

DESCRIPTION

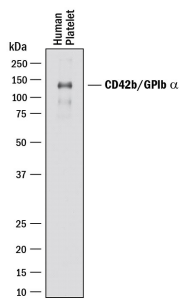
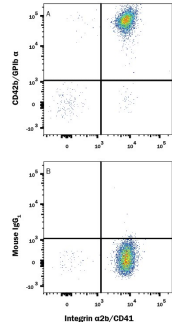
Species Reactivity	Human
Specificity	Detects human CD42b/GPIb α in direct ELISAs and Western blots.
Source	Monoclonal Mouse IgG ₁ Clone # 486805
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human CD42b/GPIb α His17-Leu505 Accession # P07359
Formulation	Lyophilized from a 0.2 μ m 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 μ m 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	2 μ g/mL	See Below
Flow Cytometry	0.25 μ g/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

<p>Western Blot</p>  <p>Detection of Human CD42b/GPIb α by Western Blot. Western blot shows lysates of human platelets. PVDF membrane was probed with 2 μg/mL of Mouse Anti-Human CD42b/GPIb α Monoclonal Antibody (Catalog # MAB4067) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). 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.</p>	<p>Flow Cytometry</p>  <p>Detection of CD42b/GPIb α in Human CD41⁺ Platelets by Flow Cytometry. Human CD41⁺ platelets were stained with Mouse Anti-Human Integrin α2b/CD41 PE-conjugated Monoclonal Antibody (Catalog # FAB7616P) and either (A) Mouse Anti-Human CD42b/GPIb α Monoclonal Antibody (Catalog # MAB4067) or (B) Mouse IgG₁ Isotype Control (Catalog # MAB002) followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B). View our protocol for Staining Membrane-associated Proteins.</p>
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PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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. <ul style="list-style-type: none"> ● 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.

BACKGROUND

Platelet glycoprotein Ib alpha chain (GPIb α), also known as CD42b, 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 CD42b 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 (1-6). Four human isoforms with 1 to 4 repeats of aa 398-411 within the sialomucin domain of mature CD42b are known to exist but have unknown significance (7). The ECD of human CD42b shares 48-51% aa identity with mouse, rat, bovine, and canine CD42b. The metalloproteinase TACE/ADAM17 constitutively and inducibly cleaves CD42b, between Gly480 and Val481. This releases a soluble form called glycofalin that circulates at ~2 μ g/mL (8, 9). CD42b 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 CD42b to vWF or thrombospondin in the plasma or matrix, vWF or P-selectin on endothelial cells, or the integrin α MP β (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 CD42b (1, 14).

References:

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