Magnetic Luminex® Performance Assay
Human GM-CSF High Sensitivity Kit

Catalog Number: LHSCM215
Pack Size: 100 Tests

SPECIFICATIONS AND USE

Recommended Sample Types
- **Human HS Cytokine Base Kit A:** Serum, EDTA plasma, and heparin plasma.
- **Human HS Cytokine Base Kit B:** Cell culture supernates, serum, EDTA plasma, and heparin plasma.

Microparticle Region
- Region-29

Components
- Microparticle Concentrate (Part 894498) is supplied as a 50X concentrated stock (0.075 mL) with preservatives.
- Biotin-Antibody Concentrate (Part 894055) is supplied as a 100X concentrated stock solution (0.075 mL) with preservatives.

Other Supplies Required
- Magnetic Luminex Performance Assay Human High Sensitivity Cytokine Base Kit A (Catalog Number LHSCM000) or Magnetic Luminex Performance Assay Human High Sensitivity Cytokine Base Kit B (Catalog Number LBHS000).

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.**

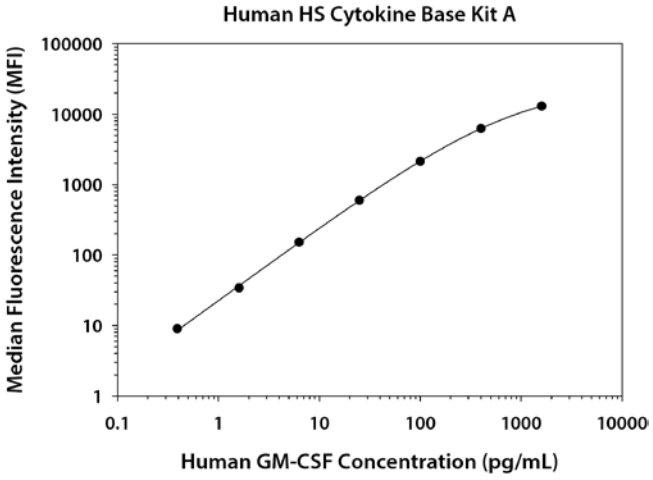
Instructions for Use
- Refer to the appropriate Base Kit insert for the Magnetic Luminex Performance Assay procedure.

TYPICAL DATA

This human GM-CSF 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.

Human HS Cytokine Base Kit A: *When using Calibrator Diluent RD6-40, a seven point standard curve (0.39-1600 pg/mL) is recommended.*

Human HS Cytokine Base Kit B: *When running cell culture supernate samples using Calibrator Diluent RD5K, a six-point standard curve (1.6-1638 pg/mL) is recommended. When running serum/plasma samples using Calibrator Diluent RD6-65, a seven-point standard curve (1.6-6550 pg/mL) is recommended.*



Standard	pg/mL	MFI	Average	Corrected
Blank	0	37 37	37	—
1	1600	12,979 13,065	13,022	12,985
2	400	6211 6328	6270	6233
3	100	2158 2180	2169	2132
4	25	634 639	636	599
5	6.3	188 190	189	152
6	1.6	70 72	71	34
7	0.39	46 46	46	9

R&D Systems, Inc.
1-800-343-7475

PRECISION

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 separate assays to assess precision between assays.

	Intra-assay Precision			Inter-assay Precision		
Sample	1	2	3	1	2	3
n	20	20	20	60	60	60
Mean (pg/mL)	2.0	20.1	430	1.9	19	455
Standard Deviation	0.1	0.6	28.8	0.3	1.8	53
% CV	5.0	3.0	6.7	15.8	9.5	11.6

RECOVERY & LINEARITY

Samples were spiked with human GM-CSF and evaluated for recovery and were serially diluted to evaluate assay linearity.

Recovery		
Sample Type	Average % Recovery	Range (%)
Cell culture supernates*	83	79-92
Serum	102	71-138
EDTA plasma	101	77-123
Heparin plasma	101	76-121

Linearity					
		Cell culture supernates*	Serum	EDTA Plasma	Heparin Plasma
1:2	Average % of Expected	110	97	96	100
	Range (%)	105-116	89-107	88-105	90-113
1:4	Average % of Expected	116	98	91	93
	Range (%)	108-123	85-111	81-103	78-100
1:8	Average % of Expected	119	101	90	89
	Range (%)	111-127	80-115	81-103	75-95

*Cell culture supernates are valid samples in Human HS Cytokine Base Kit B only.

SENSITIVITY

All data were collected with assays run as a multiplex.
Data obtained with polystyrene and magnetic beads were equivalent.

Twenty-one assays were evaluated, and the minimum detectable dose (MDD) of human GM-CSF ranged from 0.011-0.368 pg/mL. The mean MDD was 0.155 pg/mL.

The MDD was determined by adding two standard deviations to the MFI of twenty zero standard replicates and calculating the corresponding concentration.

CORRELATION

This assay has been correlated to the Quantikine® ELISA Kit with a slope of 0.9-1.1 and an R^2 value greater than 0.9.

SPECIFICITY

Note: *Refer to the base kit insert for a complete list of analytes tested for cross-reactivity and interference.*

This assay recognizes natural and recombinant human GM-CSF.

TECHNICAL HINTS

- Protect the microparticles and streptavidin-PE from light at all times.
- Refer to the appropriate 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.

Magnetic Luminex Performance Assays afford the user the benefit of multianalyte analysis of cytokines in a complex sample. A single, multipurpose diluent for each sample type is used to optimize recovery, linearity, and reproducibility. Such a multipurpose, single 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.