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

Name of Product: Recombinant Human CD155 Protein
Catalog Number: hRP-2275
Manufacturer: LD Biopharma, Inc.

Introduction

Human CD155 gene encodes a trans-membrane protein which mediates NK cell adhesion and triggers NK cell effector functions. It binds two different NK cell receptors: CD96 and CD226. These interactions accumulate at the cell-cell contact site, leading to the formation of a mature immunological synapse between NK cell and target cell. This may trigger adhesion and secretion of lytic granules and IFN-gamma and activate cytoxicity of activated NK cells. CD155 may also promote NK cell-target cell modular exchange, and PVR transfer to the NK cell. This transfer is more important in some tumor cells expressing a lot of PVR, and may trigger fratricide NK cell activation, providing tumors with a mechanism of immune-evasion. CD155 plays a role in mediating tumor cell invasion and migration. CD155 serves as a receptor for poliovirus attachment to target cells. It may play a role in axonal transport of poliovirus, by targeting virion-PVR-containing endocytic vesicles to the microtubular network through interaction with DYNLT1. This interaction would drive the virus-containing vesicle to the axonal retrograde transport. CD155 can form trans-heterodimers with PVRL3/nectin-3. The extracellular domain interacts with VTN, CD226 and CD96. The cytoplasmic domain interacts with DYNLT1. Interacts with HHV-5 UL141. Interacts with poliovirus capsid composed of VP1, VP2 and VP3, mainly through VP3. It also binds with high affinity to TIGIT

Full-length extracellular domain of human CD155 cDNA (21 – 343aa, derived from BC015542) 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-terminall. 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: CD155 (PVR; HVED; Necl-5; PVS; TAGE4)
Accession Number: NP_006496
Species: Human

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Size:	20 µg / Vial
Composition:	0.2 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

Gao J, et al., *CD155, an onco-immunologic molecule in human tumors* Cancer Sci. 108 (10), 1934-1938 (2017)

Takahashi N, et al., *Increased Soluble CD226 in Sera of Patients with Cutaneous T-Cell Lymphoma Mediates Cytotoxic Activity against Tumor Cells via CD155*. J. Invest. Dermatol. 137 (8), 1766-1773 (2017)

Pignoloni B, et al., *Distinct Roles for Human Cytomegalovirus Immediate Early Proteins IE1 and IE2 in the Transcriptional Regulation of MICA and PVR/CD155 Expression*. J. Immunol. 197 (10), 4066-4078 (2016)

Iguchi-Manaka A, et al., *Increased Soluble CD155 in the Serum of Cancer Patients*. PLoS ONE 11 (4), E0152982 (2016)

Applications

1. May be used for in vitro CD155 mediated NK activation regulation study 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 NK activities regulator for immune-modulating in vivo (recombinant CD155 protein or anti-CD155 antibody) for various diseases.
4. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

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MTLHRNEYGIASILDSYQCTAEISLADLATIFFAQFVQEATYKEVSKMVKDALTAIEKPTGDEQ
SSGCLENQLPAFLEELCHEKEILEKYGHSDCCSQSEEGRHNCFLAHKKPTPASIPLFQVPEPVT
SCEAYEEDRETFMNKFIYEIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT
KELRESSGGSHHHHHHGSENLYFQGWPPPGTGDVVVQAPTQVPGFLGDSVTLPCYLQVPNMEVT
HVSQLTWARHGESGSMAVFHQTQGPSYSESKRLEFVAARLGAELRNASLRMFGLRVEDEGNYTC
LFVTFPQGSRSVDIWLRVLAKPQNTAEVQKVQLTGEPVPMARCVSTGGRPPAQITWHSDLGGMP
NTSQVPGFLSGTVTVTSLWILVPSSQVDGKNVTCKVEHESFEKPQLLTVNLTVYYPPEVSISGY
DNNWYLGQNEATLTCDARSNPEPTGYNWSTTMGPLPPFAVAQGAQLLIRPVDKPINTTLICNVT
NALGARQAELTVQVKEGPPSEHSGISRN