



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human MADCAM1 Protein
Catalog Number: HRP-2596
Manufacturer: LD Biopharma, Inc.

Introduction

The protein encoded by human mucosal addressing cell adhesion molecular 1 (MADCAM1) gene is an endothelial cell adhesion molecule that interacts preferentially with the leukocyte beta7 integrin LPAM-1 (alpha4beta7), L-selectin, and VLA-4 (alpha4beta1) on myeloid cells to direct leukocytes into mucosal and inflamed tissues. It is a member of the immunoglobulin family and is similar to ICAM1 and VCAM1. At least seven alternatively spliced transcripts encoding different protein isoforms have been found for this gene. Isoform 2, lacking the mucin-like domain, may be specialized in supporting integrin alpha-4/beta-7-dependent adhesion strengthening, independent of L-selectin binding. Recent data indicated that MADCAM1 also plays an important role in regulating T cell / gut-specific homing.

Full-length extracellular domain of human MADCAM1 cDNA (19 – 230aa, Isoform-III, derived from BC137506) 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: MADCAM1
Accession Number: NP_570118
Species: Human
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, DTT and others.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References



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Wang J, et al., *Doxorubicin induces apoptosis by targeting Madcam1 and AKT and inhibiting protein translation initiation in hepatocellular carcinoma cells*. Oncotarget 6 (27), 24075-24091 (2015)

Zhang K, et al., *Disruption of disulfide restriction at integrin knees induces activation and ligand-independent signaling of alpha(4)beta(7)*. J. Cell. Sci. 126 (Pt 21), 5030-5041 (2013)

Ala A, et al. *Mucosal addressin cell adhesion molecule (MAdCAM-1) expression is upregulated in the cirrhotic liver and immunolocalises to the peribiliary plexus and lymphoid aggregates*. Dig. Dis. Sci. 58 (9), 2528-2541 (2013)

Yu Y, et al., *Domain 1 of mucosal addressin cell adhesion molecule has an I1-set fold and a flexible integrin-binding loop*. J. Biol. Chem. 288 (9), 6284-6294 (2013)

Applications

1. May be used for studying MADCAM1 mediated T cell homing in various tissues, such as gut for its signaling pathway regulation in vitro with this recombinant MADCAM1 protein either as soluble factor or as coating matrix protein.
2. May be used for MADCAM1 protein-protein interaction assay.
3. Potential Therapeutic / diagnostic protein, which may be used for regulating immune-response in various diseases, such as moderate to severe ulcerative colitis or Crohn's diseases treatment.
4. As native human MADCAM1 immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Human AFPn- MADCAM1 Fusion Protein (47.2 kD)

MTLHRNEYGIASILD SYQCTAEISLADLATIFFAQFVQEATYKEVSKMVKDALTAIEKPTGDEQ
SSGCLLENQLPAFLEELCHEKEILEKYGHSDCCSQSEEGRHNCFLAHKKPTPASIPLFQVPEPVT
SCEAYEEDRETFMKNFIYEIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT
KELRESSGGSHHHHHGSENLYFQGEFQSLQVKPLQVEPPEPVVAVALGASRQLTCRLACADRG
ASVQWRGLDTSLGAVQSDTGRSVLTVRNASLSAAGTRVCVGGSCGGRTFQHTVQLLVYAFPDQLT
VSPAALVPGDPEVACTAHKVTPVDPNALSFSLLVGGQELEGAQALGPEVQEEEEEPQGDEDVLF
RVTERWRLPPLGTPVPPALYCQATMRLPGLLELSHRQAI PASKPAGDQ