



# Magnetic Luminex® Performance Assay Human Cystatin C Kit

**Catalog Number:** LHK1196

**Pack Size:** 100 Tests

## SPECIFICATIONS AND USE

### Recommended Sample Types

- Serum, EDTA plasma, heparin plasma, and urine.

### Microparticle Region

- Region-19

### Components

- Microparticle Concentrate (Part 894304) is supplied as a 100X concentrated stock (0.075 mL) with preservatives.
- Biotin-Antibody Concentrate (Part 894315) is supplied as a 100X concentrated stock solution (0.075 mL) with preservatives.

### Other Supplies Required

- Magnetic Luminex Performance Assay Human Kidney Biomarker Base Kit (Catalog Number LHK000).

### 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.**

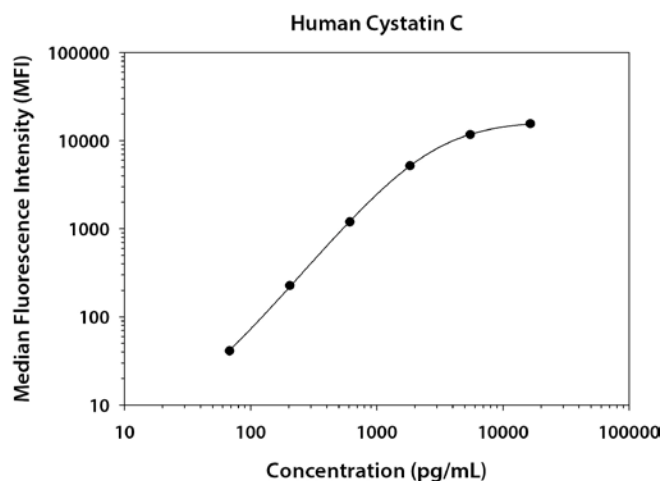
### Instructions for Use

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

## TYPICAL DATA

This human Cystatin C 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 Cystatin C kit (omit the lowest concentration standard).



Standard	pg/mL	MFI	Average	Corrected
Blank	0	68 72	70	—
1	16,500	15,561 15,712	15,637	15,567
2	5500	11,767 11,911	11,839	11,769
3	1833	5206 5317	5262	5192
4	611	1255 1281	1268	1198
5	204	291 302	297	227
6	68	110 111	111	41

## PERFORMANCE CHARACTERISTICS

All data were collected with assays run as a multiplex.

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

Thirty-two assays were evaluated, and the MDD of human Cystatin C ranged from 8.31-57.1 pg/mL. The mean MDD was 16.6 pg/mL.

## CORRELATION

This assay has been correlated to the respective Quantikine® ELISA kit with a slope of 0.9-1.1 and an R<sup>2</sup> value greater than 0.9.

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 separate assays to assess precision between assays. Assays were performed by at least three technicians using two lots of components.

	Intra-assay Precision				Inter-assay Precision		
Sample	1	2	3		1	2	3
n	20	20	20		73	71	73
Mean (pg/mL)	548	3931	10,988		529	3804	9053
Standard Deviation	13.5	62	699		46.7	358	816
% CV	2.5	1.6	6.4		8.8	9.4	9.0

**Linearity** - Samples containing and/or spiked with high concentrations of Cystatin C were serially diluted to evaluate assay linearity.

		Serum (n=4)	EDTA plasma (n=4)	Heparin plasma (n=4)	Urine (n=4)
1:2	Average % of Expected	98	91	93	91
	Range (%)	93-104	89-92	87-105	88-98
1:4	Average % of Expected	85	80	101	89
	Range (%)	78-95	75-85	95-111	87-91
1:8	Average % of Expected	—	—	—	89
	Range (%)	—	—	—	87-90

**Specificity** - This assay recognizes natural and recombinant human Cystatin C. 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:	Other recombinants:	Recombinant human multiplex partners:
ApoA1	Cathepsin O	CXCL2/GRO $\beta$	HPRG	Clusterin	bovine Osteopontin	Clusterin
ApoA2	Cathepsin S	CXCL3/GRO $\gamma$	IFN- $\gamma$	Cystatin C		Lipocalin-2/NGAL
ApoB	Cathepsin V	CXCL5/ENA-78	Lipocalin-1	CXCL10/IP-10/CRG-2		Osteopontin (OPN)
ApoB100	Cathepsin Z	CXCL6/GCP-2	MMP-3	HGF	<b>Natural human proteins:</b>	CXCL10/IP-10
ApoC1	CCL2/MCP-1	CXCL7/NAP-2	MMP-7	Lipocalin-2/NGAL	$\alpha$ 1-Acid Glycoprotein	HGF
ApoC2	CCL5/RANTES	CXCL8/IL-8	MMP-9	Osteopontin (OPN)	Kininogen	Fetuin A
ApoD	Cystatin A	CXCL9/MIG	MSP	TIM-1/KIM-1/HAVCR		RBP4
ApoE	Cystatin B	CXCL11/I-TAC	Plasminogen			TFF3
ApoH	Cystatin E/M	CXCL12/SDF-1	Serpin A1	<b>Recombinant rat:</b>		TIM-1/KIM-1/HAVCR
ApoM	Cystatin F	CXCL13/BLC/BCA-1	TIM-3	Clusterin		
Cathepsin A	Cystatin S	Enterokinase	TIM-4	Fetuin A		
Cathepsin B	Cystatin SA	Fetuin B	TFF-1	TIM-1/KIM-1/HAVCR		
Cathepsin C	Cystatin SN	Fibronectin	TFF-2			
Cathepsin D	Clusterin-like 1	HAI-1	Thrombin			
Cathepsin E	COX-2	HAI-2				
Cathepsin F	CRP	HGF R/c-MET				
Cathepsin L	CXCL1/GRO $\alpha$	HGF Activator				

## 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. 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.