Human IL-4 Singleplex Bead Kit

Technical Data Sheet

Catalog #: LHC0041 Lot #: 416346

*Note: A letter at the end of the lot number signifies an additional packaging of this same lot.

Intended Use

This kit is comprised of components for the measurement of human IL-4 in serum, plasma, or tissue culture supernatant. The assay may be run alone or in combination with other Singleplex Bead Kits from Invitrogen. Buffer reagents needed to complete the reaction are sold separately under Catalog #LHB0001. These reagents are intended for use in the Luminex® 100™ or 200™ System only. This kit is configured for research use only and is not to be used in diagnostic procedures.

Reagents Provided

1. Part #: LM002 Description: Antibody Bead Concentrate (10X) Lot: 416350 Size: 0.25 mL-100 tests

   **Bead Region:** 77
   **Form:** 0.25 mL 10X bead concentrate solution in storage buffer. Contains 0.05% sodium azide as a preservative.
   **Storage:** Light sensitive material. Store at 2 - 8°C until the expiration date indicated on the kit.

2. Part #: BN002 Description: Biotinylated Ab Conc. (10X) Lot: 416352 Size: 1 mL-100 tests

   **Form:** 1 mL of a 10X stock of Biotinylated Antibody Concentrate in Biotin Diluent. Contains 0.1% sodium azide as a preservative. Concentration of antibody is matched to this lot of beads. Do not mix lots of Coated Beads and Detection Antibody.
   **Storage:** Store at 2 - 8°C until the expiration date indicated on the kit.

3. Part #: SM024 Description: Hu Cytokine 10-Plex Standard Lot: 379561 Size: 2 Vials

   **Form:** Lyophilized. The proteins in this standard have been calibrated against the masses of highly purified recombinant proteins, with the respective Invitrogen ELISA kits, and NIBSC calibration standards (if available). Refer to the User Manual included in the Buffer Reagent Kit for further information. Contains 0.1% sodium azide as a preservative.
   **Storage:** Store at 2 to 8°C. Use within 1 hour after reconstitution. Discard immediately after use.

Concentration of Reconstituted Standards**:

- IL-2 (8,580 pg/mL)
- IL-4 (12,820 pg/mL)
- IFN-γ (9,880 pg/mL)
- IL-5 (3,910 pg/mL)
- IL-10 (13,400 pg/mL)
- IL-1β (7,330 pg/mL)
- IL-8 (10,010 pg/mL)
- TNF-α (7,410 pg/mL)
- IL-6 (5,350 pg/mL)
- GM-CSF (9,820 pg/mL)

**Important note: The concentrations of reconstituted standards are lot-specific. Please verify all concentration values entered in data analysis software.

One microgram of Invitrogen recombinant human IL-4 equals 10,000 International Units of WHO reference preparation 88/656 (NIBSC, Hertfordshire, UK, EN6 3QG).

Reconstitution: Reconstitute with 1 mL Assay Diluent when measuring IL-4 in serum or plasma samples. For other sample types, such as tissue culture supernatants, reconstitute the standard in 1 mL of a solution consisting of 50% Assay Diluent + 50% of sample matrix. Allow standard to rehydrate for approximately 10 minutes before further dilution.

Recommended Starting Concentration for Standard Curve: Upon reconstitution, the starting concentration of standards is the value cited above. Make serial 1:3 dilutions in Assay Diluent (serum/plasma samples) or other appropriate matrix. Use 100 µL per assay. If establishing a Multiplex Assay, this same standard can be used to measure the other related cytokines cited above in a Multiplex Assay format. Refer to the User Manual included in the Buffer Reagent Kit for further information.

For Research Use Only. CAUTION: Not for human or animal therapeutic or diagnostic use.

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Performance Characteristics

Analytical Sensitivity: The minimum detectable dose of Hu IL-4 is <5 pg/mL. This was determined by adding two standard deviations to the mean FI obtained when the zero standard was assayed 30 times.

![Human IL-4 Full Standard Range](image)

Typical Standard Curve

Specificity: Buffered solutions of a panel of substances at 10 or 50 ng/mL were assayed with the Invitrogen Human IL-4 Singleplex Bead Kit. The following substances were tested and all were found to have no cross-reactivity: human IL-1α, IL-1β, IL-RA, IL-2, IL-3, IL-5, IL-6, IL-7, IL-8, IL-10, βFG, G-CSF, GM-CSF, GRO, IFN-α, IFN-γ, IP-10, LIF, MCP-1, MIP-1α, MIP-1β, OSM, RANTES, SCF, TGF-β, TNF-β; mouse IL-4; rat IL-4.

Precision:

<table>
<thead>
<tr>
<th></th>
<th>Intra-assay (n=16)</th>
<th>Inter-assay (n=32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (pg/mL)</td>
<td>2710</td>
<td>2770</td>
</tr>
<tr>
<td>SD</td>
<td>227</td>
<td>240</td>
</tr>
<tr>
<td>%CV</td>
<td>8.4</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Linearity: Human serum and tissue culture medium containing 10% fetal calf serum were spiked with human IL-4 and serially diluted in Assay Diluent and a solution consisting of 50% Assay Diluent and 50% tissue culture medium containing 10% fetal calf serum, respectively, over the range of the assay. Linear regression analysis of samples versus the expected concentration yielded a correlation coefficient of 0.99 for both serum and tissue culture.

Recovery:

Human serum averaged 94% (range: 78% to 110%).
Human plasma (EDTA) averaged 86% (range: 71% to 100%).
Tissue culture medium containing 10% fetal calf serum averaged 100% (range: 95% to 105%).

Correlation to ELISA:

A correlation coefficient of 0.99 was calculated when values for stimulated lymphocytes in RPMI + 10% FCS, obtained with the Human IL-4 Singleplex Bead Kit were compared to the Invitrogen ELISA for Human IL-4 (cat.# KAC1281, KAC1282). Human IL-4 Singleplex Bead Kit (pg/mL) x 1.5 = Hu IL-4 ELISA (pg/mL). Correlation of results obtained with the Human IL-4 Singleplex Bead Kit to one’s own system should be determined to arrive at an appropriate multiplication factor.

![Human IL-4 Low End Range](image)

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