

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects recombinant mouse IL-7 R α /CD127 in direct ELISAs and Western blots.
Source	Monoclonal Rat IgG _{2B} Clone # 132220
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse IL-7 R α /CD127 Glu21-Asp239 Accession # P16872
Formulation	Lyophilized from a 0.2 μ m 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.

Mouse IL-7 Rα/CD127 Sandwich Immunoassay	Reagent
ELISA Capture	2-8 μ g/mL Mouse IL-7 R α /CD127 Antibody (Catalog # MAB4774)
ELISA Detection	0.5-2.0 μ g/mL Mouse IL-7 R α /CD127 Biotinylated Antibody (Catalog # BAM47741)
Standard	Recombinant Mouse IL-7 R α /CD127 Fc Chimera (Catalog # 747-MR)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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. <ul style="list-style-type: none"> • 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 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.