

GMP Human IL-7

Cat. No. GMP-CKS-HE007

Description

Source	Recombinant GMP Human IL-7 is expressed from E.coli with no tag. It contains Asp26-His177.
Accession	P13232
Molecular Weight	The protein has a predicted MW of 17.5 kDa same as Bis-Tris PAGE result.
Endotoxin	≤ 0.01 EU per μg by the LAL method.
Purity	$\geq 95\%$ as determined by SEC-HPLC.
Mycoplasma	Negative
Sterility	No growth determined by membrane filtration method.
Residual Host Cell Protein	< 0.5 ng/ μg
Residual Host Cell DNA	< 0.02 ng/ μg

Bioactivity Measure in a cell proliferation assay using PHA-activated human peripheral blood mononuclear cell (PBMC). The specific activity of GMP Human IL-7 is $> 1 \times 10^8$ IU/mg, which is calibrated against the WHO reference standard (NIBSC code: 90/530) .

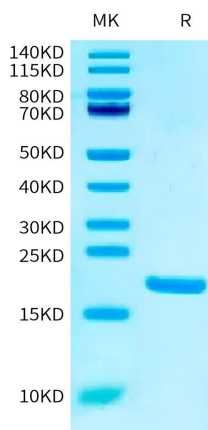
Formulation and Storage

Formulation	Lyophilized from 0.22 μm filtered solution in PBS (pH 7.4). Normally 8% trehalose is added as protectant before lyophilization.
Reconstitution	Centrifuge the tube before opening. Reconstituting to a concentration more than 100 $\mu\text{g}/\text{ml}$ is recommended. Dissolve the lyophilized protein in distilled water.

Shipping and Storage The product is shipped with ice bag. Store it immediately at $-20^\circ\text{C} \pm 5^\circ\text{C}$ upon arrival. $-20^\circ\text{C} \pm 5^\circ\text{C}$ for 36 months in lyophilized state. Recommend to aliquot the protein into smaller quantities for optimal storage. Please minimize freeze-thaw cycles.

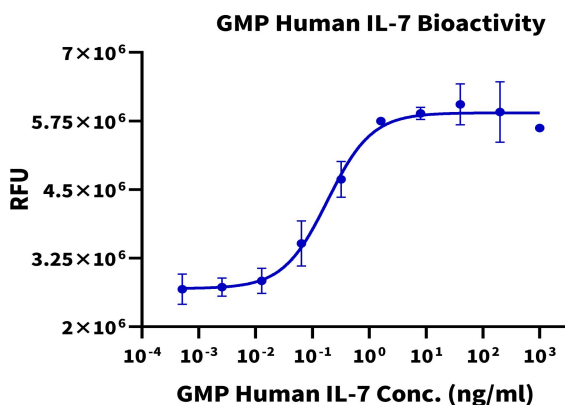
Assay Data

Bis-Tris PAGE



GMP Human IL-7 on Bis-Tris PAGE under reduced condition.

Cell Based Assay



Measured in a cell proliferation assay using PHA-activated human peripheral blood mononuclear cell (PBMC). The specific activity of GMP Human IL-7 is $> 1 \times 10^8$ IU/mg, which is calibrated against the human IL-7 WHO reference standard (NIBSC code: 90/530) (QC Test).

Quality Advantages

KACTUS GMP grade cytokines are manufactured and tested in accordance with relevant GMP guidelines and regulatory requirements, and are in compliance with ISO 13485:2016 certified quality system.

- Personnel training programs
- Clean rooms and facility
- Facility maintenance and equipment calibration & verification
- Raw material testing and supplier evaluation and approval
- Animal-free manufacturing
- Rigorous quality control
- Stability testing (freeze-thaw and accelerated stability of reconstituted protein; long-term stability in lyophilized state)
- Comprehensive support files, including COA, COO, MSDS, TSE/BSE statement, etc.

We conduct comprehensive quality control testing to ensure that KACTUS GMP grade cytokines meet strict standards for identification, purity, safety, bioactivity and batch-to-batch consistency.

- Identification by Bis-Tris PAGE
- Purity by SEC-HPLC
- Endotoxin level
- Residual host cell protein
- Residual host cell DNA
- Mycoplasma testing
- Sterility testing
- Bioactivity (Specific activity against standards of WHO if applicable)
- Batch-to-batch consistency

Background

Interleukin (IL)-7 is a non-redundant cytokine in T-cell development and function. It is required in early T-cell development as well as for T-cell homeostasis and is secreted by stromal cells in the thymic and bone marrow (BM) environment. IL-7 binds to its receptor which is composed of the two chains IL-7R α (CD127), shared with the thymic stromal lymphopoietin (TSLP), and the common γ chain (CD132) for IL-2, IL-15, IL-9 and IL-21. Whereas γ c is expressed by most hematopoietic cells, IL-7R α is nearly exclusively expressed on lymphoid cells. After binding to its receptor, IL-7 signals through two different pathways: Jak-Stat (Janus kinase-Signal transducer and activator of transcription) and PI3K/Akt responsible for differentiation and survival, respectively.

Disclaimer

KACTUS GMP Human IL-7 is for research or ex vivo cell processing use, not for human or animal in vivo application.