

DESCRIPTION

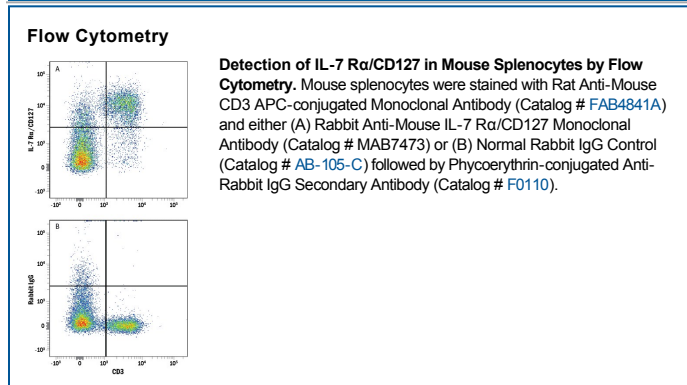
Species Reactivity	Mouse
Specificity	Stains mouse IL-7 R α /CD127 transfectants but not irrelevant transfectants in flow cytometry.
Source	Recombinant Monoclonal Rabbit IgG Clone # 1140A
Purification	Protein A or G purified from cell culture supernatant
Immunogen	NSO mouse myeloma cell line transfected with mouse IL-7 R α /CD127 Glu21-Asp239 Accession # P16872
Formulation	Supplied as a solution in PBS containing BSA, Glycerol and Sodium Azide. See Certificate of Analysis for details. *Small pack size (-SP) is supplied 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	0.5 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. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	<ul style="list-style-type: none"> ● 12 months from date of receipt, -20 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after opening. ● 6 months, -20 °C under sterile conditions after opening.

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 mouse 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). Within the ECD, mouse IL-7 R α shares 67% and 79% aa sequence identity with human and rat IL-7 R α , respectively. 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 it is required for T cell but not for B cell development (9). IL-7 induces the down regulation 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:

1. Mazzucchelli, R. and S.K. Durum, 2007, Nat. Rev. Immunol. **7**:144.
2. Liu, Y.-J. *et al.* (2007) Annu. Rev. Immunol. **25**:193.
3. Goodwin, R.G. *et al.* (1990) Cell **60**:941.
4. Noguchi, M. *et al.* (1993) Science **262**:1877.
5. Barata, J.T. *et al.* (2006), Exp. Hematol. **34**:1133.
6. Sudo, T. *et al.* (1993) Proc. Natl. Acad. Sci. **90**:9125.
7. Kaech, S.M. *et al.* (2003) Nat. Immunol. **4**:1191.
8. Peschon, J.J. *et al.* (1994) J. Exp. Med. **180**:1955.
9. Prieyl, J.A. and T.W. LeBien (1996) Proc. Natl. Acad. Sci. **93**:10348.
10. Vranjkovic, A. *et al.* (2007) Int. Immunol. **19**:1329.
11. Park, L.S. *et al.* (2000) J. Exp. Med. **192**:659.
12. Pandey, A. *et al.* (2000) Nat. Immunol. **1**:59.
13. Reche, P.A. *et al.* (2001) J. Immunol. **167**:336.
14. Al-Shami, A. *et al.* (2004) J. Exp. Med. **200**:159.
15. Jahn, T. *et al.* (2007) Blood **110**:1840.
16. Lai, L. *et al.* (2006) Blood **107**:1776.

PRODUCT SPECIFIC NOTICES

* Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to SDS for additional information and handling instructions.