

DESCRIPTION

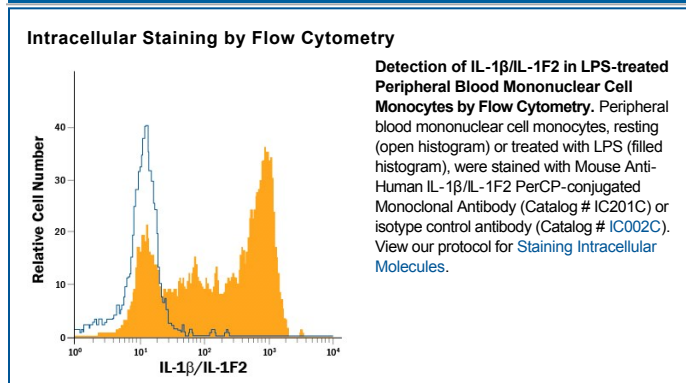
Species Reactivity	Human
Specificity	Detects human IL-1 β /IL-1F2 in Western blots. Shows less than 5% cross-reactivity with recombinant mouse (rm) IL-1 β and rIL-1 β and no cross-reactivity with rrIL-1 β , rmlL-1 α , rhIL-1ra, rmlL-1ra, or rrIL-1 α .
Source	Monoclonal Mouse IgG ₁ Clone # 8516
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human IL-1 β /IL-1F2 aa 117-269 Accession # P01584
Conjugate	PerCP (Peridinin-chlorophyll Protein Complex) Excitation Wavelength: 482 and 564 nm Emission Wavelength: 675 nm
Formulation	Supplied 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
Intracellular Staining by Flow Cytometry	10 μ L/10 ⁶ cells	See Below

DATA



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

IL-1 is a name that defines two 17 kDa pleiotropic cytokines, IL-1 α (IL-1F1) and IL-1 β (IL-1F2), both of which are the products of distinct genes. IL-1 α and IL-1 β are structurally related single-chain polypeptides that share approximately 21% amino acid (aa) identity in human. Although IL-1 (α and β) references two distinct molecules, the term IL-1 is also generally applied to an eleven-member protein family that exhibits an Ala-xxx-Asp motif in its primary structure (1,3). IL-1 α and β are not redundant. IL-1 α is constitutively expressed, contains an NLS, is active as a proform, and may present as a membrane-bound form due to myristoylation and glycosylation (4). Both proteins are produced by a wide variety of cells in response to inflammatory agents, infections, or microbial endotoxins. While IL-1 α and IL-1 β are regulated independently, and they bind to the same cell surface receptor, the functional 80 kDa IL-1 RI binds directly to IL-1 α or IL-1 β and then associates with IL-1 R accessory protein (IL-1 R3/IL-1 R AcP) to form a high-affinity receptor complex that is competent for signal transduction. IL-1 RII has high affinity for IL-1 β but functions as a decoy receptor and negative regulator of IL-1 β activity. IL-1ra, a third member of the IL-1 subfamily that also includes IL-33, functions as a competitive antagonist by preventing IL-1 α and IL-1 β from interacting with IL-1 RI (2,3). The human IL-1 β cDNA encodes a 269 aa precursor that contains a 116 aa propeptide that is cleaved intracellularly by the inflammasome-associated cysteine protease IL-1 β -converting enzyme (Caspase-1/ICE) to generate an active 153 aa cytokine (3,5,6). The 17 kDa mature human IL-1 β shares 96% aa sequence identity with rhesus and 67-78% aa sequence identity with canine, cotton rat, equine, feline, mouse, porcine, and rat IL-1 β .

References:

1. Dinarello, C.A. (2013) *Semin. Immunol.* **25**:389.
2. Palomo, J. *et al.* (2015) *Cytokine.* **76**:25.
3. Garlanda, C. *et al.* (2013) *Immunity* **39**:1003.
4. Rider, P. *et al.* (2013) *Semin. Immunol.* **25**:430.
5. Auron, P.E. *et al.* (1984) *Proc. Natl. Acad. Sci. USA* **81**:7907.
6. Afonia, I.S. *et al.* (2015) *Immunity* **42**:991.