

Recombinant Mouse IL-7, Tag Free

Information

Accession #	P10168
Alternate Names	IL7; IL-7; IL-7interleukin-7; interleukin 7; Lymphopoietin-1; PBGF
Source	Human embryonic kidney cell, HEK293-derived mouse IL-7 protein
Protein sequence	Glu26-Ile154
M.Wt	14.9 kDa
Appearance	Solution protein
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. - 3 years from date of receipt, -20 to -70°C as supplied.
Concentration	0.2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	The EC ₅₀ for this effect is 0.01-0.2 ng/mL. Measured in a cell proliferation assay using PHA-activated human peripheral blood lymphocytes (PBL).
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

Purity	> 95%, determined by SDS-PAGE.
Endotoxin	<0.010 EU per 1 ug of the protein by the LAL method.

Description

Interleukin-7 (IL-7) is a 25 kDa cytokine of the hemopoietin family that plays important roles in lymphocyte differentiation, proliferation, and survival [1-4]. Mouse IL-7 cDNA encodes 154 amino acids (aa) that include a 25 aa signal peptide [4]. Mouse IL-7 shares approximately 88% aa sequence identity with rat IL-7 and 58-60% with human, equine, bovine, ovine, porcine, feline and canine IL-7. Human and mouse IL-7 exhibit cross-species activity [2, 3]. IL-7 is produced by a wide variety of cells in primary and secondary lymphoid tissues, including stromal epithelial cells of the thymus, bone marrow, and intestines [1, 2, 5]. Circulating IL-7 is limiting in healthy animals, but increases during lymphopenia [1, 6]. IL-7 signals through a complex of the IL-7 Receptor alpha subunit (IL-7 R alpha, also known as CD127) with the common gamma chain (gamma c) [1]. The gamma c is also a subunit of the receptors

for IL-2, -4, -9, -15, and -21 [1]. IL-7 R alpha is expressed on double negative (CD4-CD8-) and CD4+ or CD8+ single positive memory T cells, but undergoes IL-7-mediated down-regulation and shedding during antigen-driven T cell proliferation, and is absent on regulatory T cells [1, 2, 6-11]. IL-7 contributes to the maintenance of all memory T cells, mainly by promoting expression of the anti-apoptotic protein Bcl-2 [9-11]. It is required for optimal T cell-dendritic cell interaction [6]. IL-7 is expressed early in B cell development prior to the appearance of surface IgM [1, 5, 9]. In mouse, IL-7 activation of IL-7 R alpha is critical for both T cell and B cell lineage development, while in humans, it is required for T cell but not for B cell development [4, 9, 12, 13].

Reference

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