

DESCRIPTION

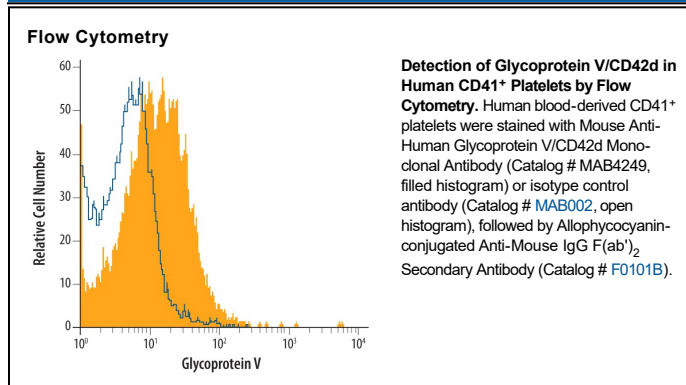
Species Reactivity	Human
Specificity	Detects human Glycoprotein V/CD42d in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human GPVI is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 508209
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Glycoprotein V/CD42d Gln17-Gly523 Accession # P40197
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
Flow Cytometry	0.25 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



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

GPV (platelet glycoprotein V; designated CD42d) is an 83 kDa type I transmembrane (TM) glycoprotein of the leucine-rich repeat (LRR) family (1, 2). It is expressed exclusively within the platelet / megakaryocyte lineage, where it noncovalently interacts with other platelet TM LRR proteins, GPIIb/β and GPIX, at a ratio of one GPV to two of each other subunit (2). The GPI-V-IX complex tethers platelets to von Willebrand factor on the surface of injured endothelial cells. Absence of the complex results in Bernard-Soulier syndrome, a rare bleeding disorder (1-3). The human GPV cDNA encodes a 560 amino acid (aa) protein with a 16 aa signal sequence, a 507 aa extracellular domain (ECD) containing 15 LRR, a 21 aa TM sequence, and a short (16 aa) cytoplasmic tail that binds calmodulin in resting, but not activated platelets. The human GPV ECD shares 70%, 71% and 81% aa identity with mouse, rat and equine GPV, respectively. GPV can form soluble fragments of 80 kDa by ADAM10 or ADAM17 cleavage after P507, or 69 kDa by thrombin cleavage after R476 (1, 4, 5). High circulating soluble GPV may be an indicator of platelet activation, but may also be caused by high doses of aspirin (6-8). The function of GPV is not entirely clear. Deletion of GPV in mice does not produce any obvious change to surface expression or function of GPIb and GPIX, but surface expression of GPV requires GPIb (9, 10). Deletion studies also indicate that GPV may play a minor role in collagen adhesion, and may modify platelet aggregation in response to thrombin (3, 11-15).

References:

1. Lanza, F. *et al.* (1993) *J. Biol. Chem.* **268**:20801.
2. Hickey, M.J. *et al.* (1993) *Proc. Natl. Acad. Sci. USA* **90**:8327.
3. Ozaki, Y. *et al.* (2005) *J. Thromb. Haemost.* **3**:1745.
4. Rabie, T. *et al.* (2005) *J. Biol. Chem.* **280**:14462.
5. Gardiner, E.E. *et al.* (2007) *J. Thromb. Haemost.* **5**:1530.
6. Wolff, V. *et al.* (2005) *Stroke* **36**:e17.
7. Javela, K. *et al.* (2005) *Transfusion* **45**:1504.
8. Aktas, B. *et al.* (2005) *J. Biol. Chem.* **280**:39716.
9. Kahn, M.L. (1999) *Blood* **94**:4112.
10. Strassel, C. *et al.* (2004) *Eur. J. Biochem.* **271**:3671.
11. Nonne, C. *et al.* (2008) *J. Thromb. Haemost.* **6**:210.
12. Moog, S. *et al.* (2001) *Blood* **98**:1038.
13. Ramakrishnan, V. *et al.* (1999) *Proc. Natl. Acad. Sci. USA* **96**:13336.
14. Ni, H. *et al.* (2001) *Blood* **98**:368.
15. Andrews, R.K. *et al.* (2001) *Blood* **98**:681.