

DESCRIPTION	
Species Reactivity	Human
Specificity	Detects human IL-7 R α in Western blots. In Western blots, approximately 5% cross-reactivity was observed with recombinant human (rh) IL-10 R, rhIL-2 R β , rhIL-5 R α , and rhIL-6 R.
Source	Monoclonal Mouse IgG ₁ Clone # 40131
Purification	Protein A or G purified from ascites
Immunogen	Mouse myeloma cell line NS0-derived recombinant human IL-7 R α Extracellular domain
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 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. <i>General Protocols</i> are available in the <i>Technical Information</i> section on our website.		
	Recommended Concentration	Sample
Flow Cytometry	10 μ L/10 ⁶ cells	See Below

DATA	
<p>Flow Cytometry</p>	<p>Detection of IL-7 Rα/CD127 in Human Blood Lymphocytes by Flow Cytometry. Human peripheral blood lymphocytes were stained with Mouse Anti-Human CD3ϵ APC-conjugated Monoclonal Antibody (Catalog # FAB100A) and either (A) Mouse Anti-Human IL-7 Rα/CD127 PE-conjugated Monoclonal Antibody (Catalog # FAB306P) or (B) Mouse IgG₁ Phycoerythrin Isotype Control (Catalog # IC002P). View our protocol for Staining Membrane-associated Proteins.</p>

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

Interleukin 7 Receptor alpha (IL-7 R α), also known as CD127, is a 75 kDa hematopoietin receptor superfamily member that plays an important role in lymphocyte differentiation, proliferation, and survival (1, 2). Mature human IL-7 R α consists of a 219 amino acid (aa) extracellular domain (ECD) with one fibronectin type-III domain and a WSXWS motif, a 25 aa transmembrane segment, and a 195 aa cytoplasmic domain (3). Alternate splicing of human IL-7 R α generates a secreted soluble form of the receptor (3). Within the ECD, human IL-7 R α shares 67% aa sequence identity with mouse and rat IL-7 R α . IL-7 R α associates with the common γ chain (γ_c) to form the functional high affinity IL-7 receptor complex (4). The γ_c is also a subunit of the receptors for IL-2, -4, -9, -15, and -21. Human and mouse IL-7 show cross-species activity through the IL-7 receptor (3, 5). IL-7 R α is expressed on double negative (CD4⁻/CD8⁻) and CD4⁺ or CD8⁺ single positive T cells as well as on CD8⁺ memory T cells and their precursors (6, 7). It is expressed early in B cell development, prior to the appearance of surface IgM (6). In mouse, IL-7 activation of IL-7 R α is critical for both T cell and B cell lineage development (8). In human, by contrast, it is required for T cell but not for B cell development (9). IL-7 induces the downregulation and shedding of cell surface IL-7 R α (10). IL-7 R α additionally associates with TSLP R to form the functional receptor for thymic stromal lymphopoietin (11, 12). TSLP indirectly regulates T cell development by modulating dendritic cell activation (2, 13). Knockout of TSLP R in mice provokes minor changes in B and T cell development compared to those seen with IL-7 R α deletion (8, 14). The complexity of IL-7 R α biology is suggested by the competition between IL-7 and TSLP for receptor binding and by the ability of IL-7 R α to form functional complexes with SCF R and HGF R (11, 12, 15, 16).

References:

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