Human CD42b/GPIb α Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF4067

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD42b/GPIb α in direct ELISAs and Western blots.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human CD42b/GPIb α His17-Leu505 Accession # P07359
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

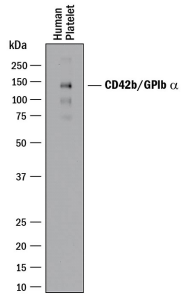
APPLICATIONS

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
Western Blot	1 µg/mL	See Below
Flow Cytometry	2.5 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

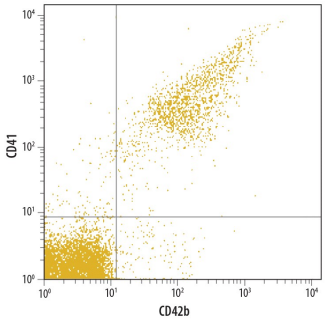
DATA

Western Blot



Detection of Human CD42b/GPIb α by Western Blot. Western blot shows lysates of human platelets. PVDF membrane was probed with 1 µg/mL of Sheep Anti-Human CD42b/GPIb α Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4067) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). A specific band was detected for CD42b/GPIb α at approximately 135 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Flow Cytometry



Detection of Human CD42b/GPIb α in Human Whole Blood CD41+ Platelets by Flow Cytometry. Human whole blood CD41+ platelets were stained with Sheep Anti-Human CD42b/GPIb α Polyclonal Antibody (Catalog # AF4067) followed by NL637-conjugated anti sheep antibody (Catalog # NL011) and Human CD41 FITC-conjugated Monoclonal Antibody. Quadrant markers were set based on control antibody staining (Catalog # 5-001-A).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Platelet glycoprotein Ib alpha chain (GPIb α), also known as CD42b α, is a 145 kDa type I transmembrane protein that is a member of the leucine-rich repeat (LRR) family of ligand binding proteins (1-3). It is expressed by platelets as the ligand-binding subunit of the platelet GPIb-IX-V complex (4). Human GPIb α contains a 16 amino acid (aa) signal sequence, a 489 aa extracellular domain (ECD), a 21-aa transmembrane domain, and a 100 aa cytoplasmic region. The ECD contains 8 LRRs, with # 2, 3, and 4 having been demonstrated to regulate shear-dependent adhesion to von Willebrand factor (vWF) (5, 6). The LRRs are followed by a thrombin-binding anionic region that includes three sulfated tyrosines, a sialomucin domain with N- and O-linked carbohydrates, and two cysteines near the membrane that allow dimerization with GP1b αβ (1-6). Four human isoforms with 1 to 4 repeats of aa 398-411 within the sialomucin domain of mature GPIb α are known to exist but have unknown significance (7). The ECD of human GPIb α shares 48-51% aa identity with mouse, rat, bovine, and canine GPIb α. The metalloproteinase TACE/ADAM17 constitutively and inducibly cleaves GPIb α, between Gly480 and Val481. This releases a soluble form called glycocalicin that circulates at ~2 µg/mL (8, 9). GPIb α binding to ligands such as thrombin, kininogen, and coagulation factors XI and XII helps to initiate platelet activation and coordinate the coagulation cascade (1, 10-12). Binding of GPIb α to vWF or thrombospondin in the plasma or matrix, vWF or P-selectin on endothelial cells, or the integrin αMβ2 (MAC-1) on myeloid cells, controls response to vascular injury (1, 13). Bernard-Soulier syndrome and platelet-type von Willebrand disease are platelet function disorders that can be caused by mutations in GPIb α (1, 14).

References:

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