

CTGrade rh IL-4

Catalog #	Product	Size
500-05	CTGrade rh IL-4	50µg, 100µg, 1mg lyophilized

Intended Use

This product is for research or further manufacturing use only. Not for injection or diagnostic procedures. The safety and efficacy of this product in diagnostic or other clinical procedures has not been established.

Product Description

This product is produced from *E. coli* and is manufactured in a facility that does not use or process beta-lactam containing materials. No animal- or human-derived materials were used during manufacturing or as ingredients. This product is manufactured, tested, and released in an ISO 9001:2015 certified facility and follows cGMP practices. USP chapter <1043> for ancillary materials has been considered in the manufacture of this product. Vial may appear empty but contains protein at the stated quantity.

Synonyms: B-cell stimulatory factor-1, BSF-1, BCDF, BCGF

NIH Accession Number: P05112

Background: Interleukin 4 (IL-4) is an immunomodulatory cytokine that stimulates B cell proliferation and activates eosinophils, basophils, and mast cells (1, 2). IL-4 is also involved in collagen production by fibroblasts and can induce vascular cell adhesion molecule (VCAM)-1 expression on endothelial cells [3]. IL-4 acts a key role in promotion of Th2 differentiation (4, 5, 6, 7) from naïve helper T cells. Functionally, IL-4 is best known for defining the Th2 phenotype of lymphocytes and for regulating cell proliferation, apoptosis, and expression of numerous genes in various cell types, including lymphocytes, macrophages, and fibroblasts, as well as epithelial and endothelial cells (8).

Specifications

Formulation:	CTGrade rh IL-4 is lyophilized from a 0.2 μ m filtered solution containing 20 mM Sodium Phosphate, pH 7.5
Protein Purity:	\geq 98% determined by reducing and non-reducing SDS-PAGE analysis.
Endotoxin:	<0.05 EU/ μ g using USP <85>/ EP 2.6.14
Bioactivity:	ED50 is determined by the dose-dependent TF-1 cell proliferation cells. The ED50 is typically less than 0.25 ng/mL. The international units of CTGrade rh IL-4 is approximately 1.4×10^4 IU/ μ g, which is calibrated against recombinant Human Interleukin 4 WHO International Standard (NIBSC code 88/656).
Quality:	Carrier-free and no animal or human-derived materials were used during manufacturing.

Quality Assurance

All quality control test results are reported on a lot specific Certificate of Analysis, which is available at www.irvinesci.com or upon request.

Shipping

This product is shipped at ambient temperature. Immediately upon receipt, store at the recommended temperature below.

Storage Instructions and Stability

Upon receipt, store the lyophilized protein at -20°C in a manual defrost freezer. Unopened vials are stable for 36 months from the date of manufacture. Reconstituted material should be apportioned in working volumes and stored at or below -20°C in manual defrost freezer.

For short term storage reconstituted material is stable for 4-6 weeks when stored at $2-8^{\circ}\text{C}$. Stability can be increased by adding at least 0.1% carrier protein.

Precautions

For *ex vivo* use only. Not for injection or diagnostic procedures. The safety and efficacy of this product in diagnostic or other clinical uses has not been established. Please refer to the Safety Data Sheet for information regarding hazards and safe handling practices.

Directions for Use

1. Reconstitution

Allow the vial and sterile water (e.g. FUJIFILM Irvine Scientific, Inc. P/N 9309 Water for Injection) to equilibrate to room temperature. Draw up desired volume of reconstitution buffer. Aseptically puncturing through rubber stopper with sterile needle, inject the buffer to achieve the desired concentration (0.1-0.5 mg/mL). Swirl the vial gently, **do not vortex**. Allow protein to rehydrate for 10-15 minutes at room temperature with occasional gentle mixing.

2. Optimum Concentration

The optimum concentration varies depending on cell type and culture conditions. Working concentration should be determined for each specific application.

Related Products

Catalog #	Product	Size
91146	PRIME-XV Dendritic Cell Maturation CDM	500 mL
91211	PRIME-XV Hematopoietic Cell Basal XSFM	500 mL
9160	RPMI Medium 1640 w/o L-Glutamine - Liquid	100mL, 500mL, 1L
9161	RPMI Medium 1640 with L-Glutamine	100mL, 500mL, 1L
9309	Water for Injection	1L

References

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8. Kelly-Welch A. E., Hanson E. M., Boothby M. R., Keegan A. D. (2003) Interleukin-4 and interleukin-13 signaling connections maps. *Science* 300, 1527–1528

Technical Support

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WEBSITE RESOURCES

Visit the website at www.irvinesci.com for technical resources and information including:

- Safety Data Sheets (SDS)
- Certificate of Analysis (CoA) (when available)
- FAQs
- Product literature

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