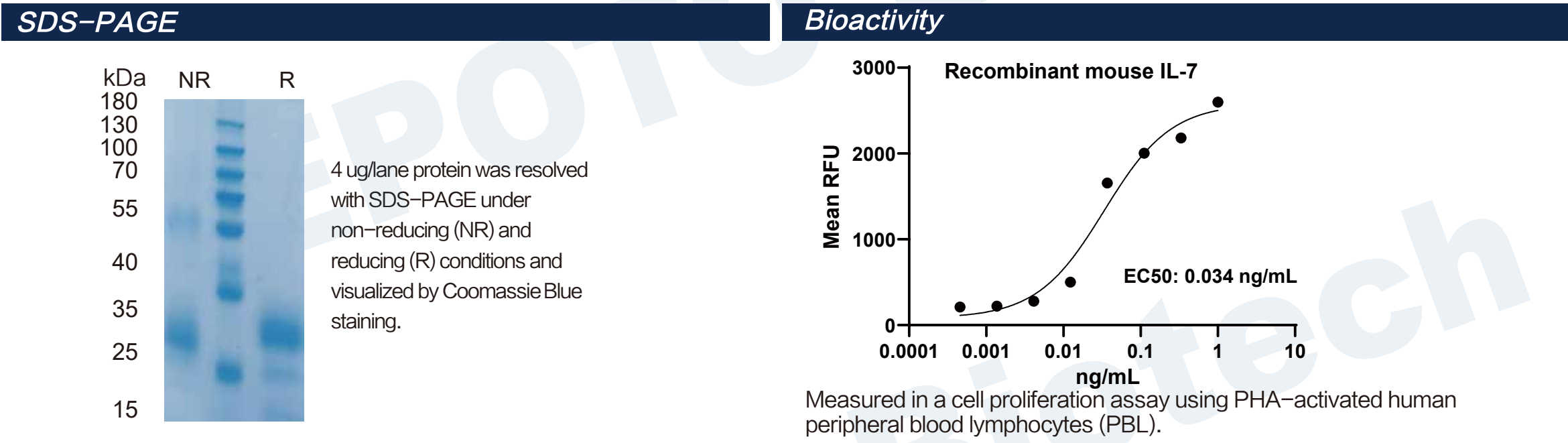


General Information	
Synonyms	IL7; IL-7; IL-7interleukin-7; interleukin 7; Lymphopoietin-1; PBGF
Accession #	P10168
Source	Human embryonic kidney cell, HEK293-derived mouse IL-7 protein
	Glu26-Ile154
Predicted Moleucular weight	14.9 kDa
Components and Storage	
Formulation	Solution protein.
	Dissolved in sterile PBS buffer.
	This solution can be diluted into other aqueous buffers. Centrifuge the vial prior to opening.
Storage and Stability	Avoid repeated freeze-thaw cycles.
	It is recommended that the protein be aliquoted for optimal storage.
	12 months from date of receipt, -20 to -70 ° C as supplied.
Shipping	Shipping with dry ice
Quality	
Purity	> 95%, determined by SDS-PAGE
Endotoxin Level	<0.010 EU per 1 ug of the protein by the LAL method
Activity	Measured in a cell proliferation assay using PHA-activated human peripheral blood lymphocytes (PBL).
	The EC50 for this effect is 0.01-0.2 ng/mL.



Background

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).

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