

DESCRIPTION

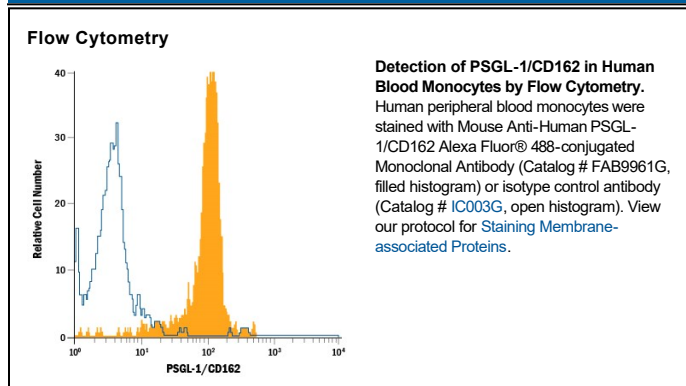
Species Reactivity	Human
Specificity	Detects human PSGL-1/CD162 in direct ELISAs.
Source	Monoclonal Mouse IgG _{2A} Clone # 688101
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human PSGL-1/CD162 Gln42-Gly295 Accession # NP_002997
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 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	5 µL/10 ⁶ cells	See Below

DATA



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. <ul style="list-style-type: none"> ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Human PSGL-1 (P-Selectin Glycoprotein Ligand-1; also known as CD162), is a 120 kDa mucin-type glycoprotein that plays a key role in leukocyte adhesion (1-3). It is synthesized as a 412 amino acid (aa) preproprecursor that contains a 17 aa signal sequence, a 24 aa pro-peptide, a 279 aa extracellular domain (ECD), a 21 aa transmembrane segment and a 71 aa cytoplasmic region (4, 5). Following cleavage of the pre- and pro-segments, it is expressed as a 240 kDa disulfide-linked homodimer. The extreme N-terminus (aa 1-16 of the mature molecule) contains one threonine (aa 16) and three tyrosines (aa 5, 7, and 10) that are involved in ligand binding. The Thr residue allows for O-linked glycosylation in the form of a core-2 structure (GalNAc-Gal) linked in a β 1,6 bond to a sialylated Lewis X motif (GlcNAc linked to both Fuc and Gal with a terminal sialic acid residue) (1, 2, 5, 6, 7). The three tyrosine residues allow for sulfation (8, 9). When binding to P-Selectin, Tyr sulfation and glycosylation are essential. Tyr7 provides the most efficient sulfate moiety, while Fuc and sialic acid are essentially mandatory (7). When binding to E-Selectin, only carbohydrate is needed, while both carbohydrate and Tyr10 are used for L-Selectin binding (6, 8). There are 16 decameric aa repeats in the ECD of the longform of PSGL-1. This form is referred to as the A allele, and represents 65 - 80% of the population. Alleles B and C show deletions of decameric repeats #2 (aa 132-141) plus #9 and 10 (aa 222-241), respectively. Shorter forms may show weaker binding to P-Selectin (9, 10). Soluble forms of PSGL-1 are also known. Neutrophil Elastase will cleave somewhere within repeats #5-9, while Cathepsin G cleaves after Tyr7 (11). The loss of Tyr5 and 7 should impact binding affinity. PSGL-1 is found on virtually all leukocytes and macrophages/DCs (1). Although there is similarity in the organization of the ECD between species, there is little aa identity. Human PSGL-1 ECD shares 51%, 52% and 43% aa sequence identity with equine, canine and mouse ECD, respectively.

References:

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5. Veldman, G.M. *et al.* (1995) *J. Biol. Chem.* **270**:16470.
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7. Leppanen, A. *et al.* (2000) *J. Biol. Chem.* **275**:39569.
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9. Afshar-Kharghan, V. *et al.* (2001) *Blood* **97**:3306.
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11. Gardiner, E.E. *et al.* (2001) *Blood* **98**:1440.

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