Recombinant Human ICAM-4 Fc Chimera

Catalog Number: 10407-IC

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human ICAM-4 protein

Human ICAM-4 (Ala31-Ala240) Accession # Q14773.1	DIEGRMD	Human IgG_1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Ala31
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	50 kDa

SPECIFICATIONS

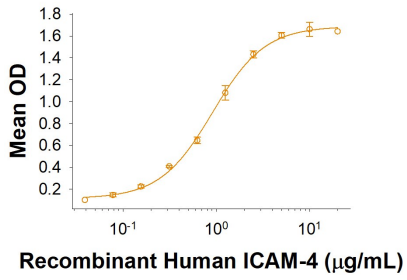
SDS-PAGE	50-60 kDa & 70-80 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human Integrin αLβ2 (Catalog # 3868-AV) is immobilized at 1 µg/mL (100 µL/well), Recombinant Human ICAM-4 Fc Chimera (Catalog # 10407-IC) binds with an ED_{50} of 0.25-1.5 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 400 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.

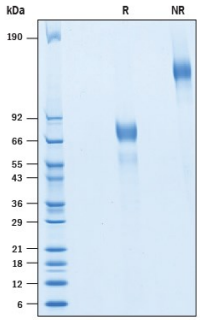
DATA

Binding Activity



When Recombinant Human Integrin alpha L beta 2 Protein (Catalog # 3868-AV) is immobilized at 1 µg/mL (100 µL/well), Recombinant Human ICAM-4 Fc Chimera (Catalog # 10407-IC) binds with an ED_{50} of 0.25-1.5 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Human ICAM-4 Fc Chimera (Catalog # 10407-IC) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at kDa.

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BACKGROUND

ICAM-4 (intercellular adhesion molecule-4), also known as CD242, is a transmembrane cell adhesion glycoprotein and a member of the immunoglobulin protein superfamily. The ICAM sub-family consists of five members, ICAM-1 through ICAM-5, and they vary in their tissue expression and number of Ig-like domains in the extracellular domain (ECD) (1). Full-length human ICAM-4 contains 2 Ig-like domains in the ECD, a single transmembrane domain and short intracellular domain. Alternative splicing of ICAM-4 results in at least one soluble form (2). The ECD of mature human ICAM-4 shares 68% and 67% amino acid sequence identity with mouse and rat ICAM-4, respectively. ICAM-4 expression is limited to erythroid and possibly placental tissue but its biological role remains poorly defined (3). ICAM-4 has been shown to bind α4β1 and αV family integrins as well as displaying broad ligand binding specificity for some β1, β2, β3 and β5 integrins (4, 5). ICAM-4 binding to endothelial αvβ3 has been indicated as a factor in vaso-occlusion, particularly in sickle cell disease (6). ICAM-4 is expressed on red blood cells (RBC), erythroid precursor cells, and possibly placental tissue (3, 7). ICAM-4 has shown to bind α4β1 on hemopoietic cells, αV family integrins (avb1, avb3, and avb5) on non-hemopoietic cells as well as displaying broad ligand binding specificity for some β1, β2, β3 and β5 integrins (4, 5, 7). Studies have shown aLb2 integrin interacts through the first Ig-like domain of ICAM-4, whereas aMb2 and aXb2 integrins interact through both Ig-like domains of ICAM-4 (7). In addition, initiation of vaso-occlusion in sickle cell disease is implicated by ICAM-4 binding to endothelial αvβ3 integrin (6). The ability of ICAM-4 to interact selectively with different integrins suggests its importance in RBC physiology and pathology as well as its therapeutic value.

References:

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5. Hermand, P. *et al.* (2003) J Biol Chem. **278**:4892.
6. Kaul, D.K. *et al.* (2006) Am J Physiol Cell Physiol. **291**:C922.
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