

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived		
	Rat IL-7R α (Glu21 - Asp239) Accession # NP_001099888	IEGRMDP	Mouse IgG _{2a} (Glu98 - Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Glu21		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	52.2 kDa (monomer)		

SPECIFICATIONS

SDS-PAGE	60-75 kDa under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When 25 ng/mL of rIL-7R α /Fc Chimera is captured by goat anti-mouse IgG Fc Chimera (Catalog # G-202-C) coated plate, the concentration of rIL-7 that produces 50% optimal binding response is found to be approximately 10-30 ng/mL.
Endotoxin Level	<1.0 EU per 1 μ g of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 μ g/mL in 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. ● 3 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 rat 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, Accession # NP_001099888). Within the ECD, rat IL-7 R α shares 67% and 79% aa sequence identity with human and mouse 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, 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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