



# Magnetic Luminex® Performance Assay Human IL-4 Kit

**Catalog Number:** LUHM204

**Pack Size:** 100 Tests

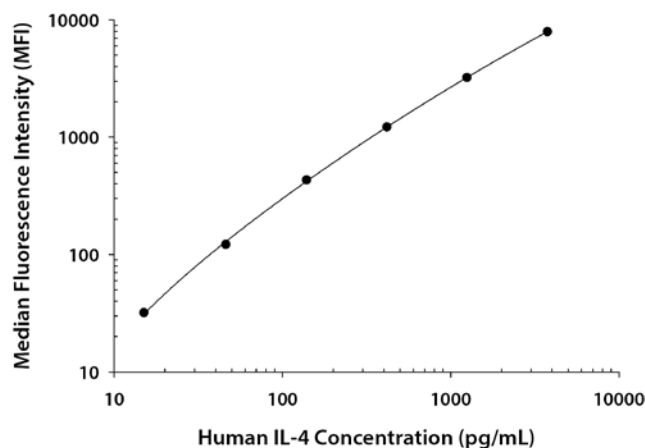
## SPECIFICATIONS AND USE

- Recommended Sample Types**
- Cell culture supernates, serum, EDTA plasma, and heparin plasma.
- Microparticle Region**
- Region-25
- Components**
- Microparticle Concentrate (Part 894434) is supplied as a 100X concentrated stock (0.075 mL) with preservatives.
  - Biotin-Antibody Concentrate (Part 892620) is supplied as a 100X concentrated stock solution (0.075 mL) with preservatives.
- Other Supplies Required**
- Magnetic Luminex Performance Assay Human Base Kit A (Catalog Number LUHM000).
- Storage**
- Store the unopened kit at 2-8 °C. Do not use past the expiration date on the label.
  - **Avoid freezing microparticles.**
  - **Protect microparticles from light.**
- Instructions for Use**
- Refer to the Base Kit insert for the Luminex Performance Assay procedure.

## TYPICAL DATA

This human IL-4 standard curve is provided only for demonstration. A standard curve must be generated each time an assay is run, utilizing values from the Standard Value Card included in the Base Kit.

**Note:** This kit utilizes a six point standard curve. When fitting a standard curve constructed with the recommended 3-fold dilution series, use the first six points for the IL-4 kit (omit the lowest concentration standard).



Standard	pg/mL	MFI	Average	Corrected
Blank	0	17 18	18	—
1	3750	7932 7962	7947	7929
2	1250	3212 3267	3239	3221
3	417	1221 1253	1237	1219
4	139	449 451	450	432
5	46	139 140	140	122
6	15	49 50	50	32

## PERFORMANCE CHARACTERISTICS

**All data were collected with assays run as a multiplex.**

**Data obtained with polystyrene and magnetic beads were equivalent.**

**Sensitivity** - The Minimum Detectable Dose (MDD) was determined by adding two standard deviations to the MFI of twenty zero standard replicates and calculating the corresponding concentration.

Thirty-eight assays were evaluated, and the MDD of human IL-4 ranged from 0.52-4.46 pg/mL. The mean MDD was 1.75 pg/mL.

FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.

**R&D Systems, Inc.**

**1-800-343-7475**

**Intra-assay Precision (precision within an assay)** - Three samples of known concentration were tested twenty times on one plate to assess precision within an assay.

**Inter-assay Precision (precision between assays)** - Three samples of known concentration were tested in twenty separate assays to assess precision between assays.

	Intra-assay Precision				Inter-assay Precision		
Sample	1	2	3		1	2	3
n	20	20	20		20	20	20
Mean (pg/mL)	23	57	369		65	430	835
Standard Deviation	0.98	1.9	11.2		7.1	68.3	78.9
% CV	4.3	3.3	3.0		10.9	15.9	9.4

**Recovery and Linearity** – Samples containing and/or spiked with high concentrations of IL-4 were evaluated for recovery and were serially diluted to evaluate assay linearity.

Recovery			Linearity					
Sample Type	Average % Recovery	Range (%)			Cell culture supernates	Serum	EDTA Plasma	Heparin Plasma
Cell culture supernates	81	69-93	1:2	Average % of Expected	84	105	98	95
				Range (%)	74-97	93-119	93-106	90-102
Serum	103	77-126	1:4	Average % of Expected	86	106	94	91
				Range (%)	74-98	94-121	90-101	85-100
EDTA plasma	106	84-123	1:8	Average % of Expected	94	103	90	96
				Range (%)	83-108	93-120	76-100	87-107
Heparin plasma	104	94-114						

**Specificity** - This assay recognizes natural and recombinant human IL-4. The assay was tested for cross-reactivity and interference with the following factors. Less than 0.5% cross-reactivity and interference was observed.

Recombinant human:			Recombinant mouse:		Recombinant rat:	Recombinant porcine:	Recombinant human multiplex partners:	
6Ckine	IL-1 RII	IL-17	G-CSF	IL-8	GM-CSF	GM-CSF	ENA-78	IL-8
CNTF	IL-2 R $\alpha$	IL-18	GM-CSF	IL-10	IFN- $\gamma$	IL-1 $\alpha$	FGF basic	IL-10
$\beta$ -ECGF	IL-2 R $\beta$	LIF	IFN- $\gamma$	IL-17	IL-1 $\alpha$	IL-1 $\beta$	G-CSF	IL-17
FGF acidic	IL-2 R $\gamma$	LIF R	IL-1 $\alpha$	MIP-1 $\alpha$	IL-1 $\beta$	IL-2	GM-CSF	MCP-1
FGF-4	IL-3 R $\alpha$	MIP-1 $\alpha$	IL-1ra	MIP-1 $\beta$	IL-2	IL-4	IFN- $\gamma$	MIP-1 $\alpha$
FGF-5	IL-4 R	MIP-3 $\alpha$	IL-1	RANTES	IL-4	IL-6	IL-1 $\alpha$	MIP-1 $\beta$
FGF-6	IL-5 R $\alpha$	MIP-3 $\beta$	IL-2	Tpo	IL-6	IL-8	IL-1 $\beta$	RANTES
FGF-9	IL-6 R	MCP-2	IL-4	TNF- $\alpha$	IL-10	IL-10	IL-1ra	Tpo
FGF-10	IL-10 R	MCP-3	IL-5	VEGF	TNF- $\alpha$	Leptin	IL-2	TNF- $\alpha$
FGF-18	IL-3	MCP-4	IL-6			TNF- $\alpha$	IL-5	VEGF
GCP-2	IL-7	M-CSF					IL-6	
GRO $\alpha$	IL-9	TNF RI						
GRO $\beta$	IL-11	TNF- $\alpha$						
GRO $\gamma$	IL-12 p40	VEGF <sub>121</sub>						
I-309	IL-12 p70	VEGF <sub>165</sub>						
IGF-I	IL-13	VEGF-D						
IGF-II	IL-15							
IL-1 RI	IL-16							

## TECHNICAL HINTS

- Protect the microparticles and streptavidin-PE from light at all times.
- Refer to the Base Kit Standard Value Card for reconstitution volume and values of the reconstituted standard.
- Diluted microparticles cannot be stored. Make a fresh dilution of microparticles each time the assay is run.
- The use of a magnetic device made to accommodate a microplate is necessary for washing.
- Discrepancies may exist in values obtained for the same analyte utilizing different technologies.

Luminex Performance Assays afford the user the benefit of multianalyte analysis of biomarkers in a complex sample. For each sample type, a single, multipurpose diluent is used to optimize recovery, linearity, and reproducibility. Such a multipurpose diluent may not optimize any single analyte to the same degree that a unique diluent selected for analysis of that analyte can optimize conditions. Therefore, some performance characteristics may be more variable than those for assays designed specifically for single analyte analysis.