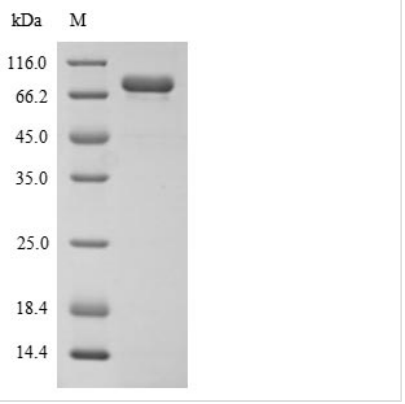
Recombinant Human Mucosal addressin cell adhesion molecule 1 (MADCAM1), partial

Product Code	CSB-YP618776HUc7
Relevance	Cell adhesion leukocyte receptor expressed by mucosal venules, helps to direct lymphocyte traffic into mucosal tissues including the Peyer patches and the intestinal lamina propria. It can bind both integrin alpha-4/beta-7 and L-selectin, regulating both the passage and retention of leukocytes. 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.
Abbreviation	Recombinant Human MADCAM1 protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q13477
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	QSLQVKPLQVEPPEPVVAVALGASRQLTCRLACADRGASVQWRGLDTSLGAV QSDTGRSVLTVRNASLSAAGTRVCVGSCGGRTFQHTVQLLVYAFPDQLTVSP AALVPGDPEVACTAHKVTPVDPNALSFSLLVGGQELEGAQALGPEVQEEEEE PQGDEDVLFRVTERWRLPPLGTPVPPALYCQATMRLPGLELSHRQAIPVLHSP TSPEPPDTTSPESPDTTSPESPDTTSQEPPDTTSPEPPDKTSPEPAPQQGSTH TPRSPGSTRTRRPEISQAGPTQGEVIPTGSSKPAGDQ
Research Area	Immunology
Source	Yeast
Target Names	MADCAM1
Protein Names	Short name: MAdCAM-1 Short name: hMAdCAM-1
Expression Region	19-317aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 6xHis-tagged
Mol. Weight	33.4 kDa
Protein Length	Extracellular Domain
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Producing recombinant human mucosal addressin cell adhesion molecule 1 (MADCAM1) in yeast involves co-cloning the gene of interest (19-317aa of human MADCAM1) into an expression vector with a C-terminal 6xHis-tag gene, which is transformed into yeast cells. The cells are cultured to induce protein expression. After reaching adequate growth, the cells are lysed to extract the recombinant MADCAM1 protein. The collected proteins are purified through affinity chromatography. The purity of the recombinant MADCAM1 protein is assessed using SDS-PAGE, exceeding 85%.

Human MADCAM1 is expressed by fibroblastic reticular cells (FRCs) in the lymph node microenvironment and plays a crucial role in leukocyte trafficking to the gut-associated lymphoid tissues (GALTs) [1]. It is a ligand for α4β7 integrin, facilitating the recruitment of lymphocytes to the gut mucosa [2]. The expression of MADCAM1 is equally distributed throughout the proximal and distal colon, contributing to the homing of dendritic cells to the human colon [2].

Furthermore, MADCAM1 is involved in the selective recruitment of peripheral blood CD16(–) natural killer cells into the human endometrium [3]. It interacts with L-selectin and chondroitin sulfate proteoglycans, mediating the migration of specific immune cells to the endometrial tissue [3].

References:
[1] A. Habtezion, L. Nguyen, H. Hadeiba, & E. Butcher, Leukocyte trafficking to the small intestine and colon, Gastroenterology, vol. 150, no. 2, p. 340-354, 2016. https://doi.org/10.1053/j.gastro.2015.10.046
[2] D. Bernardo, L. Durant, E. Mann, E. Bassity, E. Montalvillo, R. Manet al., Chemokine (c-c motif) receptor 2 mediates dendritic cell recruitment to the human colon but is not responsible for differences observed in dendritic cell subsets, phenotype, and function between the proximal and distal colon, Cellular and Molecular Gastroenterology and Hepatology, vol. 2, no. 1, p. 22-39.e5, 2016. https://doi.org/10.1016/j.jcmgh.2015.08.006
[3] T. Yamaguchi, K. Kitaya, N. Daikoku, T. Yasuo, S. Fushiki, & H. Honjo, Potential selectin l ligands involved in selective recruitment of peripheral blood cd16(–) natural killer cells into human endometrium1, Biology of Reproduction, vol. 74, no. 1, p. 35-40, 2006. https://doi.org/10.1095/biolreprod.105.045971

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the

	contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.