

## Technical Data Sheet

## Recombinant Rat IL-4

## Product Information

Material Number:	555107
Size:	5 µg
Storage Buffer:	Frozen aqueous buffered solution containing BSA.

## Description

Interleukin-4 (IL-4) is a potent lymphoid cell growth factor which can stimulate the growth, differentiation and survivability of and regulate the function of various cell types of hematopoietic (including B and T lymphocytes, mast cells, monocytes and macrophages) and non-hematopoietic (e.g., vascular endothelial cells and certain tumor cells) origin. IL-4 exerts its biological activities by binding to specific high affinity receptors expressed by a wide variety of cell types. The rat IL-4 gene product is a 17 -20 kD glycoprotein containing 123 amino acid residues.

**Formulation and Purity:** Recombinant rat IL-4 is supplied as a frozen liquid comprised of 0.22 im sterile-filtered PBS, pH 7.2, and containing 2.0 mg/ml biotechnology grade, low endotoxin bovine serum albumin, with no preservatives. Recombinant rat IL-4 protein 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 rat IL-4, as measured in a chromogenic LAL assay.

## Preparation and Storage

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

Rapidly thaw and quick-spin product prior to use.

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

Avoid multiple freeze-thaws of product.

Recombinant rat IL-4 is supplied as a frozen liquid. 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 albumin, aliquoted and stored at -80°C. For in vitro biological assay use, we recommend carrier-protein concentrations of 0.5 - 1.0 mg/ml. For use as an ELISA standard we recommend carrier-protein concentrations of 5 - 10 mg/ml.

NOTE: Failure to add carrier protein or store at indicated temperatures may result in a loss of activity.

## Application Notes

## Application

ELISA Standard	Routinely Tested
Bioassay	Reported

## Recommended Assay Procedure:

**ELISA Standard:** Recombinant rat IL-4 (Cat. No. 555107) is useful as a quantitative standard for measuring rat IL-4 protein levels in an IL-4 specific sandwich ELISA with purified anti-rat IL-4, clone OX-81, (Cat. No. 555080) as a capture antibody and biotinylated anti-rat IL-4, clone B11-3 (Cat. No. 555090) as the detection antibody. To obtain linear standard curves, doubling dilutions of the rat IL-4 standard from ~2,000 to 15 pg/ml should be included in each ELISA plate. For specific methodology, please visit the protocols section or chapter on ELISA in the Immune Function Handbook, both of which are posted on our web site, [www.bdbiosciences.com](http://www.bdbiosciences.com).

**Note:** This ELISA pair is recommended primarily for measuring cytokine from experimental cell culture systems. These ELISA reagents are not recommended for assay of serum or plasma samples. For measuring rat IL-4 in serum or plasma our BD OptEIA™ Rat IL-4 ELISA Set (Cat. No. 555198) is specially formulated and recommended.

**Biological Activity:** This material has been shown to have biological activity. Please note that the biological activity of this product is not routinely tested at BD Biosciences Pharmingen.

\*\*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.

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## Suggested Companion Products

Catalog Number	Name	Size	Clone
555090	Biotin Mouse Anti-Rat IL-4	0.5 mg	B11-3
555080	Purified Mouse Anti-Rat IL-4	0.5 mg	OX-81
555198	Rat IL-4 ELISA Set	20 plates	(none)

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to [www.bdbiosciences.com/pharmlngen/protocols](http://www.bdbiosciences.com/pharmlngen/protocols) for technical protocols.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

## References

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McKnight AJ, Classon BJ. Biochemical and immunological properties of rat recombinant interleukin-2 and interleukin-4. *Immunology.* 1992; 75(2):286-292. (Biology)

Paul WE. Interleukin-4: a prototypic immunoregulatory lymphokine. *Blood.* 1991; 77(9):1859-1870.(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: IC/FCM Block)