

# Magnetic Luminex® Performance Assay Human MMP-12 Kit

# Catalog Number: LMPM919 Pack Size: 100 Tests

#### **SPECIFICATIONS AND USE**

MMP Forms Measured	• This kit measures pro-, mature, and TIMP-1 complexed MMP-12.
Recommended Sample Types	• Cell culture supernates, serum, heparin plasma, platelet-poor heparin plasma, saliva, and urine. <b>Note:</b> When assaying serum and plasma samples, MMP-12 cannot be multiplexed with EMMPRIN (R&D Systems Catalog # LMPM972).
Microparticle Region	• Region-28
Components	<ul> <li>Microparticle Concentrate (Part 894471) is supplied as a 100X concentrated stock (0.075 mL) with preservatives.</li> </ul>
	• Biotin-Antibody Concentrate (Part 892662) 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-12 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, only use the first six points (omit the lowest concentration standard).



Standard	pg/mL	MFI	Average	Corrected	
Blank	0	23	24		
DIdIIK	U	24	24		
1	6700	10,314	10 /15	10 201	
I	0/00	10,516	10,413	10,391	
2	2233	5933	5062	5939	
		5992	2902		
3	744	2192	2244	2220	
		2295	2244		
4	248	611	615	501	
		620	015	166	
5	82.7	135	125	111	
		135	CCI	111	
6	27.6	41	12	10	
		42	42	10	

## **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-12 ranged from 0.2-0.7 pg/mL. The mean MDD was 0.5 pg/mL.

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

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)	60.3	519	2009		64.8	481	1974		
Standard Deviation	5.89	24.6	182		8.26	37.9	234		
% CV	9.8	4.7	9.1		12.8	7.9	11.8		

Recovery and Linearity – Samples containing and/or spiked with high concentrations of MMP-12 were evaluated for recovery and were serially diluted to evaluate assay linearity.

Recovery				Linearity					
Sample Type	Average % Recovery	Range (%)			Cell culture supernates	Serum	Heparin plasma	Platelet-poor heparin plasn	
Cell culture	112	100-135	1:2	Average % of Expected	102	112	116	112	
supernates	112			Range (%)	94-107	108-120	110-122	99-126	
Comme	07	72.00	1:4	Average % of Expected	99	107	116	107	
Serum	8/	/ 5-99		Range (%)	93-105	101-121	107-122	95-123	
Heparin plasma 94		06 106		Average % of Expected	90	107	112	105	
	94	80-106	1:8	Range (%)	82-98	96-119	105-121	95-125	
Platelet-poor heparin plasma	104	77-133				-			

Specificity - This assay recognizes natural and recombinant human pro-, and mature, and TIMP-1 complexed MMP-12. 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			Recombinant		Recombinant	<b>Recombinant human</b>
human:			mouse:		rat:	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-8
ADAM19	Integrin $\alpha$ L	TIMP-2	Lipocalin-2/NGAL	TIMP-1		MMP-9
ADAM33	Integrin $\alpha$ M $\beta$ 2	TIMP-3	MMP-2	TIMP-2		MMP-10
ADAMTS1	Integrin $\alpha V\beta 6$	TIMP-4				MMP-13
ADAMTS4	Integrin $\alpha V\beta 8$	VEGF				
ADAMTS5	Lipocalin-1					
ADAMTS13						

Recombinant human MMP-7 cross-reacts approximately 7.5% in this assay.

#### **TECHNICAL HINTS**

Urine

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- 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.

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