Human IL-7 Rα/CD127
Biotinylated Antibody
Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: BAF306

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-7 Rα in Western blots.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human IL-7 Rα Extracellular domain
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

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
Western Blot	0.1 µg/mL	Recombinant Human IL-7 Rα/CD127 Fc Chimera (Catalog # 306-IR)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Interleukin 7 Receptor alpha (IL-7 Rα), 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 Rα 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 Rα generates a secreted soluble form of the receptor (3). Within the ECD, human IL-7 Rα shares 67% aa sequence identity with mouse and rat IL-7 Rα. IL-7 Rα 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 Rα 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 Rα 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 Rα (10). IL-7 Rα 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 Rα deletion (8, 14). The complexity of IL-7 Rα biology is suggested by the competition between IL-7 and TSLP for receptor binding and by the ability of IL-7 Rα 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.