

#### DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human CD42b/GPIb $\alpha$ in direct ELISAs and Western blots.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 486805
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human CD42b/GPIb $\alpha$ His17-Leu505 Accession # P07359
<b>Conjugate</b>	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 nm
<b>Formulation</b>	Supplied 0.2 mg/mL 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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Flow Cytometry</b>	0.25-1 $\mu$ g/10 <sup>6</sup> cells	Human CD41 <sup>+</sup> platelets

#### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> ● 12 months from date of receipt, 2 to 8 °C as supplied.

#### BACKGROUND

Platelet glycoprotein Ib alpha chain (GPIb  $\alpha$ ), 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 glycojalicin that circulates at ~2  $\mu$ 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  $\alpha$ M $\beta$ 2 (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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