Human MAdCAM-1
Alexa Fluor® 700-conjugated Antibody

Monoclonal Mouse IgG_1 Clone # 683715

Catalog Number: FAB6056N

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human MAdCAM-1 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant mouse MAdCAM-1, recombinant human (rh) ALCAM, rhBCAM, rhCEACAM-1, rhEpCAM, rhICAM-1, -2, -3, -4, -5, rhCD31/PECAM-1, or rhVCAM-1 is observed.
Source	Monoclonal Mouse IgG_1 Clone # 683715
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human MAdCAM-1 Leu21-Gln333 Accession # AAY82472
Conjugate	Alexa Fluor 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *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.*

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10^6 cells	HeLa human cervical epithelial carcinoma cell line

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**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 DTTSPEP/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 α(4) β(7), which is expressed on lymphocytes, functions as the MAdCAM-1 receptor (1). The Ig domains of MAdCAM-1 are critical to α(4) β(7) binding, and the mucin domain has activity in L-Selectin binding. MAdCAM-1 expression is up-regulated by TNF-α and IL-1β. 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 allogenic (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.

References:

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