

Analyte Quarterly

Vol. 1 2020

Look closer at your assays, platforms and results in your multiplex and single protein detection assays

- SMC™ (Single Molecule Counting) Assays
- ELISA
- RIA
- MILLIPLEX® Assays
- Custom Assay Development



The life science business of Merck operates as MilliporeSigma in the U.S. and Canada.

Millipore®

Preparation, Separation, Filtration & Monitoring Products

We Strive for the Ideal Immunoassay

Researchers rely on commercial immunoassays to study biomarker expression in a wide variety of samples. With recent technological advances pushing the limits of protein quantification in sensitivity and multiplex analyte detection, we are committed to delivering the best possible immunoassays for your research needs. Whether you are using our industry-leading MILLIPLEX® multiplex panels to broadly survey multiple analytes, performing sub-picogram/mL biomarker analysis using the Single Molecule Counting (SMC™) ultrasensitive immunoassay platform, or examining single proteins with our tried-and-true ELISAs and RIAs, you can confidently expect reliable measurements, a simplified user experience, and knowledgeable scientific partners to help drive your biomarker project from hypothesis to publication.

Look Closer at our Advantages

Published Performance

- Broadest analyte selection across research areas and species
- Over 10,000 published papers with data generated using our immunoassays
- Configurable and customizable kits for your exact research needs

Quality

- Over four decades of immunoassay development and manufacturing expertise
- Assays developed for accurate, reproducible and biologically relevant protein measurements
- Manufactured in facilities which are ISO 9001:2015 compliant, our products are for research use only (RUO) and not for use in clinical or for medical diagnostic purposes

User Experience

- Kit components pre-optimized for easy use and minimal preparation steps
- Comprehensive protocols with recommendations for optimal sample preparation
- Knowledgeable in-house and field-based scientific support for assays and instruments
- State-of-the-art Belysa™ software for powerful immunoassay analysis and reporting

Complete Immunoassay Testing Platforms



	MILLIPLEX®	SMC™ using SMCxPRO™ Instrument	ELISAs and RIAs
	Accurately measure up to 48 proteins in a sample	Explore previously undetectable proteins	Trusted standards for protein quantitation
Single/Multiplex	Multiplex	Singleplex	Singleplex
Sensitivity	Up to pg/mL	Up to fg/mL	Up to pg/mL
Sample size	~25 µL (may be diluted)	5-100 µL	50-100 µL
Dynamic range	3-4 log	4-5 log	2-3 log
Assay	MILLIPLEX® or any Luminex® assay	SMC™	Any ELISA or RIA
Instrument	Luminex®: FLEXMAP 3D®, Luminex® 200™, MAGPIX®	SMCxPRO™	Any ELISA reader, or gamma counter (for RIA)

NEW IMMUNOASSAY PRODUCTS

NEW! MILLIPLEX® and Single Molecule Counting (SMC™) Kits

Description	Species	Cat. No.
MILLIPLEX® Panels		
Aging	Mouse	MAGE1MAG-25K
Cytokine Autoantibody	Human	HCYTAAB-17K
Cytokine/Chemokine Panel 1	Ovine (Sheep)	SCYT1-91K
Immuno-Oncology Checkpoint Protein Panel 2	Human	HCKP2-11K
Metabolic	Mouse	MMHE-44K
SMC™ Kits		
TSLP	Human	03-0172-00
IFN α 2	Human	03-0186-00
MCP-1	Human	03-0187-00

Coming Soon

Description	Species	Cat. No.
SMC™ Kits		
Alpha-synuclein	Human	Coming Soon!
Phospho-alpha-synuclein	Human	Coming Soon!
Interferon- β	Human	Coming Soon!
MILLIPLEX® Panels		
Fibrosis	Human	Coming Soon!
Metabolic	Human	Coming Soon!
Cytokine/Chemokine	Chicken	Coming Soon!

New! Human Cytokine Panel: Larger and Customizable

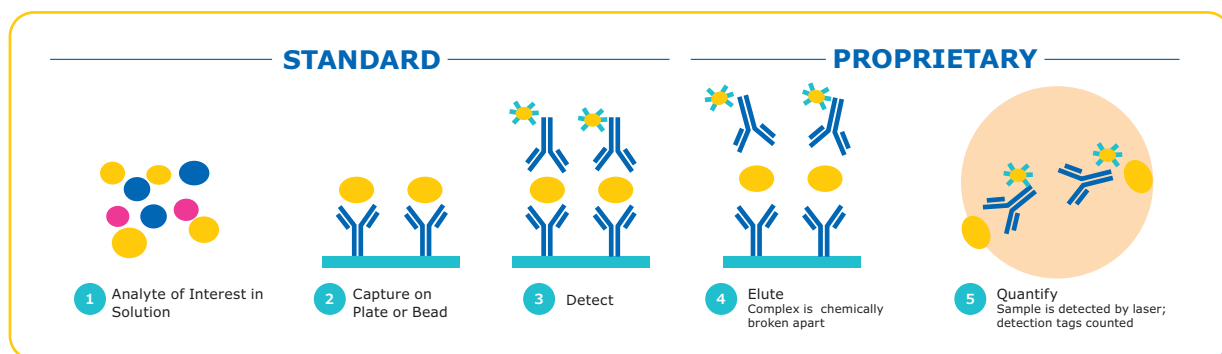
The MILLIPLEX® Human Cytokine/Chemokine/Growth Factor Panel A combines tests for 48 individual immune factors that previously have not been together in a single panel. For more information, see our **Panel A App Note**.

SMC™ Technology

Single Molecule Counting (SMC™) Technology: Reduced background + increased signal

SMC™ technology provides maximum immunoassay performance while following a workflow similar to traditional ELISA technology, as shown below. By combining a unique assay elution step and robust digital counting, SMC™ technology achieves improved signal-

to-noise ratios over traditional immunoassay technologies. The SMC™ technology thus provides enhanced quantification at both low and high levels of expression on one complete system.



Steps 2-3

Antibodies translate each biomarker into a signal

Step 4

Fluorescent dye-labeled detection antibodies dissociate from the immunocomplex

Step 5

On the SMCxPRO™ instrument, signal is collected from free-floating fluorochromes using a rotating laser, camera and counting individual molecules by an Avalanche Photodiode

Digital counting improves sensitivity and dynamic range

The SMCxPRO™ and Erenna® instruments capture the sum of all digital events counted above the background threshold. The digital event algorithm of the SMCxPRO™ instrument computes digital events across a spectrum of time series for a single standard. On the Erenna®, at lower concentrations, photons are digitally counted as single molecules. At higher concentrations, molecules are counted in analog and a proprietary algorithm computes the total sum of all photons recorded. The digital counting of molecules thus improves the assay sensitivity and extending the assay dynamic range beyond what can be achieved with traditional methods.

Verification Criteria for SMC™ Immunoassays

A comprehensive set of criteria evaluating ultimate quantitative performance are used to qualify verified immunoassays

- **Lower limit of quantitation:** Lowest point on standard curve with CV <20% and accuracy within 20% of expected values
- **Inter- and intra-assay precision:** Samples run on multiple plates over multiple days. Spiked and un-spiked samples within 20% across experiments
- **Spike recovery:** Minimum of 10 samples spiked with acceptable recovery between 80–120%
- **Dilutional linearity and parallelism (where feasible):** Assays within 20% of expected value
- **Endogenous range:** Minimum of 10 samples from individual healthy donors assessed for biomarker levels for each verified assay and lot to lot

SMC™ Immunoassay Kits

Analyte	LLOQ (pg/mL) ¹	Median Endogenous (pg/mL) ²	Species ³	Sample Type ⁴	MTO or STOCK	Cat. No.
Akt1 (Ser473)	0.98	NA	H, M, R	L	MTO	03-0100-01
Akt1 (total)	7.80	NA	H, M, R	L	MTO	03-0099-01
Amyloid beta 1-40 ^{6,7}	5.86	Normal CSF: 1366; P: 152	H, M, R	C, P	STOCK	03-0145-00
Amyloid beta 1-42 ^{6,7}	0.98	Normal CSF: 192; P: 15	H, M, R	C, P	STOCK	03-0146-00
BDNF ^{6,7}	0.04	P: 783; S: 410; CSF: 0.13	H	C, P, S	STOCK	03-0171-00
cTnI ^{6,7}	0.35	P: 3.04; S: 3.02	H, Cy, R, C, GP	P, S	STOCK	03-0154-00
G-CSF	0.08	17	H	P	MTO	03-0047-00
GM-CSF	0.02	0.2	H	P	MTO	03-0067-00
GLP-1 (active)	0.40	3.46	H, M, R, C	P	MTO	03-0024-03
GLP-1 (total)	0.39	17.8	H, M, R, C	P	MTO	03-0025-06
Glucagon ^{6,7}	0.78	44	H, M, R	P	STOCK	03-0153-00
IFN-α2 ^{6,7} NEW	0.062	P: 0.08; S: 0.08	H	P, S	STOCK	03-0186-00
IFN-γ ^{6,7}	0.03	P: 1.4; S: 1.4	H	P, S	STOCK	03-0181-00
IL-1α ^{6,7}	0.12	P: 0.09; S: 0.10	H	P, S	STOCK	03-0167-00
IL-1β ^{6,7}	0.20	P: 0.11; S: 0.12	H	P, S	STOCK	03-0160-00
IL-2	0.05	0.21	H	P, S	MTO	03-0051-00
IL-4 ^{6,7}	0.04	P: 0.18; S: 0.18	H	P, S	STOCK	03-0161-00
IL-5 ^{6,7}	0.04	P: 0.37; S: 0.30	H	P, S	STOCK	03-0168-00
IL-6 ^{6,7}	0.08	P: 0.70; S: 0.69	H	P, S	STOCK	03-0155-00
IL-7	0.39	4.91	H	P, S	MTO	03-0094-00
IL-8 / CXCL8	0.24	3.6	H	P, S	MTO	03-0055-00
IL-10 ^{6,7}	0.10	P: 0.90; S: 0.89	H	P, S	STOCK	03-0176-00
IL-12p70 ^{6,7}	0.05	P: 0.29; S: 0.28	H	P, S	STOCK	03-0182-00
IL-13 ^{6,7}	0.04	P: 0.37; S: 0.33	H	P, S	STOCK	03-0156-00
IL-15	0.10	3.38	H	P, S	MTO	03-0058-00
IL-17A ^{6,7}	0.07	P: 0.31; S: 0.30	H	P, S	STOCK	03-0159-00
IL-17F ^{6,7}	0.20	P: 1.10; S: 1.18	H	P, S	STOCK	03-0164-00
IL-17A/F Heterodimer ^{6,7}	1.17	P: 1.36; S: 3.20	H	P, S	STOCK	03-0177-00
IL-21	0.20	0.53	H	S	MTO	03-0014-07
IL-22 ^{6,7}	0.10	P: 1.51; S: 1.52	H	P, S	STOCK	03-0162-00
IL-23 ^{6,7}	0.10	P: 0.65; S: 0.46	H	P, S	STOCK	03-0157-00
KIM-1 ⁵	3.91	P: 65; S: 75; U: 147	H	P, S, U	MTO	03-0118-00
MCP-1 ^{6,7} NEW	0.15	P: 682; S: 1021	H	P, S	STOCK	03-0187-00
TNFA ^{6,7}	0.20	P: 0.85; S: 0.78	H	P, S	STOCK	03-0163-00
TNFA	0.40	38.6	M	S	MTO	03-0108-00
TSLP ^{6,7} NEW	1.56	P: 5.04; S: 3.86	H	P, S	MTO	03-0172-00
VEGF-A ^{6,7}	0.20	P: 48; S: 50	H	P, S	STOCK	03-0180-00

¹ LLoQ: Lowest point on standard curve with CV < 20% and accuracy within 20% of expected values.

² Median Endogenous: Minimum of 10 samples from individual donors assessed for ability to quantify baseline biomarker values.

³ Optimized for first species type listed. Other listed species have been tested, but not optimized for peak performance.

Key: H=Human; M=Mouse; R=Rat; GP=Guinea Pig; Cy=Cynomolgus Monkey; C=Canine

⁴ Optimized for use in sample type(s) listed. Key: P=Plasma; S=Serum; L=Lysate; U=Urine; C=Cerebrospinal Fluid (CSF)

⁵ Plate-based assay.

⁶ Assay characteristic data is representative for both Erenna® and SMCxPRO™.

⁷ Streamlined format kit.

For a complete list of kits qualified on both the SMCxPRO™ and Erenna® instruments, visit sigmaaldrich.com/smc

Mouse Plate-based Discovery Immunoassay Kits

Discovery immunoassays are provided as complete kits to run on your Erenna® platform

- Reproducible LLOQ
- Minimal sample volume
- Simple workflow

Analyte	LLOQ (pg/mL)	Median Endogenous (pg/mL)	Species	Sample Type	Cat. No.
Mouse IL-5	0.24	6.1	M	S	03-0132-00
Mouse IL-10	6.2	8.3	M	S	03-0134-00
Mouse IL-13	3.91	12.0	M	S	03-0133-00
Mouse IL-17A	0.98	9.2	M	S	03-0123-00
Mouse IL-17F	0.49	2.2	M	S	03-0125-01
Mouse IL-21	4.9	44.0	M	S	03-0126-00
Mouse IL-22	100	195	M	S	03-0127-00
Mouse TNFa	0.49	28.4	M	S	03-0137-00

Aurora High-Performing Microplates for Use on the SMCxPRO™ System



Partnering with Aurora Microplates, Inc., we are the exclusive distributor of the High-Performance 384-Well Microplate- specifically packaged for use on the SMCxPRO™. Enhanced detection and stability of your biological materials are critical for generating consistent, high quality data. Containing a flat-bottom design with a high transmittance window, Aurora plates are optimized for imaging. Available in two convenient package sizes.

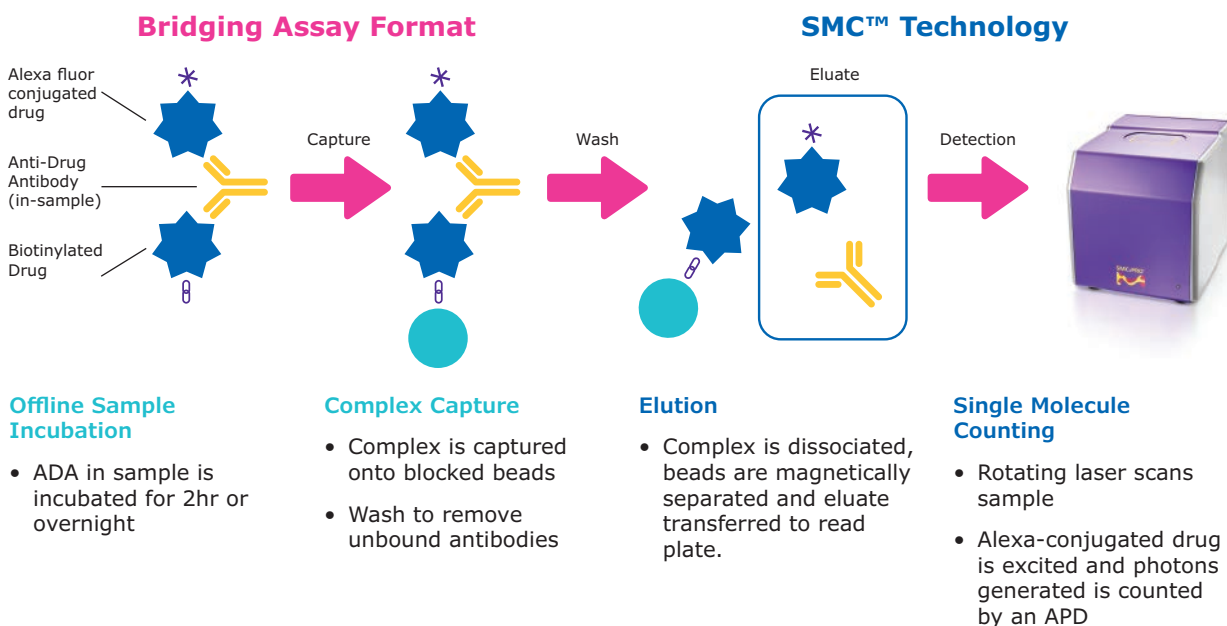
Plates are now bar-coded to enable 100% traceability of each plate to all raw materials and 100% audit ability for ISO or other traceability requirements. The bar code label can also be used in automated systems for plate tracking, data management and plate orientation.

Description	Cat. No.
384-well Bar-coded Aurora plate (Case of 32 plates)	ABB2-10160A
384-well Aurora plate (Case of 32 plates)	ABB2-00160A
One 384-well Aurora plate w/ 3 plate seals	02-1008-00

SMC™ Application Highlight for Immunogenicity

Detecting negative immunogenic responses early in the drug discovery process is critical to ensure potential immune responses are identified promptly. Informed decisions can then be made as companies seek to develop effective medicines, with improved clinical efficacy and patient safety, to critical diseases. Assessing the immunogenicity of a compound occurs via the detection of anti-drug antibodies (ADA), specifically IgG, IgM and IgE. FDA guidelines continue to stress the importance of high sensitivity as this leads to earlier detection of a primary immune response which is essential for patient safety.

Using SMC™ technology combined with our unique immunogenicity assay development kit, researchers can develop a homogenous species independent bridging assay that is simple, easy to design and validate. The SMC™ Immunogenicity bead-based assay development kit includes all you need to develop and validate an ADA assay. The comprehensive assay development protocol is designed to guide and assist you with the process. Our experienced application scientists can also help design, validate and also train end-users to fully utilize the platform.



Description	Cat. No.
SMC™ Immunogenicity Bead Based Assay Development Kit	03-0175-00
384-well Bar-coded Aurora Plate (Case of 32 plates)	ABB2-10160A
384-well Aurora Plate (Case of 32 plates)	ABB2-00160A
One 384-well Aurora plate w/ 3 plate seals	02-1008-00

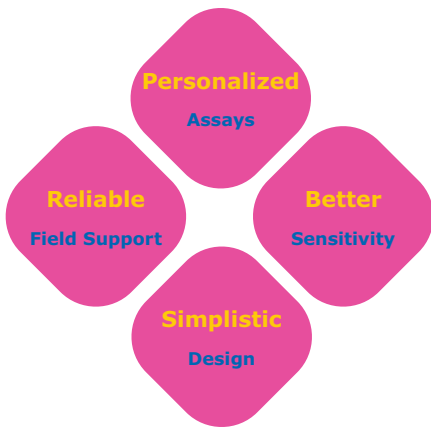
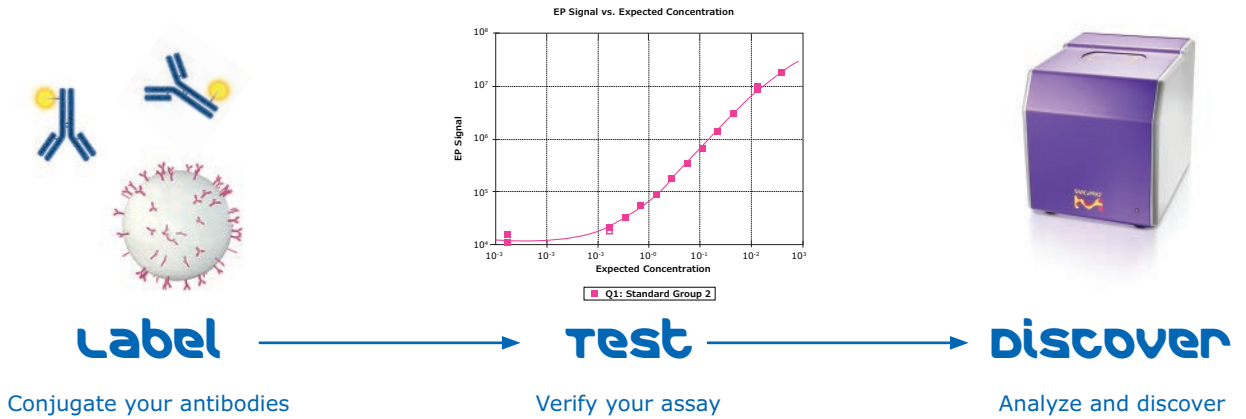
Kit includes reagents for approximately 30 plates (96-well). Includes all labeling reagents and buffers specific for optimizing the assay.

To learn how SMC™ technology can advance your drug discovery research, visit our website at www.merckmillipore.com/smc-immunogenicity

Improve your Sensitivity with SMC™ Homebrew Assays

Take advantage of our ultrasensitive Single Molecule Counting (SMC™) technology while developing your own application-specific immunoassays in either bead or plate format. Our assay development and optimization kits provide everything you need to build your own high performing SMC™ immunoassay for use with the SMCxPRO™ system. Use our platform to customize the assay required to accelerate your research. We offer hands-on assay development training for SMC™ at your facility or one of our global training centers.

Custom high-sensitivity assay development is as easy as ...



Description	Cat. No.
SMC™ Bead-based Assay Development Kit (5 plates)	03-0178-00
SMC™ Plate-based Assay Development Kit (5 plates)	03-0179-00
SMC™ Assay Development Training – 3 days	96-2024-00
SMC™ Assay Development Training – extra day	96-2025-00
SMC™ Bead Based Immunoassay Development Kit	03-0078-00
SMC™ Plate Based Immunoassay Development Kit	03-0128-00
SMC™ Detection Labeling Kit	03-0076-02
SMC™ Capture Labeling Kit	03-0077-02
SMC™ Assay Buffer Optimization Kit	03-0122-00

Expert Custom Assays & Sample Testing (CAST) for SMC™ Technology

We understand you don't always have the time or resources to develop your own assay for your protein of interest or to test your critical samples. Our CAST team has over 130 years of immunoassay development experience with core expertise in SMC™ technology. Let us help you accelerate your program from discovery research into clinical trials with a custom designed program for you.

Our services include:

Collaborative Biomarker Discovery & Development

- Preclinical to early clinical sample testing
- Immunoassay development
- Biomarker verification to sponsor requirements

Biotherapeutic Development

- Pharmacokinetics
- Pharmacodynamics
- Immunogenicity

Reagent Selection

- Reagent sourcing
- Screening and selection
- Antibody derivatization
- QC generation

Sample Testing

- Prototype sample testing
- Proprietary kit sample testing
- SMC™ immunoassay kit testing

Utilize our SMCxPlore Services, customized streamlined options to “explore” SMC™ technology with your analyte of interest or critical samples.

SMCxPlore Assay Development Feasibility:

Development of a prototype assay using your antibody pairs and standard. Ideal for bringing your assay in house.

SMCxPlore Assay Conversion to SMC™:

With access to over 600 proven antibody pairs, let us develop a SMC™ assay that isn't currently available.

SMCxPlore Proof of Concept Sample Testing:

Sample testing of up to 30 of your critical samples using one of our highly validated SMC™ immunoassays.



SMCxPRO™ Immunoassay System Specifications



SMCxPRO™ & Ancillary Product Services	Cat. No.
SMCxPRO™ Complete System	95-0100-00
Standard SMCxPRO™ Installation	96-2011-00
SMCxPRO™ System Training – 1 day	96-2022-00
SMC™ Advanced Training – 3 days	96-2023-00
SMCxPRO™ IQ/OQ Installation	96-2012-00
SMCxPRO™ PQ Service	96-2013-00
BioTek® 405 Touch Microplate Washer with MAG plate	95-0004-05
Jitterbug Plate Shaker	70-0009-00

Software is 21CFR part II compliant and LIMS compatible

Network/PC Requirement

- Microsoft Windows® 7/10 Operating Systems
- A static IP address and an FTP server
- xPRO Operating and Analysis Software included (32- or 64-bit compliant)

Read Plate Format

- 384-well plate

Assay Format

- Bead-based assays
- Plate-based assays

Instrument Specifications

- Instrument dimensions: 406.4 mm H x 355.6 mm W x 444.5 mm D (16"H x 14"W x 17.5"D)
- Weight: 22.7 kg (50 lbs)
- US: 115 VAC, 50-60 Hz (Operating range 90-125 V)
- International: 230 VAC, 50-60 Hz (Operating range 180-250 V)

Installation and Training

- Set up of unit on bench and complete calibration of unit
- Run ASSIST program to verify instrument performance
- Optional IQ/OQ and PQ Services available

Three Levels of Onsite Service Support for SMCxPRO™ Platform

- **Total Service:** Unlimited visits including labor, travel, expenses and all parts for any service for one year
- **Advanced Service:** Labor, travel and expenses for one preventative maintenance and one floating visit for one year
- **Essential Service:** Labor for one preventative maintenance visit for one year

Minimum Instrument Performance Specifications

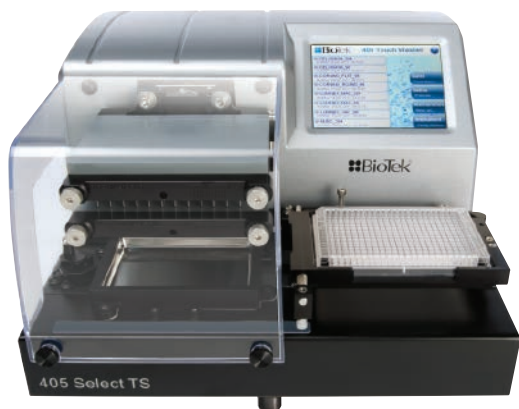
Metric	Specification
Slope	>1.2 response/fM ¹
Background	<3 response/fM ¹
Limit of Detection (LoD)	<1 fM
Precision	<10% CV ²
Dynamic Range	>4 logs

¹ Determined from calibrator set: 0-300 fM of 150 kD antibody labeled with fluorophore

² Response measurements from 30fM calibrator, n=20

Ancillary Equipment to Optimize your SMC™ Assays

BioTek® 405TS 384 Well Plate Washer



In partnership with BioTek®, we offer the latest advancements in 96-well plate washing: a fully automated system designed to quickly wash an entire plate through biomagnetic separation, washing and vacuum filtration. The system comes specifically optimized for use with SMC™ assays with the inclusion of a specially designed magnetic plate and customized pre-programmed plate washing protocols. The 405™ TS model offers an easy-to-use and glove touchable screen.

Description	Cat. No.
BioTek® 405™ TS Magnetic 96-well Washer Complete with Touch Screen and Ultrasonic Cleaning	95-0004-05

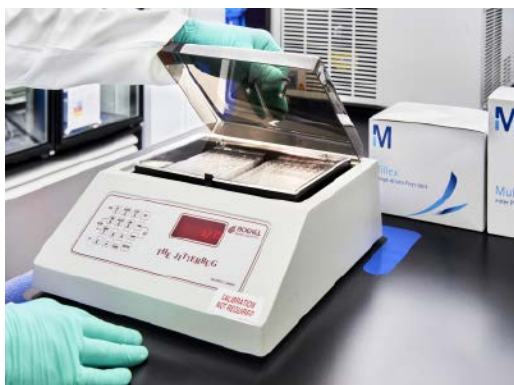
SMC™ Plate Washer Evaluation Kit



Evaluate the performance of your SMC™ plate washer using our SMC™ Plate Washer Evaluation Kit. This kit provides all required reagents to run 5 plates, mimicking steps in the SMC™ immunoassay in an abbreviated workflow. This allows you to assess the performance of your plate washer to run your assay with confidence.

Description	Cat. No.
SMC™ Plate Washer Evaluation Kit	03-0165-00

Boekel Scientific Jitterbug, 130000, Heated Microplate Shaker (115V)



The microplate shaker is temperature controlled and ideal for immunoassays like SMC™. Includes an inner lid to eliminate light and reduce the risk of contamination.

Description	Cat. No.
Boekel Jitterbug Heated Microplate Shaker (115V)	70-0009-00
Boekel Jitterbug Heated Microplate Shaker (230V)	70-0009-00A

Millipore Brand ELISAs

Metabolic/Endocrine ELISAs

Our menu of metabolic and endocrine ELISAs allows end-users a consistent and reliable method of investigating metabolic disease states or defining outcomes within toxicological studies during drug development.

Description	Species	Standard Curve Range	Sensitivity	Sample Volume	Cat. No.	Bulk Packaging Cat. No.*
Adiponectin	Human	1.56–200 ng/mL	0.2 ng/mL	10 µL	EZHADP-61K	EZHADP-61BK
Adiponectin (High Molecular Weight)	Human	1.5–200 ng/mL	0.5 ng/mL	10 µL	EZHMWAN-65K	
Adiponectin	Mouse	1–50 ng/mL	0.2 ng/mL	10 µL	EZMADP-60K	EZMADP-60BK
Adiponectin	Rat	3.125–200 ng/mL	0.4 ng/mL	10 µL	EZRADP-62K	
Amylin (active)	Human	1–100 pM	0.7 pM	50 µL	EZHA-52K	
C-Peptide	Human	0.2–20 ng/mL	0.05 ng/mL	10 µL	EZHCP-20K	EZHCP-20BK
C-Peptide	Canine	0.2–10 ng/mL	0.24 ng/mL	25 µL	EZCCP-47K	
C-Peptide 2	Mouse, Rat	25–1600 pM	15.0 pM	20 µL	EZRMCP2-21K	
C-Reactive Protein (CRP)	Human	0.12–10 ng/mL	0.2 ng/mL	2 µL	CYT298	
C-Reactive Protein (CRP)	Rat	4.9–10 ng/mL	2.5 ng/mL	2 µL	CYT294	
FGF-21	Human	31.25–2000 pg/mL	10.0 pg/mL	50 µL	EZHFGF21-19K	
FGF-21	Mouse, Rat	49.4–12,000 pg/mL	10.0 pg/mL	10 µL	EZRMFGF21-26K	
FGF-23	Human	9.9–2400 pg/mL	3.5 pg/mL	50 µL	EZHFGF23-32K	EZHFGF23-32BK
Ghrelin (active)	Human	25–2000 pg/mL	15.0 pg/mL	20 µL	EZGRA-88K	EZGRA-88BK
Ghrelin (active)	Mouse, Rat	25–2000 pg/mL	8.0 pg/mL	20 µL	EZRGRA-90K	
Ghrelin (total)	Human	100–5000 pg/mL	50.0 pg/mL	20 µL	EZGRT-89K	EZGRT-89BK
Ghrelin (total)	Mouse, Rat	0.1–10 ng/mL	0.04 ng/mL	20 µL	EZRGRT-91K	
GIP (total)	Human	8.2–2000 pg/mL	4.2 pg/mL	20 µL	EZHGIP-54K	EZHGIP-54BK
GIP (total)	Mouse, Rat	8.2–2000 pg/mL	4.2 pg/mL	10 µL	EZRMGIP-55K	EZRMGIP-55BK
GLP-1 (active)	Multi-Species	2–100 pM	1.0 pM	100 µL	EGLP-35K	EGLP-35BK
GLP-1 High Sensitivity (active) Δ••	Multi-Species	See data sheet	0.14 pM	50 µL	EZGLPHS-35K	EZGLPHS-35BK
GLP-1 (total)	Multi-Species	4.1–1000 pM	1.0 pM	20–50 µL	EZGLP1T-36K	EZGLP1T-36BK
GLP-2	Multi-Species	1–64 ng/mL	0.3 ng/mL	50 µL	EZGLP2-37K	
Glucagon Δ	Human, Mouse, Rat	0.02–2 ng/mL	0.003 ng/mL	150–300 µL	EZGLU-30K	EZGLU-30BK
Growth Hormone (GH)	Mouse, Rat	0.7–50 ng/mL	0.07 ng/mL	10 µL	EZRMGH-45K	EZRMGH-45BK
Insulin	Human	2–200 µU/mL	1.0 µU/mL	20 µL	EZHI-14K	EZHI-14BK
Insulin	Mouse, Rat	0.2–10 ng/mL	0.1 ng/mL	10 µL	EZRMI-13K	EZRMI-13BK
Insulin (Animal serum free)	Human	2–200 µU/mL	0.85 µU/mL	20 µL	EZHIASF-14K	
Leptin	Canine	0.78–50 ng/mL	0.21 ng/mL	20 µL	EZCL-31K	
Leptin	Mouse	0.2–30 ng/mL	0.05 ng/mL	10 µL	EZML-82K	EZML-82BK
Leptin	Rat	0.2–30 ng/mL	0.08 ng/mL	10 µL	EZRL-83K	EZRL-83BK
Leptin “Dual Range”	Human	0.5–100 ng/mL	0.2 ng/mL	25 µL	EZHL-80SK	EZHL-80BK
Procollagen Type IIA N-Propeptide (PIIANP)	Human	lot dependent	30.0 ng/mL	5 µL	EZPIIANP-53K	
Proinsulin (total)	Human	2–200 pM	0.5 pM	20 µL	EZHPI-15K	EZHPI-15BK
PYY (total)	Human	10–2000 pg/mL	6.5 pg/mL	20 µL	EZHPLYT66K	
Resistin	Human	0.16–5 ng/mL	0.02 ng/mL	20 µL	EZHR-95K	EZHR-95BK
SAA-3	Mouse	0.078–5 µg/mL	0.078 µg/mL	10 µL	EZMSAA3-12K	

* Bulk packaging available on select kits — more environmentally friendly and saves space (10 kit equivalent)

•• Preferred assay for measuring GLP-1 (active)

Δ Chemiluminescent assay

Millipore Brand ELISAs & RIAs

Neuroscience ELISAs

Get a complete picture of the complexities associated with normal and disease states of the nervous system with reliable quantification of biomarkers using our neuropeptide and neurodegenerative ELISAs.

Description	Species	Standard Curve Range	Sensitivity	Sample Volume	Cat. No.
Amyloid beta 1-40	Human	16–500 pg/mL	4 pg/mL	50 µL	EZHS40
Amyloid beta 1-42	Human	16–500 pg/mL	5 pg/mL	50 µL	EZHS42
Amyloid beta, Set	Human	Contains 1 each of EZHS40 and EZHS42			EZHS-SET
Amyloid beta (Brain) 1-40	Human	16–500 pg/mL	4 pg/mL	50 µL	EZBRAIN40
Amyloid beta (Brain) 1-42	Human	16–500 pg/mL	5 pg/mL	50 µL	EZBRAIN42
Amyloid beta (Brain), Set	Human	Contains 1 each of EZBRAIN40 and EZBRAIN42			EZBRAIN-SET
BDNF (Brain-Derived Neurotrophic Factor)	Human, Rat	7.8–500 pg/mL	7.8 pg/mL	50 µL	CYT306
GFAP (Glial Fibrillary Acidic Protein)	Human, Mouse, Rat	1.5–100 ng/mL	1.5 ng/mL	100 µL	NS830
NPY (Neuropeptide Y)	Human	5–1000 pg/mL	2 pg/mL	50 µL	EZHNPY-25K
NPY (Neuropeptide Y)	Mouse, Rat	0.01–2 ng/mL	0.004 ng/mL	20 µL	EZRMNPY-27K
PEDF (Pigment Epithelium-Derived Factor)	Human	0.9–62.5 ng/mL	0.9 ng/mL	50 µL	CYT420
Phosphorylated Neurofilament, (pNF-H) Sandwich	Multi-Species	0.0293–15 ng/mL	0.0585 ng/mL	1–10 µL	NS170
S100B	Human	2.7–2000 pg/mL	1.3 pg/mL	50 µL	EZHS100B-33K

Radioimmunoassays (RIAs)

RIAs have long been considered a valuable, economical and accurate way to measure protein concentration. As many researchers move away from using radioactive material, please consider using our other high quality immunoassays for your research needs.

Description	Species	Standard Curve Range	Sensitivity	Sample Volume	Cat. No.
Adiponectin	Human	lot dependent	1 ng/mL	5 µL	HADP-61HK
C-Peptide	Canine	0.156–20 ng/mL	0.15 ng/mL	50 µL	CCP-24HK
C-Peptide	Human	0.1–5 ng/mL	0.1 ng/mL	50 µL	HCP-20K
Ghrelin (active)	Human	lot dependent	7.8 pg/mL	50 µL	GHRA-88HK
Ghrelin (total)	Human	lot dependent	93 pg/mL	50 µL	GHRT-89HK
GLP-1 (active)	Multi-Species	10–500 pM	3 pM	300 µL	GLP1A-35HK
GLP-1 (total)	Multi-Species	10–1000 pM	3 pM	300 µL	GLP1T-36HK
Glucagon	Multi-Species	20–400 pg/mL	20 pg/mL	50 µL	GL-32K
Insulin	Porcine	2–200 µU/mL	2 µU/mL	50 µL	PI-12K
Insulin	Rat	0.1–10 ng/mL	0.1 ng/mL	50 µL	RI-13K
Insulin LisPro	Multi-Species	2.5–250 µU/mL	2.5 µU/mL	100 µL	LPI-16K
Insulin (sensitive)	Rat	0.02–1 ng/mL	0.02 ng/mL	50 µL	SRI-13K
Insulin Specific	Human	2–200 µU/mL	2 µU/mL	50 µL	HI-14K
Leptin	Human	0.5–100 ng/mL	0.5 ng/mL	50–100 µL	HL-81K
Leptin	Multi-Species	1–50 ng/mL	1 ng/mL	50 µL	XL-85K
Proinsulin	Human	2–100 pM	2 pM	100–200 µL	HPI-15K
PYY (3-36)	Human	lot dependent	20 pg/mL	<100 µL	PYY-67HK
PYY (total)	Human	lot dependent	10 pg/mL	<100 µL	PYYT-66HK

Sigma-Aldrich Brand ELISAs

We offer a portfolio of > 1,800 ELISAs and EIAs, covering a diverse range of species and sample types. A variety of research areas are addressed, from inflammation and cardiovascular disease to metabolic and veterinary research. With such a large number of ELISAs, it is impossible to list them all on a single page, so search your target at SigmaAldrich.com. To view protocols and performance parameters, type “sample” into the **Certificate of Analysis** box and open the PDF.

ELISA Designations

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 - Standard off-the-shelf assay
 - Some may be designated “lysate” to accommodate the change from serum, plasma or supernatant
- Custom Sandwich ELISA
 - Requires custom manufacture and validation
- Upcharge may apply
- EIA
 - Competitive ELISA
- Cell-Based Phosphorylation ELISA
 - For use on cell lysates to detect phosphorylation events

	Cytokines	Metabolic	Cardiovascular	Angiogenesis	Signaling
	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓
	✓	✓		✓	✓
	✓				
	✓	✓			
	✓				
	✓				
	✓				
	✓				
	✓	✓			

ELISA Reading and Washing Equipment in Partnership with BioTek®

Supporting our collection of over 1800 ELISA products, we are pleased to introduce the 800 TS Absorbance Reader and 50 TS Plate Washer which together provide a cost effective addition to your ELISA work flow.

BioTek® 800 TS Absorbance Reader

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- Optional absorbance test NIST traceable plate
- Color touchscreen for quick programming and simple operation
- USB flash drive for convenient data export
- Durable and high quality design

Description	Cat. No.
BioTek® 800 TS Absorbance Reader, Gen 5 Software	40-006
BioTek® 800 TS Absorbance Reader, Gen 5 Secure	40-007
BioTek® 800 TS Absorbance Reader, Basic	40-300

BioTek® 50 TS Plate Washer

BioTek® 50 TS Magnetic 96-well automated strip washer



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- Automated, built-in maintenance routines for continued reliable operation

Replaces the BioTek® ELx50 Magnetic 96-well Strip Washer

Description	Cat. No.
BioTek® 50 TS Plate Washer	40-301

MILLIPLEX® Analyte Species Index

Analyte	Page	Analyte	Page	Analyte	Page
4-6		B7-H6	H	Complement C1q	H
4-1BBL/TNFSF9	H	BAD (total)	H	Complement C2	H
4E-BP1 (total)	H,M,R	BAD (Ser112)	H,M	Complement C3	H
4E-BP1 (Thr37/46)	H,M,R	BAFF/Blys	H	Complement C3b/iC3b	H
5'-NT/CD73	H,R	BAFF/Blys (autoantibody)	H	Complement C4	H
6Ckine/CCL21/Exodus-2	H,M	BAX (total)	H	Complement C4b	H
		BCA-1/CXCL13	H	Complement C5	H
A		Bcl-2 (total)	H	Complement C5a	H
α 1-Acid Glycoprotein (AGP)	H,M,R	Bcl-2 (Ser70)	H	Complement C9	H
α-1-Antitrypsin (A1AT)	H	Bcl-xL (total)	H	Complement Factor B	H
α-1 Microglobulin	H	Bcl-xL/BAD (interaction)	H	Complement Factor H	H
α-2 Macroglobulin (A2M)	H,M,R	BDNF	H,M,R	Complement Factor I	H
α-Fetoprotein (AFP)	H	Betacellulin	M	Connective Tissue Growth Factor	
α-MSH	H,M,R	BIM	H	(CTGF)	
α-Synuclein	H	Blk (Tyr389)	H	Contactin-1	H
ACTH	C,H,M,NHP,R	BMP-9	H	Corticosterone	R
Active Caspase 8 (total)	H	BNP	H	Cortisol	H,Mul
Active Caspase 9 (total)	H	BRAF (Ser446)	H,M,R	CRAF (Ser338)	H,M,R
ADAMTS13	H	BRAK/CXCL14	H	Creatine Kinase Muscle (CKM)	R
Adiponectin	H,M,R	BTLA	H	CREB (Ser133)	H,M,R
Adipsin/Factor D	H,M			CREB (total)	H,M,R
Agouti-Related Protein (AgRP)	H,NHP	C		CTACK/CCL27	H,M
ALK-1 (soluble)	M	c-Jun (Ser73)	H,M,R	CTAG1B/NY-ESO-1 (autoantibody)	H
Akt/PKB (Ser473)	H,M,R	c-Kit (panTyr)	H	CTLA-4/CD152	H
Akt/PKB (total)	H,M,R	c-Kit/SCFR (soluble)	H	CXCL6/GCP-2	H
Akt1 (Ser473)	H,M,R	c-Met/HGFR (panTyr)	H	CXCL16	H,M
Akt1 (total)	H,M,R	c-Myc (total)	H	CYFRA21-1	H
Akt2 (Ser474)	H,M,R	C-Peptide	H,NHP	Cystatin C	C,H,M,R
Akt2 (total)	H,M,R	C-Peptide 2	M,R		
Akt3 (Ser472)	H,M,R	C-Reactive Protein (CRP)	H,M	D	
Akt3 (total)	H,M,R	CA125	H	D-dimer	H
Albumin	C,H,R	CA15-3	H	DKK1	H,M,R
ALDH1A1	H	CA19-9	H	dPAPP-A	H
Amphiregulin	M	Calbindin	H	DPP4	H
Amylin (active)	H,M,NHP,R	Carbonic Anhydrase 9 (CA9)	H		
Amylin (total)	C,H	Cardiac Troponin I (cTnI)	R	E	
Amyloid beta 1-40 (Aβ 1-40)	H,M	Cardiac Troponin T (cTnT)	R	E-Cadherin	H
Amyloid beta 1-42 (Aβ 1-42)	H,M	Cathepsin D	H	EGF	H,M,R
Angiogenin (ANG)	H	Caveolin-1 (CAV-1)	R	EGFR/HER1/ErbB1 (soluble)	H
Angiopoietin-2	H,M	CCL28	H	EGFR2/Her2/ErbB2 (soluble)	H
Angiostatin/Kringle	H	CCNB1/Cyclin B1 (autoantibody)	H	EGFR3/Her3/ErbB3 (soluble)	H
Angiotensinogen (AGT)	H	CD3ε (panTyr)	H	eIF-4B (Ser422)	H,M,R
ANGPTL3	H	CD14 (soluble)	H	eIF-4E (Ser209)	H,M,R
ANGPTL4	H	CD25/IL-2Rα	H	eIF-4G (Ser1108)	H,M,R
ANGPTL6/AGF	H	CD27	H	eIF2a (Ser51)	H,M,R
Antithrombin III	H	CD28	H	ENA-78/CXCL5	H
Apelin	H	CD30 (soluble)	H,M	Endocan-1 (ESM-1)	H,M
Apolipoprotein AI (Apo AI)	H	CD30/TNFRSF8	H	Endoglin	H,M
Apolipoprotein AII (Apo AII)	H	CD31/PECAM-1 (soluble)	H,M	Endostatin	H
Apolipoprotein B (Apo B)	H	CD40	H	Endothelin-1	H,M
Apolipoprotein CII (Apo CII)	H	CD40L (soluble)	H,M,NHP	ENO1 (autoantibody)	H
Apolipoprotein CIII (Apo CIII)	H	CD44	H	Eotaxin/CCL11	E,H,M,NHP,R
Apolipoprotein E (Apo E)	H	CD80/B7-1	H	Eotaxin-2/CCL24/MIP1F-2	H
ApoE4	H	CD86/B7-2	H	Eotaxin-3/CCL26	H
APRIL	H	CD137/4-1BB/TNFRSF9 (soluble)	H	EpCAM	H
Arginase-1 (ARG1)	H,R			Erythropoietin (EPO)	H,M,R
ATF2 (Thr71)	H,M	CD226/DNAM-1	H	ErbB1/EGFR (panTyr)	H
ATR (total)	H	CEA	H	ErbB2/HER2 (panTyr)	H
AXL (soluble)	H	CENP-A (Centromere Protein A)		ErbB3/HER3 (panTyr)	H
		(autoantibody)	H	ErbB4/HER4 (panTyr)	H
B		CENP-B (Centromere Protein B)		Erk/MAPK 1/2 (Thr185/Tyr187)	H,M,R
β-2-Microglobulin	C,H,M,R	(autoantibody)	H	Erk/MAPK 1/2 (total)	H,M,R
β-Endorphin	H,M,R	Chk1 (Ser345)	H,M,R	E-Selectin (soluble)	H,M,R
β2-Glycoprotein (autoantibody)	H	Chk2 (Thr68)	H	Estradiol	Mul
β-Tubulin (total)	H,M,R	CK-MB	H	Extracellular Matrix Protein 1 (ECM1)	H
B7-H2/ICOSL	H	Clusterin	C,H,M,R		
B7-H3/CD276	H	CNTF	H,NHP	F	
B7-H4/VTCN1	H	Collagen IV	H	FABP1	H
B7-H5/VISTA	H	C1q (autoantibody)	H	FABP3	H,R
				FABP4	H

MILLIPLEX® Analyte Species Index (continued)

Analyte	Page	Analyte	Page	Analyte	Page
FADD (Ser194).....	H	HGF.....	H,M	IL-12.....	Por
Fas Ligand (sFasL) (soluble)	H,M,NHP	HGFR/c-Met (soluble)	H	IL-12 (p40).....	F,H,M
Fas/TNFRSF6 (soluble)	F,H,M	HIF-1α (autoantibody).....	H	IL-12 (p40) (autoantibody)	H
Ferritin	H	HMGB1	H	IL-12 (p70)	E,H,M,R
Fetuin A.....	H	HSP27 (Ser78)	H	IL-12/23 (p40)	NHP
FGF-1/FGF-acidic	H	HSP60 (autoantibody)	H	IL-13.....	E,F,H,M,HNP,R
FGF-2/FGF-basic	E,H,M,NHP	HSP70	H	IL-14/α -Taxilin.....	H
FGF-19.....	H	Human Serum Albumin (HSA).....	H	IL-15.....	C,H,M,NHP,R
FGF-21	H,M,R	HVEM	H	IL-15 (autoantibody)	H
FGF-23	H,M,R	I		IL-16.....	H,M,NHP
FGFR1 (panTyr).....	H	I-309/CCL1	H	IL-17A/CTLA8	B,E,H,M,NHP,O,R
FGL1/Hepassocin	H	ICAM-1 (soluble)	H,M,R	IL-17A/CTLA8 (autoantibody).....	H
Fgr (Tyr412)	H,R	ICOS	H	IL-17A/F.....	M
Fibrinogen.....	H	IDO1	H	IL-17E/IL-25	H,M,NHP
Fibroblast Activation Protein (FAP).....	H	IFNα2	H	IL-17F.....	H,M
Flt3 Ligand.....	F,H	IFNβ.....	H	IL-17F (autoantibody)	H
Flt3 (panTyr)	H	IFNβ (autoantibody)	H	IL-18.....	C,E,F,H,NHP,Por,R
Follistatin (FST)	H,M	IFNβ1	M	IL-19.....	H
Follistatin-like Protein 1 (FSTL1)	H,M,R	IFNγ	B,C,E,F,H,M,NHP,O,Por,R	IL-20	H,M
Fractalkine/CX3CL1.....	E,H,M,NHP,R	IFNγ (autoantibody)	H	IL-21	H,NHP
FSH.....	C,H,M,NHP,R	IgA.....	H,M	IL-22	H,M,NHP
Fyn (Tyr420).....	H,M,R	IgE.....	H,M	IL-22 (autoantibody).....	H
G		IGF-1.....	H	IL-23	H,M,NHP
Galectin-1	H	IGF-2.....	H	IL-24	H
Galectin-1 (GAL1) (autoantibody).....	H	IGF1R (total)	H,M,R	IL-27	H,M
Galectin-3	H	IGF1R (panTyr)	H	IL-28A/IFNλ2.....	H,NHP
Galectin-3 (GAL3) (autoantibody).....	H	IGF1R (Tyr1135/1136)	H,M	IL-28B/IFNλ3.....	H,M
GAPDH (total).....	H	IGFBP1.....	H	IL-29/IFNλ1	H
G-CSF.....	E,H,M,NHP,R	IGFBP2	H	IL-31	H,M,NHP
G-CSF (autoantibody).....	H	IGFBP2 (autoantibody)	H	IL-32α.....	H
GDF-11	H	IGFBP3	H	IL-33/NF-HEV (mature).....	H,M,NHP
GDF15	H	IGFBP4	H	IL-34	H
GDNF.....	H	IGFBP5	H	IL-35	H
GH	C,H,M,NHP,R	IGFBP6	H	IL-36β/IL-1F8.....	H
Ghrelin (active).....	C,H,M,NHP,R	IGFBP7	H	IL-36Ra/IL-1F5.....	B,O
GIP (total).....	C,H,M,NHP,R	IgG1	H,M	IL-37/IL-1F7.....	H
GITR.....	H	IgG2	H	IL-38/IL-1F10.....	H
GITRL.....	H	IgG2a	M	Insulin	C,H,M,NHP,R
Glial Fibrillary Acidic Protein (GFAP)	H	IgG2b	M	Involucrin	H
GLP-1 (active).....	C,H,M,NHP,R	IgG3	H,M	IP-10/CXCL10	B,C,E,H,M,NHP,O,R
GLP-1 (total)	H,M	IgG4	H	IR (total).....	H,R
Glucagon	C,H,M,NHP,R	IgM	H,M	IR (panTyr).....	H
GM-CSF	C,E,F,H,M,NHP,Por,R	IκBα (Ser32).....	H	IR (Tyr1162/1163).....	H
GnRH.....	H,M	IKKα/β (Ser177/181).....	H	Irisin	H,M,R
GOT1.....	R	IL-1α.....	B,E,H,M,NHP,O,Por,R	IRS1 (Ser636)	H,M,R
GP130 (soluble)	H,M	IL-1α (autoantibody).....	H	IRS1 (total).....	H,M,R
Granulysin	H	IL-1β.....	B,E,F,H,M,NHP,O,Por,R	I-TAC/CXCL11	H
Granzyme A	H,NHP	IL-1RI (soluble)	H,M	J	
Granzyme B	H,M,NHP	IL-1RII (soluble).....	H,M	Jag1	H,M
GROα	E,H	IL-1Ra.....	H,NHP,Por	JNK/SAPK1 (Thr183/Tyr185)	H,M,R
KC/GRO/CINC-1/CXCL1	R	IL-2	C,E,F,H,M,NHP,Por,R	JNK/SAPK1 (total).....	H,M,R
GSK3α (total)	H,M,R	IL-2Ra (soluble)	H,M	Jo-1 (autoantibody)	H
GSK3α (Ser21).....	H,M,R	IL-3	H,M	K	
GSK3β (total)	H,M,R	IL-4	B,E,F,H,M,NHP,O,Por,R	Kallikrein-6	H
GSK3β (Ser9)	H,M,R	IL-4R (soluble)	H,M	KC-like Protein.....	C
GSTα	H,R	IL-5	E,H,M,NHP,R	KC/GRO/CINC-1/CXCL1	F,M
H		IL-6	B,C,E,F,H,M,NHP,O,Por,R	Keratin-1, 10	H
H2A.X (Ser139).....	H,M,R	IL-6 (autoantibody)	H	Keratin-6	H
Haptoglobin.....	H,M,R	IL-6R (soluble)	H,M	KIM-1	C,H,M,R
HB-EGF.....	H	IL-6Ra (soluble)	H	Ku (autoantibody)	H
HCC-1/CCL14	H	IL-7	C,H,M	L	
HCC-4/CCL16	H	IL-8/CXCL8	B,C,E,F,H,NHP,O,Por	Lactotransferrin (LTF)	H
HCGβ.....	H	IL-8/CXCL8 (autoantibody).....	H	LAG-3	H
Hck (Tyr411).....	H,M	IL-9	H,M	LAT (panTyr).....	H
HE4	H	IL-10.....	B,C,E,H,M,NHP,O,Por,R	Lck (panTyr).....	H,M,R
Hepsin	H	IL-10 (autoantibody)	H	Lck (Tyr394).....	H,M,R
HER2/ErbB2 (autoantibody)	H	IL-11.....	H,M		

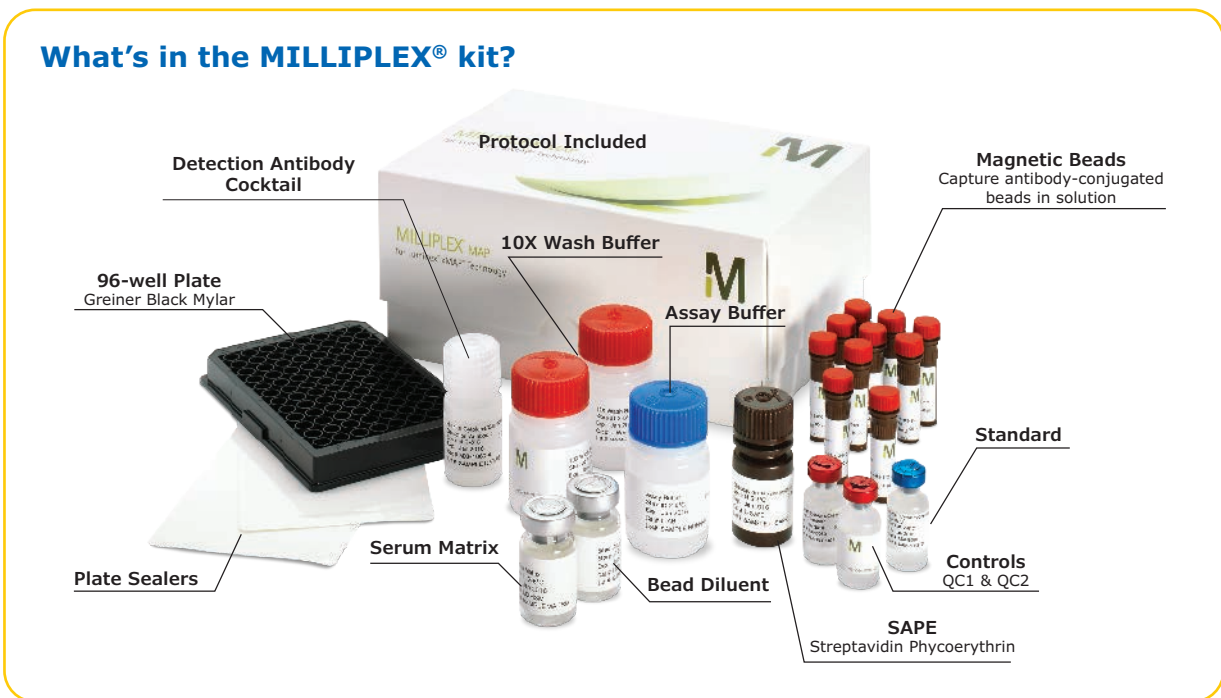
MILLIPLEX® Analyte Species Index (continued)

Analyte	Page	Analyte	Page	Analyte	Page
Leptin	C, H, M, NHP, R	Nectin-2	H	Proteinase 3 (autoantibody)	H
Leucine-rich alpha-2-glycoprotein 1 (LRG1)	H	Nectin-4	H	PSA (free)	H
Leukemia Inhibitory Factor (LIF)	H, M, R	Neurogranin (NRGN)	H	PSA (total)	H
LH	C, H, M, NHP, R	Neuron-specific Enolase (NSE)	H	P-Selectin (soluble)	H, M
LIGHT	H, M	Neuropilin-1 (soluble)	H	PTEN (total)	H, M, R
LIX/CXCL6/GCP-2	H, M, R	Neurotensin	H, M, R	PTEN (Ser380)	H, M, R
L-Selectin (soluble)	H	Neutrophil Elastase-2 (ELA2)	H	PTH	H, R
Lymphotactin/XCL1	H	NFκB (total)	H, M, R	PVR/CD155	H
Lyn (Tyr397)	H, R	NFκB (Ser536)	H, M	PYY (total)	C, H, M, NHP, R
M		NGAL/Lipocalin-2	C, H, M, R	R	
Mannose-Binding Lectin (MBL)	H	NGF	H	RAGE (soluble)	H, M
MCAM/MUC18/sCD146	H	Notch1	M	RANKL	H
Mcl-1/BIM (interaction)	H	NOXA/Mcl-1 (interaction)	H	RANTES/CCL5	E, F, H, M, HNP, R
Mcl-1 (total)	H	NT proBNP	H	Ras (total)	H
MCP-1/CCL2	B, C, E, F, H, M, NHP, R	O		RasG12D (total)	H
MCP-2/CCL8	H	Oncostatin-M (OSM)	H, M	RasG12V (total)	H
MCP-3/CCL7	H	Osteoactivin	H	RBP4	C, H
MCP-4/CCL13	H	Osteocalcin (OC)	H	Renin	H, M
MCP-5/CCL12	M	Osteocrin (OSTN)/Musclin	M, R	Resistin	H, M
M-CSF	H, M	Osteonectin/SPARC	H, M, R	Ribosomal P (autoantibody)	H
M-CSFR (panTyr)	H	Osteopontin (OPN)	C, H, M, R	RNP (Ribonucleoprotein) (autoantibody)	H
MDC/CCL22	H, M	Osteoprotegerin (OPG)	H, M, R	RNP/Smith (RNP/Sm) (autoantibody)	H, M, R
MDH1	H, M, R	OX40/CD134	H	RPS6 (Ser235/Ser236)	H, M, R
MDM2 (total)	H, M, R	Oxytocin	H, M, R	RPS6 (total)	H, M, R
MEK1 (Ser222)	H, M, R	P		S	
Melanoma Inhibitory Activity Protein (MIA)	H	P16-INK4a (autoantibody)	H	S100B	H
Melatonin	H, R	p21 (total)	H	SCF	F, H
Mesothelin	H	p38/SAPK2A/B (Thr180/Tyr182)	H, M, R	Scf-70 (autoantibody)	H
Mi-2 (autoantibody)	H	p38/SAPK2A/B (total)	H, M, R	Sclerostin (SOST)	H, M, R
MICA	H	p53 (autoantibody)	H	SDF-1/CXCL12	F, H, M
MICB	H	p53 (Ser15)	H	SDH	H, R
Midkine	H	p53 (Ser46)	H, M, R	Secretin	M
MIF	H	p70S6 Kinase (total)	H, M, R	Serum Amyloid A (SAA)	H
MIG/CXCL9	H, M	p70S6 Kinase (Thr389/412)	H, M, R	Serum Amyloid P (SAP)	H, M
MIP-1α/CCL3	B, H, M, NHP, O, R	PAI-1 (total)	H, M, R	Sex Hormone Binding Globulin (SHBG)	H
MIP-1β/CCL4	B, H, M, NHP, O	Pancreatic Polypeptide (PP)	C, H, M, NHP, R	Siglec-7	H
MIP-1δ/MIP-5/CCL15	H	PARK5/UCHL1	H	Siglec-9	H
MIP-2/CXCL2	M, R	PARK7/DJ1 (Parkinson's Disease Protein 7)	H	Sm (autoantibody)	H
MIP-3α/CCL20	H, M, NHP	PCNA (Proliferating Cell Nuclear Antigen A) (autoantibody)	H	SMAD2 (Ser465/467)	H, M, R
MIP-3β/CCL19	H, M	PD-1	H	SMAD3 (Ser423/425)	H, M, R
MIP-4/PARC/CCL18	H	PDGF-AA	H	SMAD4 (total)	H, M, R
MMP-1	H	PDGF-AB/BB	H	SOX2 (autoantibody)	H
MMP-2	H, M	PDGF-BB	F	Src (Tyr419)	H, M, R
MMP-3	H, M	PDGFRa (panTyr)	H, M, R	SSA/Ro52 (Sjögren's Syndrome-related antigen A/Ro52 kDa) (autoantibody)	H, M, R
MMP-7	H	PDGFRβ (panTyr)	H	SSA/Ro60 (Sjögren's Syndrome-related antigen A/Ro60 kDa) (autoantibody)	H, M, R
MMP-8	H, M	PD-L1	H	SB/La (Sjögren's Syndrome-related antigen B/La) (autoantibody)	H
MMP-9	H	PD-L2	H	STAT1 (Tyr701)	H, M
MMP-10	H	PEDF	H	STAT2 (Tyr690)	H
MMP-12	H, M	Pentraxin-3 (PTX3)	H	STAT3 (total)	H, M, R
MMP-13	H	Perforin	H, NHP	STAT3 (Ser727)	H, M, R
MPIF/CCL23	H	Periostin	H	STAT3 (Tyr705)	H, M, R
MSK1 (Ser212)	H, M	Progranulin (pGRN)	H	STAT5A/B (total)	H, M, R
mTOR (Ser2448)	H, M, R	PL-12 (Alanyl-tRNA Synthetase) (autoantibody)	H	STAT5A/B (Tyr694/699)	H, M, R
mTOR (total)	H, M, R	Placental Growth Factor 2	M	STAT6 (Tyr641)	H
Mucin-1 (MUC1) (autoantibody)	H	Placental Growth Factor (PLGF)	H	Substance P	H, M, R
Myeloperoxidase (MPO)	H	Platelet Factor 4 (PF4)/CXCL4	H	Superoxide Dismutase 1 (soluble) (sSOD1)	H
Myeloperoxidase (MPO) (autoantibody)	H	PM/Sci 100 (autoantibody)	H	Superoxide Dismutase 2 (soluble) (sSOD2)	H
Myoglobin	H	PRNP (Prion Protein)	H	Survivin/BIRC5 (autoantibody)	H
Myosin Light Chain 3 (MYL3)	R	Progesterone	Mul	Syk (panTyr)	H
Myostatin/GDF8	H, M, R	Prolactin	C, H, M, R		
N		ProMMP-9	M		
NAP-2/CXCL7	H	Properdin/Factor P	H		
NCAM (soluble)	H				
NCAM1/L1CAM/CD171	H				

MILLIPLEX® Analyte Species Index (continued)

Analyte	Page	Analyte	Page	Analyte	Page
T		Tissue Factor (TF)	H	V	
T3	Mul,R	TLR-2	H	VCAM-1 (soluble)	H
T4	Mul,R	TNFR1 (total)	H	VEGF	R
TARC/CCL17	H,M	TNFa	B,C,E,F,H,M,NHP,O,Por,R	VEGF-A	B,H,M,NHP,O,R
Tau (Total)	H	TNFa (autoantibody)	H	VEGF-C	H,M
Tau (Thr181)	H	TNFβ/Lymphotoxin-α (LTA)	H,M,NHP	VEGF-D	H,M
Tenascin-C (TN-C)	H	TNF RI (soluble) (sTNFR1)	H,M	VEGFR1/Flt-1 (panTyr)	H
Testosterone	Mul	TNF RII (soluble) (sTNFR2)	H,M	VEGFR1/Flt-1 (soluble)	H,M
TFF-3	C,H	TPO	H	VEGFR2/KDR/Flk-1 (panTyr)	H
TGFa	H,NHP	TRAIL/TNFSF10	H	VEGFR2/KDR/Flk-1 (soluble)	H,M
TGFβ1	Mul	Transglutaminase 2 (TGM2)	H	VEGFR3/Flt-4 (panTyr)	H,M,R
TGFβ2	Mul	TRAP5	H	VEGFR3/Flt-4 (soluble)	H,M
TGFβ3	Mul	TREM2	H	Vitamin D Binding Protein	H
TGFβRII (total)	H	Troponin I (TnI)	H,M		
Thrombomodulin	H,M	Troponin T (TnT)	H,M	Y	
Thrombospondin-1 (TSP-1)	H	TSC2 (total)	H,M,R	Yes (Tyr421)	H,M,R
Thrombospondin-2 (TSP-2)	H	TSC2 (Ser939)	H,M,R	YKL40/CHI3L1	H
TIE1 (panTyr)	H	TSH	C,H,M,NHP,R		
TIE2 (panTyr)	H	TSLP	H	Z	
Tie-2 (soluble)	H	TWEAK	H	ZAP-70 (panTyr)	H
TIM-3	H				
TIMP-1	H,M,R	U			
TIMP-2	H	ucMGP	H		
TIMP-3	H	uPAR (soluble)/CD87	H		
TIMP-4	H	Uromodulin	H		

B/Bovine, C/Canine, E/Equine, F/Feline, H/Human, M/Mouse, Mul/Multi-Species, NHP/Non-Human Primate, O/Ovine, Por/Porcine, R/Rat



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48-625MAG	34	HCKP1-11K-PX17	24	HSP1MAG-63K	22	PCYTMG-40K-PX23	25
48-626MAG	34	HCKP2-11K	24	HSP2MAG-63K	22	PRCYT2MAG40K	25
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HUMAN

Immunology

Human Cytokine/Chemokine/ Growth Factor Panel A **NEW**

☐ (Cat. No. HCYTA-60K)	
38 (Cat. No. HCYTA-60K-PX38) ♦	
38 (Cat. No. HCYTA-60K-PXBK38) ♦	
48 (Cat. No. HCYTA-60K-PX48)	
48 (Cat. No. HCYTA-60K-PXBK48)	
sCD40L	IL-13 ♦
EGF ♦	IL-15 ♦
Eotaxin/CCL11 ♦	IL-17A/CTLA8 ♦
FGF-2/FGF-basic	IL-17E/IL-25 ♦
Flt3 Ligand	IL-17F ♦
Fractalkine/CX3CL1	IL-18 ♦
G-CSF ♦	IL-22 ♦
GM-CSF ♦	IL-27
GRO α	IP-10/CXCL10 ♦
IFN α 2 ♦	MCP-1/CCL2 ♦
IFN γ ♦	MCP-3/CCL7
IL-1 α ♦	M-CSF ♦
IL-1 β ♦	MDC/CCL22
IL-1RA ♦	MIG/CXCL9 ♦
IL-2 ♦	MIP-1 α /CCL3 ♦
IL-3 ♦	MIP-1 β /CCL4 ♦
IL-4 ♦	PDGF-AA ♦
IL-5 ♦	PDGF-AB/BB ♦
IL-6 ♦	RANTES/CCL5 ♦▲
IL-7 ♦	TGF α
IL-8/CXCL8 ♦	TNF α ♦
IL-9	TNF β /Lymphotoxin- α (LTA) ♦
IL-10 ♦	VEGF-A ♦
IL-12 (p40) ♦	
IL-12 (p70) ♦	

Human Cytokine/Chemokine Panel I

☐ (Cat. No. HCYTMAG-60K)	
29 (Cat. No. HCYTMAG-60K-PX29)	
29 (Bulk Cat. No. HCYTMAG60PMX29BK)	
30 (Cat. No. HCYTMAG-60K-PX30) ♦	
30 (Bulk Cat. No. HCYTMAG60PMX30BK) ♦	
38 (Cat. No. HCYTMAG-60K-PX38)	
38 (Bulk Cat. No. HCYTMAG60PMX38BK)	
41 (Cat. No. HCYTMAG-60K-PX41)	
41 (Bulk Cat. No. HCYTMAG60PMX41BK)	
sCD40L	IL-9
EGF ♦	IL-10 ♦
Eotaxin/CCL11 ♦	IL-12 (p40) ♦
FGF-2/FGF-basic	IL-12 (p70) ♦
Flt3 Ligand	IL-13 ♦
Fractalkine/CX3CL1	IL-15 ♦
G-CSF ♦	IL-17A/CTLA8 ♦
GM-CSF ♦	IP-10/CXCL10 ♦
GRO	MCP-1/CCL2 ♦
IFN α 2 ♦	MCP-3/CCL7
IFN γ ♦	MDC/CCL22
IL-1 α ♦	MIP-1 α /CCL3 ♦
IL-1 β ♦	MIP-1 β /CCL4 ♦
IL-1Ra ♦	PDGF-AA ▲
IL-2 ♦	PDGF-AB/BB ▲
IL-3 ♦	RANTES/CCL5 ♦▲
IL-4 ♦	TGF α
IL-5 ♦	TNF α ♦
IL-6 ♦	TNF β /Lymphotoxin- α (LTA) ♦
IL-7 ♦	VEGF-A ♦
IL-8/CXCL8 ♦	

Human Cytokine/Chemokine Panel II

☐ (Cat. No. HCP2MAG-62K)	
23 (Cat. No. HCP2MAG-62K-PX23)	
23 (Bulk Cat. No. HCP2MAG62KPX23BK)	
6Ckine/CCL21/ Exodus-2	IL-28A/IFN λ 2
BCA-1/CXCL13	IL-33/NF-HEV (mature)
CTACK/CCL27	LIF
ENA-78/CXCL5	MCP-2/CCL8
Eotaxin-2/CCL24/ MPIF-2	MCP-4/CCL13
Eotaxin-3/CCL26	MIP-1 δ /MIP-5/CCL15
I-309/CCL1	SCF
IL-16	SDF-1/CXCL12
IL-20	TARC/CCL17
IL-21	TPO
IL-23	TRAIL/TNFSF10
	TSLP

Human Cytokine/Chemokine Panel III

(Cat. No. HCP3MAG-63K)	
HCC-1/CCL14 ▲	M-CSF
IL-11	MIG/CXCL9
IL-29/IFN λ 1	MIP-3 α /CCL20
I-TAC/CXCL11	MIP-3 β /CCL19
LIX/CXCL6/GCP-2	NAP-2/CXCL7 ▲
Lymphotoxin/XCL1	

Human Cytokine/Chemokine Panel IV

☐ (Cat. No. HCP4MAG-64K)	
20 (Cat. No. HCP4MAG-64K-PX20)	
20 (Bulk Cat. No. HCP4MAG64KPX20BK)	
BAFF/Blys	IL-28B/IFN λ 3
BRAK/CXCL14	IL-32 α
CCL28	IL-34
CXCL16	IL-35
HCC-4/CCL16	IL-36 β /IL-1F8
HMGB1 ●	IL-37/IL-1F7
IFN β	IL-38/IL-1F10
IL-14/ α -Taxilin	MIP-4/PARC/CCL18
IL-19	MPIF/CCL23
IL-24	YKL40/CHI3L1

Human IL-18 Singleplex

(Cat. No. HIL18MAG-66K)	
IL-18	

Human High Sensitivity T Cell

☐ (Cat. No. HSTCMAG-28SK)	
13 (Cat. No. HSTCMAG28SPMX13) ♦	
13 (Bulk Cat. No. HSTCMAG28SPMX13BK) ♦	
21 (Cat. No. HSTCMAG28SPMX21)	
21 (Bulk Cat. No. HSTCMAG28SPMX21BK)	
Fractalkine/CX3CL1	IL-12 (p70) ♦
GM-CSF ♦	IL-13 ♦
IFN γ ♦	IL-17A/CTLA8
IL-1 β ♦	IL-21
IL-2 ♦	IL-23
IL-4 ♦	I-TAC/CXCL11
IL-5 ♦	MIP-1 α /CCL3
IL-6 ♦	MIP-1 β /CCL4
IL-7 ♦	MIP-3 α /CCL20
IL-8/CXCL8 ♦	TNF α ♦
IL-10 ♦	

New! Human Cytokine Panel: Larger and Customizable

The MILLIPLEX® Human Cytokine/Chemokine/Growth Factor Panel A combines tests for 48 individual immune factors that previously have not been together in a single panel. For more information, see our **Application Note**.

Legend key for MILLIPLEX® kits

- + Analytes which cannot be plexed together:
 - Active and total
 - Free and total
- ♦ Available in Cat. No. listed
- ▼ Premix panel only
- Bulk indicates Space Saver Packaging

- ▲ These analytes cannot be plexed with other analytes in this panel in serum/plasma
- Requires a protease inhibitor during sample collection
- Requires sample extraction
- ** No standard/QC; autoantibody levels are reported as MFIs

- Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ☐ Available for custom premix
 - Analyte requires a different sample dilution from others in panel
 - Analyte not detectable in serum

384-well Human High Sensitivity T Cell

(Cat. No. HSTC384-28K)

21 (Cat. No. HSTCMAG384-PX21)

21 (Bulk Cat. No. HSTCMAG384PX21BK)

Fractalkine/CX3CL1	IL-12 (p70)
GM-CSF	IL-13
IFN γ	IL-17A/CTLA8
IL-1 β	IL-21
IL-2	IL-23
IL-4	I-TAC/CXCL11
IL-5	MIP-1 α /CCL3
IL-6	MIP-1 β /CCL4
IL-7	MIP-3 α /CCL20
IL-8/CXCL8	TNF α
IL-10	

Human Th17

(Cat. No. HTH17MAG-14K)

25 (Cat. No. HT17MG-14K-PX25)

25 (Bulk Cat. No. HT17MAG14PMX25BK)

GM-CSF	IL-17E/IL-25
IFN γ	IL-17F
IL-1 β	IL-21
IL-2	IL-22
IL-4	IL-23
IL-5	IL-27
IL-6	IL-28A/IFN λ 2
IL-9	IL-31
IL-10	IL-33/NF-HEV (mature)
IL-12 (p70)	MIP-3 α /CCL20
IL-13	TNF α
IL-15	TNF β /Lymphotoxin- α (LTA)
IL-17A/CTLA8	

Human CD8+ T Cell

20 (Cat. No. HCD8MAG-15K)

17 (Cat. No. HCD8MAG15K17PMX)

17 (Bulk Cat. No. HCD8MAG15KPX17BK)

sCD137/4-1BB/TNFRSF9	IL-4
sFAS/TNFRSF6	IL-5
sFasL	IL-6
GM-CSF	IL-10
Granzyme A	IL-13
Granzyme B	MIP-1 α /CCL3
IFN γ	MIP-1 β /CCL4
IL-2	Perforin
	TNF α

Human Soluble Cytokine Receptor

(Cat. No. HSCRMAG-32K)

14 (Cat. No. HSCRMAG32KPX14)

14 (Bulk Cat. No. HSCRMAG32PMX14BK)

sCD30	sIL-6R
sEGFR/sHER1/ErbB1	sRAGE
sGP130	sTNF RI
sIL-1RI	sTNF RII
sIL-1RII	sVEGFR1/sFlt-1
sIL-2R α	sVEGFR2/sKDR/sFlk-1
sIL-4R	sVEGFR3/sFlt-4

Human Complement Panel 1

(Cat. No. HCMP1MAG-19K)

Adipsin/Factor D	C5a
C2	C9
C4b	Factor I
C5	Mannose-binding Lectin (MBL)

Human Complement Panel 2

(Cat. No. HCMP2MAG-19K)

C1q	C4
C3	Factor B
C3b	Factor H

Human MMP Panel 1

(Cat. No. HMMP1MAG-55K)

MMP-3	MMP-13
MMP-12	

Human MMP Panel 2

(Cat. No. HMMP2MAG-55K)

MMP-1	MMP-9
MMP-2	MMP-10
MMP-7	

Human TIMP Panel 1 (Serum/Plasma samples)

(Cat. No. HTMP1MAG-54K)

TIMP-1	TIMP-2
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Human TIMP Panel 2 (Cell culture samples)

(Cat. No. HTMP2MAG-54K)

TIMP-1	TIMP-3
TIMP-2	TIMP-4

Multi-Species TGF β – Singleplex

(Cat. No. TGFBMAG-64K-01)

(Bulk Cat. No. TGFBMAG-64K-01BK)

TGF β 1

Multi-Species TGF β – 3 Plex ▼

(Cat. No. TGFBMAG-64K-03)

NON-CONFIGURABLE KIT

TGF β 1	TGF β 3
TGF β 2	

Immune Response**Human Autoimmune Autoantibody****

(Cat. No. HAIAB-10K)

β 2-Glycoprotein I	Ribosomal P
C1q	RNP (Ribonucleoprotein)
CENP-A (Centromere Protein A)	RNP/Smith (RNP/Sm)
CENP-B (Centromere Protein B)	Sci-70
Jo-1	Sm
Ku	SSA/Ro52 (Sjögren's Syndrome-related antigen A/Ro52 kDa)
Mi-2	SSA/Ro60 (Sjögren's Syndrome-related antigen A/Ro60 kDa)
Myeloperoxidase (MPO)	SSA/Ro60 (Sjögren's Syndrome-related antigen A/Ro60 kDa)
PCNA (Proliferating Cell Nuclear Antigen A)	SB/La (Sjögren's Syndrome-related antigen B/La)
PL-12 (Alanyl-tRNA Synthetase)	
PM/Sci 100	
Proteinase 3	

Human Cytokine Autoantibody **NEW ****

(Cat. No. HCYTAAB-17K)

BAFF/Blys	IL-10
G-CSF	IL-12 (p40)
IFN β	IL-15
IFN γ	IL-17A/CTLA8
IL-1 α	IL-17F
IL-6	IL-22
IL-8/CXCL8	TNF α

Human Sepsis Panel 1

(Cat. No. HSP1MAG-63K)

sFAS/TNFRSF6	MIF
sFasL	PAI-1 (total)
sICAM-1	sVCAM-1

Human Sepsis Panel 2

(Cat. No. HSP2MAG-63K)

Granzyme B	MIP-1 α /CCL3
HSP70	MIP-1 β /CCL4
IL-1 α	MMP-8
IL-8/CXCL8	

Human Sepsis Panel 3

(Cat. No. HSP3MAG-63K)

Lactotransferrin (LTF)	Resistin
Neutrophil Elastase-2 (ELA2)	Thrombospondin-1 (TSP-1)
NGAL/Lipocalin-2	

Human Skin (Skin extracts only)

(Cat. No. SKINMAG-50K)

Cortisol ^	Involucrin
Human Serum Albumin (HSA)	Keratin-1,10
	Keratin-6

Human Immunoglobulin Isotyping

☐ (Cat. No. HGAMMAG-301K)

IgA	IgG3
IgG1	IgG4
IgG2	IgM

Human IgE – Singleplex

(Cat. No. HGAMMAG-303E)

IgE

Metabolism/ Endocrinology

Human Adipokine Panel 1 (Serum/Plasma samples)

(Cat. No. HADK1MAG-61K)

Adiponectin	PAI-1 (total)
Adipsin/Factor D	Resistin
NGAL/Lipocalin-2	

Human Adipokine Panel 2 (Serum/Plasma samples)

(Cat. No. HADK2MAG-61K)

IL-1β	Leptin
IL-6	MCP-1/CCL2
IL-8/CXCL8	NGF
Insulin	TNFα

Human Adipocyte (Cell culture samples)

(Cat. No. HADCYMAG-61K)

Adiponectin	MCP-1/CCL2
HGF	NGF
IL-1β	PAI-1 (total)
IL-6	Resistin
IL-8/CXCL8	TNFα
Leptin	

Human Diabetes ▼

5 (Cat. No. HDIAB-34K-PMX5)

5 (Bulk Cat. No. HDIAB34KPMX5BK)

NON-CONFIGURABLE KIT

C-Peptide	Insulin
GLP-1 (active)▶	Leptin
Glucagon▶	

Human Metabolic Hormone

(Cat. No. HMHEMAG-34K)

Amylin (active)▶	IL-6
Amylin (total)▶	Insulin
C-Peptide	Leptin
Ghrelin (active)▶	MCP-1/CCL2
GIP (total)	Pancreatic Polypeptide (PP)
GLP-1 (active)▶	PYY (total)
GLP-1 (total)▶	TNFα
Glucagon▶	

Human Myokine

(Cat. No. HMYOMAG-56K)

Apelin	IL-15
BDNF	Irisin
Erythropoietin (EPO)	LIF
FABP3	Myostatin/GDF8
FGF-21	Oncostatin-M (OSM)
Fractalkine/CX3CL1	Osteocrin (OSTN)/Musclin
FSTL1	Osteonectin/SPARC
IL-6	

Human Aging Panel 1

(Cat. No. HAGE1MAG-20K)

CTACK/CCL27	IL-6
FGF-21	IL-10*
GDF-11	IL-18
GDF15	Jag1
GnRH	Leptin

Human Liver Protein

(Cat. No. HLPPMAG-57K)

α-Fetoprotein (AFP)	FGF-19
ANGPTL3	FGF-21
ANGPTL4	FGF-23
ANGPTL6	HGF
FABP1	

Human IGF Binding Protein▶

(Cat. No. HIGFBMAG-53K)

IGFBP1	IGFBP5
IGFBP2	IGFBP6
IGFBP3◦	IGFBP7
IGFBP4	

Human IGF■

(Cat. No. HIGFMAG-52K)

IGF-1	IGF-2
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Human Pituitary Panel 1

(Cat. No. HPTP1MAG-66K)

ACTH	FSH
Agouti-Related Protein (AgRP)	GH
CNTF	LH
	TSH

Multi-Species Hormone ■ ^

(Cat. No. MSHMAG-21K)

Cortisol	Testosterone
Estradiol	T3
Progesterone	T4

Cardiovascular

Human CVD Panel 1

(Cat. No. HCVD1MAG-67K)

BNP	LIGHT
CK-MB	NT proBNP
CXCL6/GCP-2	Oncostatin-M (OSM)
CXCL16	Placental Growth Factor (PLGF)
Endocan-1 (ESM-1)	Troponin I (TnI)
FABP3	
FABP4	

Human CVD Panel 2

(Cat. No. HCVD2MAG-67K)

ADAMTS13	Myoglobin
D-dimer	NGAL/Lipocalin-2
GDF15	sP-Selectin
sICAM-1	Serum Amyloid A
Myeloperoxidase (MPO)	sVCAM-1

Human CVD Panel 3 (Acute Phase)

(Cat. No. HCVD3MAG-67K)

α-1-Acid Glycoprotein (AGP)	Haptoglobin
α-2-Macroglobulin	sL-Selectin
Adipsin/Factor D	Platelet Factor 4 (PF4)/CXCL4
CRP	Serum Amyloid P (SAP)
Fetuin A	
Fibrinogen ◊	

Human CVD Panel 4

(Cat. No. HCVD4MAG-67K)

sCD31/sPECAM-1	Pentraxin-3 (PTX3)
dPAPP-A	Thrombomodulin
sE-Selectin	Tissue Factor (TF)
Follistatin (FST)	Troponin T (TnT)

Legend key for MILLIPLEX® kits

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 - Active and total
 - Free and total
- ◆ Available in Cat. No. listed
- ▼ Premix panel only
- Bulk indicates Space Saver Packaging

- ▲ These analytes cannot be plexed with other analytes in this panel in serum/plasma
- ▶ Requires a protease inhibitor during sample collection
- Requires sample extraction
- ** No standard/QC; autoantibody levels are reported as MFIs

- Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ☐ Available for custom premix
 - Analyte requires a different sample dilution from others in panel
 - Analyte not detectable in serum

Human CVD Panel 6

(Cat. No. HCV6MAG-67K)

sCD14	MCAM/MUC18
DPP4	Progranulin (pGRN)
Endostatin	ucMGP
LRG1	

Human Apolipoprotein

(Cat. No. APOMAG-62K)

Apo AI	Apo CII
Apo AII	Apo CIII
Apo B	Apo E

Bone**Human Bone**

(Cat. No. HBNMAG-51K)

ACTH	Osteocalcin (OC)
DKK1	Osteopontin (OPN)
FGF-23	Osteoprotegerin (OPG)
IL-1β	PTH
IL-6	Sclerostin (SOST)
Insulin	TNFα
Leptin	

Human RANKL – Singleplex

(Cat. No. HRNKL MAG-51K-01)

RANKL

Cancer**Human Immuno-Oncology Checkpoint Protein Panel 1**

(Cat. No. HCKP1-11K)

⑰ (Cat. No. HCKP1-11K-PX17)

⑰ (Bulk Cat. No. HCKP1-11K-PXBK17)

BTLA	HVEM
CD27	ICOS
CD28	LAG-3
CD40	PD-1
CD80/B7-1	PD-L1
CD86/B7-2	PD-L2
CTLA-4/CD152	TIM-3
GITR	TLR-2
GITRL	

Human Immuno-Oncology Checkpoint Protein Panel 2(Cat. No. HCKP2-11K) **NEW**

4-1BBL/TNFSF9	FGL1/Hepassocin
5'-NT/CD73	Galectin-1
APRIL	Galectin-3
Arginase-1	Granulysin
B7-H2/ICOSL	Granzyme B
B7-H3/CD276	IDO1
B7-H4/VTCN1	MICA
B7-H5/VISTA	MICB
B7-H6	Nectin-2
BAFF/BLyS	Nectin-4
CD25/IL-2Rα	OX40/CD134
CD30/TNFRSF8	Perforin
CD40L	PVR/CD155
CD137/4-1BB	Siglec-7
CD226/DNAM-1	Siglec-9
E-Cadherin	

Human Cancer Autoantibody**

(Cat. No. HCABMAG-13K)

CCNB1/Cyclin B1	IGF2BP2/IMP2
CTAG1B/NY-ESO-1	IGF2BP3/IMP3
ENO1	Mucin-1 (MUC1)
Galectin-1 (GAL1)	P16-INK4a
Galectin-3 (GAL3)	p53
HER2/ErbB2	SOX2
HIF-1α	Survivin/BIRC5
HSP60	

Human Circulating Cancer Biomarker Panel 1

(Cat. No. HCCBP1MAG-58K)

α-Fetoprotein (AFP)	IL-8/CXCL8
CA125	Leptin
CA15-3	MIF
CA19-9	Osteopontin (OPN)
CEA	Prolactin
CYFRA21-1	PSA (free)†
sFAS/TNFRSF6	PSA (total)†
sFasL	SCF
FGF-2/FGF-basic	TGFα
HCGβ	TNFα
HE4	TRAIL/TNFSF10
HGF	VEGF-A
IL-6	

Human Circulating Cancer Biomarker Panel 2

(Cat. No. HCCBP2MAG-58K)

Antithrombin III	Extracellular Matrix Protein 1 (ECM1)
Complement Factor H (CFH)	Vitamin D Binding Protein

Human Circulating Cancer Biomarker Panel 3

(Cat. No. HCCBP3MAG-58K)

Cathepsin D	Melanoma Inhibitory Activity (MIA)
Ferritin	Myeloperoxidase (MPO)
Fibroblast Activation Protein (FAP)	Sex Hormone Binding Globulin (SHBG)
Galectin-3	
IGFBP3	

Human Circulating Cancer Biomarker Panel 4

(Cat. No. HCCB4MAG-58K)

ALDH1A1	Kallikrein-6
Carbonic Anhydrase 9 (CA9)	Mesothelin
CD44	Midkine
EpCAM	NCAM1/L1CAM/CD171
Hepsin	Transglutaminase 2 (TGM2)

Human Cancer/Metastasis Biomarker Panel 1

(Cat. No. HCMBMAG-22K)

DKK1	Osteoprotegerin (OPG)
GDF15	Periostin
Neuron-specific Enolase (NSE)	TRAP5
Osteonectin/SPARC	TWEAK
	YKL40/CHI3L1

Human Angiogenesis/Growth Factor Panel 1

(Cat. No. HAGP1MAG-12K)

Angiopoietin-2	HB-EGF
BMP-9	HGF
EGF	IL-8/CXCL8
Endoglin	Leptin
Endothelin-1	Placental Growth Factor (PLGF)
FGF-1/FGF-acidic	VEGF-A
FGF-2/FGF-basic	VEGF-C
Follistatin (FST)	VEGF-D
G-CSF	

Human Angiogenesis Panel 2

(Cat. No. HANG2MAG-12K)

Angiostatin/Kringle	sIL-6Rα
sAXL	sNeuropilin-1 (sNRP-1)
sCD31/sPECAM-1	Osteopontin (OPN)
sc-Kit/sStem Cell Factor Receptor (SCFR)	PDGF-AB/BB
sE-Selectin	Tenascin-C (TN-C)
sEGFR/sHER1/sErbB1	Thrombospondin-2 (TSP-2)
sHER2/sEGFR2/sErbB2	sTIE-2
sHER3/sEGFR3/sErbB3	suPAR
sHGFR/sc-Met	sVEGFR1/sFlt-1
	sVEGFR2/sKDR/sFlk-1
	sVEGFR3/sFlt-4

Neuroscience**Human Amyloid Beta and Tau (CSF samples)**

(Cat. No. HNABTMAG-68K)

Amyloid beta 1-40	pTau (Thr181)
Amyloid beta 1-42	Tau (total)

Human Neuroscience Panel 1 (CSF samples)

(Cat. No. HNS1MAG-95K)

α-Synuclein	PARK5/Uchl1
Glial Fibrillary Acidic Protein (GFAP)	PARK7/DJ1
Neuron-specific Enolase (NSE)	Transglutaminase 2 (TGM2)

Human Neuroscience Panel 2

(Cat. No. HNS2MAG-95K)

Angiogenin (ANG) ^o	Neurogranin (NRGN)
ApoE4 ^o	PRNP (Prion Protein)
FABP3	TREM2
Ferritin	

Human Neurodegenerative Disease Panel 1

(Cat. No. HNDG1MAG-36K)

α-2-Macroglobulin	Complement Factor C3
Apo AI	Complement Factor H (CFH)
Apo CIII	
Apo E	

Human Neurodegenerative Disease Panel 2

(Cat. No. HNDG2MAG-36K)

α-1-Antitrypsin (A1AT)	MIP-4/PARC/CCL18
C4	PEDF
CRP	Serum Amyloid P (SAP)

Human Neurodegenerative Disease Panel 3

(Cat. No. HNDG3MAG-36K)

BDNF	PAI-1 (total)
Cathepsin D	PDGF-AA
sICAM-1	PDGF-AB/BB
Myeloperoxidase (MPO)	RANTES/CCL5
sNCAM	sVCAM-1

Human Neurodegenerative Disease Panel 4 (CSF samples)

(Cat. No. HNDG4MAG-36K)

Amyloid beta 1-40	sRAGE
Amyloid beta 1-42	S100B
GDNF	

Human Neurological Disorders Panel 3

(Cat. No. HND3MAG-39K)

Angiotensinogen (AGT)	Osteopontin (OPN)
Contactin-1	Soluble Superoxide Dismutase 1 (sSOD1)
Fetuin A	Soluble Superoxide Dismutase 2 (sSOD2)
Kallikrein-6	

Human Neuropeptide ■ ^

(Cat. No. HNPAG-35K)

α-MSH	Oxytocin
β-Endorphin	Substance P
Neurotensin	

Human Circadian Stress ■ ^

(Cat. No. HNCSMAG-35K)

Cortisol	Melatonin
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Toxicity**Human Kidney Injury Panel 1 (Urine samples)**

(Cat. No. HKI1MAG-99K)

Calbindin	KIM-1
Collagen IV	Osteoactivin
FABP1	Renin
GSTα	TFF-3
IP-10/CXCL10	TIMP-1

Human Kidney Injury Panel 2 (Urine samples)

(Cat. No. HKI2MAG-99K)

α-1-Microglobulin	EGF
Albumin	NGAL/Lipocalin-2
Clusterin	Osteopontin (OPN)
Cystatin C	

Human Kidney Injury Panel 3 (Urine samples)

(Cat. No. HKI3MAG-99K)

β-2-Microglobulin	Uromodulin
RBP4	

Human Kidney Injury Panel 4 (Serum/Plasma samples)

(Cat. No. HKI4MAG-99K)

EGF	Osteopontin (OPN)
FABP1	PTH
IP-10/CXCL10	Renin
KIM-1	

Human Kidney Injury Panel 5 (Serum/Plasma samples)

(Cat. No. HKI5MAG-99K)

α-1-Microglobulin	Osteoactivin
Collagen IV	TIMP-1
NGAL/Lipocalin-2	Uromodulin

Human Kidney Injury Panel 6 (Serum/Plasma samples)

(Cat. No. HKI6MAG-99K)

β-2-Microglobulin	Cystatin C
Clusterin	RBP4

Human Liver Injury

(Cat. No. HLINJMAG-75K)

5'NT/CD73	MDH1
ARG1	SDH
GSTα	

PRIMATE**Immunology****Non-Human Primate Cytokine/Chemokine Panel 1**

● (Cat. No. PRCYTOMAG-40K)
 ● (Cat. No. PCYTMG-40K-PX23)
 ● (Bulk Cat. No. PRCYMAG40PMX23BK)

sCD40L	IL-12/23 (p40)
G-CSF	IL-13
GM-CSF	IL-15
IFNγ	IL-17A/CTLA8
IL-1β	IL-18
IL-1Ra	MCP-1/CCL2
IL-2	MIP-1α/CCL3
IL-4	MIP-1β/CCL4
IL-5	TGFα
IL-6	TNFα
IL-8/CXCL8	VEGF-A
IL-10	

Non-Human Primate Cytokine/Chemokine Panel 2

● (Cat. No. PRCYT2MAG40K)
 ● (Cat. No. PRCYT2MAG40K-PX24)
 ● (Bulk Cat. No. PRCY2MG40PMX24BK)
 ● (Cat. No. PRCYT2MAG40K-PX25)
 ● (Bulk Cat. No. PRCY2MG40PMX25BK)

sCD137/4-1BB/TNFRSF9	IL-17E/IL-25
Eotaxin/CCL11	IL-21
sFasL	IL-22
FGF-2/FGF-basic	IL-23
Fractalkine/CX3CL1	IL-28A/IFNλ2
Granzyme A	IL-31
Granzyme B	IL-33/NF-HEV (mature)
IL-1α	IP-10/CXCL10
IL-2	MIP-3α/CCL20
IL-4	Perforin
IL-6	RANTES/CCL5 ▲
IL-16	TNFβ/Lymphotoxin-α (LTA)
IL-17A/CTLA8	

Multi-Species TGFβ – Singleplex

(Cat. No. TGFBMAG-64K-01)
 (Bulk Cat. No. TGFBMAG-64K-01BK)

TGFβ1

Multi-Species TGFβ – 3 Plex ▼

(Cat. No. TGFBMAG-64K-03)

NON-CONFIGURABLE KIT

TGFβ1	TGFβ3
TGFβ2	

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- ▼ Premix panel only
- Bulk indicates Space Saver Packaging

- ▲ These analytes cannot be plexed with other analytes in this panel in serum/plasma
- Requires a protease inhibitor during sample collection
- Requires sample extraction
- ** No standard/QC; autoantibody levels are reported as MFIs

- Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ◻ Available for custom premix
 - Analyte requires a different sample dilution from others in panel
- Analyte not detectable in serum

Metabolism/ Endocrinology

Non-Human Primate Metabolic Hormone

(Cat. No. NHPMHMAG-45K)

Amylin (active)▶	Insulin
C-Peptide	Leptin
Ghrelin (active)▶	MCP-1/CCL2
GIP (total)	Pancreatic Polypeptide (PP)
GLP-1 (active)▶	PYY (total)
Glucagon▶	
IL-6	

Non-Human Primate Pituitary Panel 1

(Cat. No. NHPPT1MG-46K)

ACTH	FSH
Agouti-Related Protein (AgRP)	GH
CNTF	LH
	TSH

Multi-Species Hormone ■ ▲

(Cat. No. MSHMAG-21K)

Cortisol	Testosterone
Estradiol	T3
Progesterone	T4

MOUSE

Immunology

Mouse Cytokine/Chemokine Panel 1

- ☉ (Cat. No. MCYTOMAG-70K)
- 25 (Cat. No. MCYTOMAG-70K-PMX)◆
- 25 (Bulk Cat. No. MCYTOMAG70PMX25BK)◆
- 32 (Cat. No. MCYTOMAG-70K-PX32)
- 32 (Bulk Cat. No. MCYTOMAG70PMX32BK)

Eotaxin/CCL11	IL-13◆
G-CSF◆	IL-15◆
GM-CSF◆	IL-17A/CTLA8◆
IFNγ◆	IP-10/CXCL10◆
IL-1α◆	KC/GRO/CINC-1/CXCL1◆
IL-1β◆	LIF
IL-2◆	LIX
IL-3	MCP-1/CCL2◆
IL-4◆	M-CSF
IL-5◆	MIG/CXCL9
IL-6◆	MIP-1α/CCL3◆
IL-7◆	MIP-1β/CCL4◆
IL-9◆	MIP-2/CXCL2◆
IL-10◆	RANTES/CCL5◆
IL-12 (p40)◆	TNFα◆
IL-12 (p70)◆	VEGF-A

Mouse Cytokine/ Chemokine Panel 2

- ☉ (Cat. No. MECY2MAG-73K)
- 15 (Cat. No. MECY2MAG-73KPX)
- 15 (Bulk Cat. No. MECY2MAG73KPBK)

Erythropoietin (EPO)	IL-17A/F
Exodus-2/CCL21/6Ckine	IL-20
Fractalkine/CX3CL1	MCP-5/CCL12
IFNβ1	MDC/CCL22
IFNγ	MIP-3α/CCL20
IL-11	MIP-3β/CCL19
IL-16	TARC/CCL17
	TIMP-1

Mouse High Sensitivity T Cell

- ☉ (Cat. No. MHSTCMAG-70K)
- 18 (Cat. No. MHSTCMAG-70KPMX)
- 18 (Bulk Cat. No. MHSTCMAG-70KPBK)

GM-CSF	IL-10
IFNγ	IL-12 (p70)
IL-1α	IL-13
IL-1β	IL-17A/CTLA8
IL-2	KC/GRO/CINC-1/CXCL1
IL-4	LIX
IL-5	MCP-1/CCL2
IL-6	MIP-2/CXCL2
IL-7	TNFα

Mouse Th17

- ☉ (Cat. No. MTH17MAG-47K)
- 25 (Cat. No. MT17MAG47K-PX25)
- 25 (Bulk Cat. No. MT17MAG47PMX25BK)

sCD40L	IL-17E/IL-25
GM-CSF	IL-17F
IFNγ	IL-21
IL-1β	IL-22
IL-2	IL-23
IL-4	IL-27
IL-5	IL-28B/IFNλ3
IL-6	IL-31
IL-10	IL-33/NF-HEV (mature)
IL-12 (p70)	MIP-3α/CCL20
IL-13	TNFα
IL-15	TNFβ/Lymphotoxin-α (LTA)
IL-17A/CTLA8	

Mouse CD8+ T Cell

- ☉ (Cat. No. MCD8MAG-48K)
- 15 (Cat. No. MCD8MAG48K-PX15)
- 15 (Bulk Cat. No. MCD8MAG48KPX15BK)

sCD137/4-1BB/TNFRSF9	IL-4
sFas/TNFRSF6	IL-5
sFasL	IL-6
GM-CSF	IL-10
Granzyme B	IL-13
IFNγ	MIP-1β/CCL4
IL-2	RANTES/CCL5
	TNFα

Mouse Soluble Cytokine Receptor

- ☉ (Cat. No. MSCRMAG-42K)

sCD30	sRAGE
sGP130	sTNF RI
sIL-1RI	sTNF RII
sIL-1RII	sVEGFR1/sFit-1
sIL-2Ra	sVEGFR2/sKDR/sFlk-1
sIL-4R	sVEGFR3/sFit-4
sIL-6R	

Mouse MMP Panel 1 (Serum/Plasma samples)

(Cat. No. MMMP1MAG-79K)

MMP-2	MMP-8
MMP-3	

Mouse MMP Panel 2 (Serum/Plasma samples)

(Cat. No. MMMP2MAG-79K)

proMMP-9	MMP-12
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Mouse MMP Panel 3 (Cell culture samples)

(Cat. No. MMMP3MAG-79K)

MMP-2	proMMP-9
MMP-3	MMP-12
MMP-8	

Multi-Species TGFβ – Singleplex

(Cat. No. TGFBMAG-64K-01)
(Bulk Cat. No. TGFBMAG-64K-01BK)

TGFβ1

Multi-Species TGFβ – 3 Plex ▼

(Cat. No. TGFBMAG-64K-03)

NON-CONFIGURABLE KIT

TGFβ1 TGFβ3
TGFβ2

Immune Response

Mouse Immunoglobulin Isotyping

☐ (Cat. No. MGAMMAG-300K)

IgA IgG2b
IgG1 IgG3
IgG2a IgM

Mouse IgE – Singleplex

(Cat. No. MGAMMAG-300E)

IgE

Metabolism/ Endocrinology

Mouse Adipokine (Serum/Plasma samples)

(Cat. No. MADKMAG-71K)

IL-6 PAI-1 (total)
Insulin Resistin
Leptin TNFα
MCP-1/CCL2

Mouse Adipocyte (Cell culture samples)

(Cat. No. MADCYMAG-72K)

Adiponectin PAI-1 (total)
IL-6 Resistin
Leptin TNFα
MCP-1/CCL2

Mouse Adiponectin – Singleplex

(Serum/Plasma samples)

(Cat. No. MADPNMAG-70K-01)

Adiponectin

Mouse Metabolic Hormone

(Cat. No. MMHMAG-44K)

Amylin (active) ▶	Leptin
C-Peptide 2	MCP-1/CCL2
Ghrelin (active) ▶	Pancreatic Polypeptide (PP)
GIP (total)	PYY (total)
GLP-1 (active) ▶	Resistin
Glucagon ▶	TNFα
IL-6	
Insulin	

Mouse Metabolic Hormone Expanded

(Cat. No. MMHE-44K) **NEW**

Amylin (active) ▶	Leptin
C-Peptide 2	MCP-1/CCL2
Ghrelin (active) ▶	Pancreatic Polypeptide (PP)
GIP (total)	PYY (total)
GLP-1 (active) ▶	Resistin
GLP-1 (total) †	Secretin
Glucagon ▶	TNFα
IL-6	
Insulin	

Mouse Myokine

(Cat. No. MMYOMAG-74K)

BDNF	Irisin
Erythropoietin (EPO) ★	LIF
FGF-21	Myostatin/GDF8
Follistatin-like Protein 1 (FSTL1)	Oncostatin-M (OSM)
Fractalkine/CX3CL1	Osteocrin (OSTN)/Musclin
IL-6	Osteonectin/SPARC
IL-15	

Mouse Aging Panel 1

(Cat. No. MAGE1MAG-25K) **NEW**

CTACK/CCL27	Jag1
FGF-21	Leptin
GnRH	Notch1
IL-6	TNFα

Mouse Pituitary

(Cat. No. MPTMAG-49K)

ACTH	LH
BDNF	Prolactin
FSH	TSH
GH	

Multi-Species Hormone ■ ^

(Cat. No. MSHMAG-21K)

Cortisol	Testosterone
Estradiol	T3
Progesterone	T4

Cardiovascular

Mouse CVD Panel 1

(Cat. No. MCVD1MAG-77K)

sCD31/SPECAM-1	ProMMP-9
sE-Selectin	sP-Selectin
sICAM-1	Thrombomodulin
PAI-1 (total)	

Mouse CVD Panel 2

(Cat. No. MCVD2MAG-77K)

sCD40L	Oncostatin M (OSM)
CXCL16	Placental Growth Factor 2
Endocan-1 (ESM-1)	Follistatin (FST)
Follistatin (FST)	Troponin I (TnI)
LIGHT	Troponin T (TnT)

Mouse Acute Phase Panel 2

(Cat. No. MAP2MAG-76K)

α-1-Acid Glycoprotein (AGP)	CRP
α-2-Macroglobulin	Haptoglobin
Adipsin/Factor D	Serum Amyloid P (SAP)

Bone

Mouse Bone

(Cat. No. MBNMAG-41K)

ACTH	Leptin
DKK1	Osteoprotegerin (OPG)
FGF-23	Sclerostin (SOST)
IL-6	TNFα
Insulin	

Cancer

Mouse Angiogenesis / Growth Factor Panel 1

(Cat. No. MAGPMAG-24K)

sALK-1	IL-6
Amphiregulin	IL-17A/CTLA8
Angiopoietin-2 ▲	KC/GRO/CINC-1/CXCL1
Betacellulin ▲	Leptin
sCD31/SPECAM-1 ▲	MCP-1/CCL2
EGF	MIP-1α/CCL3
Endoglin	Placental Growth Factor 2
Endothelin-1	Prolactin
sFasL	SDF-1/CXCL12
FGF-2/FGF-basic	TNFα
Follistatin (FST)	VEGF-A
G-CSF	VEGF-C
HGF	VEGF-D
IL-1β	

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 - Free and total
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- Requires sample extraction
- ** No standard/QC; autoantibody levels are reported as MFIs

- Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ☐ Available for custom premix
 - Analyte requires a different sample dilution from others in panel
 - Analyte not detectable in serum

Neuroscience

Mouse Amyloid Beta

(Cat. No. MABMAG-83K)

Amyloid beta 1-40	Amyloid beta 1-42
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Mouse Neuropeptide ■ ^

(Cat. No. RMNPMAG-83K)

α-MSH	Oxytocin
β-Endorphin	Substance P
Neurotensin	

Toxicity

Mouse Kidney Injury Panel 1

(Cat. No. MKI1MAG-94K)

β-2-Microglobulin	Renin
IP-10/CXCL10	TIMP-1
KIM-1	VEGF-A

Mouse Kidney Injury Panel 2

(Cat. No. MKI2MAG-94K)

Clusterin	NGAL/Lipocalin-2
Cystatin C	Osteopontin (OPN)
EGF	

RAT

Immunology

Rat Cytokine/Chemokine

- ☐ (Cat. No. RECYTMAG-65K)
 27 (Cat. No. RECYMAG65K27PMX)
 27 (Bulk Cat. No. RECYMAG65PMX27BK)

EGF	IL-10
Eotaxin/CCL11	IL-12 (p70)
Fractalkine/CX3CL1	IL-13
G-CSF	IL-17A/CTLA8
GM-CSF	IL-18
KC/GRO/CINC-1/ CXCL1	IP-10/CXCL10
IFNγ	Leptin
IL-1α	LIX
IL-1β	MCP-1/CCL2
IL-2	MIP-1α/CCL3
IL-4	MIP-2/CXCL2
IL-5	RANTES/CCL5
IL-6	TNFα
	VEGF

Multi-Species TGFβ – Singleplex

(Cat. No. TGFBMAG-64K-01)
 (Bulk Cat. No. TGFBMAG-64K-01BK)

TGFβ1

Multi-Species TGFβ – 3 Plex ▼

(Cat. No. TGFBMAG-64K-03)

NON-CONFIGURABLE KIT

TGFβ1	TGFβ3
TGFβ2	

Metabolism/ Endocrinology

Rat Adipokine (Serum/Plasma samples)

(Cat. No. RADPKMAG-80K)

IL-1β	MCP-1/CCL2
IL-6	PAI-1 (total)
Insulin	TNFα
Leptin	

Rat Adipocyte (Cell culture samples)

(Cat. No. RADPCMAG-82K)

Adiponectin	MCP-1/CCL2
IL-1β	PAI-1 (total)
IL-6	TNFα
Leptin	

Rat Metabolic Hormone

(Cat. No. RMHMAG-84K)

Amylin (active)▶	Insulin
C-Peptide 2	Leptin
Ghrelin (active)▶	MCP-1/CCL2
GIP (total)	Pancreatic Polypeptide (PP)
GLP-1 (active)▶	PYY (total)
Glucagon▶	TNFα
IL-6	

Rat Myokine

(Cat. No. RMYOMAG-88K)

BDNF	IL-15
Erythropoietin (EPO)	Irisin
FGF-21	LIF
Follistatin-like Protein 1 (FSTL1)	Myostatin/GDF8
Fractalkine/CX3CL1	Osteocrin (OSTN)/ Musclin
IL-6	Osteonectin/SPARC

Rat Pituitary

(Cat. No. RPTMAG-86K)

ACTH	LH
BDNF	Prolactin
FSH	TSH
GH	

Rat Stress Hormone ■

(Cat. No. RSHMAG-69K)

ACTH	Melatonin^
Corticosterone^	

Multi-Species Hormone ■ ^

(Cat. No. MSHMAG-21K)

Cortisol	Testosterone
Estradiol	T3
Progesterone	T4

Rat Thyroid

(Cat. No. RTHYMAG-30K)

T3^	TSH
T4^	

Cardiovascular

Rat Cardiac Injury Panel 1

(Cat. No. RCI1MAG-87K)

Cardiac Troponin I (cTnI)	FABP3
Cardiac Troponin T (cTnT)	Follistatin-like Protein 1 (FSTL1)
Creatine Kinase Muscle (CKM)	Myosin Light Chain 3 (MYL3)
	TIMP-1

Rat Vascular Injury Panel 1 (Serum/Plasma samples)

(Cat. No. RV1MAG-26K)

Caveolin-1	IL-6
Connective Tissue Growth Factor (CTGF)	MCP-1/ CCL2
KC/GRO/CINC-1/ CXCL1	PAI-1 (total)
	TIMP-1
	TNF α
	VEGF

Rat Vascular Injury Panel 2 (Serum/Plasma samples)

(Cat. No. RV2MAG-26K)

Adiponectin	sICAM-1
sE-Selectin	

Rat Vascular Injury Panel 3 (Serum/Plasma samples)

(Cat. No. RV3MAG-26K)

α -1-Acid Glycoprotein (AGP)	Haptoglobin
α -2-Macroglobulin (A2M)	

Bone

Rat Bone Panel 1 (Serum/Plasma samples)

(Cat. No. RBN1MAG-31K)

ACTH	Leptin
DKK1	Osteoprotegerin (OPG)
FGF-23	PTH
Insulin	Sclerostin (SOST)

Neuroscience

Rat Neuropeptide ■ ^

(Cat. No. RMNPMAG-83K)

α -MSH	Oxytocin
β -Endorphin	Substance P
Neurotensin	

Toxicity

Rat Kidney Toxicity Panel 1 (Urine samples)

(Cat. No. RKTX1MAG-37K)

Clusterin	Osteopontin (OPN)
GST α [^]	TIMP-1
IP-10/CXCL10	VEGF-A
KIM-1	

Rat Kidney Toxicity Panel 2 (Urine samples)

(Cat. No. RKTX2MAG-37K)

α -1-Acid Glycoprotein (AGP)	Cystatin C
Albumin [^]	EGF
β -2-Microglobulin	NGAL/ Lipocalin-2

Rat Liver Injury

(Cat. No. RLI1MAG-92K)

5'NT/CD73	GST α
ARG1	SDH
GOT1	

OTHER SPECIES

Immunology

Bovine Cytokine/Chemokine Panel 1

● (Cat. No. BCYT1-33K)
15 (Cat. No. BCYT1-33K-PX15)
15 (Bulk Cat. No. BCYT1-33K-PXBK15)

IFN γ	IL-36RA/IL-1F5
IL-1 α	IP-10/CXCL10
IL-1 β	MCP-1/CCL2
IL-4	MIP-1 α /CCL3
IL-6	MIP-1 β /CCL4
IL-8/CXCL8	TNF α
IL-10	VEGF-A
IL-17A/CTLA8	

Canine Cytokine/Chemokine

● (Cat. No. CCYTOMAG-90K)
13 (Cat. No. CCYTMG-90K-PX13)
13 (Bulk Cat. No. CCYTMG90KPX13BK)

GM-CSF	IL-15
IFN γ	IL-18
IL-2	IP-10/CXCL10
IL-6	KC-like
IL-7	MCP-1/CCL2
IL-8/CXCL8	TNF α
IL-10	

Equine Cytokine/Chemokine

● (Cat. No. EQCYTMAG-93K)
23 (Cat. No. EQCYTMG-93KPX23)
23 (Cat. No. EQCTMG93KPX23BK)

Eotaxin/CCL11	IL-6
FGF-2/FGF-basic	IL-8/CXCL8
Fractalkine/CX3CL1	IL-10
G-CSF	IL-12 (p70)
GM-CSF	IL-13
GRO	IL-17A/CTLA8
IFN γ	IL-18
IL-1 α	IP-10/CXCL10
IL-1 β	MCP-1/CCL2
IL-2	RANTES/CCL5
IL-4	TNF α
IL-5	

Legend key for MILLIPLEX® kits

- + Analytes which cannot be plexed together:
 - Active and total
 - Free and total
- ▼ Premix panel only
- Bulk indicates Space Saver Packaging
- Requires a protease inhibitor during sample collection
- Requires sample extraction
- ^ Competitive assay format
- Available for custom premix

Feline Cytokine/Chemokine ▼

- 19 (Cat. No. FCYTMAG-20K-PMX)
 19 (Bulk Cat. No. FCYTMAG20KPX19BK)
NON-CONFIGURABLE KIT

sFAS/TNFRSF6	IL-13
Fit3 Ligand	IL-18
GM-CSF	KC/GRO/CINC-1/ CXCL1
IFN γ	MCP-1/CCL2
IL-1 β	PDGF-BB
IL-2	RANTES/CCL5
IL-4	SCF
IL-6	SDF-1/CXCL12
IL-8/CXCL8	TNF α
IL-12 (p40)	

Ovine Cytokine/Chemokine Panel 1 **NEW**

- 19 (Cat. No. SCYT1-91K)
 14 (Cat. No. SCYT1-91K-PX14)
 14 (Bulk Cat. No. SCYT1-91K-PXBK14)

IFN γ	IL-17A/CTLA8
IL-1 α	IL-36RA/IL-1F5
IL-1 β	IP-10/CXCL10
IL-4	MIP-1 α /CCL3
IL-6	MIP-1 β /CCL4
IL-8/CXCL8	TNF α
IL-10	VEGF-A

Porcine Cytokine/Chemokine

- 19 (Cat. No. PCYTMAG-23K)
 15 (Cat. No. PCYTMAG-23K-13PX)
 15 (Bulk Cat. No. PCYTMAG23PMX13BK)

GM-CSF	IL-6
IFN γ	IL-8/CXCL8
IL-1 α	IL-10
IL-1 β	IL-12
IL-1Ra	IL-18
IL-2	TNF α
IL-4	

Multi-Species TGF β – Singleplex

- (Cat. No. TGFBMAG-64K-01)
 (Bulk Cat. No. TGFBMAG-64K-01BK)

TGF β 1

Multi-Species TGF β – 3 Plex ▼

- (Cat. No. TGFBMAG-64K-03)
NON-CONFIGURABLE KIT

TGF β 1	TGF β 3
TGF β 2	

**Metabolism/
Endocrinology****Canine Gut Hormone**

- (Cat. No. CGTMAG-98K)

Amylin (total) †	Insulin
Ghrelin (active) †	Leptin
GIP (total)	Pancreatic Polypeptide (PP)
GLP-1 (active) †	PYY (total)
Glucagon	

Canine Pituitary Expanded Panel

- (Cat. No. CANPIT-96K)

ACTH	LH
FSH	Prolactin
GH	TSH

Multi-Species Hormone ■ ^

- (Cat. No. MSHMAG-21K)

Cortisol	Testosterone
Estradiol	T3
Progesterone	T4

Toxicity**Canine Kidney Toxicity Expanded Panel 1 (Urine samples)**

- (Cat. No. CKT1MAG-97K)

Clusterin	MCP-1/CCL2
Cystatin C	NGAL/Lipocalin-2
IL-8/CXCL8	Osteopontin (OPN)
KIM-1	

Canine Kidney Toxicity Panel 2 (Urine samples)

- (Cat. No. CKT2MAG-97K)

Albumin	RBP4
β -2-Microglobulin	TFF-3

Legend key for MILLIPLEX® kits

- † Analytes which cannot be plexed together:
 - Active and total
 - Free and total
- ▼ Premix panel only
- Bulk indicates Space Saver Packaging
- ‡ Requires a protease inhibitor during sample collection
- Requires sample extraction
- ^ Competitive assay format
- Available for custom premix


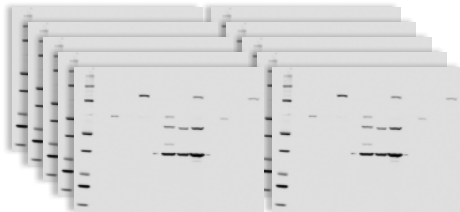
Cell Signaling MILLIPLEX® Assays

Uncover how your cells communicate

We offer three kit formats in our MILLIPLEX® Cell Signaling portfolio to meet your diverse needs:

1. Phosphoprotein or total protein (or mixed) multiplex assays (≥ 3 -plex)
2. Same protein phosphoprotein and total protein in the same assay (2-plex)
3. Singleplex MAPmate™ kits you can use as loading controls in multiplex kits

Our Cell Signaling multiplex kits give you the gift of time and sample, for example:

10 Proteins 12 Samples	MILLIPLEX® Assays	Western Blots
Number of 96-well plates or acrylamide gels		
Number of samples per plate or gel	12 (>40 samples can be measured in duplicate)	12
Total data points per plate or gel	120 (>400 data points can be measured per plate)	12
Total time to result	2.5 hours + overnight incubation (~18 hr)	Days/weeks
Amount of protein required (µg)	1-25 µg of total protein per well (all 10 proteins measured in same sample)	10-50 µg total protein per lane (100-500 µg total protein for 10 gels)

Akt/mTOR (Phosphoprotein) – 11 Plex

(Cat. No. 48-611MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Akt/PKB	✓ (Ser473)	H, M, R	
GSK3α	✓ (Ser21)	H, M, R	
GSK3β	✓ (Ser9)	H, M, R	
IGF1R	✓ (Tyr1135/1136)	H, M	
IR	✓ (Tyr1162/1163)	H	
IRS1	✓ (Ser636)	H, M, R	
mTOR	✓ (Ser2448)	H, M, R	
p70S6 Kinase	✓ (Thr389/412)	H, M, R	
PTEN	✓ (Ser380)	H, M, R	
RPS6	✓ (Ser235/236)	H, M, R	
TSC2	✓ (Ser939)	H, M, R	

Akt/mTOR (Total) – 11 Plex

(Cat. No. 48-612MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Akt/PKB	✓	H, M, R	
GSK3α	✓	H, M, R	
GSK3β	✓	H, M, R	
IGF1R	✓	H, M, R	
IR	✓	H, R	
IRS1	✓	H, M, R	
mTOR	✓	H, M, R	
p70S6 Kinase	✓	H, M, R	
PTEN	✓	H, M, R	
RPS6	✓	H, M, R	
TSC2	✓	H, M, R	

- Can be plexed with other 2 Plexes
- * Cannot plex with other phospho Akt
- ▼ Premix panel only

AB1: Uses Assay Buffer 1
AB2: Uses Assay Buffer 2

H Human
M Mouse
R Rat

Early Apoptosis – 7 Plex(Cat. No. 48-669MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Akt/PKB		✓ (Ser473)	H, M, R
BAD		✓ (Ser112)	H, M
Bcl-2		✓ (Ser70)	H
Active Caspase 8	✓		H
Active Caspase 9	✓		H
JNK/SAPK1		✓ (Thr183/Tyr185)	H, M, R
p53		✓ (Ser46)	H

Human Bcl-2 Family Apoptosis Panel 1 - 6 Plex(Cat. No. 48-682MAG) AB1 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
BAD	✓	✓ (Ser112)	H
BAX	✓		H
Bcl-xL/BAD (interaction)	✓		H
BIM	✓		H
Mcl-1/BIM (interaction)	✓		H

Human Bcl-2 Family Apoptosis Panel 2 - 4 Plex(Cat. No. 48-683MAG) AB1 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Bcl-2	✓		H
Bcl-xL	✓		H
Mcl-1	✓		H
NOXA/Mcl-1 (interaction)	✓		H

Human DNA Damage/Genotoxicity – 7 Plex(Cat. No. 48-621MAG) AB1 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
ATR	✓		H
Chk1		✓ (Ser345)	H, M, R
Chk2		✓ (Thr68)	H
H2A.X		✓ (Ser139)	H, M, R
MDM2	✓		H, M, R
p21	✓		H
p53		✓ (Ser15)	H

MAPK/SAPK (Phosphoprotein) – 10 Plex(Cat. No. 48-660MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
ATF2		✓ (Thr71)	H, M
c-Jun		✓ (Ser73)	H, M, R
Erk/MAPK 1/2		✓ (Thr185/Tyr187)	H, M, R
HSP27		✓ (Ser78)	H
JNK/SAPK1		✓ (Thr183/Tyr185)	H, M, R
MEK1		✓ (Ser222)	H, M, R
MSK1		✓ (Ser212)	H, M
p38/SAPK2A/B		✓ (Thr180/Tyr182)	H, M, R
p53		✓ (Ser15)	H
STAT1		✓ (Tyr701)	H, M

Human RTK (Phosphoprotein)**(Choose Analytes that Meet your Needs)**

(Cat. No. HPRTKMAG-01K) AB1

Analyte	Total	Phosphorylated	
c-Kit		(pan Tyr)	H
c-Met/HGFR		(pan Tyr)	H
ErbB1/EGFR		(pan Tyr)	H
ErbB2/HER2		(pan Tyr)	H
ErbB3/HER3		(pan Tyr)	H
ErbB4/HER4		(pan Tyr)	H
FGFR1		(pan Tyr)	H
Flt3		(pan Tyr)	H
IGF1R		(pan Tyr)	H
IR		(pan Tyr)	H
M-CSFR		(pan Tyr)	H
PDGFRα		(pan Tyr)	H, M, R
PDGFRβ		(pan Tyr)	H
TIE1		(pan Tyr)	H
TIE2		(pan Tyr)	H
VEGFR1/Flt-1		(pan Tyr)	H
VEGFR2/KDR/Flk-1		(pan Tyr)	H
VEGFR3/Flt-4		(pan Tyr)	H, M, R

Multi-Pathway (Phosphoprotein) – 9 Plex(Cat. No. 48-680MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Akt/PKB		✓ (Ser473)	H, M, R
CREB		✓ (Ser133)	H, M, R
Erk/MAPK 1/2		✓ (Thr185/Tyr187)	H, M, R
JNK/SAPK1		✓ (Thr183/Tyr185)	H, M, R
NFκB		✓ (Ser536)	H, M
p38/SAPK2A/B		✓ (Thr180/Tyr182)	H, M, R
p70S6 Kinase		✓ (Thr389/412)	H, M, R
STAT3		✓ (Ser727)	H, M, R
STAT5A/B		✓ (Tyr694/699)	H, M, R

Multi-Pathway (Total) – 9 Plex(Cat. No. 48-681MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Akt/PKB	✓		H, M, R
CREB	✓		H, M, R
Erk/MAPK 1/2	✓		H, M, R
JNK/SAPK1	✓		H, M, R
NFκB	✓		H, M, R
p38/SAPK2A/B	✓		H, M, R
p70S6 Kinase	✓		H, M, R
STAT3	✓		H, M, R
STAT5A/B	✓		H, M, R

NFκB — 6 Plex(Cat. No. 48-630MAG) AB1 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
c-Myc	✓		H
FADD		✓ (Ser194)	H
IκBa		✓ (Ser32)	H
IKKα/β		✓ (Ser177/181)	H
NFκB		✓ (Ser536)	H, M
TNFR1	✓		H

Protein Translation — 6 Plex(Cat. No. 48-655MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
eIF2a		✓ (Ser51)	H, M, R
eIF-4B		✓ (Ser422)	H, M, R
eIF-4E		✓ (Ser209)	H, M, R
eIF-4G		✓ (Ser1108)	H, M, R
4E-BP1	✓	✓ (Thr37/46)	H, M, R

Human Ras-Raf Oncoprotein — 6 Plex(Cat. No. 48-684MAG) AB2 ▼ **NON-CONFIGURABLE KIT** **NEW**

Analyte	Total	Phosphorylated	
BRAF		✓ (Ser446)	H, M, R
CRAF		✓ (Ser338)	H, M, R
MEK1		✓ (Ser217/Ser221)	H, M, R
Ras	✓		H, M, R
RasG12D	✓		H
RasG12V	✓		H

Src Family Kinase Active Site (Phosphoprotein) — 8 Plex(Cat. No. 48-650MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Blk		✓ (Tyr389)	H
Fgr		✓ (Tyr412)	H, R
Fyn		✓ (Tyr420)	H, M, R
Hck		✓ (Tyr411)	H, M
Lck		✓ (Tyr394)	H, M, R
Lyn		✓ (Tyr397)	H, R
Src		✓ (Tyr419)	H, M, R
Yes		✓ (Tyr421)	H, M, R

STAT (Phosphoprotein) — 5 Plex(Cat. No. 48-610MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
STAT1		✓ (Tyr701)	H, M
STAT2		✓ (Tyr690)	H
STAT3		✓ (Tyr705)	H, M, R
STAT5A/B		✓ (Tyr694/699)	H, M, R
STAT6		✓ (Tyr641)	H

T-Cell Receptor (Phosphoprotein) — 7 Plex(Cat. No. 48-690MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
CD3ε		✓ (pan Tyr)	H
CREB		✓ (Ser133)	H, M, R
Erk/MAPK 1/2		✓ (Thr185/Tyr187)	H, M, R
LAT		✓ (pan Tyr)	H
Lck		✓ (pan Tyr)	H, M, R
Syk		✓ (pan Tyr)	H
ZAP-70		✓ (pan Tyr)	H

TGFβ — 6 Plex(Cat. No. 48-614MAG) AB2 ▼ **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Akt/PKB		✓ (Ser473)	H, M, R
Erk/MAPK 1/2		✓ (Thr185/Tyr187)	H, M, R
SMAD2		✓ (Ser465/467)	H, M, R
SMAD3		✓ (Ser423/425)	H, M, R
SMAD4	✓		H, M, R
TGFβRII	✓		H

Akt Phospho/Total — 2 Plex(Cat. No. 48-618MAG) AB2 ▼ * ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Akt/PKB		✓ (Ser473)	H, M, R
Akt/PKB	✓		H, M, R

Akt1 Phospho/Total — 2 Plex(Cat. No. 48-631MAG) AB2 ▼ * ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Akt1		(Ser473)	H, M, R
Akt1	✓		H, M, R

- Can be plexed with other 2 Plexes
- * Cannot plex with other phospho Akt
- ▼ Premix panel only

AB1: Uses Assay Buffer 1
AB2: Uses Assay Buffer 2

H Human
M Mouse
R Rat

Akt2 Phospho/Total – 2 Plex(Cat. No. 48-632MAG) AB2 ▼ * ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Akt2		(Ser474)	H, M, R
Akt2	✓		H, M, R

Akt3 Phospho/Total – 2 Plex(Cat. No. 48-633MAG) AB2 ▼ * ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Akt3		(Ser472)	H, M, R
Akt3	✓		H, M, R

CREB Phospho/Total – 2 Plex(Cat. No. 48-628MAG) AB2 ▼ ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
CREB		✓ (Ser133)	H, M, R
CREB	✓		H, M, R

Erk/MAPK 1/2 Phospho/Total – 2 Plex(Cat. No. 48-619MAG) AB2 ▼ ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
Erk/MAPK 1/2		✓ (Thr185/Tyr187)	H, M, R
Erk/MAPK 1/2	✓		H, M, R

IRS1 Phospho/Total – 2 Plex(Cat. No. 48-626MAG) AB2 ▼ ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
IRS1		✓ (Ser636)	H, M
IRS1	✓		H, M, R

JNK Phospho/Total – 2 Plex(Cat. No. 48-622MAG) AB2 ▼ ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
JNK/SAPK1		✓ (Thr183/Tyr185)	H, M, R
JNK/SAPK1	✓		H, M, R

mTOR Phospho/Total – 2 Plex(Cat. No. 48-625MAG) AB2 ▼ ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
mTOR		✓ (Ser2448)	H, M, R
mTOR	✓		H, M

p38 Phospho/Total – 2 Plex(Cat. No. 48-624MAG) AB1 or AB2 ▼ ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
p38/SAPK2A/B		✓ (Thr180/Tyr182)	H, M, R
p38/SAPK2A/B	✓		H, M, R

STAT3 Phospho/Total – 2 Plex(Cat. No. 48-623MAG) AB2 ▼ ●● **NON-CONFIGURABLE KIT**

Analyte	Total	Phosphorylated	
STAT3		✓ (Tyr705)	H, M, R
STAT3	✓		H, M, R

MAPmate™ Singleplex Loading Control Assays

Plex loading control MAPmate™ assays into existing MILLIPLEX® Cell Signaling Panels to enhance the panel within the guidelines provided in the protocols. Our Cell Signaling Buffer and Detection Kit (48-602MAG), may be purchased if additional buffers are required.

Our custom immunoassay team can assist with differently configured cell signaling assays. For more information on this program, contact your sales specialist.

MAPmate™ Kits	Species Homology (Buffer)	Cat. No.
β-Tubulin (total) MAPmate™	H, M, R (AB2)	46-713MAG
GAPDH (total) MAPmate™	H (AB2)	46-667MAG

- Can be plexed with other 2 Plexes
 - * Cannot plex with other phospho Akt
 - ▼ Premix panel only
- AB1:** Uses Assay Buffer 1 **H** Human
AB2: Uses Assay Buffer 2 **M** Mouse
R Rat

Custom MILLIPLEX® Assay Development

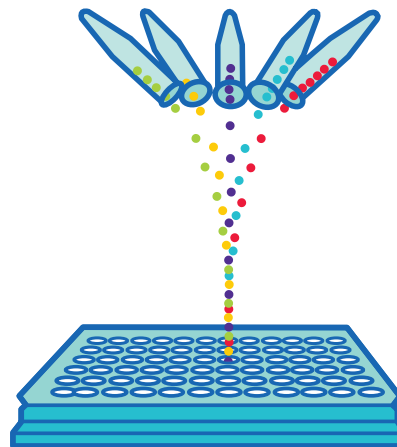
Accelerate your research with customized MILLIPLEX® assays designed for YOUR samples. We offer the following services:

- Develop new analytes
- Multiplex new analytes with existing analytes
- Rearrange existing analytes into new panels
- Design and validate assays on your samples
- Kit bridging for lot-to-lot reproducibility

Get started today!



Download our new custom menu of services brochure for a complete listing of services at sigmaaldrich.com/customassay



STEP 1

Visit either link on this page and "Request Information"; fill in your contact information along with the analyte full protein names, species and samples types; submit your request

STEP 2

Receive work plan and quotation from sales specialist

STEP 3

Place purchase order and participate in project kickoff call



SMCxPRO™

Single analyte detection customized.

When your assays require detection of single analytes only, consider custom assay services for SMCxPRO™ and ELISA plate readers. Leverage sub-picogram detection capabilities of SMCxPRO™ to quantify proteins previously undetectable in samples. For more information on SMCxPRO™, visit sigmaaldrich.com/customassay.



ELISA Plate Reader

Custom MILLIPLEX® Analytes

Analyte	Species (Sample Types)
α-1 Antichymotrypsin	H (S/P)
α-2 Antiplasmin	H (S/P)
AGP (α 1-Acid Glycoprotein)	H (U)
Akt/PKB (Ser473)	H, M, R (Lys)**
Akt/PKB (total)	H, M, R (Lys)**
Angiotensin-1	H (S/P, T)
Anti-Cardiolipin antibody IgA	H (S/P)
Anti-EBV VCA IgG	H (S/P)
Anti-Phosphatidylserine IgG, IgM	H (S/P)
Anti-β2 Glycoprotein IgA, IgG, IgM	H (S/P)
Apolipoprotein A-IV	H (S/P)
APRIL	H (S/P)
Arginase 1 for Mouse Serum/plasma	M (S/P)
AXL (s)	M, R (S/P)
BAD (Ser112)	H, M (Lys)**
BAFF	H (S/P)
BCMA (B-cell Maturation Antigen)	H (S/P)
BMP-9	M, R (S/P)
BRD4	H, M, R (Lys)
Calprotectin/S100A8	H (S/P)
Calprotectin/S100A8/S100A9 Heterodimer	H (S/P)
Caspase 3 (Active)	H, M (Lys)**
CBP	H, M, R (Lys)
CD13 Aminopeptidase N	H (S/P)
CD163 (s)	H (S/P)
Ceruloplasmin	H (U)
Cleaved PARP (total)	H (Lys)**
Collagen 1	H (Mul)
CSTB (Cystatin B)	H (S/P)
Elafin	H (S/P)
ERK/MAPK 1/2 (Thr185/Tyr187)	H, M, R (Lys)**
ERK/MAPK 1/2 (total)	H, M, R (Lys)**
Galectin-1	H, M, R (S/P)
Galectin-3	M, R (S/P)
Gas-6	H, M, R (S/P)
Granzyme A for Mouse Serum/plasma	M (S/P)
Gremlin	M, R (S/P)

Analyte	Species (Sample Types)
GRP78	H (S/P)
HGFR/cMET	M, R (S/P)
I-FABP	H (S/P)
IGF-1	M, R (S/P)
IL-18	M, R (S/P)
IL-33R/ST2 (Suppressor of Tumorigenicity 2)	H (S/P)
JNK/SAPK1 (Thr183/Tyr185)	H, M (Lys)**
JNK/SAPK1 (total)	H, M (Lys)**
LCAT (Lecithin-cholesterol Acyltransferase)	H (S/P)
LPGDS (Lipocalin like prostaglandin D synthase)	H (U)
Lysozyme C	H (S/P)
MIP-1γ	M, R (S/P)
mTOR (Ser2448)	H, M, R (Lys)**
mTOR (total)	H, M, R (Lys)**
p300	H, M, R (Lys)
p38/SAPK2A/B (Thr180/Tyr182)	H, M, R (Lys)**
p38/SAPK2A/B (total)	H, M, R (Lys)**
Periostin	M, R (S/P)
PODXL	M, R (S/P)
Prealbumin (Transthyretin)	H (S/P)
Procalcitonin	H, M, R (S/P)
Semaphorin 3A	H (Sup)
SM22/Transgelin	H (S/P)
STAT1 (total)	H, M (Lys)**
STAT1 (Tyr701)	H, M (Lys)**
sTM (s Thrombomodulin)	H (S/P)
Tenascin C	M, R (S/P)
Thyroxine Binding Globulin	H (S/P)
TRAIL	M, R (S/P)
Transferrin	H (U)
Vasopressin Plasma	M, R (P)
VE Cadherin/Cadherin 5	H (S/P)
Vitronectin Serum/Plasma	M, R (S/P)
Wnt-3a	H (S/P, Sup, Lys)
Zinc-α-2 Glycoprotein	H (S/P)

Species Key

H Human
M Mouse
R Rat

Sample Type Key

Lys Cell/Tissue Lysates
Mul Multiple Types
S/P Serum/Plasma
Sup Cell/Tissue Culture Supernatants
T Tears
U Urine

Notations

s Soluble analyte
****** No standard/QC; levels reported as MFIs

Multiplexed Biomarker Analysis using Luminex® Systems

Driving Assay Consistency

Enhance your data generation with our Luminex® instrument solutions. Combined with the largest portfolio of multiplex analytes available, we provide you the power of Luminex® xMAP® technology, the most trusted, widely used platform for biomarker screening and protein

analysis. As a Luminex® partner, we are 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 quickly and reliably.

Luminex® xMAP® technology offers many advantages compared to other immunoassay methods:

- **Multiplexing:** Data generated simultaneously is less prone to user error, enabling the end-user to construct cleaner data sets to explore multiple parameters.
- **Low sample volume:** With minimal hands-on time, screen more than 40 analytes in a single sample using a maximum of 25 µL per well.
- **Magnetic bead-based format:** Responds rapidly and efficiently to a magnetic field, enabling better and faster washing techniques, including high-throughput washing options.
- **Reproducibility:** High-volume production of xMAP® microspheres allows assay standardization that solid-phased flat arrays cannot provide.
- **Speed/high-throughput:** Simultaneously measure the concentration of a large number of different analytes in a single sample, in 96- or 384-well format, enabling you to do your work faster, gaining the early and comprehensive data so critical to your work.



Specifications

Instrument	FLEXMAP 3D® System	Luminex® 200™ System	MAGPIX® System
Cat. No.	40-014	40-012	40-072
Description	The fastest, most flexible platform.	Gen 2 of the original widely used Luminex® 100™ System.	The newest most cost-effective model for running protein assays.
Software	xPONENT® 4.3	xPONENT® 4.3	xPONENT® 4.3
Optics	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	100 (80 for MagPlex®)	50
Read Time (Microtiter Plate)	~20 min/96-well plate ~75 min/384-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
Dimensions including PC (W x D x H)	110 x 62 x 63 cm	115 x 60 x 50 cm	70 x 60 x 50 cm
Weight (Analyzer)	77.1 kg (170 lbs)	49 kg (113 lbs)	17.5 kg (38.5 lbs)
CFR 21 Part 11	✓	✓	✓
Automation	✓	✓	✓
Security	✓	✓	✓
LIS	✓	✓	✓

All systems run on the Luminex® xPONENT® 4.3 data acquisition platform providing a consistent experience, from data input to results, no matter which instrument a scientist uses for their research. This software adapts to fit the capabilities of each platform.

Instrument and Kit Service, Consumables and Training

As a preferred partner of Luminex® instruments, we supply full service at point of sale and throughout your research. Multi-level service contracts provide cover from Luminex® engineers tailored to the use of your new

instrument. Our staff can help you install the instrument, train you to use your platform, and continue to supply you with the appropriate reagents to run it as required.

Service Contracts

Luminex® System 1 Year Warranty Plans	Unlimited Remote Support	Unlimited Emergency Repair	1 (PM)	2 (PM)	Cat. No.
FLEXMAP 3D®, Bronze	•		•		SVCLUMBRZFM3D
FLEXMAP 3D®, Silver	•	○	•		SVCLUMSLVFM3D
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 days 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

Consumables

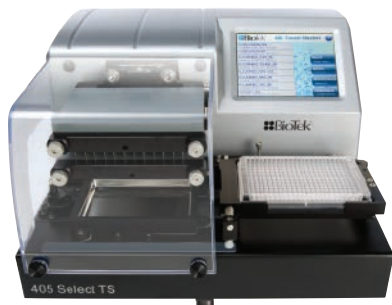
Description	Pack Size	Cat. No.
MAGPIX® Drive Fluid	4 pack, 750 mL ea	MPXDF-4PK
Sheath Fluid for Luminex® 100/200™ & FLEXMAP 3D® Systems	20 L	40-50015
Sheath Fluid (20x concentrate)	1 L	40-50018
MAGPIX® Calibration Kit	25 uses	MPX-CAL-K25
MAGPIX® Performance Verification Kit	25 uses	MPX-PVER-K25
Luminex® 200™ Calibration Kit (xPONENT®)	25 uses	LX2R-CAL-K25
Luminex® 200™ Performance Verification Kit (xPONENT®)	25 uses	LX2R-PVER-K25
FLEXMAP 3D® Calibration Kit	25 uses	F3D-CAL-K25
FLEXMAP 3D® Performance Verification Kit	25 uses	F3D-PVER-K25

Training/IQOQ

Description	Cat. No.
MAGPIX® System Onsite Installation and Training	TRONSITE-MAGPIX
MAGPIX® IQ/OQ	VP-MAGPIX-XP0N-IQOQ
Luminex® 200™ System Onsite Installation and Training	TRONSITE-LX200
Luminex® 200™ IQ/OQ	VP-LX-XP0N-IQOQ
FLEXMAP 3D® System Onsite Installation and Training	TRONSITE-FM3D
FLEXMAP 3D® IQ/OQ	VP-FM3D-XP0N-IQOQ
MILLIPLEX® Analyst 5.1 Software Onsite Installation and Training	TRONSITE-MA
BioTek® Washer Onsite Installation and Training	TRONSITE-BIOTEK
MILLIPLEX® Kits Training	TRONSITE-MPX

BioTek® Washing & Dispensing Solutions for MILLIPLEX® Assays

In partnership with BioTek®, we offer the latest advancements in fully automated magnetic separation for 96- and 384-well plate washing systems. The MultiFlo™ FX allows users to dispense kit reagents, ensuring excellent assay reproducibility.



BioTek® 405™ Select TS (touch screen) Washer

BioTek® washer advantages:

- Fast and hands-free full plate washing
- The BioTek® 405™ TS models in 96- and 384-well options include an intuitive touch-screen user interface and the Ultrasonic Advantage™ for easy washing of the toughest sample types

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® MultiFlo™ FX Automated Reagent Dispenser

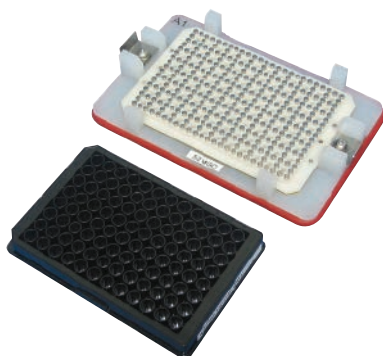


The perfect instrument for MILLIPLEX® 384-well Assays

- Fully automated process, just load your standards, QCs and samples and walk away
- Optimized for both 384- and 96-well plates
- The performance of a larger robot for a fraction of the cost
- Self-contained, programmable reagent dispenser enables precise liquid delivery

Description	Cat. No.
BioTek® MultiFlo™ FX Automated Reagent Dispenser	40-099

Handheld Magnetic Separator Block for 96-well Flat Bottom or Conical Well Plates



A low-cost alternative to automated plate washers without loss of assay performance. Simply decant or “flick” the liquid contents and blot the remainder on a paper towel. Magnetic beads are securely held in the wells by the block magnets.

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

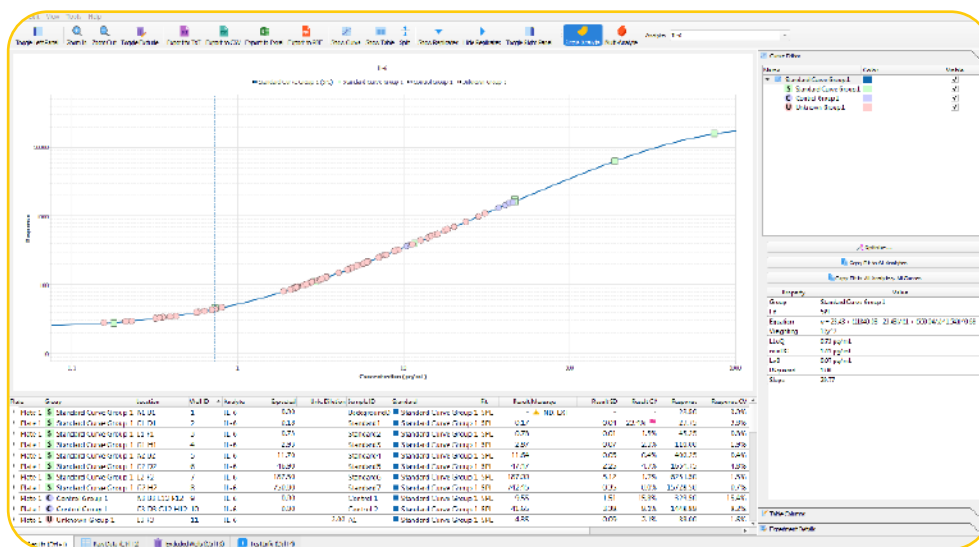
Belysa™ Immunoassay Curve Fitting Software

(Cat. No. 40-122)

Our newest proprietary software package for curve fitting, examination and comparison of data acquired from a variety of immunoassay platforms. Belysa™ has been designed to provide an easy-to-use tool to optimize curve fit and confirm the integrity of data within a plate or across plates from multiple runs.

Belysa™ Software Key Features and Benefits

- User friendly interface
- Automatic and manual curve fitting (4pl, 5pl, linear, cubic spline)
- Curve comparison tools
- Rules-based data flagging
- Suitable for use with RUO Luminex® instruments, SMCxPRO™, and ELISA .csv acquisition files
- Win7/10 compatible

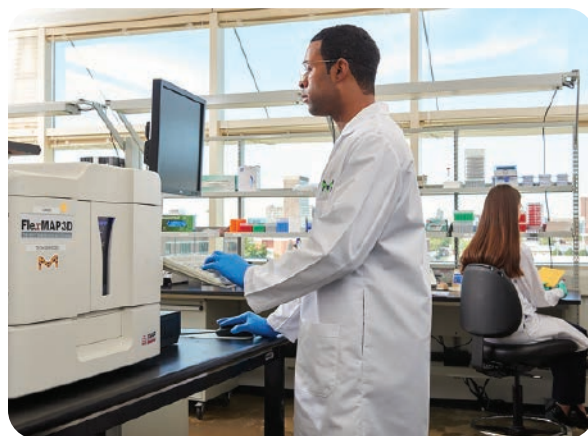


Example 1. Belysa™ standard curve and data analysis: IL-6 MILLIPLEX® from a Luminex® xPONENT®.csv output file

As shown in Example 1, a .csv output file is simply drag-and-dropped into the Belysa™ browser for instant data review.

Once the user selects the curve fit model, either automatically by using the wizard, or manually, the data are displayed:

- Sample concentrations
- Recovery of standards
- Equation of line
- Limit of Detection (LoD)
- Lower Limit of Quantitation (LLOQ)
- Minimum Detectable Dose (MD)
- Data is exportable to: Excel, .csv, .txt and .pdf



Data Autoflagging

Message	Result SD	Result CV	Response	Response CV
▲ EXT, ND	-	-	15.75	2.2%
▲ BLOQ	0.03	3.6%	35.50	2.0%
▲ BLOQ	0.08	10.4%	32.75	5.4%
▲ BLOQ	0.13	16.4%	33.00	8.6%
▲ BLOQ	0.03	6.0%	27.50	2.6%
▲ BLOQ	0.03	3.8%	34.50	2.0%
▲ BLOQ	0.03	4.2%	32.50	2.2%
▲ BLOQ	0.03	3.4%	36.50	1.9%
▲ BLOQ	0.18	25.9%	30.75	12.6%
▲ BLOQ	0.00	0.0%	23.00	0.0%
▲ BLOQ	0.05	13.3%	23.75	4.5%
▲ BLOQ	0.06	27.1%	21.00	6.7%
▲ BLOQ	0.03	10.5%	22.50	3.1%
▲ BLOQ	0.10	10.7%	35.50	6.0%

As shown in Example 2, Belysa™ annotates data for hard rules such as below the limit of quantitation (BLOQ) using a yellow triangle. The user may define parameters such as acceptable %CV or bead counts which pink flags raw data which does not meet the users acceptance criteria. A decision may then be made to exclude points which will then be recorded if required for review.

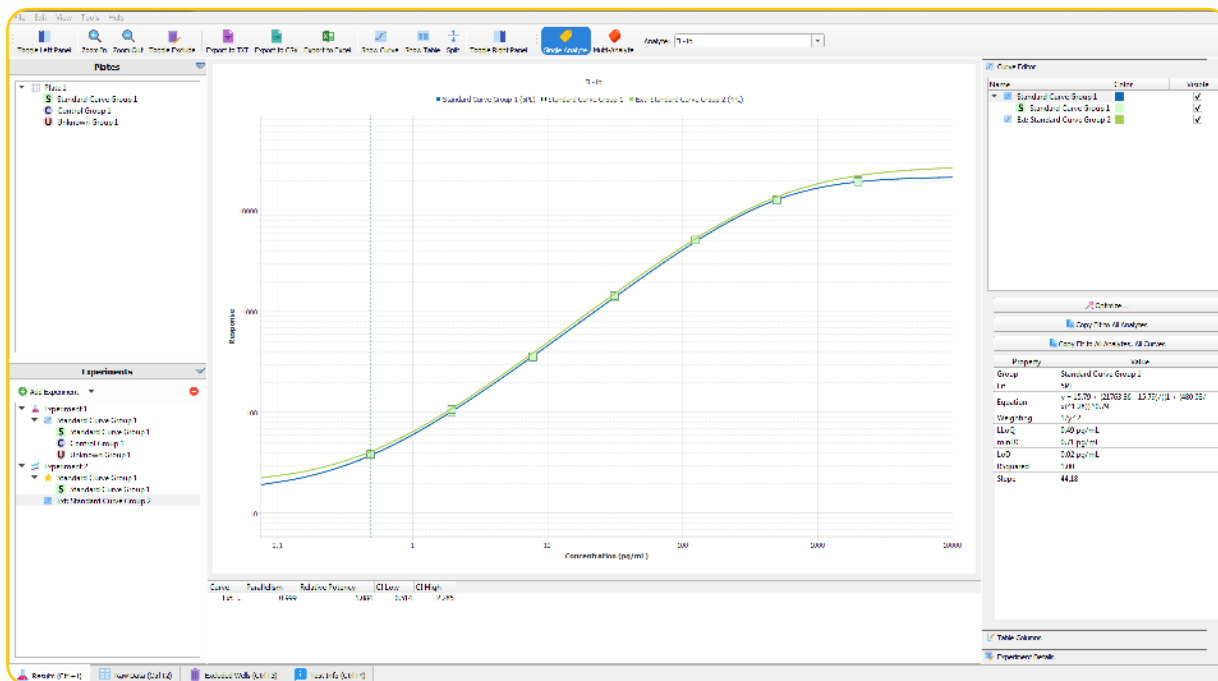
Example 2. Belysa™ data annotation: below LLOQ (yellow triangle), %CV (pink flags)

Belysa™ Software Curve Comparison Tool

Standard curves provide crucial information on the reproducibility of an assay over multiple plates within specific runs or over the course of a longitudinal study. As shown in Example 3, Belysa™ provides a curve comparison tool for multiple curves imported from previously saved Belysa™ output files; the first curve is used as a reference against which each subsequent curve is compared.

Comparison tests across multiple runs:

- Parallelism
- Relative potency of standards



Example 3. Comparison of two standard curves in Belysa™ from two lots of the same MILLIPLEX assay run 1 year apart.

MILLIPLEX® Multiplex Panels for COVID-19 Research

Cytokine Storm Biomarker Quantitation

COVID-19 (SARS-CoV-2) viral infection of the lungs can result in cytokine storm syndrome (CSS), which causes severe clinical symptoms in patients including inflammation, fluid buildup in the lungs, respiratory distress, multiple organ failure, and can be fatal.

MILLIPLEX® multiplex immunoassays allow researchers to better understand the immune response to SARS-CoV-2 for both human and non-human primate samples by simultaneously quantitating numerous cytokines and additional critical analytes. Expedite your disease-related research and save sample volume for a snapshot of analyte profiles during cytokine storm, sepsis, or other disease states. For research use only, not for diagnostic applications.

Comparison of Sepsis vs. Normal Serum/Plasma Samples Using MILLIPLEX® Human Cytokine Panel A

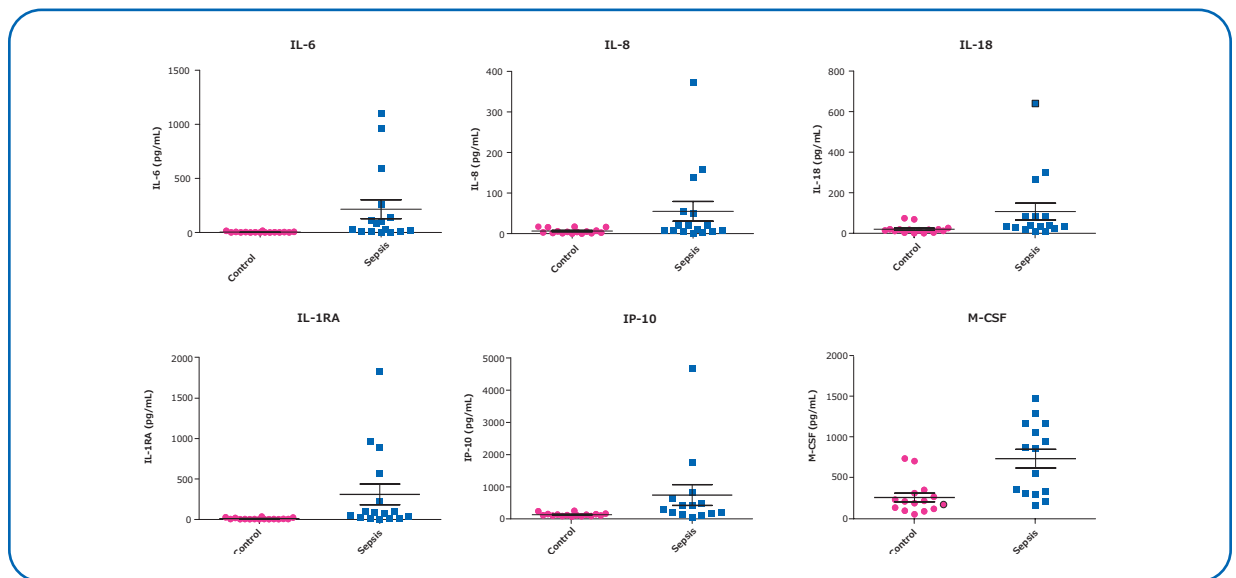


Figure 1. Healthy control (n=20) and sepsis patient (n=16) serum/plasma samples (obtained from BioIVT, Discovery, and BioChemed) were tested neat (25 μ L/well) in the HCYTA-60K panel. Shown here are a subset of the analytes which have been mentioned in recent publications to be increased in SARS-CoV-2 cytokine release syndrome (CRS).

CSS research in non-human primate models

Research on SARS-CoV-2 is being conducted in animal models which will allow researchers to test possible vaccines and antiviral medications/treatments in preclinical studies. A preprint article used MILLIPLEX® non-human primate assays to analyze serum over multiple time points for changes in cytokine and chemokine levels.¹

Understanding the human immune response to SARS-CoV-2 infection

Our MILLIPLEX® multiplex immunoassays offer researchers the ability to simultaneously quantitate a large number of analytes critical to understanding the COVID-19 immune response in humans. We also offer a wide array of MILLIPLEX® soluble protein panels and cell signaling kits to help elucidate the downstream signaling pathways when researching anti-viral immune response.

See pg 21 for product details and ordering information to drive your disease-related research forward.

1. Munster, V., et al. 2020. Respiratory disease and virus shedding in rhesus macaques inoculated with SARS-CoV-2. bioRxiv 2020.03.21.001628; doi: <https://doi.org/10.1101/2020.03.21.001628>. This article is a preprint and has not been certified by peer review

LOOK CLOSER

All biomarker kits are not created equal

With assay performance data included in every protocol, you can discover with confidence.



Rigorous Assay Development

Specificity

- Antibody specificity is tested to ensure negligible cross-reactivity in the tested sample types
- Assay specificity is ensured by confirming consistent performance in singleplex and multiplex formats

Method Comparisons

- We test our kits against in-house kits and kits from other vendors when available, ensuring the highest performing kits

Selectivity

- Assay buffers and bead diluents are optimized to enhance antibody binding to only those analytes of interest in samples

Detection and Sensitivity

- The assay range and minimum detectible concentrations (minDCs or LLOQ) for each analyte is published in our protocols, and is based on actual samples

Performance in a Sample Matrix

- Assays are verified for the sample type noted in the protocol; for serum/plasma sample kits, we always provide an optimized native serum matrix to mimic the environment of the sample, normalizing assay performance

Reproducible Results you can Trust

Stability

- All kits are rigorously tested for shipping stability to determine impact on each analyte
- Sample stability is examined at a range of temperatures, and by freeze/thaw

Precision and Accuracy

- Precision of control standards are typically within 15% CV for intra-assay and 20% CV for inter-assay
- Accuracy is normally within $\pm 30\%$

Linearity of Dilution

- Spike recovery in sample is performed for each analyte at three concentrations; diluted sample results must be directly proportional to the concentration of analyte in the sample, typically within $\pm 30\%$

Lot-to-Lot Consistency

- A “gold standard” calibrator is defined during assay development and used as a reference for all future production lots

Dedicated Support

- Committed care when and where you need it, from our sales specialists, technical support scientists, customer support, and custom immunoassay development team

We'll help you choose the right platform and assays to meet your needs today, and we'll partner with you to meet those needs in the future—without compromising quality.

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