

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Integrin $\beta$ 2/CD18 in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human Integrin $\beta$ 1 or recombinant mouse Integrin $\alpha$ 5 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 212701
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human Integrin $\beta$ 2/CD18 Gln23-Asn700 Accession # AAA59490
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ 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 $\mu$ m filtered solution in PBS.

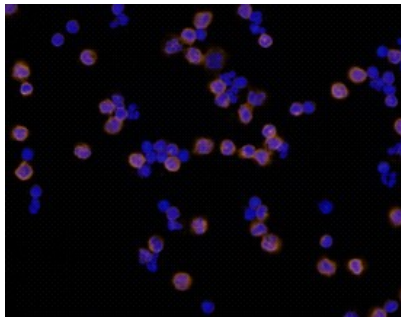
## APPLICATIONS

**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
<b>Western Blot</b>	1 $\mu$ g/mL	Recombinant Human Integrin $\alpha$ X $\beta$ 2 (Catalog # 5755-AX) under non-reducing conditions only
<b>Flow Cytometry</b>	2.5 $\mu$ g/10 <sup>6</sup> cells	Human peripheral blood mononuclear cells
<b>Immunocytochemistry</b>	8-25 $\mu$ g/mL	See Below
<b>CyTOF-ready</b>	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

## DATA

### Immunocytochemistry



**Integrin  $\beta$ 2/CD18 in Human PBMCs.** Integrin  $\beta$ 2/CD18 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) using Mouse Anti-Human Integrin  $\beta$ 2/CD18 Monoclonal Antibody (Catalog # MAB1730) at 10  $\mu$ g/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counter-stained with DAPI (blue). Specific staining was localized to cell surfaces and cytoplasm. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Integrin  $\alpha$  $\beta$ 2, also called CD11c/CD18, p150/95 or complement receptor type 4 (CR4), is one of four  $\beta$ 2 integrins. The non-covalent heterodimer of 150 kDa  $\alpha$ X/CD11c and 95 kDa  $\beta$ 2/CD18 integrin subunits is expressed on macrophages, dendritic cells and hairy cell leukemias, with lower amounts on other myeloid cells and activated B, NK and some cytotoxic T cells (1-7). Like other integrins,  $\alpha$  $\beta$ 2 has multiple activation states (3). In the presence of divalent cations and "inside-out" signaling,  $\alpha$  $\beta$ 2 is fully active and extended. The  $\alpha$ X vWFA or I-domain, which contains the adhesion sites, forms the N-terminal head region with the  $\alpha$ X beta-propeller and the  $\beta$ 2 vWFA domain (1, 8). In the inactive state, the heterodimer flexes in the center at the  $\alpha$ X thigh and calf domains and  $\beta$ 2 I-EGF domains, impeding access to adhesion sites (1). The 1088 aa human  $\alpha$ X/CD11c ECD shares 70-76% aa sequence identity with mouse, rat and canine  $\alpha$ X while the 678 aa human  $\beta$ 2/CD18 ECD shares 81-83% aa sequence identity with mouse, rat, cow, dog, goat, sheep, and pig  $\beta$ 2. Potential  $\alpha$ X isoforms containing 719 and 725 aa (as compared to full-length 1163 aa  $\alpha$ X) lack the vWFA domain and the N-terminus. Active  $\alpha$  $\beta$ 2 shares some adhesion partners with  $\alpha$ M $\beta$ 2/CD11b/CD18, including complement opsonin fragment iC3b, ICAMs, vWF and fibrinogen, and is expressed on many of the same cells (4-11). However,  $\alpha$ M $\beta$ 2 activity is often constitutive, while  $\alpha$  $\beta$ 2 activity requires cell activation (4-7).  $\alpha$  $\beta$ 2 also binds osteopontin, Thy-1, plasminogen, heparin, and proteins with abnormally exposed acidic residues (11-16). The adhesion events are important for proliferation, degranulation, chemotactic migration, and phagocytosis of complement-opsonized particles (5, 6, 9, 11, 12, 16). Mutations of  $\beta$ 2, especially in the vWFA domain, cause leukocyte adhesion deficiency (LAD-1) and susceptibility to bacterial infections (17).

**References:**

1. Corbi, A.L. *et al.* (1987) EMBO J. **6**:4023.
2. Kishimoto, T.K. *et al.* (1987) Cell **48**:681.
3. Hynes, R.O. (2002) Cell **110**:673.
4. Arnaout, M.A. (1990) Blood **75**:1037.
5. Postigo, A.A. *et al.* (1991) J. Exp. Med. **174**:1313.
6. Beyer, M. *et al.* (2005) Respir. Res. **6**:70.
7. Nicolaou, F. *et al.* (2003) Blood **101**:4033.
8. Vorup-Jensen, T. *et al.* (2003) Proc. Natl. Acad. Sci. USA **100**:1873.
9. Bilisland, C.A.G. *et al.* (1994) J. Immunol. **152**:4582.
10. Pendu, R. *et al.* (2006) Blood **108**:3746.
11. Sadhu, C. *et al.* (2007) J. Leukoc. Biol. **81**:1395.
12. Schack, L. *et al.* (2009) J. Immunol. **182**:6943.
13. Choi, J. *et al.* (2005) Biochem. Biophys. Res. Commun. **331**:557.
14. Gang, J. *et al.* (2007) Mol. Cells **24**:240.
15. Vorup-Jensen, T. *et al.* (2007) J. Biol. Chem. **282**:30869.
16. Vorup-Jensen, T. *et al.* (2004) Proc. Natl. Acad. Sci. USA **102**:1614.
17. Kishimoto, T.K. *et al.* (1987) Cell **50**:193.