

DESCRIPTION

Species Reactivity	Human
Specificity	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.
Source	Monoclonal Mouse IgG ₁ Clone # 212701
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Integrin $\beta 2$ /CD18 Gln23-Asn700 Accession # AAA59490
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	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.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 μ g/10 ⁶ cells	Human peripheral blood mononuclear cells

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Integrin $\alpha X\beta 2$, 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 αX /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, $\alpha X\beta 2$ has multiple activation states (3). In the presence of divalent cations and "inside-out" signaling, $\alpha X\beta 2$ is fully active and extended. The αX vWFA or I-domain, which contains the adhesion sites, forms the N-terminal head region with the αX beta-propeller and the $\beta 2$ vWFA domain (1, 8). In the inactive state, the heterodimer flexes in the center at the αX thigh and calf domains and $\beta 2$ I-EGF domains, impeding access to adhesion sites (1). The 1088 aa human αX /CD11c ECD shares 70-76% aa sequence identity with mouse, rat and canine αX 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 αX isoforms containing 719 and 725 aa (as compared to full-length 1163 aa αX) lack the vWFA domain and the N-terminus. Active $\alpha X\beta 2$ 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 $\alpha X\beta 2$ activity requires cell activation (4-7). $\alpha X\beta 2$ 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:

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