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ProDots[®] Recombinant Human IL-7 GMP

RDsystems

DESCRIPTION

Source	<i>E. coli</i> -derived Asp26-His177, with an N-terminal Met Accession # P13232.1 Produced using non-animal reagents in an animal-free laboratory. Manufactured and tested under cGMP guidelines.
N-terminal Sequence Analysis	Met-Asp-(Cys)-Asp-Ile-Glu-Gly-Lys-Asp-Gly
Predicted Molecular Mass	17 kDa

SPECIFICATIONS	
Activity	Measured in a cell proliferation assay using PHA-activated human peripheral blood lymphocytes (PBL). Yokota, T. <i>et al</i> . (1986) Proc. Natl. Acad. Sci. USA 83 :5894. The ED ₅₀ for this effect is 0.1-0.5 ng/mL.
	The specific activity of ProDots Recombinant Human IL-7 GMP is >1.0 x 10 ⁸ units/mg, which is calibrated against the human IL-7 reference standard (NIBSC code: 90/530).
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE with silver staining, under reducing conditions.
Host Cell Protein	<0.5 ng per µg of protein when tested by ELISA.
Mycoplasma	Negative when tested in a ribosomal RNA hybridization assay.
Host Cell DNA	<0.0015 ng per µg of protein when tested by PCR.
Formulation	Lyophilized from an phosphate buffered saline-based formulation using proprietary excipients. See Certificate of Analysis for details.

PREPARATION AND STORAGE	
Reconstitution	Reconstitute immediately prior to use with up to 25 mL of cell culture media.
Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Store material as supplied, unopened, and unreconstituted at 2-8 °C until use. Stability is a minimum of 8 weeks when stored at 2-8 °C as supplied. Refer to lot specific COA for the Use by Date.

The foil pouch is used for shipping and storage only and is not terminally sterilized. GMP ProDots within the weldable bag are prepared under GMP-controlled conditions and protein content is tested to USP <71> guidelines.



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ProDots[®] Recombinant Human IL-7 GMP

Catalog Number: PRD207-GMP

RDSYSTEMS

BACKGROUND

IL-7 (interleukin-7) is a 25 kDa cytokine of the hemopoietin family that plays important roles in lymphocyte differentiation, proliferation, and survival (1-4). Human IL-7 cDNA encodes 177 amino acids (aa) that include a 25 aa signal peptide (3). Human IL-7 shares approximately 60-63% aa sequence identity with mouse, rat, canine and feline IL-7, and 72-76% with equine, bovine, ovine, and porcine 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 α , also known as CD127) with the common γ chain (γ c) (1). The γ c is also a subunit of the receptors for IL-2, -4, -9, -15, and -21 (1). IL-7 R α is expressed on double negative (CD4-CD8-) and single positive (CD4+ or CD8+) naïve and memory T cells, but undergoes IL-7-mediated down-regulation and shedding during antigen-driven T cell portient absent on regulatory T cells (1, 2, 6-11). IL-7 contributes to the maintenance of all naïve and 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 α 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). However, IL-7 functions in both mouse and human pro-B cells to suppress premature Ig light chain recombination during proliferative growth (14, 15).

References:

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- 3. Goodwin, R.G. et al. (1990) Proc. Natl. Acad. Sci. USA 86:302.
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- 13. Pribyl, J.A. and T.W. LeBien (1996) Proc. Natl. Acad. Sci. 93:10348.
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PRODUCT SPECIFIC NOTICES

The GMP ProDot bag(s) should be used after proper inspection. Assess the bags after media is added to the bag either through the weldable port or needless valve. Inspect the bag to ensure complete dissolution of the GMP ProDot, and visually inspect seals and corners for a complete seal.

GMP ProDots are fragile. Please handle with care. If breakage of a ProDot is observed, there is no integrity lost, and can be used as indicated.

SDS-PAGE Purity, Host Cell DNA, and Host Cell Protein testing were completed on protein prior to lyophilization.

The End User is aware that R&D Systems, Inc. sells GMP products for preclinical or clinical ex vivo use and not for in vivo use. The End User Terms of Use of Product may be found at: RnDSystems.com/legal-information.

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