Magnetic Luminex® Performance Assay Human IL-1β/IL-1F2 Kit

Catalog Number: LUHM201
Pack Size: 100 Tests

SPECIFICATIONS AND USE

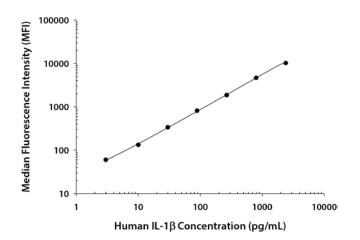|	
Recommended Sample Types	• Cell culture supernates, serum, EDTA plasma, and heparin plasma.
Microparticle Region	• Region-20
Components	• Microparticle Concentrate (Part 894430) is supplied as a 100X concentrated stock (0.075 mL) with preservatives.
	• Biotin-Antibody Concentrate (Part 892618) is 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-1β 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.

Standard	pg/mL	MFI	Average	Corrected
Blank	0	12 13	13	——
1	2400	10,168 10,272	10,220	10,207
2	800	4662 4684	4673	4660
3	267	1858 1889	1874	1861
4	89	817 834	825	812
5	30	345 351	348	335
6	10	144 148	146	133
7	3	72 73	73	60

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.

Forty-two assays were evaluated, and the MDD of human IL-1β ranged from 0.11-0.57 pg/mL. The mean MDD was 0.27 pg/mL.

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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)	29	95	662	34	115	713
Standard Deviation	1.6	4.3	33.5	3.4	11.3	52.5
% CV	5.5	4.5	5.1	10.0	9.8	7.4

Recovery and Linearity – Samples containing and/or spiked with high concentrations of IL-1β were evaluated for recovery and were serially diluted to evaluate assay linearity.

Recovery		
Sample Type	Average % Recovery	Range (%)
Cell culture supernates	93	92-94
Serum	109	98-119
EDTA plasma	100	88-111
Heparin plasma	99	87-106

Linearity			Cell culture supernates	Serum	EDTA Plasma	Heparin Plasma
1:2	Average % of Expected		99	103	105	99
	Range (%)		89-116	99-111	87-115	92-104
1:4	Average % of Expected		94	101	106	98
	Range (%)		79-112	95-104	91-114	90-104
1:8	Average % of Expected		99	100	113	97
	Range (%)		75-119	92-110	103-121	88-101

Specificity - This assay recognizes natural and recombinant human IL-1β. 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 Rα	IL-18	GM-CSF	IL-10	IFN-γ	IL-1α	FGF basic	IL-10
β-ECGF	IL-2 Rβ	LIF	IFN-γ	IL-17	IL-1α	IL-1β	G-CSF	IL-17
FGF acidic	IL-2 Rγ	LIF R	IL-1α	MIP-1α	IL-1β	IL-2	GM-CSF	MCP-1
FGF-4	IL-3 Rα	MIP-1α	IL-1ra	MIP-1β	IL-2	IL-4	IFN-γ	MIP-1α
FGF-5	IL-4 R	MIP-3α	IL-1	RANTES	IL-4	IL-6	IL-1α	MIP-1β
FGF-6	IL-5 Rα	MIP-3β	IL-2	Tpo	IL-6	IL-8	IL-1ra	RANTES
FGF-9	IL-6 R	MCP-2	IL-4	TNF-α	IL-10	IL-10	IL-2	Tpo
FGF-10	IL-10 R	MCP-3	IL-5	VEGF	TNF-α	Leptin	IL-4	TNF-α
FGF-18	IL-3	MCP-4	IL-6			TNF-α	IL-5	VEGF
GCP-2	IL-7	M-CSF					IL-6	
GROα	IL-9	TNF RI						
GROβ	IL-11	TNF-α						
GROγ	IL-12 p40	VEGF₁₂₁						
I-309	IL-12 p70	VEGF₁₆₅						
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.