Magnetic Luminex® Performance Assay Human PDGF-BB Kit

Catalog Number: LANM220
Pack Size: 100 Tests

SPECIFICATIONS AND USE

Recommended Sample Types
- Cell culture supernates, serum, EDTA plasma, heparin plasma, urine, and human milk.

Microparticle Region
- Region-19

Components
- Microparticle Concentrate (Part 894458) is supplied as a 100X concentrated stock (0.075 mL) with preservatives.
- Biotin-Antibody Concentrate (Part 893622) is supplied as a 100X concentrated stock solution (0.075 mL) with preservatives.

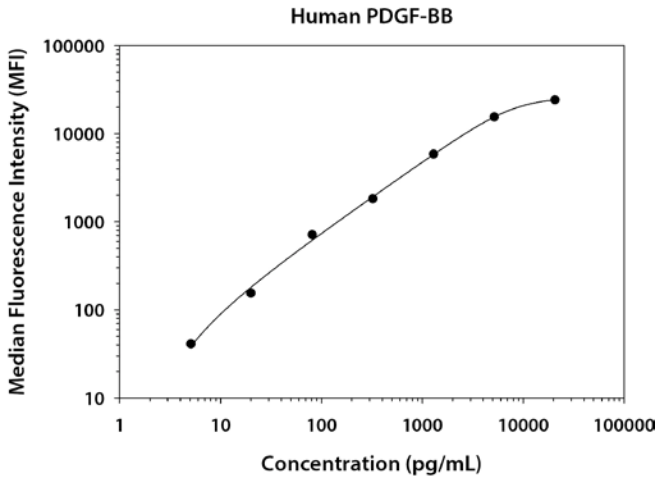
Other Supplies Required
- Magnetic Luminex Performance Assay Human Angiogenesis Base Kit A (Catalog Number LANM000).

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 PDGF-BB 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	16 16	16	—
1	20,700	24,215 24,265	24,240	24,224
2	5175	15,467 15,546	15,507	15,491
3	1294	5822 5933	5878	5862
4	323	1822 1862	1842	1826
5	81	584 876	730	714
6	20	170 172	171	155
7	5.1	56 57	57	41

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 PDGF-BB ranged from 0.1-2.0 pg/mL. The mean MDD was 0.5 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 fifty-two separate assays to assess precision between assays.

	Intra-assay Precision			Inter-assay Precision		
Sample	1	2	3	1	2	3
n	20	20	20	52	52	52
Mean (pg/mL)	33.5	108	3890	38	134	3281
Standard Deviation	0.47	1.7	117	5.4	16.8	531
% CV	1.4	1.5	3.0	14.1	12.5	16.2

Recovery and Linearity – Samples spiked with high concentrations of PDGF-BB were evaluated for recovery. Samples were serially diluted to evaluate assay linearity.

Recovery		
Sample Type	Average % Recovery	Range %
Cell culture supernates	114	83-145
Serum	103	57-135
EDTA plasma	113	88-137
Heparin plasma	112	76-155
PP EDTA plasma	99	71-111
PP Heparin plasma	101	75-129
Urine	94	92-120

Linearity								
						Platelet-poor		
		Cell culture supernates	Serum	EDTA plasma	Heparin plasma	EDTA plasma	Heparin plasma	Urine
1:2	Average % of Expected	96	92	87	93	98	98	112
	Range (%)	84-129	74-108	79-97	69-125	87-101	95-100	91-134
1:4	Average % of Expected	88	87	85	90	99	94	104
	Range (%)	78-117	67-99	73-105	74-112	96-103	91-98	73-133
1:8	Average % of Expected	89	87	92	83	99	97	95
	Range (%)	77-121	70-99	78-108	69-111	93-105	94-101	60-119

Specificity - This assay recognizes natural and recombinant human PDGF-BB. The assay was tested for cross-reactivity and interference with the following factors. Less than 0.5% cross-reactivity and interference was observed unless otherwise noted.

Recombinant human:			Recombinant mouse:		Recombinant rat:	Recombinant porcine:	Recombinant human multiplex partners:
Angiopoietin-2	FGF-17	IGF-II R	EG-VEGF	HGF	EGF	GM-CSF	Angiogenin
Angiopoietin-4	FGF-18	IGFBP-1	EGF	HGF R	FGF basic		Angiopoietin-1
Angiopoietin-like 3	FGF-19	IGFBP-2	EGF R	IGF-I	FGF-BP		Endostatin
Angiopoietin-like 4	FGF-20	KGF/FGF-7	FGF-8b	IGF-II	β-NGF		FGF acidic
CTGF	FGF-21	MSP	FGF-8c	IGFBP-1	PDGF-BB		FGF basic
EG-VEGF	FGF-22	MSP-β	FGF-15	KGF/FGF-7	$VEGF_{164}$		PDGF-AA
FGF-3	FGF R1α	M-CSF	FGF-21	M-CSF			PIGF
FGF-4	FGF R3	β-NGF	FGF-23	PDGF-CC			Thrombospondin-2
FGF-5	FGF R4	PD-ECGF	FGF R3	PIGF-2			VEGF
FGF-6	Flt-3	PDGF-CC	Flt-3	Thrombospondin-1			VEGF-D
FGF-8a	Flt-3 Ligand	PDGF-DD	Flt-3 Ligand	$VEGF\text{-}B_{167}$			
FGF-8e	G-CSF	VEGF-C	G-CSF	VEGF R2			
FGF-8f	G-CSF R	VEGF R1	GM-CSF	VEGF R3			
FGF-9	GM-CSF	VEGF R2					
FGF-10	HB-EGF	VEGF R3					
FGF-11	HRG-α	Thrombospondin-1					
FGF-12	IGF-I	Thrombospondin-4					
FGF-13	IGF-I R						
FGF-16	IGF-II						

Recombinant human PDGF-AB cross-reacts approximately 14.3% in this assay.
Recombinant mouse PDGF Rβ interferes at concentrations > 391 pg/mL.

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.