



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human C5AR1 Protein
Catalog Number: hRP-2693
Manufacturer: LD Biopharma, Inc. USA

Introduction

Human C5a anaphylatoxin chemotactic receptor 1 (C5AR1, also named as CD88) gene encodes a receptor for the chemotactic and inflammatory peptide anaphylatoxin C5a. The ligand interacts with at least two sites on the receptor: a high-affinity site on the extracellular N terminus, and a second site in the trans-membrane region which activates downstream signaling events. Receptor activation stimulates chemotaxis, granule enzyme release, intracellular calcium release and superoxide anion production. As C5a is thought to activate myeloid-derived suppressor cells and thereby make the tumor microenvironment immunosuppressive, so blocking C5a / C5AR1 signaling pathway might be a good therapeutic target for cancer immunotherapy.

Four fragments of human C5AR1 extracellular domain were jointed together using small GGGGS link sequence. This fusion protein cDNA (20 – 253 aa) 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 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: C5AR1 (C5AR; C5R1, CD88)
Accession Number: NP_001727.1
Species: Human
Size: 50µg / Vial
Composition: 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT and others.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two weeks.

Key References



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Chen J, et al., *Complement C5a/C5aR pathway potentiates the pathogenesis of gastric cancer by down-regulating p21 expression* Cancer Lett. 412, 30-36 (2018)

Zaal A, et al., *TLR4 and C5aR crosstalk in dendritic cells induces a core regulatory network of RSK2, PI3Kbeta, SGK1, and FOXO transcription factors.* J. Leukoc. Biol. 102 (4), 1035-1054 (2017)

Hawksworth OA, et al., *New concepts on the therapeutic control of complement anaphylatoxin receptors.* Mol. Immunol. 89, 36-43 (2017)

Applications

1. May be used for in vitro C5AR1 mediated myeloid-derived suppressor cells activation study in vitro with this recombinant C5AR1 protein either as soluble factor or as coating matrix protein.
2. May be used for C5AR1 protein-protein interaction assay.
3. Potential Therapeutic / diagnostic protein, which may be used as T cell activation regulator (such as anti-C5AR1 antibody) for cancer therapy.
4. As human C5AR1 immunogen for its specific antibody production.

Quality Control

Purity: > 93 % by SDS-PAGE.

Recombinant Human AFPn- C5AR1 Fusion Protein Sequence (36.8 kD)

MTLHRNEYGIASILDSYQCTAEISLADLATIFFAQFVQEATYKEVSKMKVDALTAIEKPTGDEQ
SSGCLLENQLPAFLEELCHEKEILEKYGHSDCCSQSEEGRHNCFLAHKKPTPASIPLFQVPEPVT
SCEAYEEDRETFMKNFIYEIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT
KELRESSGGSHHHHHGSENLYFOGGE MDSFNYTTPDYGHYDDKDTLDLNTPVDKTSNTLRVPD
GGGSTSIVQHHPFGGAACSGGSSRVVREEYFPPKVLGVDYSHDKRRERGGSSSFLEPSSPT
FLLLKKLD