

## DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Human                                                                                               |
| <b>Specificity</b>                                                                                                                                                                                      | Detects human MADCAM-1 in direct ELISAs.                                                            |
| <b>Source</b>                                                                                                                                                                                           | Polyclonal Sheep IgG                                                                                |
| <b>Purification</b>                                                                                                                                                                                     | Antigen Affinity-purified                                                                           |
| <b>Immunogen</b>                                                                                                                                                                                        | Mouse myeloma cell line NS0-derived recombinant human MADCAM-1<br>Met1-Leu333<br>Accession # Q13477 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 532<br>Excitation Wavelength: 534 nm<br>Emission Wavelength: 553 nm                     |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                                        |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |                                                                                                     |

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

**ELISA** Optimal dilution of this antibody should be experimentally determined.

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

Mucosal addressin cell adhesion molecule-1 (MADCAM-1) is an approximately 60 kDa type 1 transmembrane glycoprotein. It is an endothelial cell adhesion molecule that belongs to the immunoglobulin (Ig) superfamily of proteins (1). Human MADCAM-1 is synthesized as a 382 amino acid (aa) precursor that contains an 18 aa signal sequence, a 299 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 44 aa cytoplasmic tail. Within the ECD there is one potential site for N-linked glycosylation (2). The ECD comprises two Ig-like domains of 90 aa and 119 aa, respectively, each possessing invariant cysteine residues that stabilize the Ig loop (2). There is also a Ser-Thr-Pro-rich (71%) mucin-like 48 aa domain that is (aa 206-317) formed by six tandem repeats of an eight aa sequence having the general consensus DTTSPSP/SP. This mucin domain contains 19 potential sites for O-linked glycosylation (2, 3). A splicing variant in which a single Ala residue is substituted for aa 223-334 in isoform 1 produces a second isoform. Human mature MADCAM-1 shares only 44% aa sequence identity with mature mouse MADCAM-1. The integrin  $\alpha(4)\beta(7)$ , which is expressed on lymphocytes, functions as the MADCAM-1 receptor (1). The Ig domains of MADCAM-1 are critical to  $\alpha(4)\beta(7)$  binding, and the mucin domain has activity in L-Selectin binding. MADCAM-1 expression is up-regulated by TNF- $\alpha$  and IL-1 $\beta$ . MADCAM-1 is expressed on the surface of high endothelial venules (HEV) in the gut and in Peyer's patches, on endothelial cells of the mesenteric lymph nodes, lamina propria of the small and large intestine, and the mammary gland during lactation, and on brain endothelial cells (1). MADCAM-1 has also been reported to be expressed in the liver portal region in autoimmune hepatitis (1), and in bone marrow following allogeneic (genetically non-identical) hematopoietic stem cell transplantation, where it recruits donor T cells, which may lead to graft versus host disease (3, 4). MADCAM-1 functions as a homing receptor, and plays a central role in leukocyte migration into HEVs and Peyer's patch (5). In addition to its normal role in lymphocyte trafficking to mucosal tissue, MADCAM-1 expression is also dramatically increased in chronic inflammatory and disease states (1, 6), including inflammatory bowel disease (Crohn's disease and ulcerative colitis) (7), sclerosing cholangitis (8), and diabetes (9), and may play an important role in these conditions.

## PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.