

## Technical Data Sheet

## Recombinant Human IL-2

## Product Information

<b>Material Number:</b>	554603
<b>Size:</b>	10 µg
<b>Concentration:</b>	200 µg/ml
<b>Reactivity:</b>	QC testing: Human
<b>Storage Buffer:</b>	Frozen aqueous buffered solution containing BSA and glycerol.

## Description

Interleukin-2 (IL-2), originally called T cell growth factor (TCGF), is a multifunctional cytokine which can stimulate the differentiation and proliferation of T lymphocytes and other cell types including B lymphocytes, NK cells, LAK cells, and monocytes/macrophages. IL-2 exerts its biological effects by binding to specific receptors expressed by various target cells. Human IL-2 is a 15 kD protein containing 133 amino acid residues.

## Formulation and Purity

Recombinant human IL-2 is supplied as a frozen liquid comprised of 0.22 µm sterile-filtered aqueous buffered solution, pH 7.2, and containing 2.0 mg/mL biotechnology grade, low endotoxin bovine serum albumin, with no preservatives. The human IL-2 was purified by immunoaffinity chromatography and was found to be > 95% pure by SDS-PAGE analysis, and an absorbance assay based on the Beers-Lambert law. The endotoxin level is ≤ 0.1 ng per µg of human IL-2, as measured in a chromogenic LAL assay.

## Preparation and Storage

Store product at -80°C prior to use or for long term storage of stock solutions.

This preparation contains no preservatives, thus it should be handled under aseptic conditions.

Avoid multiple freeze-thaws of product.

Rapidly thaw and quick-spin product prior to use.

Upon initial thawing, the product should be aliquoted into polypropylene microtubes and frozen at -80°C for future use.

Alternatively, the product can be diluted in sterile neutral buffer containing not less than 0.5 - 10 mg/mL carrier protein such as human or bovine serum albumin, aliquoted and stored at -80°C. For in vitro biological assay use, carrier-protein concentrations of > 1 mg/mL are suggested. For use as an ELISA standard, a carrier-protein concentrations of 5 - 10 mg/mL is suggested.

Note: Failure to add carrier protein or store at indicated temperatures may result in a loss of activity. The product should not be diluted to less than 10 µg/mL for long term storage. Carrier proteins should be pre-screened for possible effects in an appropriate experimental system. Carrier proteins may effect experimental results due to toxicity, high endotoxin levels or possible blocking activity.

## Application Notes

## Application

ELISA Standard	Routinely Tested
Bioassay	Routinely Tested
Intracellular block/flow cytometry	Tested During Development

## Recommended Assay Procedure:

**Biological Activity:** Proliferation is measured using CTLL-2 indicator cells.

Specific Activity: 0.06 - 1.0 x 10<sup>9</sup> Units/mg

Unit is defined as the amount of material required to stimulate a half-maximal response cytokine saturation.

ED50: 10-150 pg/mL

**ELISA Standard:** Recombinant human IL-2 is useful as a quantitative standard for measuring human IL-2 protein levels in an IL-2 specific sandwich ELISA with the purified 5344.111 antibody (Cat. No. 555051) as a capture antibody and the biotinylated B33-2 antibody (Cat. No. 555040) as the detection antibody. To obtain linear standard curves, doubling dilutions of this human IL-2 standard from ~2,000 to 15 pg/mL should be included in each ELISA plate. For measuring human IL-2 in complex fluids, such as serum or plasma, the BD OptEIA™ Human IL-2 Set (Cat. No. 555190) and BD OptEIA™ Human IL-2 Kit II (Cat. No. 550611) are recommended.

**Ligand Blocking Control for Immunofluorescent Staining and Flow Cytometric Analysis:** Recombinant human IL-2 can be used as a blocking control to demonstrate the specificity of IL-2 staining, such as by conjugated formats of the MQ1-17H12 anti-human IL-2 antibody. The intracellular cytokine staining technique and use of blocking controls are described in detail by C.Prussin and D.Metcalf.

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## Suggested Companion Products

<u>Catalog Number</u>	<u>Name</u>	<u>Size</u>	<u>Clone</u>
555040	Biotin Mouse Anti-Human IL-2	0.5 mg	B33-2
555051	Purified Mouse Anti-Human IL-2	0.5 mg	5344.111
555190	Human IL-2 ELISA Set	20 plates	(none)
550611	Human IL-2 ELISA Kit II	2 plates	(none)

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. This product is manufactured and sold under license from Pestka Biomedical Laboratories, Inc. (d/b/a PBL InterferonSource) and may be used solely as indicated. This product may not be resold or incorporated in any manner into another product for resale. Any use for therapeutics is strictly prohibited. This product is covered by U.S. Patent No. 5,597,901 and Bulgarian Patent No. BG1895.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
4. Please refer to [www.bdbiosciences.com/pharming/en/protocols](http://www.bdbiosciences.com/pharming/en/protocols) for technical protocols.

## References

- Gillis S, Ferm MM, Ou W, Smith KA. T cell growth factor: parameters of production and a quantitative microassay for activity. *J Immunol.* 197; 120(6):2027-2032. (Biology)
- Prussin C, Metcalfe DD. Detection of intracytoplasmic cytokine using flow cytometry and directly conjugated anti-cytokine antibodies. *J Immunol Methods.* 1995; 188(1):117-128. (Methodology)
- Smith, KA. Interleukin-2: inception, impact, and implications. *Science.* 1988; 240(4856):1169-1176. (Biology)
- Stern AS, Pan YC, Urdal DL, Mochizuki DY, DeChiara S, Blacher R, Wideman J, Gillis S. Purification to homogeneity and partial characterization of interleukin 2 from a human T-cell leukemia. *Proc Natl Acad Sci U S A.* 1984; 81(3):871-875. (Biology)
- Taniguchi T, Matsui H, Fujita T, Takaoka C, Kashima N, Yoshimoto R, Hamuro J. Structure and expression of a cloned cDNA for human interleukin-2. *Nature.* 1983; 302(5906):305-310. (Biology)

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