Data Sheet (Cat.No.TMPY-01367)

TargetMol

IL-7R alpha/CD127 Protein, Mouse, Recombinant (His)

General Information

Synonyms:	IL7R α/CD127;interleukin 7 receptor;IL-7Ralpha;CD127;IL-7Rα
Protein Construction:	A DNA sequence encoding the mouse IL7Rα (NP_032398.3) extracellular domain (Met 1-Asp 239) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Glu 21
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	P16872
Molecular Weight:	26.5 kDa (predicted); 34-40 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 85 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Interleukin 7 Receptor alpha (IL-7RA), also known as CD127, is a 75 kDa hematopoietic receptor superfamily member that plays an important role in lymphocyte differentiation, proliferation, and survival. IL-7 receptor alpha (CD127) signaling is essential for T-cell development and regulation of naive and memory T-cell homeostasis. IL-7RA is critically required for the proper development and function of lymphoid cells. Therefore, the IL-7RA is critically required for the proper development and function of lymphoid cells. Studies from both pathogenic and

controlled HIV infection indicate that the containment of immune activation and preservation of CD127 expression are critical to the stability of CD4(+) T cells in infection. A better understanding of the factors regulating CD127 expression in HIV disease, particularly on T(CM) cells, might unveil new approaches exploiting the IL-7/IL-7R receptor pathway to restore T cell homeostasis and promote immune reconstitution in HIV infection. Factors relevant to HIV infection that could potentially decrease CD127 expression on human CD8(+) T cells. CD127 down-regulation may be an important contributor to HIV-associated T-cell dysfunction. In addition to IL-7, IL-7RA also associates with TSLPR to form the functional receptor for thymic stromal lymphopoietin (TSLP) which indirectly regulates T cell development by modulating dendritic cell activation. Mutations in the human IL-7RA gene cause a type of severe combined immunodeficiency in which the major deficiencies are in T cell development, whereas B and NK cells are relatively normal in number. Variation in the IL7RA gene was recently found associated with multiple sclerosis (MS). The polymorphisms in the IL7RA gene is involved in MS pathogenesis and suggest that IL7RA variation may primarily affect chronic disease courses. Soluble CD127 (sCD127) appears to play an important role in the immunopathogenesis of several chronic infections, multiple sclerosis, and various cancers.

Reference

Vranjkovic A,et al.(2007) IL-7 decreases IL-7 receptor alpha (CD127) expression and induces the shedding of CD127 by human CD8+ T cells. Int Immunol. 19(12): 1329-39.

Kiazyk SA,et al.(2008) Loss of CD127 expression links immune activation and CD4(+) T cell loss in HIV infection. Trends Microbiol. 16(12): 567-73.

Akkad DA,et al.(2009) Variation in the IL7RA and IL2RA genes in German multiple sclerosis patients. J Autoimmun. 32(2): 110-5.

Crawley AM,et al.(2010) Soluble IL-7R alpha (sCD127) inhibits IL-7 activity and is increased in HIV infection. J Immunol. 184(9): 4679-87.

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