



# Magnetic Luminex® Performance Assay Human MMP-13 Kit

Catalog Number: LMPM511

Pack Size: 100 Tests

## SPECIFICATIONS AND USE

### MMP Forms Measured

- This kit measures pro-, mature, and TIMP-1 complexed MMP-13.

### Recommended Sample Types

- Cell culture supernates, serum, saliva, and urine.

**Note:** When assaying serum samples, MMP-13 cannot be multiplexed with EMMPRIN (R&D Systems Catalog # LMPM972).

Plasma samples are not suitable for use in this assay.

### Microparticle Region

- Region-29

### Components

- Microparticle Concentrate (Part 894463) is supplied as a 100X concentrated stock (0.075 mL) with preservatives.
- Biotin-Antibody Concentrate (Part 892663) is supplied as a 100X concentrated stock solution (0.075 mL) with preservatives.

### Other Supplies Required

- Magnetic Luminex Performance Assay Human MMP Base Kit (Catalog Number LMPM000).

### Storage

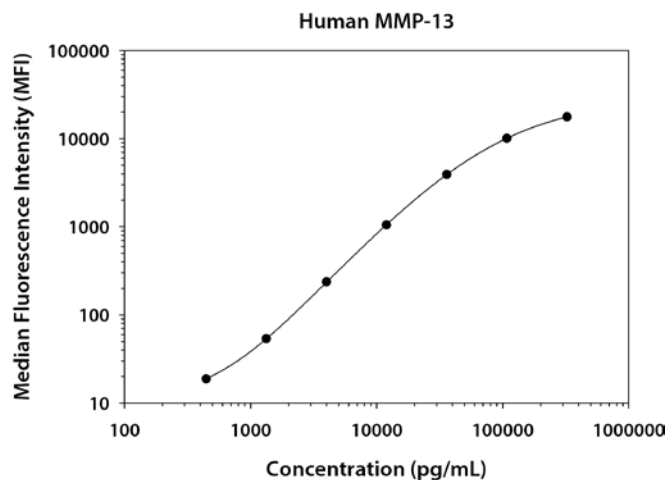
- Store the unopened kit at 2-8 °C. Do not use past the expiration date on the label.
- **Avoid freezing microparticles.**
- **Protect microparticles from light.**

### Instructions for Use

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

## TYPICAL DATA

This human MMP-13 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	17	17	—
1	324,000	16,132	17,697	17,680
2	108,000	10,085	10,112	10,095
3	36,000	3895	3942	3925
4	12,000	1064	1067	1050
5	4000	253	254	237
6	1333	70	71	54
7	444	36	36	19

## 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 assays were evaluated, and the MDD of human MMP-13 ranged from 18.3-63.5 pg/mL. The mean MDD was 36.5 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 separate assays to assess precision between assays.

	Intra-assay Precision				Inter-assay Precision		
Sample	1	2	3		1	2	3
n	20	20	20		59	59	59
Mean (pg/mL)	1940	23,879	67,795		1765	21,359	59,326
Standard Deviation	101	1036	3770		214	2276	7460
% CV	5.2	4.3	5.6		12.1	10.7	12.6

**Recovery and Linearity** – Samples containing and/or spiked with high concentrations of MMP-13 were evaluated for recovery and were serially diluted to evaluate assay linearity.

Recovery			Linearity				
Sample Type	Average % Recovery	Range (%)			Cell culture supernates	Serum	Urine
Cell culture supernates	106	94-131	1:2	Average % of Expected	102	109	112
				Range (%)	96-106	103-115	95-124
Serum	111	93-131	1:4	Average % of Expected	95	106	108
				Range (%)	89-105	100-110	91-121
Urine	113	102-121	1:8	Average % of Expected	94	105	110
				Range (%)	89-99	100-110	90-126

**Specificity** - This assay recognizes natural and recombinant human pro-, and mature, and TIMP-1 complexed MMP-13. The assay was tested for cross-reactivity and interference with the following factors. Less than 0.5% cross-reactivity and interference was observed with the following.

Recombinant human:			Recombinant mouse:		Recombinant rat:	Recombinant human multiplex partners:
ADAM8	ADAMTSL1.2	Lipocalin-2/NGAL	ADAM9	MMP-3	MMP-8	EMMPRIN
ADAM9	CD44	MMP-14/MT1-MMP	ADAM10	MMP-7		MMP-1
ADAM10	Hyaluronan	MMP-16/MT3-MMP	ADAM15	MMP-8		MMP-2
ADAM12	Integrin $\alpha 3 \beta 1$	TACE/ADAM17	ADAM19	MMP-9		MMP-3
ADAM15	Integrin $\alpha 5$	TIMP-1	EMMPRIN	MMP-12		MMP-7
ADAM19	Integrin $\alpha L$	TIMP-2	Lipocalin-2/NGAL	TIMP-1		MMP-8
ADAM33	Integrin $\alpha M \beta 2$	TIMP-3	MMP-2	TIMP-2		MMP-9
ADAMTS1	Integrin $\alpha V \beta 6$	TIMP-4				MMP-10
ADAMTS4	Integrin $\alpha V \beta 8$	VEGF				MMP-12
ADAMTS5	Lipocalin-1					
ADAMTS13						

## 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.