSQSEEGRHNCFLAHKKPTPASIPLFQVPEPVT
SCEAYEEDRETFMNKFIYEIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT
KELRESSGGSHHHHHHGSENLYFQGWAHVGGQDKPFCSAWPSAVVPQGGHVTLRCHYRRGFNIF
TLYKKDGVVPPELYNRIFWNSFLISPVTPAHAGTYRCRGFHPHSPTIEWSAPSNPLVIMVTGLYE
KPSLTARPGPTVRAGENVTLSQSSQSSFDIYHLSREGEAHELRLPAVPSINGTFQADFPLGPAT
HGETYRCFGSFHGSPEYEWSDPSDPLPVSVTGNPSSSWPSPTEPSFKTGIARHLH