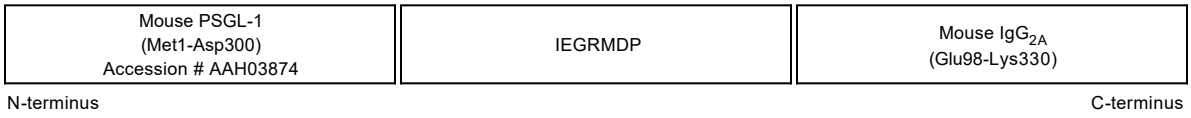
Recombinant Mouse PSGL-1/CD162 Fc Chimera

Catalog Number: 7407-PS

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived



N-terminal Sequence Analysis	Gln42
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	54 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	100-150 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of CHO Chinese hamster ovary cells transfected with P-Selectin. The ED_{50} for this effect is 0.15-0.6 µg/mL. **Optimal dilutions should be determined by each laboratory for each application.**
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 300 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.

BACKGROUND

PSGL-1 (P-Selectin Glycoprotein Ligand-1, designated CD162), is a 110-120 kDa mucin-type glycoprotein that plays a key role in leukocyte adhesion (1-3). Mouse PSGL-1 cDNA encodes 397 amino acids (aa) including a 17 aa signal sequence, a 24 aa propeptide, a 290 aa extracellular domain (ECD), a 21 aa transmembrane segment and a 69 aa cytoplasmic region (1). The ECD of mouse PSGL-1 contains 10 decameric aa repeats, or 12 repeats in a 417 aa long form, while human PSGL-1 contains 14-16 repeats (1, 3). Shorter forms may show weaker binding to P-selectin (9). Mouse PSGL-1 ECD shares 74% aa sequence identity with rat, and less than 40% with human, equine, canine and porcine PSGL-1 ECD. However, all share structural motifs and functions (1-3). The mature PSGL-1 (aa 42-397) is expressed as a disulfide-linked homodimer that signals intracellularly and promotes integrin activation (2-4). Ligand binding relies on presence of O-glycosylation/sialylated Lewis X (Le^X) and tyrosine sulfation within aa 42-57 (1, 5-7). Sulfation and glycosylation, which are constitutive on neutrophils and induced with activation on T cells, are essential for binding to P-selectin and L-selectin (3-6). E-Selectin requires only glycosylation (3). Proteases such as neutrophil elastase and cathepsin G can cleave within this region, impacting binding affinity (3, 8). Cleaved, soluble ectodomains of PSGL-1 are also known (3). PSGL-1 is found on virtually all leukocytes, dendritic cells, platelets, and some endothelial cells (3). It is primarily responsible for early events in extravasation, especially rolling adhesion of leukocytes to vascular endothelium (3, 4). In addition, PGSL-1 binds chemokines such as CCL19, CCL21 and CCL27, promoting chemotaxis of hematopoietic stem cells and plasma cells to the bone marrow and T cell homing to lymphoid organs (3, 10, 11). Recombinant PSGL-1 ECD interferes with this chemotaxis (13). PSGL-1 binds von Willebrand factor in endothelial-derived Weibel-Palade bodies, and the chondroitin sulfate, versican (3). It is present with Tissue Factor in pro-thrombotic microparticles from membranes of monocytes and cancer cells, and is required for particle shedding and fusion with activated platelets (12, 13).

References:

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