

DESCRIPTION

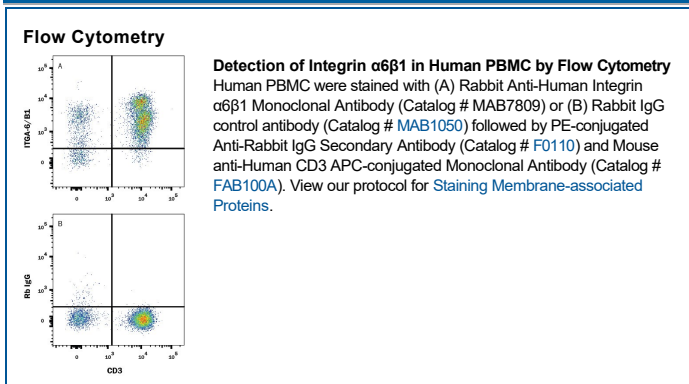
Species Reactivity	Human
Specificity	Detects human Integrin $\alpha 6 \beta 1$ in direct ELISAs. In direct ELISA, less than 1% of cross reactivity with recombinant human (rh) Integrin $\beta 1$ and recombinant mouse (rm) Integrin $\alpha 6$ is observed. In direct ELISA, no cross-reactivity with rhIntegrin $\alpha 3$, $\beta 2$, $\beta 3$, $\beta 5$, $\beta 6$, $\beta 7$, and rmIntegrin $\beta 1$ is observed.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2548B
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese Hamster Ovary cell line, CHO-derived Human Integrin $\alpha 6 \beta 1$ heterodimer Phe24-Ser1012(Integrin alpha 6) and Gln21-Asp728 (Integrin beta1) Accession # NP_000201
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
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



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

Integrin $\alpha 6 \beta 1$, also called platelet glycoprotein GPIIb-IIIa, is a laminin binding integrin that is expressed on T cells, monocytes, endothelial cells, stem cells, and platelets (1-9). The non-covalent heterodimer is composed of ~150 kDa $\alpha 6$ /CD49f and 130 kDa $\beta 1$ /CD29 type I transmembrane glycoprotein subunits (2). While $\alpha 6$ pairs only with $\beta 1$ or $\beta 4$, twelve integrins share the $\beta 1$ subunit (1-5). The $\alpha 6$ subunit is cleaved into extracellular heavy and transmembrane light chains (3). Alternative splicing in the human $\alpha 6$ extracellular domain (ECD) at amino acid (aa) 216 creates X1 (ubiquitous), X2 and X1X2 isoforms, while splicing at a mouse or human cytoplasmic site creates A and B isoforms (10, 11). These forms do not appear to alter the binding specificity (4, 10, 11). The $\beta 1$ ECD contains a vWFA domain, which participates in binding. Each subunit then has a transmembrane sequence and a short cytoplasmic tail. The dimer is folded when it is least active. Divalent cations and intracellular (inside-out) signaling convert it to its most active, extended and open conformation (1, 2). The human $\alpha 6$ (X1) heavy chain shares 94-95% aa identity with mouse, rat, bovine, and canine $\alpha 6$, and the human $\beta 1$ ECD shares 92-96% aa sequence identity with rat, bovine, mouse, and feline $\beta 1$. $\alpha 6 \beta 1$ shows broad specificity for adhesion to laminin isoforms (4, 10). Its expression on human and mouse pluripotent stem cells is important for attachment, expansion, and self-renewal on LN-511 (laminin $\alpha 5 \beta 1 \gamma 1$) (6, 7). The secreted protein Netrin-4 and the laminin $\gamma 1$ subunit form an adhesion-activating complex with $\alpha 6 \beta 1$ on mouse neural stem cells and human lymphatic endothelial cells that promotes lymphangiogenesis (8, 9). $\alpha 6 \beta 1$ up-regulation on cancers such as prostate, glioma, and hepatoma is reported to enhance tumorigenicity, motility, invasion and metastasis (12-14). $\alpha 6 \beta 1$ cleavage via uPA (urokinase-type plasminogen activator) facilitates tumorigenicity in prostate cancers, and interaction of hepatoma $\alpha 6 \beta 1$ with EMMPRIN/CD147 may also enhance tumorigenicity by inducing uPA and other metalloproteinases (12, 13).

References:

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