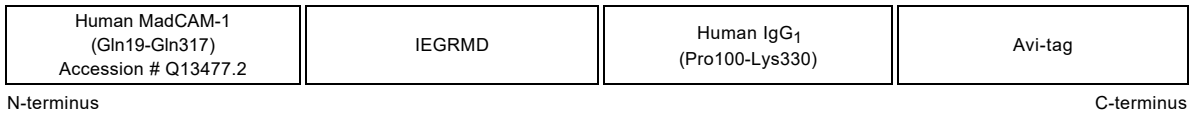
Biotinylated Recombinant Human MAdCAM-1 Fc Chimera Avi-tag

Catalog Number: AVI11379

DESCRIPTION

Source

Human embryonic kidney cell, HEK293-derived human MAdCAM-1 protein



N-terminal Sequence Analysis	Gln19 and Gln22; deduced from Ser20 and Val23 after deblock
Structure / Form	Disulfide-linked homodimer Biotinylated via Avi-tag
Predicted Molecular Mass	60 kDa

SPECIFICATIONS

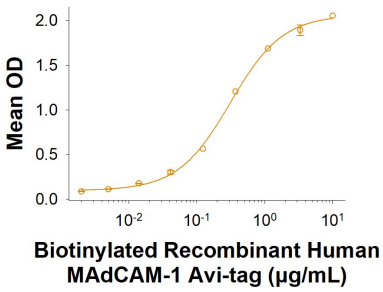
SDS-PAGE	93-103 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. Biotinylated Recombinant Human MAdCAM-1 Fc Chimera Avi-tag (Catalog # AVI11379) binds to Recombinant Human Integrin alpha 4 beta 7 Protein (Catalog # 5397-A3) with an ED_{50} of 0.250-2.50 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

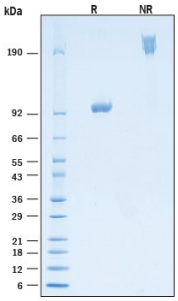
DATA

Binding Activity



Biotinylated Recombinant Human MAdCAM-1 Fc Chimera Avi-tag Protein Binding Activity. Measured by its binding ability in a functional ELISA. Biotinylated Recombinant Human MAdCAM-1 Fc Chimera Avi-tag Protein (Catalog # AVI11379) binds to Recombinant Human Integrin alpha 4 beta 7 Protein (Catalog # 5397-A3) with an ED_{50} of 0.250-2.50 µg/mL.

SDS-PAGE



Biotinylated Recombinant Human MAdCAM-1 Fc Chimera Avi-tag Protein SDS-PAGE. 2 µg/lane of Biotinylated Recombinant Human MAdCAM-1 Fc Chimera Avi-tag Protein (Catalog # AVI11379) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 93-103 kDa and 190-210 kDa, respectively.

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Biotinylated Recombinant Human MAdCAM-1 Fc Chimera Avi-tag

Catalog Number: AVI11379

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. Our Avi-tag Biotinylated human MAdCAM-1 Fc Chimera features biotinylation at a single site contained within the Avi-tag, a unique 15 amino acid peptide. Protein orientation will be uniform when bound to streptavidin-coated surface due to the precise control of biotinylation and the rest of the protein is unchanged so there is no interference in the protein's bioactivity.

References:

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