

## Technical Data Sheet

## Recombinant Human IL-12 (p70)

## Product Information

|                  |   |
|------------------|---|
| Material Number: | 554613  |
| Size:            | 5 µg  |
| Concentration:   | 100 µg/ml   |
| Reactivity:      | QC Testing: Human   |
| Storage Buffer:  | Frozen aqueous buffered solution containing BSA and glycerol. |

## Description

Interleukin-12 (IL-12) is a potent regulator of cell-mediated immune responses. Biologically active IL-12 is secreted by activated B lymphocytes and macrophages as a 70 kD heterodimeric glycoprotein comprised of disulfide-bonded 35 kD (p35) and 40 kD (p40) subunits. The IL-12 p40 monomer shares amino acid sequence homology with the IL-6 receptor. It has been reported that activated PBMC produce a manyfold excess of IL-12 p40 monomer over the bioactive p70 heterodimer. The IL-12 p40 monomer has been reported to inhibit binding of IL-12 p70 to the IL-12 receptor, but with 20X less effectiveness than the IL-12 p70 homodimer.

## Formulation and Purity:

Recombinant human IL-12 is supplied as a frozen liquid comprised of 0.22 µm sterile-filtered aqueous buffered solution containing 1 mg/ml Biotechnology grade, low endotoxin bovine serum albumin, with no preservatives. Purity is > 95% as determined by non-reducing SDS-PAGE, and an absorbance assay based on the Beers-Lambert Law. The endotoxin level is ≤ 0.1 ng per µg of human IL-12 p70, 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.

Rapidly thaw and quick-spin product prior to use.

Avoid multiple freeze-thaws of product.

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

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. 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. For in vitro biological assay use, we recommend carrier-protein concentrations of 0.5 - 1 mg/ml. For use as an ELISA standard we recommend carrier-protein concentrations of 5 - 10 mg/ml. 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 25 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

|                |                  |
|----------------|------------------|
| Bioassay       | Routinely Tested |
| ELISA Standard | Routinely Tested |

## Recommended Assay Procedure:

**Biological Activity:** The activity range is measured in proliferation assay using PHA/IL-2 -activated human peripheral blood mononuclear cell (PBMC).

**Specific Activity:** 0.2 - 5.0 X 10<sup>8</sup> Unit/mg (Unit is defined as the amount of material required to stimulate a half-maximal response at cytokine saturation.); ED50: 20 - 500 pg/ml. Since applications vary, each investigator should titrate the reagent to obtain optimal results.

**ELISA Standard:** Human IL-12 is useful as a quantitative standard for measuring human IL-12 protein levels in an IL-12 specific sandwich ELISA with the purified 20C2 antibody (Cat. No.555065) as a capture antibody and the biotinylated C8.6 antibody (Cat. No. 554660) as the detection antibody. To obtain linear standard curves, doubling dilutions of this human IL-12 standard from ~2,000 to 15 pg/ml should be included in each ELISA plate. For specific methodology, please visit the protocol sections or chapter on ELISA in the Immune Function Handbook, both of which

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are located 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 assaying serum or plasma samples. For measuring human IL-12 in serum or plasma the human IL-12 OptEIA™ sets (Cat. No. 555171 for human IL-12 p40 and Cat. No. 555183 for human IL-12 p70) and the human IL-12 OptEIA kits (Cat. No. 551116 for human IL-12 p40 and Cat. No. 559258 for human IL-12 p70) are specially formulated and recommended.

### Suggested Companion Products

| <u>Catalog Number</u> | <u>Name</u>                             | <u>Size</u> | <u>Clone</u> |
|-----------------------|---|-------------|--------------|
| 555065                | Purified Rat Anti-Human IL-12 p70       | 0.5 mg      | 20C2         |
| 554660                | Biotin Mouse Anti-Human IL-12 (p40/p70) | 0.5 mg      | C8.6         |
| 555171                | Human IL-12 (p40) ELISA Set             | 20 plates   | (none)       |
| 555183                | Human IL-12 (p70) ELISA Set             | 20 plates   | (none)       |
| 551116                | Human IL-12 (p40) ELISA Kit II          | 2 plates    | (none)       |
| 559258                | Human IL-12 (p70) ELISA Kit             | 2 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/pharming/en/protocols](http://www.bdbiosciences.com/pharming/en/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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