

## DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects recombinant mouse IL-7 R $\alpha$ /CD127 in direct ELISAs and Western blots.
<b>Source</b>	Monoclonal Rat IgG <sub>2B</sub> Clone # 132220
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant mouse IL-7 R $\alpha$ /CD127 Glu21-Asp239 Accession # P16872
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ 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 R $\alpha$ /CD127 Sandwich Immunoassay		Reagent
<b>ELISA Capture</b>	2-8 $\mu$ g/mL	Mouse IL-7 R $\alpha$ /CD127 Antibody (Catalog # MAB4774)
<b>ELISA Detection</b>	0.5-2.0 $\mu$ g/mL	Mouse IL-7 R $\alpha$ /CD127 Biotinylated Antibody (Catalog # BAM47741)
<b>Standard</b>		Recombinant Mouse IL-7 R $\alpha$ /CD127 Fc Chimera (Catalog # 747-MR)

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Interleukin 7 Receptor alpha (IL-7 R $\alpha$ ), 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 $\alpha$  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 $\alpha$  shares 67% and 79% aa sequence identity with human and rat IL-7 R $\alpha$ , respectively. IL-7 R $\alpha$  associates with the common  $\gamma$  chain ( $\gamma_c$ ) to form the functional high affinity IL-7 receptor complex (4). The  $\gamma_c$  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 $\alpha$  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 $\alpha$  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 $\alpha$  (10). IL-7 R $\alpha$  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 $\alpha$  deletion (8, 14). The complexity of IL-7 R $\alpha$  biology is suggested by the competition between IL-7 and TSLP for receptor binding and by the ability of IL-7 R $\alpha$  to form functional complexes with SCF R and HGF R (11, 12, 15, 16).

## References:

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