Luminex® xMAP® Technology

Bring your biomarkers to life with the most advanced instruments and software.

Bring your biomarkers to life with the most advanced instruments and software.

Complete instrument solutions, combined with the largest portfolio of multiplex analytes available, give you the maximum power of Luminex® xMAP® technology, the trusted, widely used platform for biomarker screening and protein analysis. As a Luminex® partner, EMD Millipore is a preferred distributor of Luminex® instruments, accessories and software. Our ongoing dedication and industry leading experience with multiplex technology enable you to gain more information faster and reliably.

xMAP® technology offers many advantages compared with other immunoassay methods:

- **Speed/High throughput**: Simultaneously measure the concentration of a large number of different analytes in a single sample, enabling you to do your work faster, gaining early and comprehensive data so critical to your work.

- **Accuracy**: xMAP® technology generates real-time analysis and accurate quantification of antibody-antigen interactions.

- **Reproducibility**: High-volume production of xMAP® microspheres allows assay standardization that solid-phased flat arrays cannot provide.

- **Low sample volume**: With minimal hands-on time, you can screen more than 40 analytes in a single sample using as little as 25 µL.

- **Magnetic bead-based format**: Responds rapidly and efficiently to a magnetic field, enabling better and faster washing techniques, including high-throughput options.

How Luminex xMAP® technology works

The Luminex® system is the combination of four core technologies:

xMAP® microspheres:

- xMAP® magnetic bead microspheres are a family of 80 fluorescently dyed 6.45 μm magnetic microspheres that act as both the identifier and the solid surface to build the assay.
- Traditional agarose microspheres are a family of 500 fluorescently dyed 5.6 μm polystyrene microspheres that act as both the identifier and the solid surface to build the assay.

Bead–based immunoassays:

- MILLIPLEX® MAP multiplex assays consist of analyte-specific capture antibodies conjugated to xMAP® beads, enabling multivariate analysis of complex biological states, including metabolic disease, immunology, neurodegenerative disease, toxicity, cancer and more, using minimal sample volumes. MILLIPLEX® MAP assays are analytically validated for sensitivity, specificity, reproducibility and wide dynamic range.
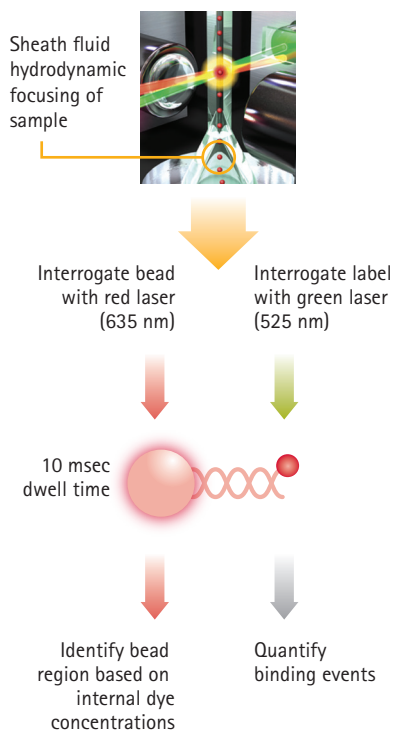
Luminex® analyzer:

- Luminex 200™ and FLEXMAP 3D® systems: a flow cytometry-based instrument that integrates key xMAP® detection components, such as lasers, optics, advanced fluidics and high-speed digital signal processors.
- MAGPIX® system: a CCD-based instrument that integrates key xMAP® capture and detection components with the speed and efficiency enabled by magnetic beads.
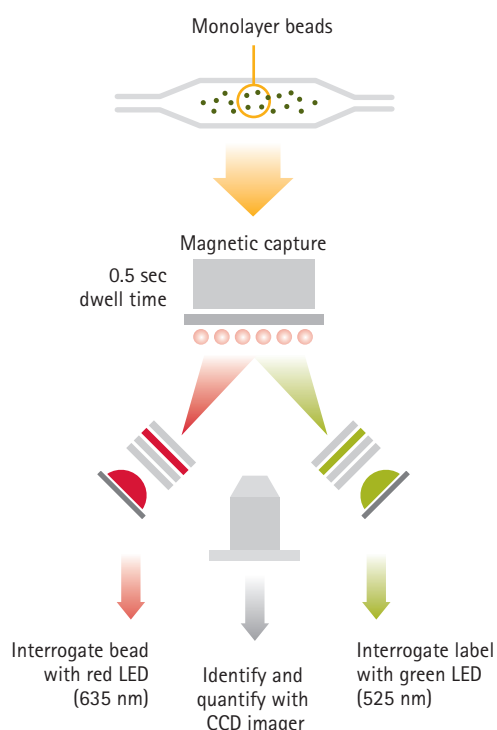
Software:

- XPONENT® software package for data acquisition.
- MILLIPLEX® Analyst 5.1 software package for sophisticated data analysis.

Flow cytometry–based analysis

Sheath fluid hydrodynamic focusing of sample

Interrogate bead with red laser (635 nm) — Interrogate label with green laser (525 nm)

10 msec dwell time

Identify bead region based on internal dye concentrations — Quantify binding events

LED–based analysis

Monolayer beads

Magnetic capture

0.5 sec dwell time

Interrogate bead with red LED (635 nm) — Identify and quantify with CCD imager — Interrogate label with green LED (525 nm)

Luminex® Instruments

FLEXMAP 3D® System

The FLEXMAP 3D® system combines differentially dyed fluorescent microsphere sets with an innovative instrument design to enable precise, rapid multiplexing of up to 500 unique assays within a single sample. Features such as automated probe height adjustment, simplified routine maintenance operations and an intuitive software interface make the FLEXMAP 3D® system a flexible and easy-to-use high-throughput multiplexing platform capable of quantifying protein and nucleic acid biomarkers.

FLEXMAP 3D® system advantages

- **Automation/LIS compatibility** - New xPONENT® 4.0 Software controls the FLEXMAP 3D® system and offers automated maintenance routines as well as interfacing options for Laboratory Information Systems (LIS) and other automation platforms.

- **Ultra fast** - Run 48,000 analytes in less than one hour. Dual sample fluidics paths and increased syringe injection speed facilitate a faster sample injection rate.

- **96– and 384–well capability** - Greater sample volume flexibility and increased throughput.

- **Multi–functional** – Perfect for running both protein and nucleic acid applications on the same instrument.

- **Extended Dynamic Range** – Linear response of up to at least 400,000 MFI, range is limited by biology, not by the instrument.

- **Highest multiplexing** - Each microsphere is impregnated with different amounts of three dyes. Monitoring the relative intensities of the three signals enables the system to discriminate up to 500 different microsphere sets.
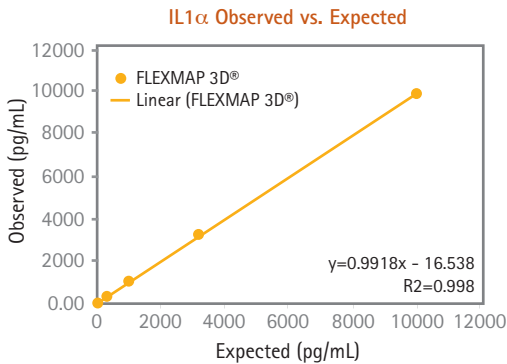
Description	Cat. No.
FLEXMAP 3D® System	40-014

FLEXMAP 3D® System

Fastest read times—largest linear response range.

Test†	Time†	Tests/hour
96-well (100 plex)	18 min	32,000
384-well (100 plex)	1 hour 15 min	30,700
96-well (500 plex)	45 min	64,000
384-well (500 plex)	2 hour 15 min	85,000

† 2,500 beads per region, per well.

‡ Read times measured across 4 instruments. Actual results may vary.

Table 1.

Typical read times and throughput for FLEXMAP 3D® System.

IL1α Observed vs. Expected

- FLEXMAP 3D®
- Linear (FLEXMAP 3D®)

$y=0.9918x - 16.538$
$R2=0.998$

Calibrator (pg/mL)	Obs/Exp
0	NA
1	108
3.16	105
10	104
31.6	101
100	100
316	96
1000	103
3160	104
10000	99

Figure 1.

In a spike and recovery experiment, linearity was observed from 0 to 10,000 pg/mL. Observed values ranged from 96% to 108% of expected values.

Luminex 200™ System and Luminex XY Platform™

The Luminex 200™ system, combined with our MILLIPLEX® MAP magnetic bead-based multi-analyte panels, MILLIPLEX® Analysis 5.1 software, and technical support, provides a complete mid to high range solution for rapid, accurate biomarker quantification.

The Luminex XY Platform™ (Luminex XYP™) complements the Luminex 100™ and 200™ systems by automating the sequential positioning of each well of a microtiter plate. This enables you to perform a total of up to 9,600 unattended tests per plate in less than one hour.

Luminex 200™ advantages:

- **Flexible** – Run both magnetic bead and nonmagnetic bead immunoassays.

- **Multiplex** – Up to 100 analytes per well of a 96 well microtiter plate in as little as 25 µL of sample.

- **Ease of use** – User-friendly programming functions.

- **Scalable** – Bar code reader included.

Description	Cat. No.
Luminex 200™ System	40-012

MAGPIX® System

The newest, most flexible small-footprint instrument

The MAGPIX® system, combined with our MILLIPLEX® MAP magnetic bead-based multi-analyte panels, MILLIPLEX® Analyst 5.1 software and technical support, provides you with a complete smaller scale solution for rapid, accurate biomarker quantification.

MAGPIX® System advantages:

- **Low-cost** – Entry level platform with proven xMAP® technology.

- **Powerful** - More than 125 (and growing) MILLIPLEX® MAP magnetic bead-based assay kits—the largest offering of customizable magnetic bead immunoassay panels for the MAGPIX® instrument.

- **Multiplex** - Simultaneously measure up to 50 analytes in as little as 25 µL of sample.

- **Ease of use** - Magnetic bead-based technology using CCD imaging.

- **Small footprint** – Saves room on your lab bench, requiring only 3 feet (91.44 cm) of linear space.

- **Portable** – Easily moves from bench to bench or lab to lab, with minimal setup.

Description	Cat. No.
MAGPIX® System	40-072
MAGPIX® System with Laptop Option	80-073

Choose the Multiplex Instrument that's right for you!

Specifications

Instrument	FLEXMAP 3D® System	Luminex 100/200™ System	MAGPIX® System
Software	xPONENT® 4.2	xPONENT® 3.1	xPONENT® 4.2
Optic	Lasers/ APDs/ PMTs	Lasers/ APDs/ PMTs	LED/ CCD Camera
Hardware	Flow Cytometry-based	Flow Cytometry-based	Fluorescent Imager
Bead Compatibility	Magnetic and nonmagnetic	Magnetic and nonmagnetic	Magnetic
Multiplex Capacity	500 (80 for MagPlex®)	100 (80 for MagPlex®)	50
Read Time	~20 min/96-well plate	~40 min/96-well plate	~60 min/96-well plate
Applications	Protein/ Nucleic Acid	Protein/ Nucleic Acid	Protein/ Nucleic Acid
Dynamic Range	4.5 logs	3.5 logs	3.5 logs
Microtiter Plate	96-well & 384-well	96-well	96-well
Footprint including PC (linear bench space)	64.8 cm (24")	80.0 cm (32")	64.8 cm (24")
Weight (Analyzer)	77.1 kg (170 lbs)	49 kg (113 lbs)	17.5 kg (38.5 lbs)

Luminex System 1 Year Warranty Plans	Cat. No.	Unlimited Remote Support	Unlimited Emergency Repair	1 (PM)	2 (PM)
FLEXMAP 3D®, Silver	SVCLUMSLVFM3D	●	○	●	
FLEXMAP 3D®, Bronze	SVCLUMBRZFM3D	●			
FLEXMAP 3D®, Gold	SVCLUMGLDFM3D	●	○	●	
FLEXMAP 3D®, Gold 360*	SVCLUMGLD360FM3D	●	○	●	●
FLEXMAP 3D®, Platinum	SVCLUMPLTFM3D	●	●		●
FLEXMAP 3D®, Platinum 360*	SVCLUMPLT360FM3D	●	●		●
Luminex 200™, Bronze	SVCLUMBRZ	●			
Luminex 200™, Silver	SVCLUMSLV	●	○	●	
Luminex 200™, Gold	SVCLUMGLD	●	○	●	
Luminex 200™, Gold 360*	SVCLUMGLD360	●	○	●	
Luminex 200™, Platinum	SVCLUMPLT	●	●		●
Luminex 200™, Platinum 360*	SVCLUMPLT360	●	●		●
MAGPIX®, Standard	SVCLUMGLDMAGPIX	●	○		
MAGPIX®, Gold	SVCMAGPIXGOLDPM	●	○	●	
MAGPIX®, Platinum	SVCMAGPIXPLATPM	●	●		●

● Onsite 1-business day response
○ Onsite 2-business day response

1 (PM) = includes 1 preventive maintenance
2 (PM) = includes 2 preventive maintenances

* 360 service includes on-site support for assays developed by Luminex only (for MILLIPLEX MPX assay support see TRONSITE).

MILLIPLEX® Analyst 5.1 and Luminex® xPONENT® Software

Next generation multiplex data analysis, designed for ease of use and getting the most information out of your data.

EMD Millipore offers the most powerful combination software package, including best-in-class multiplex data analysis with our MILLIPLEX® Analyst 5.1 software coupled with data acquisition using the Luminex xPONENT® software. MILLIPLEX® Analyst 5.1 software enables you to manage, track and analyze your multiplex assays rapidly and efficiently, giving you more time to focus on advancing your research.

Data acquisition and analysis integrate seamlessly with all Luminex® instruments, including FLEXMAP 3D®, Luminex 200™ and MAGPIX® systems. MILLIPLEX® Analyst 5.1 software is available in one- and five-seat licenses, enabling complete flexibility for small, medium and large laboratories.
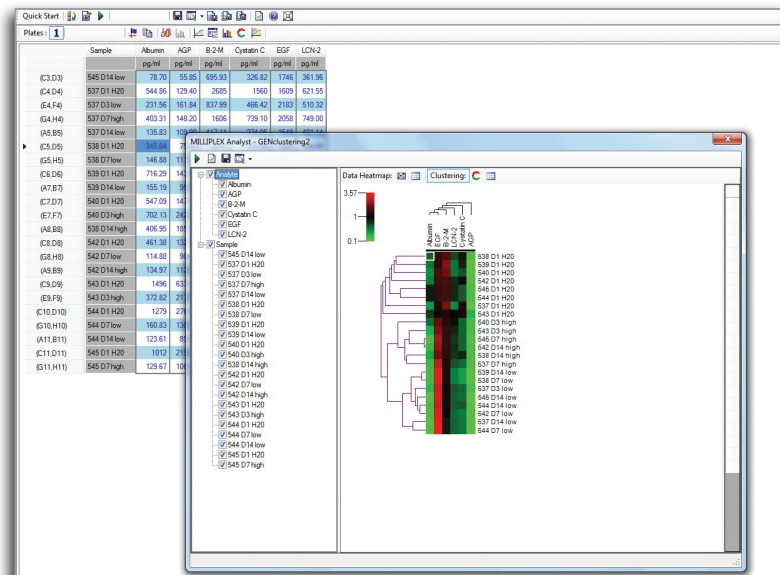

Figure 2.

Hierarchical cluster (based on Pearson correlation coefficients) generated by MILLIPLEX® Analyst 5.1 software.

The most advanced curve fitting algorithm, based on self-learning improvements using real-life data sets.

Analyzing data from multiplexed biomarker assays can be difficult when working with diverse sample and analyte types. This diversity can lead to a wide range of possible analyte levels and assay signal intensity with respect to those analyte levels, neither of which are always easy to predict or determine accurately. MILLIPLEX® Analyst 5.1 software was designed to generate the most meaningful quantitative analyte data with a focus on data derived from the low and high ends of standard curves. Data in these regions can be important and are commonly missed by existing multiplex data analysis packages.

In developing the new curve fitting algorithms for MILLIPLEX® Analyst® 5.1, simulations were run on 600+ data sets using actual experimental standard curves to determine the curve fit that would give the lowest CVs at the low and high ends of the curves and that works well even with standard curves of low quality.

Description	Catalogue No.
MILLIPLEX® Analyst 5.1 Software – 1 seat license	40-086
MILLIPLEX® Analyst 5.1 Software – 5 seat license	40-087
MILLIPLEX® Analyst 5.1 Software Database Edition - 1 seat license	40-088
MILLIPLEX® Analyst 5.1 Software Database Edition - 5 seat license	40-089

Better curve fit, higher recoveries and more reliable data at the low and high ends of your standard curves: See what you've been missing!

Most multiplex data analysis tools can calculate concentrations in the middle of the curve, but may struggle with the data from the plateaus. Improved curve-fitting algorithms and weighting methods in MILLIPLEX® Analyst 5.1 software resulted in the software's ability to generate more meaningful data points at high and low concentration extremes for many biologically important analytes, typically outperforming other commonly used multiplex data analysis software packages.

Analyte: IFNγ, Kit: Rat Cytokine/Chemokine
Units: pg/mL

	MILLIPLEX® Analyst 5.1*	StatLIA®	Bio-Plex®
Standard1	14.7	3.0	
Standard2	57.4	67.0	53.7
Standard3	241.6	245.0	248.6
Standard4	932.1	897.0	908.1
Standard5	3683.0	3858.0	3820.0
Standard6	15184.0	14769.0	14824.5
Standard7	59874.0	61392.0	60975.2
Unknown1	<3.40 ↓	<1.0e−07	OOR <
Unknown2	**16.8**	**8.0**	**OOR <**
Unknown3	51.3	60.0	45.0
Unknown4	197.1	205.0	205.8
Unknown5	844.1	809.0	821.3
Unknown6	3412.0	3564.0	3531.3
Unknown7	14639.0	14296.0	14339.3
Unknown8	70718.0	82002.0	78697.5
Unknown9	<3.40 ↓	<1.0e−07	OOR <
Unknown10	<3.40 ↓	<1.0e−07	OOR <
Unknown11	<3.40 ↓	<1.0e−07	OOR <
Unknown12	**3.7**	**<1.0e−07**	**OOR <**
Unknown13	<3.40 ↓	<1.0e−07	OOR <
Unknown14	<3.40 ↓	<1.0e−07	OOR <
Unknown15	**5.0**	**<1.0e−07**	**OOR <**
Unknown16	**16.8**	**8.0**	**OOR <**
Unknown17	**24.0**	**22.0**	**OOR <**
Unknown18	**28.6**	**29.0**	**1.1**
Unknown19	<3.40 ↓	<1.0e−07	OOR <
Unknown20	<3.40 ↓	<1.0e−07	OOR <
Unknown21	<3.40 ↓	<1.0e−07	OOR <
Unknown22	**14.7**	**3.0**	**OOR <**
Unknown23	<3.40 ↓	<1.0e−07	OOR <
Unknown24	<3.40 ↓	<1.0e−07	OOR <
Unknown25	6.8	<1.0e−07	OOR <
Unknown26	<3.40 ↓	<1.0e−07	OOR <
Unknown27	<3.40 ↓	<1.0e−07	OOR <
Unknown28	**5.9**	**<1.0e−07**	**OOR <**
Unknown29	**4.5**	**<1.0e−07**	**OOR <**
Unknown30	**8.2**	**<1.0e−07**	**OOR <**
Unknown31	<3.40 ↓	<1.0e−07	OOR <
Unknown32	<3.40 ↓	<1.0e−07	OOR <

Green:	Extrapolated value
Orange:	Extrapolated value
OOR<:	Out of Range Below
<3.40 ↓ :	Out of Range Below
<1.0e−07:	Out of Range Below
*Best Fitting, 5P Log	

Table 2.

Significantly more IFNγ concentrations could be calculated at the low end of the curve in the Rat Cytokine/Chemokine Magnetic Bead Panel by MILLIPLEX® Analyst 5.1 software compared to the Bio-Plex® and StatLIA® software packages.

Recovery* IFNγ

	MILLIPLEX® Analyst 5.1	StatLIA®	Bio-Plex®
Standard1	100.4%	20.5%	excluded
Standard2	97.96%	114.3%	92
Standard3	103.08%	104.5%	106
Standard4	99.42%	95.7%	97
Standard5	98.21%	102.9%	102
Standard6	101.23%	98.5%	99
Standard7	99.79%	102.3%	102

Table 3.

Recovery for IFNγ. MILLIPLEX® Analyst 5.1 software calculated IFNγ recoveries close to 100% at all concentrations.

*Recovery is a parameter to assess the quality of a curve fit
Recovery = (Observed concentration / Expected concentration) X 100%

Data from application note, "Improved analysis of multiplexed biomarker quantitation data with MILLIPLEX® Analyst 5.1 software," Lit No. AN5664EN00.

## Enhanced features of MILLIPLEX® Analyst 5.1 software include:

- MILLIPLEX® Analyst 5.1 software offers simple integration with Luminex xPONENT® system.

- Seamless loading of data via a **Quick Start Wizard**.

- Automatic importing of data from Luminex® instruments using our novel **Watchdog** feature.

- Our superior algorithms yield better data from the low and high ends of the standard curve.

- Comprehensive detailed reports and enhanced visualization features.

New features and improvements of MILLIPLEX® Analyst 5.1 software:

- Complete with CD and Dongle USB/Thumb drive for quick and easy installation.

- Auto-detect feature for standards, quality controls and samples.

- Easily analyze data from multiple sources including Luminex® 1.7 files formats, Microsoft Excel®, Bio-Plex®, and other Luminex® data analysis-related software programs.

- The best curve fit possible using our best-in-class algorithms.

- Qualitative analysis allows for relative comparisons between samples and analytes.

- Curve Potency feature (comparing two or more standard curves).

- Create custom formats for importing data.

- Export compatible – PDF and Microsoft Excel® formats.

- Reports values for CHI, Recovery, and CVs.

- Even very large data sets are calculated in seconds.

- Full support of Microsoft Windows® 7, 32-bit and 64-bit.

- Complete support from our world-class technical service team.

- MILLIPLEX® Analyst 5.1 Database Version is 21 CFR Part 11 compliant.

MILLIPLEX® Analyst 5.1 detailed report

Easily export complete multiplex data for use in presentations and record keeping.

Analyte IL–10

CV=0%, R²=1

Analyte VEGF

CV=0%, R²=1

Analyte IFNγ
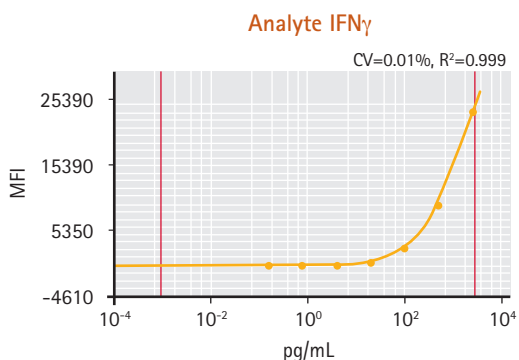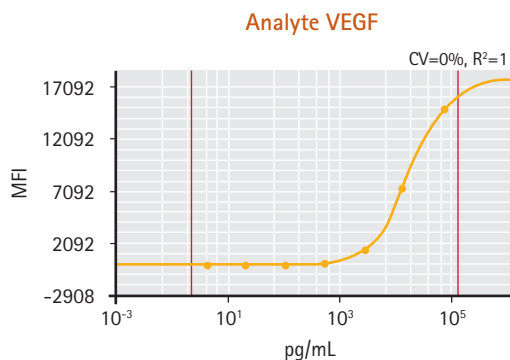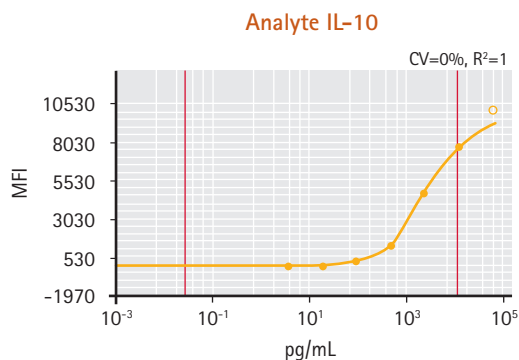
CV=0.01%, R²=0.999

5-P.linear.weighted(41.71, 53815.74, 0.01, 3317.51, 0.98)
CHI=3.65%, CV=0.010%, R²=0.999, DC=(0.00085, 2660)

Notes:

CV — The Coefficient of Variation of standard curve replicates at each dilution level.

CHI — The CHI-Square test statistic of the distance between observed concentrations with expected concentrations.

Location	Expected pg/mL(i)	MFI(i)	pg/mL(i)	MFI	pg/mL	CV	Recovery
1C1	0.13	45	0.09	46.5	0.13	4.56%	100.37%
1D1		48	0.17				
1E1	0.64	66	0.68	64.5	0.63	3.29%	99.08%
1F1		63	0.59				
1G1	3.2	164	3.48	153.25	3.17	9.92%	99.12%
1H1		142.5	2.86				
1A2	16	592	16.17	610.75	16.74	4.34%	104.6%
1B2		629.5	17.3				
1C2	80	2456	76.33	2578	80.51	6.67%	100.64%
1D2		2699	84.73				
1E2	400	9938	411.35	9154	367.15	12.11%	91.79%
1F2		8370	325.53				
1G2	2000	23685	2131	23298	2031	2.35%	101.53%
1H2		22912	1936				

Figure 3.

Detailed reports generated by MILLIPLEX® Analyst 5.1 software.

Samples:

Location	Sample	MFI(i)	pg/mL(i)	MFI	pg/mL	CV
1A3	QC1	1630	48.75	1599	47.72	2.81%
1B3		1567	46.69			
1C3	QC2	8054	309.44	8581	336.49	8.69%
1D3		9108	364.64			

www.emdmillipore.com/bmia

MILLIPLEX® Analyst 5.1 Software options

Curve
Calibration Curve
Fitting Model
Import from File
Predefined Curve
Individual Curve Fitting
Curve Quality Criterion Threshold
CV %
Hook %
Slope
Data Analysis
Background Subtraction
Neg-Ctrl Subtraction
Pos-Ctrl Analyte Global Normalization
Pos-Ctrl Analyte Normalization
Pos-Ctrl Sample Normalization
Outlier Threshold
Curve Fitting
Replicate Value
Output
Curves Info
Options Settings
Sample Details
General Info
Data Sort By
Default Report
Reportable Range
Data High Limit
Data High Limit Ignore
Data High Limit Label
Data Low Limit
Data Low Limit Ignore
Data Low Limit Label
High Bead CV (%)
Low Bead Count
Output X Unit
Output Y Unit
Individual Reportable Range
View
BarChart Error Box
BarChart Group By
BarChart with Units
Graphic Zero Baseline
List w/o Colors

Table 4.

Comprehensive multiplex data analysis options in MILLIPLEX® Analyst 5.1 software including curve fitting model, curve quality thresholds, multiple normalization methods and reportable range.

See for yourself how MILLIPLEX® Analyst 5.1 software can help with your multiplex data sets.

Download the risk-free trial version at: **www.emdmillipore.com/mpx_demo**

What do your ELISA data really mean?
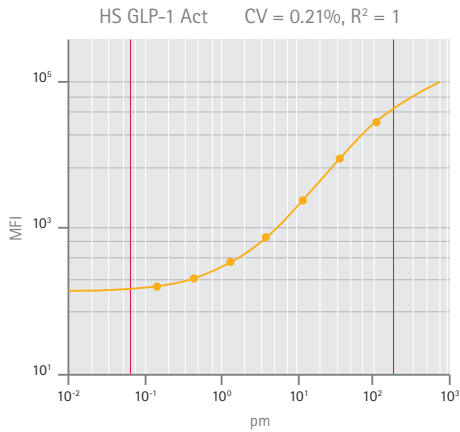

HS GLP-1 Act   CV = 0.21%, R^2 = 1

Figure 4.

Typical ELISA data analysis report provided by MILLIPLEX® Analyst 5.1 software, including informative statistics and superior curve fit.

Get more biological information out of your ELISAs with the new MILLIPLEX® Analyst 5.1 software.

More than merely reporting protein concentrations, **MILLIPLEX® Analyst 5.1 software** provides you with a comprehensive suite of powerful features for protein quantitation data analysis:

- Full statistical analysis package, delivering R^2, CVs and CHI values to establish the statistical significance of ELISA data.

- Superior algorithms to calculate more accurate concentrations at both high and low ends of your standard curves.

- Comprehensive, detailed reports and enhanced visualization with clustering and heat map capabilities.

MILLIPLEX® Analyst 5.1 Detail Report

Expected pm(i)	MFI(i)	pm(i)	MFI	pm	CV	Recovery
0	140		144.5		4.40%	
	149					
0.14	164	0.2	156.5	0.15	6.78%	107.4%
	149	0.1				
0.41	190	0.39	190	0.39	0%	93.99%
	190	0.39				
1.23	303	1.24	305	1.25	0.93%	101.36%
	307	1.27				
3.7	683	3.71	682	3.71	0.21%	100.07%
	681	3.7				
11.11	2302	11.37	2240	11.11	3.88%	100.01%
	2179	10.86				
33.33	8438	33.7	8317	33.27	2.06%	99.82%
	8196	32.85				
100	25710	100.46	25635	100.13	0.41%	100.12%
	25560	99.79				

CHI=0.0081%, CV=0.21%, R^2=1, DC=(0.062, 180.70)

Washing solutions for MILLIPLEX® MAP Assays

To complete our multiplex assay solution of MILLIPLEX® MAP kits, instruments, software and service, EMD Millipore offers BioTek® microplate washers, handheld magnetic separation block and MultiScreen®HTS vacuum manifold.

New! 405 LS and 405 TS Microplate Washers for biomagnetic and nonmagnetic beads

In partnership with BioTek®, we now offer the latest advancements in multiplex washing: a fully automated system designed to quickly wash an entire plate through biomagnetic separation, washing and vacuum filtration. Both systems offer magnetic and vacuum filtration options—with the 405 TS model now offering an easy to use and glove usable touch screen. These newest BioTek® Washers come pre-loaded with EMD Millipore-validated wash protocols.

BioTek® Washer advantages:

- Fast and hands-free full plate washing.

- MILLIPLEX® MAP and Luminex® xMAP®-approved.

- High-energy neodymium iron boron magnets for rapid separation of multiplex beads with superior retention.

- 405 TS models have state-of-the-art, high resolution LED backlit touch screen user interface for intuitive and flexible onboard instrument.

- 405 TS models come with the built in Ultrasonic Advantage™ enabling for easy cleaning even with the toughest of sample types.
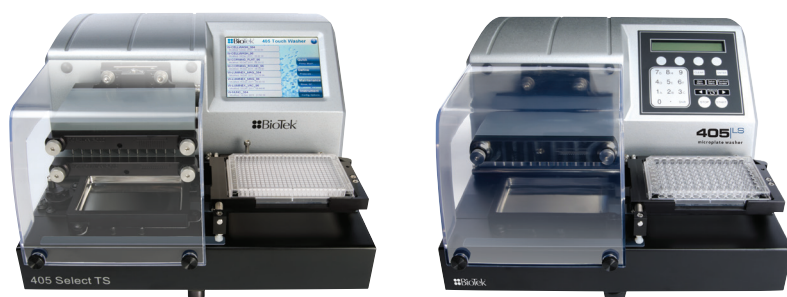

Figure 5.
Biotek® plate washer model 405 LS (left) and models 40–094 and 40–095 (right).

Description	Cat. No.
BioTek® 405 LS Magnetic 96-well Washer	40-094
BioTek® 405 LS Magnetic/Vacuum Filtration 96-well Washer	40-095
BioTek® 405 TS Magnetic 96-well Washer Complete with Touch Screen and Ultrasonic Cleaning	40-096
BioTek® 405 TS Magnetic/Vacuum Filtration 96-well Washer Complete with Touch Screen and Ultrasonic Cleaning	40-097

# BioTek® Magnetic 96-well Strip Washer — Hands-free washing with a small footprint

Better together: ELx50 washer with MILLIPLEX® MAP Magnetic Bead Assays

- Reduced hands-on time for multiplex assays.

- Optimized magnet for strip wells and flat-bottom magnetic bead assay plates.

- Self-contained, programmable washer enables precise fluidic delivery—ensuring complete control while washing multiplex assay plates.

Figure 6.
BioTek® Magnetic 96-well strip washer.

Description	Cat. No.
BioTek® ELx50 Magnetic 96-well Strip Washer	40-062
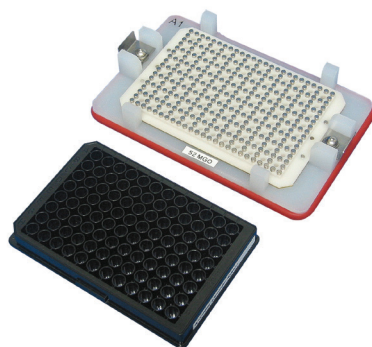
Handheld Magnetic Separator Block for 96-Well Flat Bottom or Conical Well Plates

EMD Millipore offers a low-cost alternative to automated washing of MILLIPLEX® MAP magnetic immunoassays without loss in assay performance. The handheld magnetic separator allows the liquid contents of the 96-well plate to be removed by simply decanting or "flicking" the contents into a sink and blotting off the remainder on a paper towel. Magnetic beads are securely held to the sides by 9 magnets surrounding each well.

- Top magnetic frame is white polycarbonate, with a corrosion-resistant steel plate underneath, all mounted to a polypropylene base.

- Adjustable clip system holds a wide variety of microplates to the separator block.

- O-Ring on base plate facilitates gripping for all sizes of hands.

- Magnetic strength: 52 Mega Gauss Oersteds (MGO).

Description	Cat. No.
Handheld Magnetic Separator Block for 96-well Flat Bottom or Conical Well Plates	40-285

TRONSITE
onsite training

As your partners in research, our highly qualified specialists will ensure you have all the tools you need. Our TRONSITE Onsite Training is now available for your team when you purchase a Luminex® instrument, MILLIPLEX® MAP kits, MILLIPLEX® Analyst 5.1 data analysis software and BioTek® microplate washer.

Receive certification of training in the following categories:

Installation & Training: Instruments

- Installation and set-up of instrument and software on bench, ready for use.
- Instruction on correct care and maintenance of instrument (daily, weekly, monthly and yearly).
- Set-up of protocols, batches, multi-batches and analysis thereof.
- Assistance with pre-site evaluation form (FLEXMAP 3D® System).

Description	Cat. No.
FLEXMAP 3D® System Onsite Installation/Training	TRONSITE-FM3D
Luminex 200™ System Onsite Installation/Training	TRONSITE-LX200
MAGPIX® System Onsite Installation/Training	TRONSITEMAGPIX

Installation & Training: MILLIPLEX® MAP Kits

- Assistance in selecting appropriate kit for training or initial studies (prior to onsite training).
- Training on how to run a MILLIPLEX® MAP kit with pre-determined kit and samples.
- Optimization of protocol techniques and data analysis.
- Running kits using Luminex® instrument with xPONENT® software.
- Analysis of raw data file using installed MILLIPLEX® Analyst 5.1 software (if purchased).
- Tips and tricks for optimizing sample collection and using a MILLIPLEX® MAP kit.

Description	Cat. No.
MILLIPLEX® MAP Kits Onsite Installation/Training	TRONSITE-MPX

Installation & Training: MILLIPLEX® Analyst 5.1 Software

- Installation of software, licensing and correct use of single seat and multi-seat licenses.
- Import of raw data files, analysis through protocol, plate-map and analysis parameters.
- Report creation- Word, PDF and Excel® formats.
- Demonstration of Standard Curve finding, heat-map and multi-curve comparison features.

Description	Cat. No.
MILLIPLEX® Analyst 5.1 Software Onsite Installation/Training	TRONSITE-MA

Installation & Training: BioTek® Washer

- Set-up of unit on lab bench—can include magnetic plate and/or vacuum attachments.
- Programming of unit for use with MILLIPLEX® MAP kits.
- Testing of units for functionality and bead retention.

Description	Cat. No.
BioTek® Washer Onsite Installation/Training	TRONSITE-BIOTEK

Advanced customer training (ACT)

Introducing ACT, the most versatile and advanced multiplex assay training available. Select the training that's right for you and fits within your schedule.

Hands-on training—available on site, or at one of EMD Millipore's global training centers

Whether the training is at your site or at one of EMD Millipore's world renowned global training facilities, we'll provide you with the training you need to become an expert at multiplex and related assays. Training typically lasts 1.5 days**. Plus, we offer the full line of Luminex® systems for your training (FLEXMAP 3D®, Luminex 200™ and MAGPIX® systems) and our complete line of BioTek® Plate Washers.

Customized training agenda includes:

- Technology and protocol discussions
- MILLIPLEX® assay set-up
- Equipment
- Precautions
- Data analysis and review
- Maintenance
- Troubleshooting

Choose from hands-on or or web-based training...

Description	Cat. No.
Training at EMD Millipore site	40-091*
Training at customer site	40-092
Training, web-based	40-090

Web-based Training

Our web-based training is built around your needs and typically will not exceed one day.

Available options:

- Basic MILLIPLEX® Analyst 5.1 software training.

- Advanced MILLIPLEX® Analyst 5.1 software training (for the user with modified/alternate assay needs or complex requirements, e.g. clustering, potency, Watch-Dog functionality).

- Different levels of xPONENT® training.

* EMD Millipore site hands-on training available only in North America, China and India (Coming soon in Europe—speak with your local protein specialist). ** Based on your specific needs training session can be extended; not to exceed 5 working days.

MILLIPLEX® MAP Kits

Bring your biomarkers to life with simultaneous multi-analyte detection.

- The broadest selection of analytes across a wide range of disease states.

- All the components and reagents you need to detect multiple analytes simultaneously.

- Quality controls provided to qualify assay performance.

- Analytically validated panels that yield consistent analyte profiles within panels.

- Comparison of standard and QC to a reference lot to ensure lot-to-lot consistency.

- Panels meet stringent manufacturing criteria to ensure batch-to-batch reproducibility.

Custom assay development

Need to develop a specific, sensitive, analytically validated assay for your laboratory? We develop reliable, custom multiplexed assays, using Luminex® xMAP® technology, as well as single detection (ELISAs, GyroMark™ HT, and RIAs) assays for protein research, providing you with:

- Reagents (immunogen design and antibody development).

- Assay development.

- Manufacturing (commercial kits for research use only).

To design and price your MILLIPLEX® MAP Kits, visit:

www.emdmillipore.com/bmia

To place an order or receive technical assistance

In the U.S. and Canada, call toll-free **1-800-645-5476**

For other countries across Europe and the world, please visit: **www.emdmillipore.com/offices**

For Technical Service, please visit:
www.emdmillipore.com/techservice

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