MERCK

Analyte Quarterly

Vol. 1 2018

Your comprehensive guide to multiplex and single protein detection

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

Millipore®

Preparation, Separation, Filtration & Testing Products

Look closer

All biomarker kits are not created equal

We set the performance criteria during assay development and uphold it for subsequent lots to ensure reproducible results you can trust.

See the Difference: Rigorous Assay Development

Specificity

- Antibody specificity is tested to ensure negligible cross-reactivity of each antibody pair with other analytes and proteins in the validated sample types
- Assay specificity is ensured by confirming consistent performance of every analyte in both singleplex and multiplex formats

Method Comparisons

- We test our kits against in-house kits with the same analytes (MILLIPLEX® MAP, ELISA or SMC™ assays), and against kits from other vendors when available, ensuring we launch the highest performing kits

Selectivity

- Assay buffers and bead diluents are optimized to enhance antibody binding to only those analytes of interest in the presence of sample matrix

Detection and Sensitivity

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

Cross-Talk

- Proper maintenance of instrumentation eliminates or minimizes cross-talk between analytes in the assay

Performance in a Sample Matrix

- Assays are validated for the specific sample type, and for kits validated for serum and plasma, we always provide an optimized native serum matrix to mimic the environment of the sample, normalizing assay performance

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.

Platforms Fit for Your Purpose

We're here to guide you to choose the best protein detection platform for your needs

What's better than a well-validated, sensitive, reproducible, robust immunoassay that fits your study requirements? Having a scientific partner offering you a variety of high performance assay platforms. Whether you need rich profiling data from a multiplex panel using Luminex® technology, ultrasensitive detection from an SMC™ assay, robust ELISAs, or maximum throughput from a Gyrolab® workstation, we help you get data you trust.

MILLIPLEX® MAP Multiplex Detection

- Widest range of research areas—and species
- Broadest selection of analytes from which to choose

SMC™ Assays for SMCxPRO™ or Erenna® Instruments

- Previously undetectable assays, now quantified
- Measure to the femtogram/mL level

ELISAs

- >1,800 ELISAs, EIAs and RIAs against numerous soluble circulating and intracellular biomarkers

Flexibility and sensitivity: our platforms fit your purpose

Protein Detection Platforms	Fit for Purpose	Quantitative	Sensitivity	Sample Volume	Dynamic Range	Multiplex Capability	Custom Assay Support
Luminex® platform							
	Multiplex detection Flexible platform	Yes	pg/mL	≤ 25 µL	•••	▬	Yes
SMCxPRO™ or Erenna® system							
	Ultrasensitivity High performance	Yes	fg/mL	5–100 µL	•••	▭	Yes
ELISA							
	Plate reader compatibility Most widely cited	Yes	pg/mL	50–100 µL	••	▭	Yes
Gyrolab® workstation							
	Fully automated High precision	Yes	pg/mL	< 5 µL	•••	▭	Yes

• Good Performance •• Strong Performance ••• Superior Performance ▭ Not Recommended ▬ Recommended

PROTEIN DETECTION PLATFORMS

NEW! MILLIPLEX® MAP and Single Protein Detection Kits

Description	Species	Cat. No.
MILLIPLEX® MAP Panels		
Autoimmune Autoantibody	Human	**HAIAB-10K**
Bcl-2 Family Apoptosis Panel 1	Human	**48-682MAG**
Bcl-2 Family Apoptosis Panel 2	Human	**48-683MAG**
Immuno-Oncology Checkpoint Protein	Human	**HCKPMAG-11K**
Neuroscience Panel 2	Human	**HNS2MAG-95K**
SMC™ Streamlined Kits		
Amyloid Beta 1-42 High Sensitivity Immunoassay Kit	Human, Mouse, Rat	**03-0146-00**
Glucagon High Sensitivity Immunoassay Kit	Human	**03-0153-00**
IL-6 High Sensitivity Immunoassay Kit	Human	**03-0155-00**
cTnI High Sensitivity Immunoassay Kit	Human, Cynomolgus Monkey, Rat, Canine, Guinea Pig	**03-0154-00**

Coming Soon

Description	Species	Cat. No.
MILLIPLEX® MAP Panels		
Aging Panel 1	Human	**Coming Soon!**
Cancer Autoantibody	Human	**Coming Soon!**
IL-18 Singleplex	Human	**Coming Soon!**
SMC™ Streamlined Kits		
Amyloid Beta 1-40 High Sensitivity Immunoassay Kit	Human, Mouse, Rat	**Coming Soon!**
IL-13 High Sensitivity Immunoassay Kit	Human	**Coming Soon!**
IL-17A High Sensitivity Immunoassay Kit	Human	**Coming Soon!**
IL-17F High Sensitivity Immunoassay Kit	Human	**Coming Soon!**
IL-22 High Sensitivity Immunoassay Kit	Human	**Coming Soon!**
IL-23 High Sensitivity Immunoassay Kit	Human	**Coming Soon!**
Instrumentation		
50 TS Plate Washer, BioTek		**40-301**
800 TS Absorbance Reader-Basic, BioTek		**40-300**

Instrumentation:

- 800 TS Absorbance Reader-Gen 5 Software 40-006
- 800 TS Absorbance Reader-Gen 5 Secure 40-007

New SMC™ Streamlined Kit Improvements:

Making it easier for you to do your work

- Improved options for sample prep and incubation
- Lyophilization of the standard provides the kit at one storage condition
- Removal of a plate transfer step
- Increased reagent volumes to accommodate automation
- Kits are verified to work on both SMCxPRO™ and Erenna® instruments

Human Immuno-Oncology Checkpoint Protein Panel

(Cat. No. HCKPMAG-11K)

Your scientific partner for immuno-oncology detection assays.

Immune checkpoint proteins can express on immune cells and/or tumor cells as activating or inhibitory receptors. Many immune checkpoint proteins are also expressed as soluble forms in circulation and in the tumor and tumor micro-environment, as putative immuno-oncology biomarkers.

If you are working on projects related to immuno-oncology, or investigating immunotherapies, check out our newest MILLIPLEX® MAP immuno-oncology panel. This 16-plex panel allows quantitative measurement of the levels of multiple checkpoint proteins (co-stimulatory, co-inhibitory, and an anti-tumor immune regulator) to facilitate your discoveries.

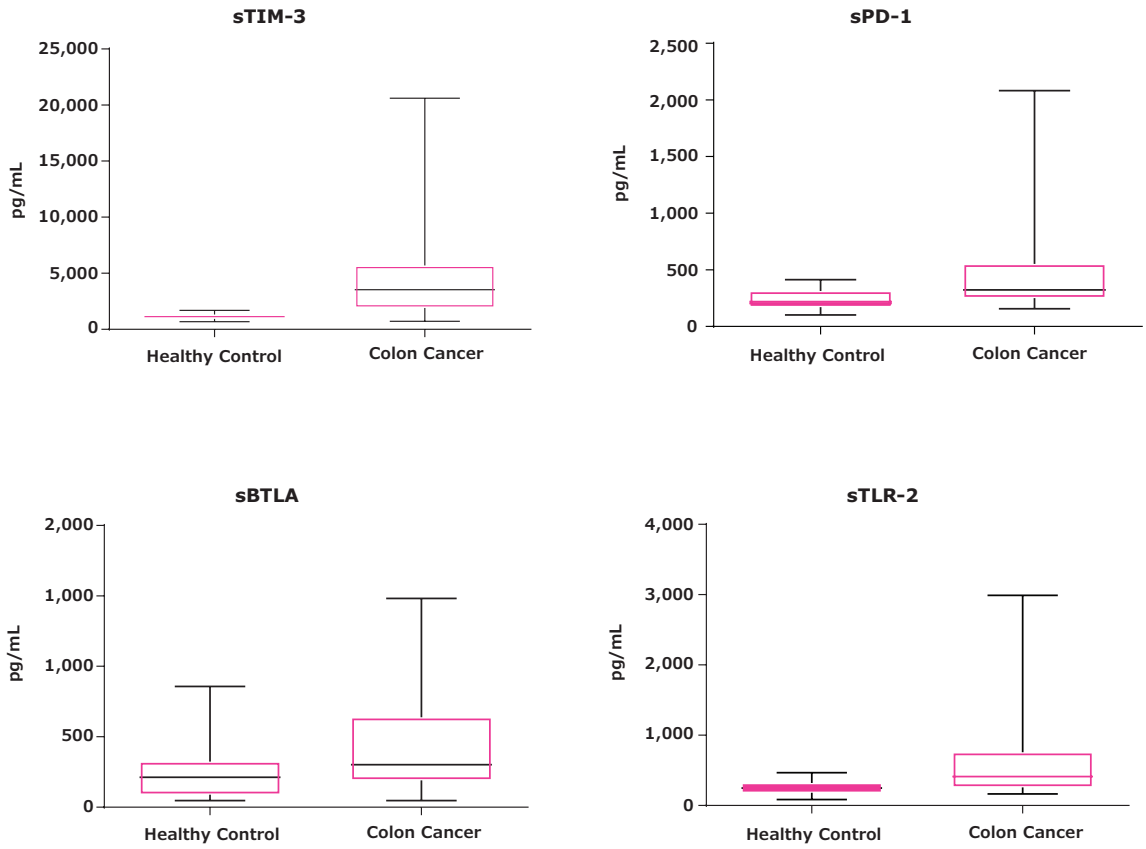


Figure 1. 20 normal and 20 colon cancer serum samples were diluted 1:2 in assay buffer. The data has been adjusted back to the serum levels with the dilution factor. Statistical analysis was performed using the Mann-Whitney Test. 8 markers (BTLA, CD27, TIM-3, HVEM, CD40, TLR-2, PD-1, and CD86) showed statistically significant differences between normal and colon cancer serum samples. Data is shown for the checkpoint proteins, TIM-3, PD-1, BTLA, and for the anti-tumor immune regulator, TLR-2.

Human Bcl-2 Family Apoptosis Panels 1 and 2

(Cat. No. 48-682MAG and 48-683MAG)

The newest addition to our cell signaling kit portfolio allows deeper exploration of apoptosis mechanisms.

Apoptosis is an essential physiological process that plays a crucial role in normal development and homeostatic mechanisms of multicellular organisms. At least two major apoptotic pathways have been described: the intrinsic pathway via Caspase-9 activation, in which death arises from mitochondrial dysfunction, and the extrinsic pathway via Caspase-8 activation, in which death is initiated from the activation of cell surface receptors.

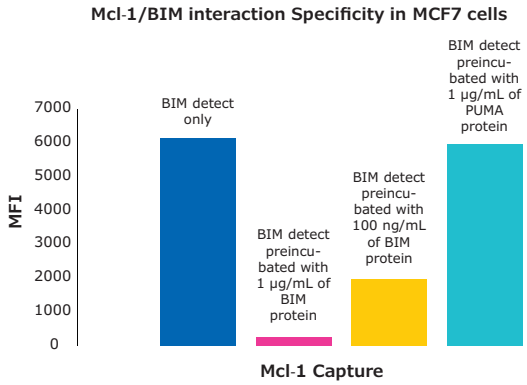
Bcl-2 family members play an important role in the intrinsic apoptotic pathway.

Our new MILLIPLEX® MAP Human Bcl-2 Family Apoptosis Panels 1 and 2, allow you to examine the roles of pro- and anti-apoptotic Bcl-2 family members whether you are studying signaling or investigating potential cancer drug development.

(A)

		Multiplexed Beads					
		Bcl-xL	**BAD**	**Mcl-1**	**BIM**	**Bcl-2**	**BAX**
Single recombinant protein	**Bcl-xL**	100%	0%	0%	0%	1%	0%
	BAD	0%	100%	4%	0%	0%	0%
	Mcl-1	0%	0%	100%	0%	0%	1%
	BIM	0%	0%	0%	100%	0%	0%
	Bcl-2	0%	1%	0%	0%	100%	0%
	BAX	0%	0%	1%	0%	1%	100%

(B)



(C)

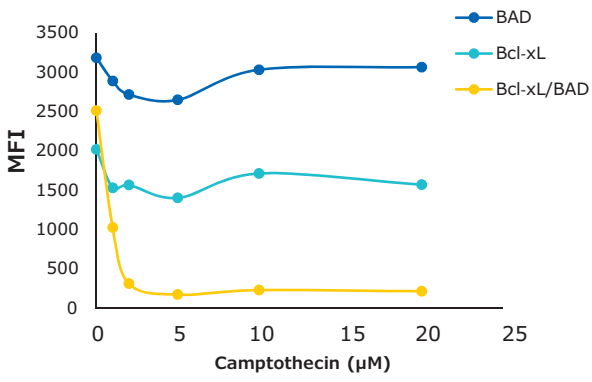


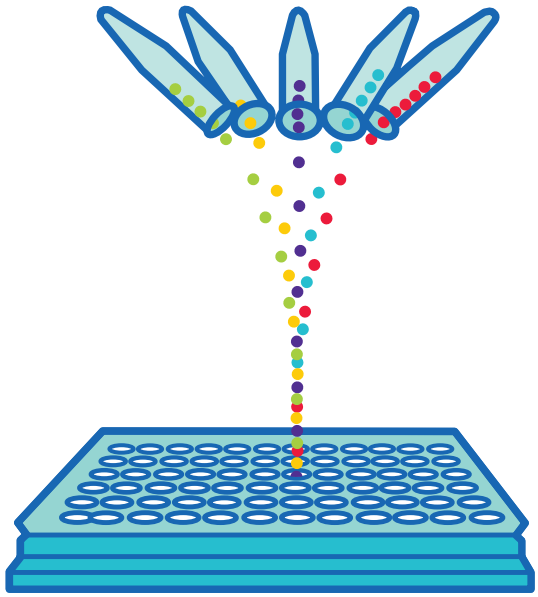
Figure 2. (A) Recombinant proteins were used during the development of these panels to measure cross-reactivity. No significant cross-reactivity was found amongst the analytes. **(B)** To measure protein-protein interaction specificity, the detection antibody was incubated with its specific recombinant protein overnight, and then used in the assay the next day. No significant signal was observed, as expected (second bar in the graph). The example shown here is the Mcl-1/BIM interaction specificity. **(C)** Drug dose-dependent study in MCF7 cells using the panels, showing signal for total BAD, Bcl-xL/BAD interaction, and total Bcl-xL. MCF7 cells were treated with 0, 1, 2, 5, 10, and 20 µM concentrations of Camptothecin for 16 hours. 20 µg total protein of each lysate diluted in kit assay buffer was analyzed according to the protocol.

Custom Immunoassay Development Services for the Luminex® and SMCxPRO™ Platforms

Your research frequently demands tracking unique combinations of biomarkers. Often, there is no single assay that measures all of your proteins of interest or offers the sensitivity/dynamic range that you require. Many scientists are forced to split samples and run separate assays, or work to optimize an assay range entirely and then re-validate their assay. In addition, assays marketed for screening purposes may not be validated for lot-to-lot consistency, and are often not suitable for long-term studies. Each of these factors can make measuring your proteins of interest costly and time-consuming.

Our team of scientists is here to help! With a track-record of developing only high-quality, validated MILLIPLEX® MAP kits for Luminex® systems, we now offer the ability to customize assays to meet your exact requirements. And we have extended our expertise to new platforms, including the ultrasensitive SMCxPRO™ instrument.

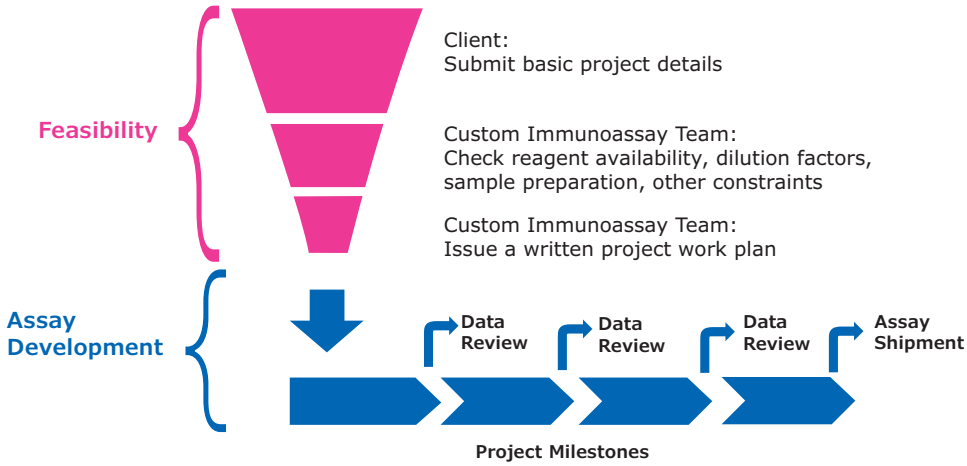
Using your research plan as the blueprint for custom assay development, a scientist will consult with you during the development process about your assay requirements. We offer a comprehensive menu of validation offerings to get you started. All projects are managed by a dedicated project manager, and data review calls are arranged at each project milestone to ensure that the assay is meeting performance requirements for your samples.



Examples of some popular features of our custom assays include:

- Ability to measure new analytes
- Combining targets from multiple panels into one kit
- Validating for a new sample type
- Providing appropriate assay ranges for your samples (often using your samples during development)
- Transitioning assays from one platform to another
- Supplying kits with lot-to-lot consistency and guaranteed performance

Client Project Feasibility and Project Workflow



Connect with a scientist about your project by visiting **MerckMillipore.com/customassay**

A Custom Assay Success Story: How Meeting an Unmet Need Introduced a New Product

Endocrine disrupting chemicals (EDC) are known to disrupt hormones that play key roles in the regulation of energy balance, mental and physical development, sex organ development, reproduction, pregnancy and may even lead to certain forms of cancer.

When our Custom Immunoassay Development team was contracted by Dr. Olivier Blanck (Crop Sciences Division of Bayer, France), we developed a MILLIPLEX® MAP assay to meet his lab's specific EDC testing needs. Read the full story in Anita Ramanathan's February 2018 editorial article interview with Dr. Blanck on SelectScience.net.

We are the first Luminex® partner to bring you a 6-plex MILLIPLEX® MAP Multi-Species Hormone Panel to detect and quantify hormone levels in human or animal serum, plasma or tissue culture samples for EDC testing. This multi-species kit may be used to detect the 6 analytes in human or canine (validated), rat, mouse, cynomolgous

monkey, rhesus monkey, horse, rabbit, cat, pig, guinea pig and hamster.

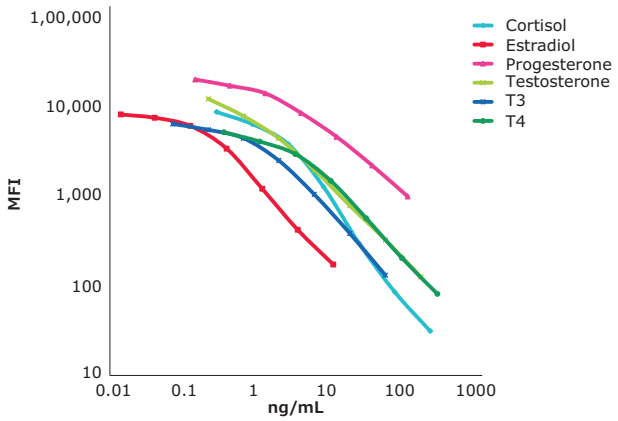
We thank Dr. Blanck for his feedback, which inspired the release of the analytes in this panel and ensured that our assay is appropriate for measuring each of these proteins in biologically-relevant samples.

Multi-Species Hormone Panel

(Cat. No. MSHMAG-21K)

Our new hormone panel allows endocrine disrupting chemical (EDC) testing.

- Cortisol
- Estradiol
- Progesterone
- Testosterone
- T3
- T4



HUMAN

Immunology

Human Cytokine/Chemokine Panel I

◯ (Cat. No. HCYTOMAG-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♦
IFNα2♦	MCP-3/CCL7
IFNγ♦	MDC/CCL22
IL-1α♦	MIP-1α/CCL3♦
IL-1β♦	MIP-1β/CCL4♦
IL-1Ra♦	PDGF-AA ▲
IL-2♦	PDGF-AB/BB ▲
IL-3♦	RANTES/CCL5♦▲
IL-4♦	TGFα
IL-5♦	TNFα♦
IL-6♦	TNFβ/Lymphotoxin-α (LTA)♦
IL-7♦	VEGF-A♦
IL-8/CXCL8♦	

Human Cytokine/Chemokine Panel II

◯ (Cat. No. HCYP2MAG-62K)
23 (Cat. No. HCP2MAG-62K-PX23)
23 (Bulk Cat. No. HCP2MAG62KPX23BK)

6Ckine/CCL21/ Exodus-2	IL-28A/IFNλ2
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-1δ/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. HCYP3MAG-63K)

HCC-1/CCL14▲	M-CSF
IL-11	MIG/CXCL9
IL-29/IFNλ1	MIP-3α/CCL20
I-TAC/CXCL11	MIP-3β/CCL19
LIX/CXCL6/GCP-2	NAP-2/CXCL7▲
Lymphotactin/XCL1	

Human Cytokine/Chemokine Panel IV

◯ (Cat. No. HCYP4MAG-64K)
21 (Cat. No. HCY4MG-64K-PX21)
21 (Cat. No. HCP4MG64KPX21BK)

APRIL/TNFSF13	IL-28B/IFNλ3
BAFF/Blys	IL-32α
BRAK/CXCL14	IL-34
CCL28	IL-35
CXCL16	IL-36β/IL-1F8
HCC-4/CCL16	IL-37/IL-1F7
HMGB1 ●	IL-38/IL-1F10
IFNβ	MIP-4/PARC/CCL18
IL-14/α-Taxilin	MPIF/CCL23
IL-19	YKL40/CHI3L1
IL-24	

Human High Sensitivity T Cell

◯ (Cat. No. HSTCMAG-28SK)
13 (Cat. No. HSTCMAG28SPMX13)♦
13 (Bulk Cat. No. HSTCMAG28PMX13BK)♦
21 (Cat. No. HSTCMAG28SPMX21)
21 (Bulk Cat. No. HSTCMAG28PMX21BK)

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

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
IFNγ	IL-17A/CTLA8
IL-1β	IL-21
IL-2	IL-23
IL-4	I-TAC/CXCL11
IL-5	MIP-1α/CCL3
IL-6	MIP-1β/CCL4
IL-7	MIP-3α/CCL20
IL-8/CXCL8	TNFα
IL-10	

Human Soluble Cytokine Receptor

(Cat. No. HSCRMAG-32K)
14 (Cat. No. HSCRMAG32KPX14)
14 (Bulk Cat. No. HSCRMAG32PMX14BK)

sCD30	sIL-6R
sEGFR	sRAGE
sgp130	sTNF RI
sIL-1RI	sTNF RII
sIL-1RII	sVEGFR1/sFlt-1
sIL-2Rα	sVEGFR2/sKDR/sFlk-1
sIL-4R	sVEGFR3/sFlt-4

Human Th17

(Cat. No. HTH17MAG-14K)
25 (Cat. No. HT17MG-14K-PX25)
25 (Bulk Cat. No. HT17MAG14PMX25BK)

GM-CSF	IL-17E/IL-25
IFNγ	IL-17F
IL-1β	IL-21
IL-2	IL-22
IL-4	IL-23
IL-5	IL-27
IL-6	IL-28A/IFNλ2
IL-9	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	

Human CD8+ T Cell

◯ (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-1α/CCL3
IFNγ	MIP-1β/CCL4
IL-2	Perforin
	TNFα

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	Factor B
C3	Factor H
C3b/iC3b	Factor P/Properdin
C4	

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

Human TIMP Panel 2
(Cell culture samples)

(Cat. No. HTMP2MAG-54K)

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

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

Human Autoimmune Autoantibody

(Cat. No. HAIAB-10K) NEW
QUALITATIVE ASSAY

β2-Glycoprotein	Ribosomal P
C1q	RNP (Ribonucleoprotein)
CENP-A (Centromere Protein A)	RNP/Smith (RNP/Sm)
CENP-B (Centromere Protein B)	Scl-70
Jo-1	Sm
Ku	SSA/Ro52 (Sjögren's Syndrome-related antigen A/Ro52 kDa)
Mi-2	
Myeloperoxidase (MPO)	SSA/Ro60 (Sjögren's Syndrome-related antigen A/Ro60 kDa)
PCNA (Proliferating Cell Nuclear Antigen A)	
PL-12 (Alanyl-tRNA Synthetase)	SB/La (Sjögren's Syndrome-related antigen B/La)
PM/Sci 100	
Proteinase 3	

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-1α/CCL3
HSP70	MIP-1β/CCL4
IL-1α	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
Fibronectin	Keratin-1,10
Human Serum Albumin (HSA)	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)

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

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▼

❺ (Cat.No. HDIAB-34K-PMX5)
❺ (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	
IL-6	Osteonectin/SPARC

Human Liver Protein

(Cat. No. HLPPMAG-57K)

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

Legend key for MILLIPLEX® MAP kits

- † Analytes which cannot be plexed together:
  - Active and total
  - Free and total
- ♦ Available in Cat. No. listed
- ▼ Premix panel only
- ▲ These analytes cannot be plexed with other analytes in this panel in serum/plasma
- ◗ Requires a protease inhibitor during sample collection
- ■ Requires sample extraction
- ● Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ◙ Available for custom premix
- ◦ Analyte requires a different sample dilution from others in panel

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

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) NEW

Cortisol	Testosterone
Estradiol	T3
Progesterone	T4

Cardiovascular

Human CVD Panel 1

(Cat. No. HCVD1MAG-67K)

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

Human CVD Panel 2

(Cat. No. HCVD2MAG-67K)

ADAMTS13	Myoglobin
D-dimer	NGAL/Lipocalin-2
GDF-15	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	von Willebrand Factor (vWF)
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)

Human CVD Panel 5

(Cat. No. HCVD5MAG-67K)

ADAM15	Leptin Receptor (LEPR)/OB-R
Cadherin 13 (CDH13)	MR-ProADM
sCD163	Notch1
Chromogranin-A (CHGA/CGA)	PLA2G7
HSP60	PTGDS
IGF1R	sST2/IL1RL1
LDLR	Syndecan 4 (SYND4)

Human CVD Panel 6

(Cat. No. HCVD6MAG-67K)

sCD14	LRG1
DPP4	MCAM/MUC18
Endostatin	ucMGP
pGRN	

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. HRNKLMAG-51K-01)

RANKL

Cancer

Human Immuno-Oncology Checkpoint Protein

(Cat. No. HCKPMAG-11K) NEW

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

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	NCAML1/L1CAM/CD171
Hepsin	Transglutaminase 2 (TGM2)

Human Cancer/Metastasis Biomarker Panel 1

(Cat. No. HCMBMAG-22K)

DKK1	Osteoprotegerin (OPG)
GDF-15	Periostin
Neuron-specific Enolase (NSE)	TRAP5
Osteonectin/SPARC	TWEAK
	YKL40/1CHI3L1

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) NEW

Angiogenin (ANG)◦	Neurogranin (NRGN)
ApoE4◦	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. HNPMAG-35K)

α-MSH	Oxytocin
β-Endorphin	Substance P
Neurotensin	

Human Circadian Stress■^

(Cat. No. HNCSMAG-35K)

Cortisol	Melatonin

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	

Legend key for MILLIPLEX® MAP kits

- † Analytes which cannot be plexed together:
  - Active and total
  - Free and total
- ♦ Available in Cat. No. listed
- ▼ Premix panel only
- ▲ These analytes cannot be plexed with other analytes in this panel in serum/plasma
- ◗ Requires a protease inhibitor during sample collection
- ■ Requires sample extraction
- ● Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ◙ Available for custom premix
- ◦ Analyte requires a different sample dilution from others in panel

PRIMATE

Immunology

Non-Human Primate Cytokine/Chemokine Panel 1

(Cat. No. PRCYTOMAG-40K)
23 (Cat. No. PCYTMG-40K-PX23)
23 (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)
24 (Cat. No. PRCYTMAG40K-PX24)
24 (Bulk Cat. No. PRCY2MG40PMX24BK)
25 (Cat. No. PRCYTMAG40K-PX25)
25 (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	

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) NEW

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. MCYTMAG70PMX25BK)♦
32 (Cat. No. MCYTMAG-70K-PX32)
32 (Bulk Cat. No. MCYTMAG70PMX32BK)

Eotaxin/CCL11	IL-13♦
G-CSF♦	IL-15♦
GM-CSF♦	IL-17A/CTLA8♦
IFNγ♦	IP-10/CXCL10♦
IL-1α♦	KC/GROα/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. MECY2MAG73KPXBK)

Erythropoietin (EPO)	IL-17A/F
Exodus-2/ CCL21/6Ckine	IL-20
Fractalkine/CX3CL1	MDC/CCL22
IFNβ1	MCP-5/CCL12
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-70KPXBK)

GM-CSF	IL-10
IFNγ	IL-12 (p70)
IL-1α	IL-13
IL-1β	IL17A/CTLA8
IL-2	KC/GROα/CXCL1
IL-4	LIX
IL-5	MCP-1/CCL2
IL-6	MIP-2/CXCL2
IL-7	TNFα

Mouse Soluble Cytokine Receptor

(Cat. No. MSCRMAG-42K)

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

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

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	

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

Mouse MMP Panel 3 (Cell culture samples)

(Cat. No. MMMP3MAG-79K)

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

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 Gut Hormone

(Cat. No. MGTMAG-78K)

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

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 Myokine

(Cat. No. MMYOMAG-74K)

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

Mouse Pituitary

(Cat. No. MPTMAG-49K)

ACTH	LH
BDNF	Prolactin
FSH	TSH
GH	

Multi-Species Hormone ■ ^

(Cat. No. MSHMAG-21K) NEW

Cortisol	Testosterone
Estradiol	T3
Progesterone	T4

Cardiovascular

Mouse CVD Panel 1

(Cat. No. MCVD1MAG-77K)

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

Mouse CVD Panel 2

(Cat. No. MCVD2MAG-77K)

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

Mouse Acute Phase Panel 2

(Cat. No. MAP2MAG-76K)

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

Bone Metabolism

Mouse Bone

(Cat. No. MBNMAG-41K)

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

Legend key for MILLIPLEX® MAP kits

- † Analytes which cannot be plexed together:
  - Active and total
  - Free and total
- ♦ Available in Cat. No. listed
- ▼ Premix panel only
- ▲ These analytes cannot be plexed with other analytes in this panel in serum/plasma
- ◗ Requires a protease inhibitor during sample collection
- ■ Requires sample extraction
- ● Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ◙ Available for custom premix
- ◦ Analyte requires a different sample dilution from others in panel

Cancer

Mouse Angiogenesis / Growth Factor Panel 1

(Cat. No. MAGPMAG-24K)

sALK-1	IL-6
Amphiregulin	IL-17A/CTLA8
Angiopoietin-2 ▲	KC/CXCL1
Betacellulin ▲	Leptin
sCD31/sPECAM-1 ▲	MCP-1/CCL2
EGF	MIP-1α/CCL3
Endoglin	Placental Growth Factor (PLGF-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	

Neuroscience

Mouse Amyloid Beta

(Cat. No. MABMAG-83K)

Amyloid beta 1-40	Amyloid beta 1-42

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
GROα/KC/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
Fractalkine	Osteocrin (OSTN)/ Musclin
FSTL1	Osteonectin/SPARC
Myostatin/GDF8	
IL-6	

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) NEW

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
GROα/KC/CINC-1/CXCL1	PAI-1 (total)
	TIMP-1
	TNFα
	VEGF

Rat Vascular Injury Panel 2 (Serum/Plasma samples)

(Cat. No. RV2MAG-26K)

Adiponectin	sICAM-1
sE-Selectin	von Willebrand Factor (vWF)

Rat Vascular Injury Panel 3
(Serum/Plasma samples)

(Cat. No. RV3MAG-26K)

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

Bone Metabolism

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)

Calbindin	KIM-1
Clusterin	Osteopontin (OPN)
GSTα^	TIMP-1
IP-10/CXCL10	VEGF-A

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	GSTα
ARG1	SDH
GOT1	

OTHER SPECIES

Immunology

Canine Cytokine/Chemokine

◙ (Cat. No. CCYTOMAG-90K)
13 (Cat. No. CCYTMG-90K-PX13)
13 (Bulk Cat. No. CCYTMAG90KPX13BK)

GM-CSF	IL-15
IFNγ	IL-18
IL-2	IP-10/CXCL10
IL-6	KC-like
IL-7	MCP-1/CCL2
IL-8/CXCL8	TNFα
IL-10	

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

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

(Cat. No. CPTMAG-96K)

ACTH	GH
BDNF	TSH
FSH	

Multi-Species Hormone■^

(Cat. No. MSHMAG-21K) NEW

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

Immunology

Feline Cytokine/Chemokine▼

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

sFAS/TNFRSF6	IL-13
Flt3 Ligand	IL-18
GM-CSF	KC/GRO
IFNγ	MCP-1/CCL2
IL-1β	PDGF-BB
IL-2	RANTES/CCL5
IL-4	SCF
IL-6	SDF-1/CXCL12
IL-8/CXCL8	TNFα
IL-12 (p40)	

Legend key for MILLIPLEX® MAP kits

† Analytes which cannot be plexed together:
– Active and total
– Free and total
♦ Available in Cat. No. listed
▼ Premix panel only
▲ These analytes cannot be plexed with other analytes in this panel in serum/plasma
◗ Requires a protease inhibitor during sample collection
■ Requires sample extraction
● Serum/Plasma only
★ Tissue Culture samples only
^ Competitive assay format
◙ Available for custom premix
◦ Analyte requires a different sample dilution from others in panel

Metabolism/ Endocrinology

Feline Metabolic Hormone

(Cat. No. FMHMAG-29K)

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

Multi-Species Hormone ■ ^

(Cat. No. MSHMAG-21K) NEW

Cortisol	Testosterone
Estradiol	T3
Progesterone	T4

Immunology

Porcine Cytokine/Chemokine

◙ (Cat. No. PCYTMAG-23K)
⑬ (Cat. No. PCYTMG-23K-13PX)
⑬ (Bulk Cat. No. PCYTMAG23PMX13BK)

GM-CSF	IL-6
IFNγ	IL-8/CXCL8
IL-1α	IL-10
IL-1β	IL-12
IL-1Ra	IL-18
IL-2	TNFα
IL-4	

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

Multi-Species Hormone ■ ^

(Cat. No. MSHMAG-21K) NEW

Cortisol	Testosterone
Estradiol	T3
Progesterone	T4

Immunology

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
IFNγ	IL-18
IL-1α	IP-10/CXCL10
IL-1β	MCP-1/CCL2
IL-2	RANTES/CCL5
IL-4	TNFα
IL-5	

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	

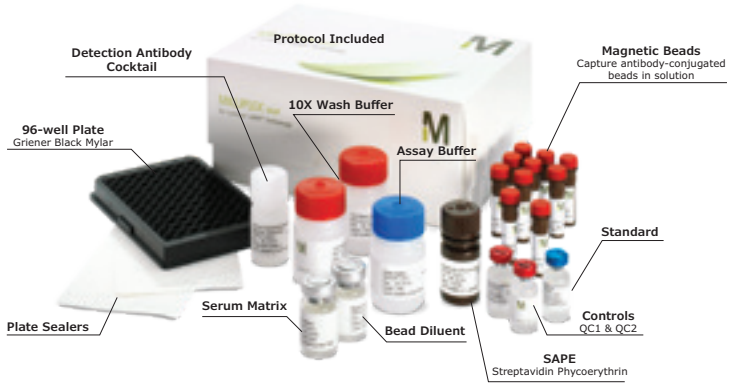
Metabolism/ Endocrinology

Multi-Species Hormone ■ ^

(Cat. No. MSHMAG-21K) NEW

Cortisol	Testosterone
Estradiol	T3
Progesterone	T4

What's in the MILLIPLEX® kit?



Legend key for MILLIPLEX® MAP kits

- † Analytes which cannot be plexed together:
  - Active and total
  - Free and total
- ♦ Available in Cat. No. listed
- ▼ Premix panel only
- ▲ These analytes cannot be plexed with other analytes in this panel in serum/plasma
- ◗ Requires a protease inhibitor during sample collection
- ■ Requires sample extraction
- ● Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ◙ Available for custom premix
- ◦ Analyte requires a different sample dilution from others in panel

Uncover How Your Cells Communicate

Cell Signaling MILLIPLEX® MAP Assays

Discovering the pathway

Signaling pathways are often interconnected and involve multifaceted mechanisms. Count on our cell signaling multiplex assays to enable accurate quantitation of both total and phosphorylated forms of signaling proteins, revealing connections and crosstalk within your pathways of interest. Choose from MILLIPLEX® MAP cell signaling multiplex panels and MAPmate™ assays, using the Luminex® xMAP® platform, to better understand cell signaling pathways.

Multiplexing, using the Luminex® xMAP® platform (see instrumentation section), provides faster answers to your cell signaling questions compared to traditional Western blots, mass spectrometry and radioactive phosphorylation assays that require large amounts of sample.

Cell signaling phosphoprotein + total 2-plex assays

- Directly compare the total vs. phosphoprotein levels in your assay by reading them in the same well
- All 2-plex assays (exceptions noted) can be combined with each other to study multiple total and phosphorylated proteins in the same well

Cell signaling phosphoprotein & total multiplex assays

- Measure multiple total or phosphoproteins simultaneously in a single sample
- Acquire a deeper understanding of intracellular pathways involved in both normal and disease states that include:
  - Immune response and cancer
  - Cardiovascular and metabolic health and disease
  - Neurological disorders

MAPmate™ phosphoprotein & total singleplex kits

- Plex up to 8 individual MAPmate™ kits to design your own custom assays using our Cell Signaling Buffer and Detection Kit*
- Plex additional MAPmate™ kits into existing MILLIPLEX® MAP Cell Signaling kits*
- Use β–tubulin or GAPDH as housekeeping/ loading controls by plexing into an existing MILLIPLEX® MAP Cell Signaling Kit*

*Refer to the guidelines provided in the protocols.

Cell Signaling Phosphoprotein + Total 2 Plex Assays

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

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

●● 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

Cell Signaling

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, R
mTOR		✓ (Ser2448)	H, M
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

Early Apoptosis – 7 Plex

(Cat. No. 48-669MAG) AB2 ▼ NON-CONFIGURABLE KIT

Analyte	Total	Phosphorylated	
Akt/PKB		✓ (Ser473)	H, M, R
BAD		✓ (Ser112)	H
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 NEW

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 NEW

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
MSCFR		(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

Cell Signaling (continued)

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
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
IκBα		✓ (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

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
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

Cell Signaling (continued)

MAPmate™: Phosphoprotein & Total Singleplex Assays

Plex up to 8 individual MAPmate™ assays together using our Cell Signaling Buffer and Detection Kit, or include them in existing MILLIPLEX® MAP Cell Signaling Panels to enhance the panel or serve as controls within the guidelines provided in the protocols. All of the analytes in the MAPmate™ portfolio are available to build into custom assays. For more information contact your sales specialist or email us at **customassay@emdmillipore.com**.

Important MAPmate™ Guidelines

- Consult the protocol prior to use.
- All MAPmate™ assays require the Cell Signaling Buffer & Detection Kit (**48-602MAG**). This kit contains all necessary reagents except the MAPmate™ assay. Both a filter and flat bottom plate are included for convenience.
- All MAPmate™ assays use Cell Signaling Assay Buffer 2 (AB2).
- The following MAPmate™ assays should not be plexed together:
  - Phospho-specific and total MAPmate™ pairs.
- GAPDH and β-Tubulin MAPmates™ can be used for normalization with any of the MAPmates™.

MAPmate™ Kits	Species Homology	Cat. No.
β-Tubulin (total)	H, M, R	**46-713MAG**
GAPDH (total)	H	**46-667MAG**
Akt/PKB (Ser473)	H, M, R	**46-677MAG**
Akt/PKB (total)	H, M, R	**46-675MAG**
BAD (Ser112)	H, M	**46-694MAG**
Caspase 3 (Active)	H, M	**46-604MAG**
ERK/MAPK 1/2 (Thr185/Tyr187)	H, M, R	**46-602MAG**
ERK/MAPK 1/2 (total)	H, M, R	**46-609MAG**
JNK/SAPK1 (Thr183/Tyr185)	H, M	**46-613MAG**
JNK/SAPK1 (total)	H, M	**46-618MAG**
mTOR (Ser2448)	H, M, R	**46-686MAG**
mTOR (total)	H, M, R	**46-685MAG**
p38/SAPK2A/B (Thr180/Tyr182)	H, M, R	**46-610MAG**
p38/SAPK2A/B (total)	H, M, R	**46-612MAG**
Cleaved PARP (total)	H	**46-656MAG**
STAT1 (Tyr701)	H, M	**46-655MAG**
STAT1 (total)	H, M	**46-654MAG**

Lysates

Lysate Description	Cat. No.
A431: EGF	**47-210**
A549: Camptothecin	**47-218**
Daudi: IL-4	**47-217**
HEK293: Serum	**47-233**
HeLa: IFNα	**47-226**
HeLa: Lambda Phosphatase	**47-229**
HeLa: TNFα+CalA	**47-230**
HeLa: Unstim	**47-205**
HeLa: HS/Ars	**47-211**
HepG2: DCA	**47-232**
HepG2: Insulin	**47-227**

Lysate Description	Cat. No.
HFF-1: Serum	**47-247**
HepG2: TGFβ	**47-235**
HL-60: Pervanadate	**47-225**
HUVEC: Serum	**47-238**
Jurkat: Anisomycin	**47-207**
Jurkat: H_2O_2	**47-208**
Jurkat: Paclitaxel	**47-220**
MCF7: IGF-1	**47-216**
NIH3T3: Anisomycin	**47-219**
Ramos: PVD	**47-224**
THP-1: Serum	**47-246**

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 maximum 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® 4.2	xPONENT® 4.2	xPONENT® 4.2
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® 4.2 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, Training and Consumables

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

Description	Cat. No.
MAGPIX® System Onsite Installation and Training	TRONSITE-MAGPIX
Luminex® 200™ System Onsite Installation and Training	TRONSITE-LX200
FLEXMAP 3D® System Onsite Installation and Training	TRONSITE-FM3D
MILLIPLEX® Analyst 5.1 Software Onsite Installation and Training	TRONSITE-MA
BioTek® Washer Onsite Installation and Training	TRONSITE-BIOTEK
MILLIPLEX® MAP Kits Training	TRONSITE-MPX

Luminex® Systems Installation Qualification (IQ) and Operational Qualification (OQ)

IQ/OQ Protocol	Protocol No.
FLEXMAP 3D® for xPONENT® 4.2 platform	VP-FM3D-4.2
Luminex® 200™ xPONENT® 4.2 platform	Coming Soon!
MAGPIX® xPONENT® 4.2 platform	VP-MAGPIX-4.2
Field Service**	92-00040-00-002

** Optional for Luminex® 200™ and required for FLEXMAP 3D®

MILLIPLEX® Analyst 5.1 "Flex" Software

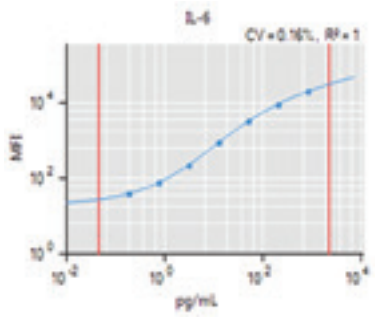
Use our advanced curve-fitting algorithm, developed from our experience in assay manufacturing and validated using real-life data sets

MILLIPLEX® Analyst 5.1 "Flex" software was designed to focus on data derived from the low and high ends of standard curves. Data in these regions can be important and are commonly missed by existing multiplex data analysis packages.

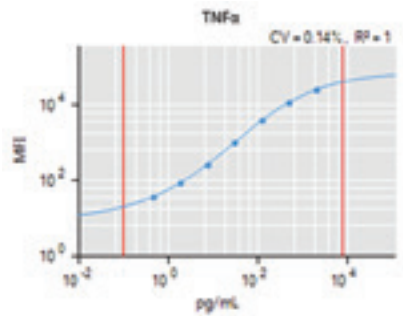
In developing the curve-fitting algorithms for MILLIPLEX® Analyst 5.1 "Flex" Software, simulations were run on 600+ data sets using actual experimental standard curves to determine the fit that would give the lowest CVs at the low and high ends of the curves, and that work well even with standard curves of low quality. With its dongle-activated format, MILLIPLEX® Analyst 5.1 "Flex" Software may be used from the lab to the office with this simple plug and play functionality.

MILLIPLEX® Analyst 5.1 Detailed Reports

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



Curve statistics: 5-P.log(2.96, 11.89, 0.52, 3.19, 0.31)
Chi = 1.88%, CV = 0.16%, R² = 0.9999
DC = (0.047, 2025)



Curve statistics: 5-P.log(2.13, 11.10, 0.41, 3.06, 0.47)
Chi = 1.66%, CV = 0.14%, R² = 0.9999
DC = (0.097, 7853)

Notes:

DC – The detectable concentration range.

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

Chi – The Chi-Squared test statistic of the distance between observed concentrations with expected concentrations.

Figure 6. Example data from the MILLIPLEX® Human High Sensitivity T Cell panel (HSTCMAG-28SK, analytes IL-6 and TNFα). Curves generated using 5 parameter logarithmic curve fit using MILLIPLEX® Analyst 5.1.

Standard	Exp pg/mL	MFI	Obs pg/mL	% CV	% Recovery	minDC pg/mL
IL-6						
Blank	0	24	—	11.79	—	0.047
Std 1	0.18	38.5	0.18	5.51	99.99	
Std 2	0.73	75	0.74	11.31	100.69	
Std 3	2.93	211.5	2.86	5.68	97.64	
Std 4	11.72	847	11.99	9.18	102.34	
Std 5	46.88	3052	47.5	4.73	101.33	
Std 6	187.5	8262	181.59	5.02	96.85	
Std 7	750	18348	759.68	1.92	101.29	
TNFα						
Blank	0	22.25	—	11.12	—	0.097
Std 1	0.43	36	0.43	3.93	99.62	
Std 2	1.71	83.5	1.74	2.54	101.83	
Std 3	6.84	246.5	6.66	3.73	97.42	
Std 4	27.34	954.5	27.45	4.96	100.38	
Std 5	109.38	3665	111.88	3.43	102.29	
Std 6	437.5	10648	428.21	0.05	98.11	
Std 7	1750	23262	1758	1.01	100.44	

Table 1. Standard curve performance from HSTCMAG-28SK analytes IL-6 and TNFα using MILLIPLEX® Analyst 5.1. minDC = minimum detectable concentration.

Description	Cat. No.
MILLIPLEX® Analyst 5.1 "Flex" Software	**40-086**

Washing solutions for MILLIPLEX® MAP and all your plate-based assays

In partnership with BioTek®, we offer the latest advancements in 96- and 384-well plate washing: a fully automated system designed to quickly wash an entire plate through biomagnetic separation, washing and vacuum filtration. We offer two systems which allow magnetic and vacuum filtration options—with the 405™ TS model offering an easy-to-use and glove-touchable screen. These BioTek® washers come pre-loaded with our validated wash protocols.

BioTek® washer advantages:

- Fast and hands-free full plate washing
- MILLIPLEX® MAP and Luminex® xMAP®-approved
- High-energy neodymium iron boron magnets for rapid separation of multiplex beads with superior retention
- 405™ TS models have a state-of-the-art, high-resolution LED backlit touch screen user interface for an intuitive and flexible instrument
- 405™ TS models come with the built-in Ultrasonic Advantage™ enabling easy cleaning even with the toughest of sample types

Figure 7. BioTek® plate washer models: the BioTek® 405™ Select TS (touch screen) Washer (left); the BioTek® 405™ LS Washer (right).

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

BioTek® MultiFlo™ FX Automated Reagent Dispenser

The perfect instrument for MILLIPLEX® MAP 384-well Assays

- Fully automated process: load 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 washer enables precise fluidic delivery—ensuring complete control while washing 96-well and 384-well assay plates

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

BioTek® 50 TS Plate Washer

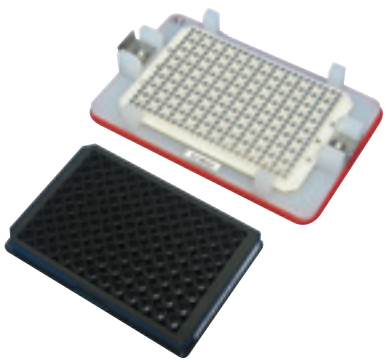
BioTek® 50 TS Magnetic 96-well automated strip washer

- Color touchscreen makes programming quick and easy
- Easy touch operation for washing full or partial plates
- Reliable and safe: liquid level sensing
- Automated switching of up to 3 buffers for even greater automation
- 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 NEW	40-301

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



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

- Top magnetic frame is white polycarbonate, with a corrosion-resistant steel plate underneath, all mounted to a polypropylene base
- Adjustable clip system holds a wide variety of microplates to the separator block
- O-Ring on base plate facilitates gripping for all sizes of hands
- Magnetic strength: 52 Mega Gauss Oersteds (MGO)

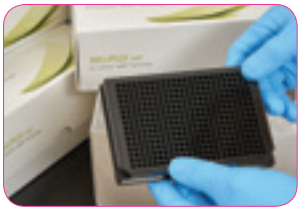
Description	Cat. No.
Handheld Magnetic Separator Block for 96-well Flat Bottom or Conical Well Plates	40-285

22,932 Data Points in 24 Hours Using 3 Plates

The MILLIPLEX® MAP 384-well Human High Sensitivity T Cell Panel is analytically validated to deliver the quality you expect from the MILLIPLEX® MAP brand. Extensive testing for standard curve range, sensitivity, precision, cross-reactivity and recovery shows that the 384-well format produces comparable, if not superior, results to the 96-well format kit.

This kit, plus reagent addition via the BioTek® MultiFlo™ FX, and the 384-well reading capability of the Luminex® FLEXMAP 3D® increases your throughput and decreases your hands-on time compared to equivalent 96-well protocols.

The Tools



MILLIPLEX® MAP Kits

MILLIPLEX® MAP 384-well Human High Sensitivity T Cell Panel (Cat. No. HSTCMAG384-PX21)

BioTek® MultiFlo™ FX

Fully automated reagent dispenser provides superior performance and walkaway option (Cat. No. 40-099)

Luminex® FLEXMAP 3D®

384-well capable system with xPONENT® 4.2 software (Cat. No. 40-014)

The Data

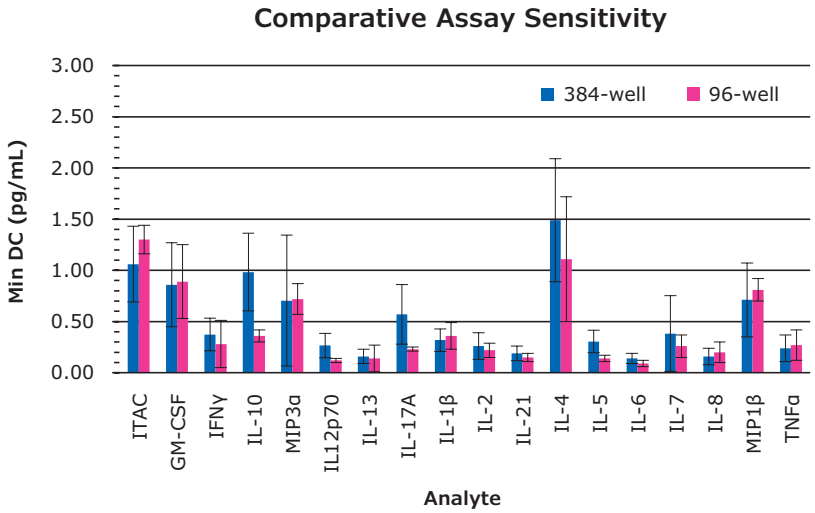


Figure 7. Side-by-side representation of min DCs in the 384-well and the 96-well assay of 18 analytes determined by MILLIPLEX® Analyst Software (384-well, n=12; 96-well, n=3).

With the MILLIPLEX® MAP Human High Sensitivity T Cell 21-plex assay for 384-well plates, BioTek® MultiFlo™ FX and FLEXMAP 3D®, users can increase their throughput to ~22,932 data points in a single day (based on 3 assays per day).

Single Protein Analysis Solutions

Measuring single protein biomarkers? We offer a range of products to meet your specific needs.

Our SMC™ immunoassay kits and technology allow for high sensitivity measurements when detecting low levels of protein biomarkers is critical. We offer a range of immunoassay kits as well as assay development and optimization kits to build your own SMC™ immunoassays for use with SMCxPRO™ or Erenna® systems.

For other single protein detection needs, including high throughput, our ELISAs, RIAs and GyroMark™ HT assays are unique, providing:

- Standards validated to match reference lots
- Serum matrix for generating standard curves that accurately simulate native analyte conditions in serum or plasma
- In-assay controls

Choose the platform that meets your single protein detection needs with our:

- SMC™ immunoassay kits, custom assay development, and sample testing
- ELISA kits and custom assay development
- RIA kits
- GyroMark™ HT custom assay development

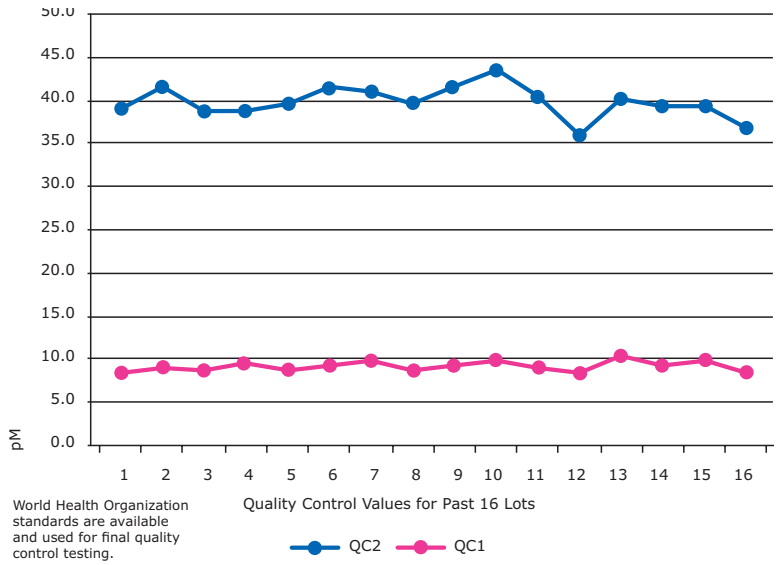
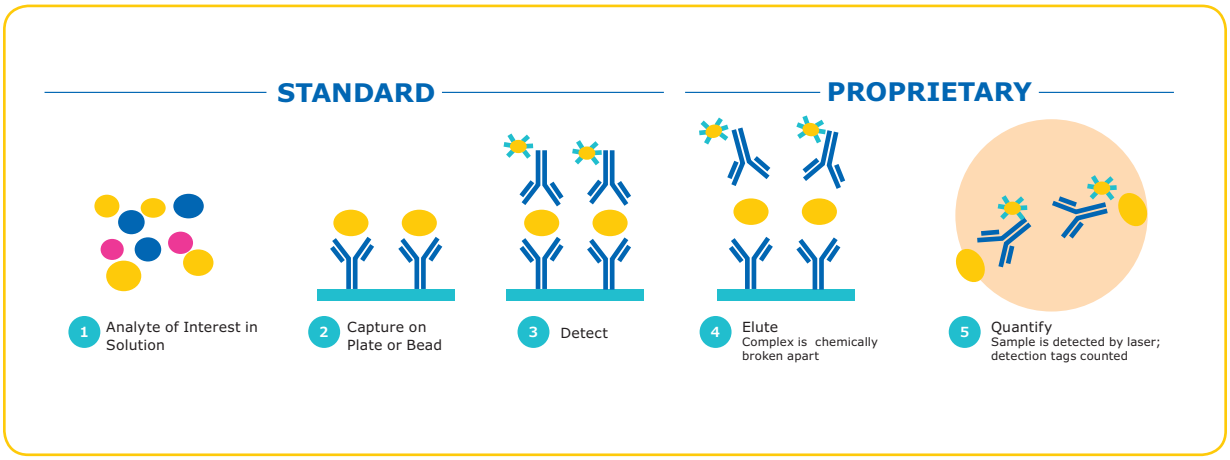


Figure 8. Low and high quality control values for the Human Intact Proinsulin ELISA (EZHPI-15K) show consistent values for the past 16 lots (±10% of reference lot).

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.



SMC™ Assay Workflow

During the capture and detection steps, specific antibodies translate each biomarker into a signal. During the modified elution step, fluorescent dye-labeled detection antibodies are dissociated from the immunocomplex. In the Erenna® instrument, eluate is then drawn into the system capillary tube, which contains a small interrogation space that is illuminated by a laser. Single fluorescently labeled molecules are excited by the laser as they pass through the interrogation space as detected events.

The SMCxPRO™ system is the second generation instrument supporting SMC™ technology assays. The SMCxPRO™ technology approach collects signal from analyte fluorochromes free-floating in suspension using a rotating laser, CCD camera optics, and individual photons are counted by Avalanche Photodiode (APD).

Digital counting improves sensitivity and dynamic range

The SMCxPRO™ and Erenna® instruments capture the sum of all digital events counted above a background threshold. This model can have limited dynamic range, so at higher concentrations on the Erenna® instrument, a proprietary algorithm computes the total sum of all photons recorded as an additional standard curve. The SMCxPRO™ instrument digital event algorithm computes digital events across a spectrum of time series for a single standard curve, thus improving assay sensitivity and extending the dynamic measuring range beyond what can be achieved with traditional technologies.

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**
SMCxPRO™ IQ/OQ Installation	**96-2012-00**
SMCxPRO™ PQ Service	**96-2013-00**
BioTek® 405 Touch Microplate Washer with MAG plate	**95-0004-05**
Tecan Hydroflex Microplate 8-Channel Washer	**95-0014-00**
Jitterbug Plate Shaker	**70-0009-00**

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)

Min. 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

Installation and Training

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

Three Levels of Onsite Service Support for SMCxPRO™ Platform

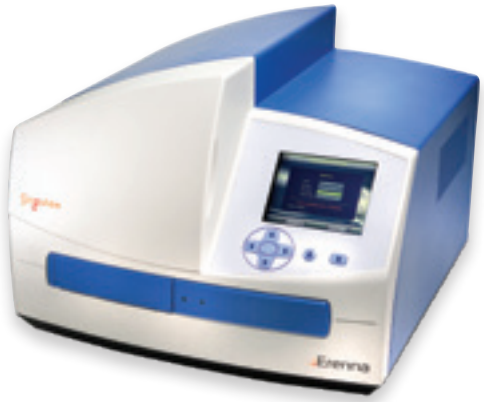
- **Total Service:** Unlimited visits including labor, travel, expenses and all parts for any service for one year
- **Advanced Service:** Labor, travel and expenses for one preventative maintenance and one floating visit for one year
- **Essential Service:** Labor for one preventative maintenance visit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

Advanced Customer Training

Take advantage of ultrasensitive digital (SMC™) technology while developing your own application-specific immunoassays in either bead- or plate-based assay format. We offer hands-on training at your facility or at one of our global training centers. This training will provide the tools you need to develop your own immunoassays for use on the SMCxPRO™ and Erenna® instruments. Ask your sales specialist for more information.

Description	Cat. No.
SMC™ Assay Development Training - 3 days	**96-2024-00**
SMC™ Assay Development Training - extra day	**96-2025-00**

Erenna® Immunoassay System Specifications



Erenna® & Ancillary Product Services	Cat. No.
Erenna® Immunoassay System & Accessories	**95-0017-00**
Complete Erenna® Installation	**96-0015-00**
Erenna® with Sgx link IQ/OQ Installation	**96-0016-00**
PQ for Erenna® with Sgx Link	**96-0032-02**
BioTek® 405 Touch Microplate washer with MAG plate	**95-0004-05**
Tecan Hydroflex Microplate 8-Channel Washer	**95-0014-00**
Jitterbug Plate Shaker	**70-0009-00**
Heat Sealer	**70-0018-00**

Network/PC Requirement

- Microsoft Windows® 7 Operating Systems
- A static IP address and an FTP server
- Sgx link Operating and Analysis software included

Instrument Dimensions and Weight

- Height: 400 mm (15.75 in)
- Width: 540 mm (21.25 in)
- Depth: 575.6 mm (22.7 in)
- Weight: 31.3 kg (69 lbs)

Power Requirement

- US: 115 VAC, 50-60 Hz (operating range 90-125 V)
- International: 230 VAC, 50-60 Hz (operating range 180-250 V)

Min. Instrument Performance Specifications

Metric	Specification
Slope	>20 DE/fM*
Background	<100 DE
Limit of detection (LoD)	<1 fM*
Precision	<7% CV†
Dynamic Range	>4 logs

* Determined from calibrator set: 0–300 fM of 150 kD antibody labeled with fluorophore

† DE measurements from 30 fM calibrator, n=20

Three Levels of Onsite Service Support for the Erenna® Instrument

- **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

SMC™ Bead-based Immunoassay Kits

Analyte	LLOQ (pg/mL)[1]	Median Endogenous (pg/mL)[2]	Species[3]	Sample Type[4]	Cat. No.
Akt1 (Ser473)	0.98	NA	H, M, R	L	**03-0100-01**
Akt1 (total)	7.8	NA	H, M, R	L	**03-0099-01**
Amyloid beta 1-40[6,7]	Coming Soon		H, M, R	C, P	**03-0145-00**
Amyloid beta 1-42[6,7] NEW	0.98	P: 14.7; CSF: 101	H, M, R	C, P	**03-0146-00**
cTnI[6]	0.69	1.75	H, Cy, R, C, GP	P, S	**03-0092-00**
cTnI[6,7] NEW	0.69	1.75	H, Cy, R, C, GP	P,S	**03-0154-00**
G-CSF	0.08	17	H	P	**03-0047-00**
GM-CSF	0.02	0.2	H	P	**03-0067-00**
GLP-1 (active)	0.4	3.46	H, M, R, C	P	**03-0024-03**
GLP-1 (total)	0.39	17.8	H, M, R, C	P	**03-0025-06**
Glucagon[6,7] NEW	0.781	44	H, M, R	P	**03-0153-00**
IFN-γ	0.2	0.79	H	P	**03-0049-00**
IL-1α	0.39	1.06	H	P	**03-0072-00**
IL-1β[6]	0.2	P: 0.45; S: 1.08	H	P	**03-0028-00**
IL-2	0.2	0.21	H	P, S	**03-0051-00**
IL-4[6]	0.04	0.12	H	P	**03-0052-00**
IL-5	3.91	4.52	H	P	**03-0053-00**
IL-6[6]	0.08	1.3	H	P, S	**03-0089-01**
IL-6[6,7] NEW	0.08	1.3	H	P, S	**03-0155-00**
IL-7	0.39	4.91	H	P, S	**03-0094-00**
IL-8 / CXCL8	0.24	3.6	H	P, S	**03-0055-00**
IL-10	0.39	1.01	H	P	**03-0056-00**
IL-12	0.05	0.13	H	P, S	**03-0057-00**
IL-13 v2[6]	0.04	0.21	H	P, S	**03-0109-02**
IL-15	0.1	3.38	H	P, S	**03-0058-00**
IL-17A v2	0.03	0.12	H	P, S	**03-0103-00**
IL-17F v2	0.2	0.86	H	P, S	**03-0102-00**
IL-17A/F Heterodimer v2	1.2	2.75	H	P, S	**03-0119-00**
IL-21	0.2	0.53	H	S	**03-0014-07**
IL-22[6]	0.2	3.3	H	P	**03-0059-01**
IL-23[6]	0.1	0.18	H	P,S	**03-0112-00**
KIM-1[5]	3.91	P: 65; S: 75; U: 147	H	P, S, U	**03-0118-00**
TNFα[6]	0.2	2.3	H	P	**03-0088-00**
TNFα	0.4	38.6	M	S	**03-0108-00**
VEGF	0.2	66.5	H	P	**03-0068-00**

[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] KIM-1 is a plate-based assay.

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

[7] New streamlined format kit. For list of changes refer to the new panels section.

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

Validation Criteria for Verified 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:** Assays within 20% of expected value
- **Endogenous range:** Minimum of 10 samples from individual donors assessed for ability to quantify biomarker levels

Mouse Plate-based Discovery Immunoassay Kits

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

- Reproducible LLOQ
- Simple workflow
- Minimal sample volume

Analyte	LLOQ (pg/mL)	Sample Type	Cat. No.
Mouse IL-4	0.49	Serum	**03-0136-00**
Mouse IL-5	0.24	Serum	**03-0132-00**
Mouse IL-10	6.2	Serum	**03-0134-00**
Mouse IL-13	3.91	Serum	**03-0133-00**
Mouse IL-17A	0.98	Serum	**03-0123-00**
Mouse IL-17F	0.49	Serum	**03-0125-01**
Mouse IL-21	4.9	Serum	**03-0126-00**
Mouse IL-22	100	Serum	**03-0127-00**
Mouse TNFα	0.49	Serum	**03-0137-00**

Expert Custom Services & Sample Testing for SMC™ Technology

Custom services and sample testing when time and resources require an expert outsource partner to help accelerate programs from discovery into clinical trials.

Our capabilities include:

Collaborative Biomarker Discovery & Development

- Fit-for-purpose sample testing (non-GLP)
- Immunoassay development
- Biomarker validation (to sponsor requirements)

Biomarker Assay Services for Biotherapeutic Discovery

- Pharmacokinetics
- Pharmacodynamics
- Immunogenicity

Antibody Derivatization/Labeling and Characterization

- Antibody screening and selection
- Antibody labeling
- Assay stability testing

SMC™ Assay Kit Development

- Proprietary or commercial SMC™ assay kit development
- Assay kit verification and validation
- Assay kit manufacturing
- Method transfer to CRO

Sample Testing

- R&D and prototype assay kits
- Commercial assay kits
- Potential biological relevance in real samples
- Biological anomalies that may occur due to drug interference, matrix effects, etc.

Merck Millipore Brand ELISAs

Metabolic/Endocrine ELISAs

Our broad range of metabolic/endocrine ELISAs can help elucidate therapeutic mechanisms of action, aid in early diagnosis of disease states, predict toxicities, investigate metabolic diseases and more.

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**	**EZHA-52BK**
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**	**EZCCP-47BK**
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 WHO	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 WHO	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" WHO	Human	0.5–100 ng/mL	0.2 ng/mL	25 µL	**EZHL-80SK**	**EZHL-80BK**
Pancreatic Polypeptide	Human	12.6–3000 pg/mL	12.3 pg/mL	50 µL	**EZHPP-40K**	**EZHPP-40BK**
Procollagen Type IIA N-Propeptide (PIIANP)	Human	lot dependent	30.0 ng/mL	5 µL	**EZPIIANP-53K**	
Proinsulin (total) WHO	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	**EZHPYYT66K**	
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

Neuroscience: Neuropeptide & Neurodegenerative ELISAs

Get a complete picture of the complexities associated with normal and disease states of the nervous system with reliable quantification of biomarkers. Trust our neuropeptide and neurodegenerative ELISAs to precisely quantify soluble biomarkers in sera and lysates.

Description	Species	Standard Curve Range	Sensitivity	Sample Volume	Cat. No.
α-Synuclein	Human, Mouse, Rat	3–60 ng/mL	3 ng/mL	100 µL	**NS400**
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**
NGF (Nerve Growth Factor)	Mouse, Rat	10–1000 pg/mL	10-15 pg/mL	50 µL	**CYT304**
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**

BioTek® 800 TS Absorbance Reader

For Merck Millipore and Sigma-Aldrich ELISAs

- Precise, accurate and versatile, used for many applications, including ELISA, protein and other end-point assays, plus kinetics and cell-based assays
- Software options: Basic, Gen 5 and Gen 5 Secure
- Flexible filter options; 450nm, 590nm, 630nm and 750nm as standard
- 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 **NEW**	**40-006**
BioTek® 800 TS Absorbance Reader, Gen 5 Secure **NEW**	**40-007**
BioTek® 800 TS Absorbance Reader, Basic **NEW**	**40-300**

Merck Millipore Brand Radioimmunoassays (RIAs)

RIAs have long been considered a valuable, economical and accurate way to measure protein concentration. However, as many researchers move away from using radioactive material, we would like to recommend that you consider using our ELISAs or MILLIPLEX® MAP kits 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**
Leptin (sensitive)	Human	0.05–10 ng/mL	0.05 ng/mL	50 µL	**SHL-81K**
Proinsulin	Human	2–100 pM	2 pM	100–200 µL	**HPI-15K**
PYY	Mouse, Rat	lot dependent	15.6 pg/mL (78.1 pg/mL)	100 µL (20 µL)	**RMPYY-68HK**
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

- Sandwich ELISA
  - 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
	✔	✔	✔	✔	✔
	✔	✔	✔	✔	✔
	✔	✔		✔	✔
	✔				
	✔	✔			
	✔				
	✔				
	✔				
	✔				
	✔	✔			

Fit-for-Purpose Custom Immunoassay Development

We offer four types of assays to meet your assay verification and validation requirements. Projects can include new analyte development or use of existing analytes in a new format (including transferring assays to a new platform or verifying assays for a new sample type). Our consultative technical specialists will help determine the right solution for you.

STEP 1

Pick a platform based on the number of proteins you would like to measure in your sample. Consider sensitivity requirements, sample volume and/or throughput constraints.

Luminex® Platform

Multiplex Detection: MAGPIX®, Luminex® 200™, FLEXMAP 3D® systems

Single Molecule Counting (SMC™)

Ultrasensitive Single Protein Detection: SMCxPRO™ or Erenna® systems*

*Please refer to the SMC™ technology section for complete details on how to meet your custom assay and sample testing needs.

ELISA

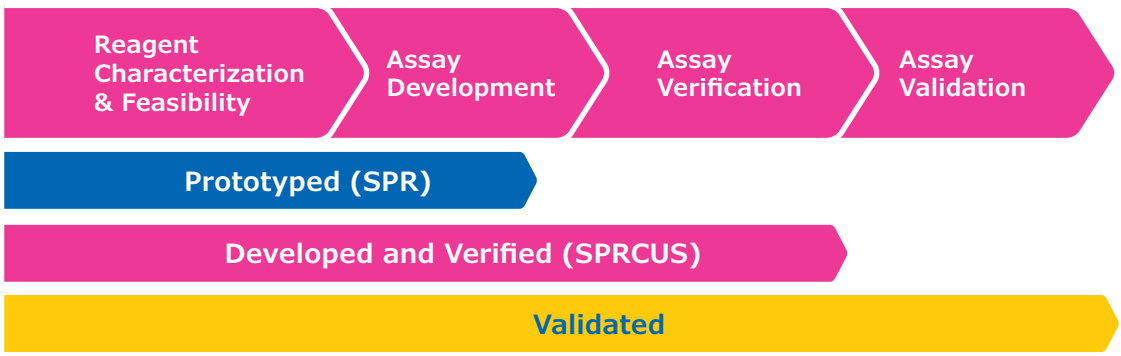
Single Protein Detection: Plate reader compatibility

GyroMark™ HT

Automated Single Protein Detection: Gyrolab® xP and Gyrolab® xPlore™

STEP 2

Choose your assay type based on your required level of verification and validation (Prototyped, Developed and Verified or Validated).



STEP 3

Determine the appropriate level of verification and validation testing needed in your custom assay.

Minimum levels of assay verification are suggested and included for each platform. Additional verification and validation services are also available.

STEP 4

Determine the kitted format for your custom assay.

Final kit formats can be customized to meet your needs. All custom assays will include a customized protocol and standard kit materials. In addition, special bulk packaging requirements, 384-well assay formats (custom SMC™ and multiplex) and/or premixed beads (custom multiplex assays only) can be selected. Download our Custom Immunoassay Menu of Services companion piece for a complete list of formats available by platform.

Download our Custom Immunoassay Menu of Services companion piece for a complete list of assay formats, verification, and validation testing available for each platform:
MerckMillipore.com/customassay

Get started today.

Contact **customassay@emdmillipore.com** for a complimentary feasibility assessment.

DID YOU KNOW?

One advantage of supporting four different platforms is the ability to test the same antibody pair(s) in different immunoassay formats. Antibody pair information in commercial immunoassays is usually proprietary. We can test antibodies used in any of our assays on any platform. For example, we can test the same antibody pairs used in a multiplex assay screen in a custom SMC™ assay to achieve greater sensitivity. Use of the same reagents ensures consistency in epitope detection across platforms, and enables us to support you as your research evolves.

Custom Analytes

Human

Analyte	Platform	Sample
Adalimumab ADA	GyroMark™ HT	Serum/Plasma
Adalimumab Drug Quantitation	GyroMark™ HT	Serum/Plasma
B-cell Maturation Antigen (BCMA)	MILLIPLEX® MAP	Serum/Plasma
Calprotectin	MILLIPLEX® MAP	Serum/Plasma
CD13 Aminopeptidase N	MILLIPLEX® MAP	Serum/Plasma
Collagen 1	MILLIPLEX® MAP	Multiple
CSTB (Cystatin B)	MILLIPLEX® MAP	Serum/Plasma
Elafin	MILLIPLEX® MAP	Serum/Plasma
Galectin-1	MILLIPLEX® MAP	Serum/Plasma
GLP-1 (active)	GyroMark™ HT	Serum/Plasma
GLP-1 (total)	GyroMark™ HT	Serum/Plasma
Glucagon	GyroMark™ HT	Serum/Plasma
GRP78	MILLIPLEX® MAP	Serum/Plasma
Human Pancreatic Polypeptide (HPP)	GyroMark™ HT	Serum/Plasma
IL-6	GyroMark™ HT	Serum/Plasma
IL-33	GyroMark™ HT	Serum/Plasma
Infliximab ADA	GyroMark™ HT	Serum/Plasma
Insulin	GyroMark™ HT	Serum/Plasma
Lecithin–cholesterol Acyltransferase (LCAT)	MILLIPLEX® MAP	Serum/Plasma
Semaphorin 3A	MILLIPLEX® MAP	Cell and Tissue Culture Supernatants
ST2 (Suppressor of Tumorigenicity 2)	MILLIPLEX® MAP	Serum/Plasma
sTM (Soluble Thrombomodulin)	MILLIPLEX® MAP	Serum/Plasma
VE Cadherin	MILLIPLEX® MAP	Serum/Plasma

Mouse and/or Rat

Analyte	Platform	Sample
β-2 Microglobulin	GyroMark™ HT	Urine
BMP-9	MILLIPLEX® MAP	Serum/Plasma
Clusterin	GyroMark™ HT	Urine
Cystatin C	GyroMark™ HT	Urine
Galectin-1	MILLIPLEX® MAP	Serum/Plasma
Galectin-3	MILLIPLEX® MAP	Serum/Plasma
GLP-1 (active)	GyroMark™ HT	Serum/Plasma
GLP-1 (total)	GyroMark™ HT	Serum/Plasma
HGFR/cMET	MILLIPLEX® MAP	Serum/Plasma
IGF-1	MILLIPLEX® MAP	Serum/Plasma
IL-6	GyroMark™ HT	Serum/Plasma
Insulin	GyroMark™ HT	Serum/Plasma
KIM-1	GyroMark™ HT	Urine
NGAL/Lipocalin-2	GyroMark™ HT	Urine
Periostin	MILLIPLEX® MAP	Serum/Plasma
sAXL	MILLIPLEX® MAP	Serum/Plasma
Tenascin C	MILLIPLEX® MAP	Serum/Plasma
TRAIL	MILLIPLEX® MAP	Serum/Plasma
Vasopressin	MILLIPLEX® MAP	Plasma
Vitronectin	MILLIPLEX® MAP	Serum/Plasma

Contact your local specialist or email **customassay@emdmillipore.com** if interested in the analytes listed above.

Soluble Analyte Appendix

How to use the appendix

Soluble analytes appear in alphabetic order. The alphabetic letter in the chart represents the platform:

E = ELISA
G = GyroMark™ HT assay
M = MILLIPLEX® MAP assay
R = RIA
S = SMC™ (Single Molecule Counting) assay

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
5'-NT/CD73	M		M						
6CKine/CCL21/Exodus-2	M								
ACTH	M	M	M	M			M		
ADAMTS13	M								
ADAM15	M								
Adiponectin	M E R	M E	M E						
Adiponectin, High Molecular Weight	E								
Adipsin/Factor D	M	M							
Agouti-Related Protein (AgRP)	M						M		
Albumin (urine)	M		M	M					
ALDH1A1	M								
sALK-1		M							
α-1-Acid Glycoprotein (AGP)	M	M	M						
α-1-Microglobulin	M								
α-1-Antitrypsin (A1AT)	M								
α-2-Macroglobulin (A2M)	M	M	M						
α-Fetoprotein (AFP)	M								
α-MSH	M	M	M						
α-Synuclein	M E	E	E						
Amphiregulin		M							
Amylin (active)	M E	M	M		M		M		
Amylin (total)	M			M					
Amyloid beta 1-40	M E S	M S	S						
Amyloid beta 1-42	M E S	M S	S						
Angiogenin (ANG)	M								
Angiopoietin-2	M	M							
Angiostatin/Kringle	M								
Angiotensinogen (AGT)	M								
ANGPTL3	M								
ANGPTL4	M								
ANGPTL6	M								
Antithrombin III	M								
Apelin	M								
Apo AI	M								
Apo AII	M								
Apo B	M								
Apo CII	M								
Apo CIII	M								
Apo E	M								

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
ApoE4	M								
APRIL/TNFSF13	M								
ARG1	M		M						
sAXL	M								
BAFF/Blys	M								
BCA-1/CXCL13	M								
BDNF	M E	M	M E	M					
Betacellulin		M							
β-Endorphin	M	M	M						
β2-Glycoprotein	M								
β-2-Microglobulin	M	M	M G	M					
BMP-9	M								
BNP	M								
BRAK/CXCL14	M								
BTLA	M								
C1q	M								
C2	M								
C3	M								
C3b/iC3b	M								
C4	M								
C4b	M								
C5	M								
C5a	M								
C9	M								
CA125	M								
CA15-3	M								
CA19-9	M								
Cadherin 13 (CDH13)	M								
Calbindin	M		M						
Carbonic Anhydrase 9 (CA9)	M								
Cathepsin D	M								
Caveolin-1			M						
CCL28	M								
sCD14	M								
CD27	M								
CD28	M								
sCD30	M	M							
sCD137/4-1BB/TNFRSF9	M	M					M		
sCD163	M								
sCD31/sPECAM-1	M	M							
CD40	M								
sCD40L	M	M					M		
CD44	M								
CD80/B7-1	M								
CD86/B7-2	M								
CEA	M								
CENP-A (Centromere Protein A)	M								

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
CENP-B (Centromere Protein B)	M								
Chromogranin-A (CHGA/CGA)	M								
sc-Kit/sSCFR	M								
CK-MB	M								
Clusterin	M	M	M G	M					
CNTF	M						M		
Collagen IV	M								
Complement Factor C3	M								
Complement Factor H (CFH)	M								
Connective Tissue Growth Factor (CTGF)			M						
Contactin-1	M								
Corticosterone			M						
Cortisol	M	M	M	M	M	M	M	M	M
C-Peptide	M E R			E R			M		
C-Peptide 2		M E	M E						
Creatine Kinase Muscle (CKM)			M						
CRP	M E	M	E						
CTACK/CCL27	M								
CTLA-4/CD152	M								
CXCL16	M	M							
CYFRA21-1	M								
Cystatin C	M	M	M G	M					
D-dimer	M								
DKK1	M	M	M						
dPAPP-A	M								
DPP4	M								
EGF	M	M	M						
ENA-78/CXCL5	M								
Endocan-1 (ESM-1)	M	M							
Endoglin	M	M							
Endostatin	M								
Endothelin-1	M	M							
Eotaxin/CCL11	M	M	M				M	M	
Eotaxin-2/CCL24/MPIF-2	M								
Eotaxin-3/CCL26	M								
EpCAM	M								
Erythropoietin (EPO)	M	M	M						
sE-Selectin	M E	M	M						
Estradiol	M	M	M	M	M	M	M	M	M
Exodus-2/CCL21/6CKine		M							
Extracellular Matrix Protein 1 (ECM1)	M								
FABP1	M								
FABP3	M		M						
FABP4	M								
Factor B	M								
Factor H	M								

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
Factor I	M								
sFAS/TNFRSF6	M	M			M				
sFasL	M	M					M		
Ferritin	M								
Fetuin A	M								
FGF-1/FGF-acidic	M								
FGF-2/FGF-basic	M	M					M	M	
FGF-19	M								
FGF-21	M E	M E	M E						
FGF-23	M E	M	M						
Fibrinogen	M		M						
Fibroblast Activation Protein (FAP)	M								
Fibronectin	M E								
Flt3 Ligand	M				M				
Follistatin (FST)	M	M							
Follistatin-like Protein 1 (FSTL1)	M	M	M						
Fractalkine/CX3CL1	M	M	M				M	M	
FSH	M	M	M	M			M		
Galectin 3	M								
G-CSF	M S	M	M				M	M	
GDF-15	M								
GDNF	M								
GH	M	M E	M E	M			M		
Ghrelin (active)	M E R	M E	M E	M	M		M		
Ghrelin (total)	E R	E	E						
GIP (total)	M E	M E	M E	M	M		M		
GITR	M								
GITRL	M								
Glial Fibrillary Acidic Protein (GFAP)	M E	E	E						
GLP-1 (active)	M S	M S	M S	M S	M		M		E R G
GLP-1 High Sensitivity (active)									E
GLP-1 (total)	M S	S	S	S					E R G
GLP-2									E
Glucagon	M E S	M E S	M E S	M	M		M		R G
GM-CSF	M S	M	M	M	M	M	M	M	
GOT1			M						
sGP130	M	M							
Granzyme A	M						M		
Granzyme B	M	M					M		
GRO	M							M	
GROα/KC/CINC-1/CXCL1		M	M		M				
GSTα	M		M						
Haptoglobin	M	M	M						
HB-EGF	M								
HCC-1/CCL14	M								
HCC-4/CCL16	M								
HCGβ	M								

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
HE4	M								
Hepsin	M								
sHER1/sEGFR/sErbB1	M								
sHER2/sEGFR2/sErbB2	M								
sHER3/sEGFR3/sErbB3	M								
HGF	M	M							
sHGFR/sc-Met	M								
HMGB1	M								
HSP60	M								
HSP70	M								
Human Serum Albumin (HSA)	M								
HVEM	M								
I-309/CCL1	M								
sICAM-1	M E	M	M						
ICOS	M								
IFNα2	M								
IFNβ	M								
IFNβ1		M							
IFNγ	M S	M	M	M	M	M	M	M	
IgA	M	M							
IgE	M	M							
IGF-1	M								
IGF1R	M								
IGF-2	M								
IGFBP1	M								
IGFBP2	M								
IGFBP3	M								
IGFBP4	M								
IGFBP5	M								
IGFBP6	M								
IGFBP7	M								
IgG1	M	M							
IgG2	M								
IgG2a		M							
IgG2b		M							
IgG3	M	M							
IgG4	M								
IgM	M	M							
IL-1α	M S	M	M			M	M	M	
IL-1β	M S	M	M		M	M	M	M	
IL-1Ra	M					M	M		
sIL-1RI	M	M							
sIL-1RII	M	M							
IL-2	M S	M	M	M	M	M	M	M	
sIL-2Rα	M	M							
IL-3	M	M							
IL-4	M S	M S	M		M	M	M	M	

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
sIL-4R	M	M							
IL-5	M S	M S	M				M	M	
IL-6	M S G	M G	M	M	M	M	M	M	
sIL-6R	M	M							
sIL-6Rα	M								
IL-7	M S	M		M					
IL-8/CXCL8	M S			M	M	M	M	M	
IL-9	M	M							
IL-10	M S	M S	M	M		M	M	M	
IL-11	M	M							
IL-12	S					M			
IL-12 (p40)	M	M			M				
IL-12/23 (p40)							M		
IL-12 (p70)	M E	M	M					M	
IL-13	M S	M S	M		M		M	M	
IL-14/α-Taxilin	M								
IL-15	M S	M	M	M			M		
IL-16	M	M					M		
IL-17A/CTLA8	M S	M S	M				M	M	
IL-17A/F	S	M							
Il-17E/IL-25	M	M					M		
IL-17F	M S	M S							
IL-18			M	M	M	M	M	M	
IL-19	M								
IL-20	M	M							
IL-21	M S	M S					M		
IL-22	M S	M S					M		
IL-23	M S	M					M		
IL-24	M								
IL-27	M	M							
IL-28A/IFNλ2	M						M		
IL-28B/IFNλ3	M	M							
IL-29/IFNλ1	M								
IL-31	M	M					M		
IL-32α	M								
IL-33/NF-HEV (mature)	M G	M					M		
IL-34	M	M S							
IL-35	M								
IL-36β/IL-1F8	M								
IL-37/IL-1F7	M								
IL-38/IL-1F10	M								
Insulin	M E G	M E G	M E R G	M	M	R	M		
Insulin (Animal Serum Free)	E								
Insulin Lispro									R
Insulin Specific	R								
Involucrin	M								
IP-10/CXCL10	M	M	M	M			M	M	

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
Irisin	M	M	M						
I-TAC/CXCL11	M								
Jo-1	M								
Kallekrein-6	M								
KC-like Protein				M					
Keratin-1, 10	M								
Keratin-6	M								
KIM-1	M S	M	M G	M					
Ku	M								
Lactotransferrin (LTF)	M								
LAG-3	M								
Laminin	E								
LDLR	M								
Leptin	M E R	M E	M E	M E	M		M		R
Leptin Receptor (LEPR)/OB-R	M								
LH	M	M	M				M		
LIF	M	M	M						
LIGHT	M	M							
LIX/CXCL6/GCP-2	M	M	M						
Leucine-rich alpha-2-glycoprotein 1 (LRG1)	M								
sL-Selectin	M								
Lymphotactin/XCL1	M								
Mannose-binding lectin (MBL)	M								
MCAM/MUC18/sCD146	M								
MCP-1/CCL2	M	M	M	M	M		M	M	
MCP-2/CCL8	M								
MCP-3/CCL7	M								
MCP-4/CCL13	M								
MCP-5/CCL12		M							
M-CSF	M	M							
MDC/CCL22	M	M							
MDHI	M								
Melanoma Inhibitory Activity Protein (MIA)	M								
Melatonin	M		M						
Mesothelin	M								
Mi-2	M								
Midkine	M								
MIF	M								
MIG/CXCL9	M	M							
MIP-1α/CCL3	M	M	M				M		
MIP-1β/CCL4	M	M					M		
MIP-1δ/MIP-5/CCL15	M								
MIP-2/CXCL2		M	M						
MIP-3α/CCL20	M	M					M		
MIP-3β/CCL19	M	M							

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
MIP-4/PARC/CCL18	M								
MMP-1	M								
MMP-2	M	M							
MMP-3	M	M							
MMP-7	M								
MMP-8	M	M							
MMP-9	M	M							
MMP-10	M								
MMP-12	M	M							
MMP-13	M								
MPIF/CCL23	M								
MR-ProADM	M								
Myeloperoxidase (MPO)	M								
Myoglobin	M								
Myostatin/GDF8	M	M	M						
Myostatin Light Chain 3 (MYL3)			M						
NAP-2/CXCL7	M								
sNCAM	M								
NCAML1/L1CAM/CD171	M								
Neurogranin/NRGN	M								
Neuropeptide Y (NPY)	E	E	E						
sNeuropilin-1 (sNRP-1)	M								
Neurotensin	M	M	M						
Neuron-specific Enolase (NSE)	M								
Neutrophil Elastase-2 (ELA2)	M								
NGAL/Lipocalin-2	M	M	M G	M					
NGF	M	E	E						
Notch1	M								
NT proBNP	M								
Oncostatin-M (OSM)	M	M							
Osteoactivin	M								
Osteocalcin (OC)	M								
Osteocrin (OSTN)/Musclin	M	M	M						
Osteonectin/SPARC	M	M	M						
Osteopontin (OPN)	M	M	M	M					
Osteoprotegerin (OPG)	M	M	M						
Oxytocin	M	M	M						
PAI-1 (total)	M	M	M						
Pancreatic Polypeptide (PP)	M E G	M	M	M	M		M		
PARK5/UCHL1	M								
PARK7/DJ1	M								
PCNA (Proliferating Cell Nuclear Antigen A)	M								
PD-1	M								
PDGF-AA	M								
PDGF-AB/BB	M								
PDGF-BB					M				

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
PD-L1	M								
PEDF	M E								
Pentraxin-3 (PTX3)	M								
Perforin	M						M		
Periostin	M								
Phosphorylated Neurofilament (pNF-H)									E
PL-12 (Alanyl-tRNA Synthetase)	M								
PLA2G7	M								
Placental Growth Factor (PLGF)	M								
Placental Growth Factor 2 (PLGF-2)		M							
Platelet Factor 4 (PF4)/CXCL4	M								
PM/Sci 100	M								
PIIANP	E								
PRNP (Prion Protein)	M								
Progesterone	M	M	M	M	M	M	M	M	M
Progranulin (pGRN)	M								
Proinsulin	E R								
Prolactin	M	M	M						
ProMMP-9		M							
Properdin/Factor D	M								
Proteinase 3	M								
PSA (free)	M								
PSA (total)	M								
sP-Selectin	M	M							
PTGDS	M								
PTH	M		M						
PYY (3-36) Specific	R								
PYY		R	R						
PYY (total)	M E R	M	M	M	M		M		
sRAGE	M	M							
RANKL	M								
RANTES/CCL5	M	M	M		M		M	M	
RBP4	M			M					
Renin	M	M							
Resistin	M E	M							
Ribosomal P	M								
RNP (Ribonucleoprotein)	M								
RNP/Smith (RNP/Sm)	M								
S100B	M E								
SAA-3		E							
SCF	M				M				
Scl-70	M								
Sclerostin (SOST)	M	M	M						
SDF-1/CXCL12	M	M			M				
SDH	M		M						
Serum Amyloid A	M								

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
Serum Amyloid P (SAP)	M	M							
Sex Hormone Binding Globulin (SHBG)	M								
Sm	M								
SSA/Ro52 (Sjögren's Syndrome-related antigen A/Ro52 kDa)	M								
SSA/Ro60 (Sjögren's Syndrome-related antigen A/Ro60 kDa)	M								
SSB/La (Sjögren's Syndrome-related antigen B/La)	M								
sST2/IL1RL1	M								
Substance P	M	M	M						
Soluble Superoxide Dismutase 1 (sSOD1)	M								
Soluble Superoxide Dismutase 2 (sSOD2)	M								
Syndecan 4 (SYND4)	M								
T3	M	M	M	M	M	M	M	M	M
T4	M	M	M	M	M	M	M	M	M
TARC/CCL17	M	M							
pTau (Thr181)	M								
Tau (total)	M								
Tenascin-C (TN-C)	M								
Testosterone	M	M	M	M	M	M	M	M	M
TFF-3	M			M					
TGFα	M						M		
TGFβ1	M	M	M	M		M	M	M	M
TGFβ2	M	M	M	M		M	M	M	M
TGFβ3	M	M	M	M		M	M	M	M
Thrombomodulin	M	M							
Thrombospondin-1 (TSP-1)	M								
Thrombospondin-2 (TSP-2)	M								
sTIE-2	M								
TIM-3	M								
TIMP-1	M	M	M						
TIMP-2	M								
TIMP-3	M								
TIMP-4	M								
Tissue Factor (TF)	M								
TLR-2	M								
TNFα	M S	M S	M	M	M	M	M	M	
TNFβ/Lymphotoxin-α (LTA)	M	M					M		
sTNF RI	M	M							
sTNF RII	M	M							
TPO	M								
TRAIL/TNFSF10	M								
Transglutaminase 2 (TGM2)	M								
TRAP5	M								
TREM2	M								

Analyte	Human	Mouse	Rat	Canine	Feline	Porcine	Primate	Equine	Multi-Species
Troponin I (TnI)	M	M							
Troponin T (TnT)	M	M							
Cardiac Troponin I (cTnI)	S		M S	S			S		
Cardiac Troponin T (cTnt)			M						
TSH	M	M	M	M			M		
TSLP	M								
TWEAK	M								
suPAR	M								
Uromodulin	M								
ucMGP	M								
sVCAM-1	M E								
VEGF	S		M						
VEGF-A	M	M					M		
VEGF-C	M	M							
VEGF-D	M	M							
sVEGFR1/sFlt-1	M	M							
sVEGFR2/sKDR/sFlk-1	M	M							
sVEGFR3/sFlt-4	M	M							
Vitamin D Binding Protein	M								
YKL40/CHI3L1	M								
von Willebrand Factor (vWF)	M		M						

E = ELISA
G = GyroMark™ HT assay
M = MILLIPLEX® MAP assay
R = RIA
S = SMC™ assay

Cell Signaling Analyte Appendix

How to use the appendix

Cell Signaling analytes appear in alphabetic order. The alphabetic letter in the chart represents the type of kit:

MK = MILLIPLEX® MAP Kit
M2 = MILLIPLEX® MAP Phospho/Total 2 Plex Kit
MM = MILLIPLEX® MAP MAPmate™ assay
S = SMC™ (Single Molecule Counting) assay

Analyte	Human	Mouse	Rat
4E-BP1 (Thr37/46)	MK	MK	MK
4E-BP1 (total)	MK	MK	MK
Akt/PKB (Ser473)	MK M2 MM	MK M2 MM	MK M2 MM
Akt/PKB (total)	MK M2 MM	MK M2 MM	MK M2 MM
Akt1 (Ser473)	M2 S	M2 S	M2 S
Akt1 (total)	M2 S	M2 S	M2 S
Akt2 (Ser474)	M2	M2	M2
Akt2 (total)	M2	M2	M2
Akt3 (Ser472)	M2	M2	M2
Akt3 (total)	M2	M2	M2
ATF2 (Thr71)	MK	MK	
ATR (total)	MK		
BAD (Ser112)	MK MM	MM	
BAD (total)	MK		
BAX (total)	MK		
Bcl-2 (Ser70)	MK		
Bcl-2 (total)	MK		
Bcl-xL/BAD (interaction)	MK		
Bcl-xL (total)	MK		
β-Tubulin (total)	MM	MM	MM
Blk (Tyr389)	MK		
BIM	MK		
Caspase 3 (Active)	MM	MM	
Caspase 8, Active (total)	MK		
Caspase 9, Active (total)	MK		
CD3ε (pan Tyr)	MK		
Chk1 (Ser345)	MK	MK	MK
Chk2 (Thr68)	MK		
c-Jun (Ser73)	MK	MK	MK
c-Kit (pan Tyr)	MK		
c-Met/HGFR (pan Tyr)	MK		
c-Myc (total)	MK		
CREB (Ser133)	MK M2	MK M2	MK M2
CREB (total)	MK M2	MK M2	MK M2
eIF2a (Ser51)	MK	MK	MK
eIF-4B (Ser422)	MK	MK	MK
eIF-4E (Ser209)	MK	MK	MK
eIF-4G (Ser1108)	MK	MK	MK

Analyte	Human	Mouse	Rat
ErbB1/EGFR (pan Tyr)	MK		
ErbB2/HER2 (pan Tyr)	MK		
ErbB3/HER3 (pan Tyr)	MK		
ErbB4/HER4 (pan Tyr)	MK		
Erk/MAPK 1/2 (Thr185/Tyr187)	MK M2 MM	MK M2 MM	MK M2 MM
Erk/MAPK 1/2 (total)	MK M2 MM	MK M2 MM	MK M2 MM
FADD (Ser194)	MK		
FGFR1 (pan Tyr)	MK		
Fgr (Tyr412)	MK		MK
Flt3 (pan Tyr)	MK		
Fyn (Tyr420)	MK	MK	MK
GAPDH (total)	MM		
GSK3α (Ser21)	MK	MK	MK
GSK3α (total)	MK	MK	MK
GSK3β (Ser9)	MK	MK	MK
GSK3β (total)	MK	MK	MK
H2A.X (Ser139)	MK	MK	MK
Hck (Tyr411)	MK	MK	
HSP27 (Ser78)	MK		
IGF1R (pan Tyr)	MK		
IGF1R (Tyr1135/1136)	MK	MK	
IGF1R (total)	MK	MK	MK
IR (pan Tyr)	MK		
IR (Tyr1162/1163)	MK		
IR (total)	MK		MK
IRS1 (Ser636)	MK M2	M2	MK
IRS1 (total)	MK M2	MK M2	MK M2
IκBα (Ser32)	MK		
Ικκα/β (Ser177/181)	MK		
JNK/SAPK1 (Thr183/Tyr185)	MK M2 MM	MK M2 MM	MK M2
JNK/SAPK1 (total)	MK M2 MM	MK M2 MM	MK M2
LAT (pan Tyr)	MK		
Lck (pan Tyr)	MK	MK	MK
Lck (Tyr394)	MK	MK	MK
Lyn (Tyr397)	MK		MK
Mcl-1/BIM (interaction)	MK		
Mcl-1 (total)	MK		
MDM2 (total)	MK	MK	MK
MEK1 (Ser222)	MK	MK	MK
MSCFR (pan Tyr)	MK		
MSK1 (Ser212)	MK	MK	
mTOR (Ser2448)	MK M2 MM	MK M2 MM	M2 MM
mTOR (total)	MK M2 MM	MK M2 MM	MK MM
NFκB (Ser536)	MK	MK	
NFκB (total)	MK	MK	MK
NOXA/Mcl-1 (interaction)	MK		
p21 (total)	MK		

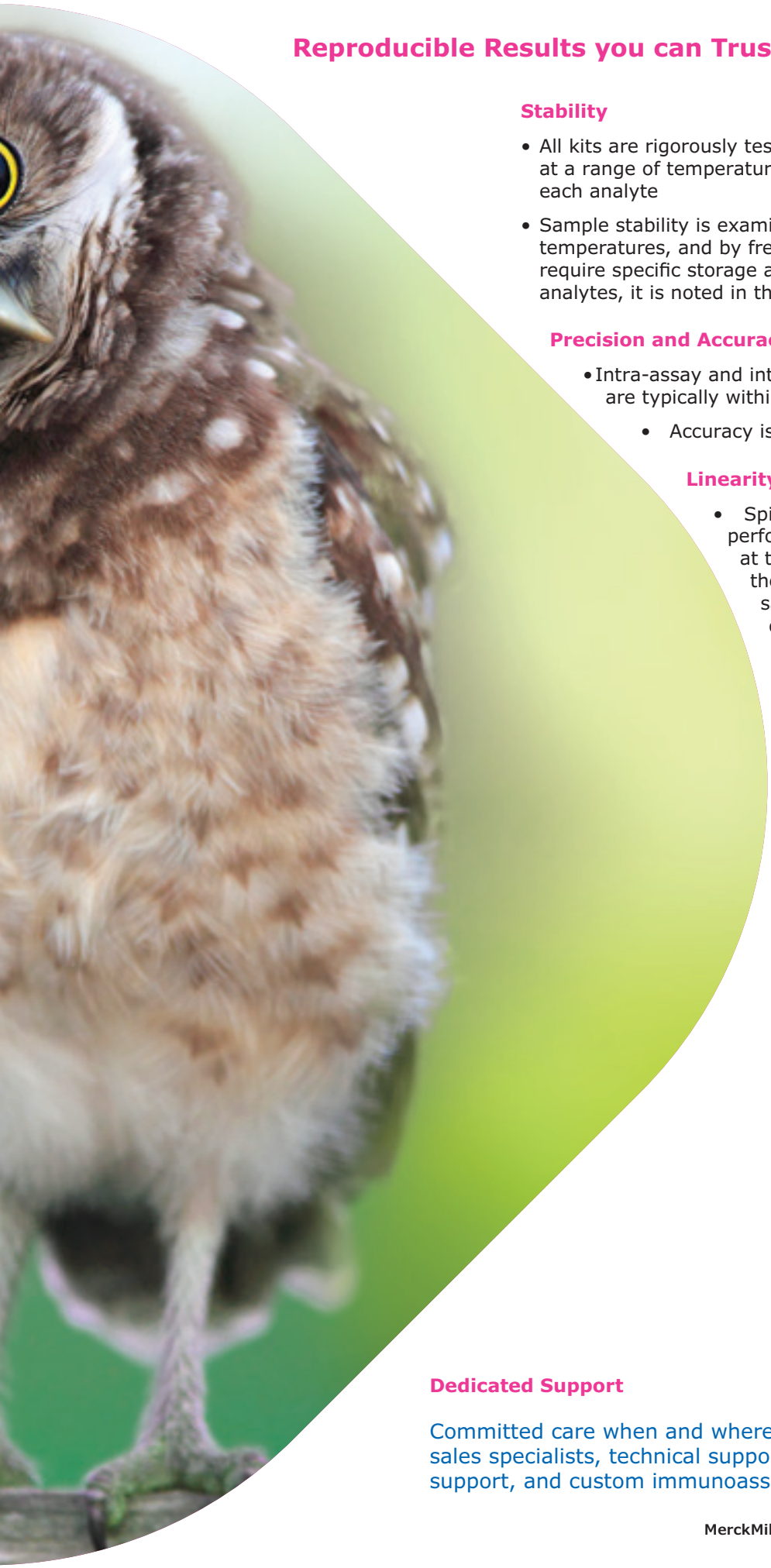
Analyte	Human	Mouse	Rat
p38/SAPK2A/B (Thr180/Tyr182)	MK M2 MM	MK M2 MM	MK M2 MM
p38/SAPK2A/B (total)	MK M2 MM	MK M2 MM	MK M2 MM
p53 (Ser15)	MK		
p53 (Ser46)	MK		
p70S6 Kinase (Th389/412)	MK	MK	MK
p70S6 Kinase (total)	MK	MK	MK
PARP, Cleaved (total)	MM		
PDGFRα (pan Tyr)	MK	MK	MK
PDGFRβ (pan Tyr)	MK		
PTEN (Ser380)	MK	MK	MK
PTEN (total)	MK	MK	MK
RPS6 (Ser235/236)	MK	MK	MK
RPS6 (total)	MK	MK	MK
SMAD2 (Ser465/467)	MK	MK	MK
SMAD3 (Ser423/425)	MK	MK	MK
SMAD4 (total)	MK	MK	MK
Src (Tyr419)	MK	MK	MK
STAT1 (Tyr701)	MK MM	MK MM	
STAT1 (total)	MM	MM	
STAT2 (Tyr690)	MK		
STAT3 (Tyr705)	MK M2	MK M2	MK M2
STAT3 (Ser727)	MK	MK	MK
STAT3 (total)	MK M2	MK M2	MK M2
STAT5A/B (Tyr694/699)	MK	MK	MK
STAT5A/B (total)	MK	MK	MK
STAT6 (Tyr641)	MK		
Syk (pan Tyr)	MK		
TGFβRII (total)	MK		
TIE1 (pan Tyr)	MK		
TIE2 (pan Tyr)	MK		
TNFR1 (total)	MK		
TSC2 (Ser939)	MK	MK	MK
TSC2 (total)	MK	MK	MK
VEGFR1/Flt-1 (pan Tyr)	MK		
VEGFR2/KDR/Flk-1 (pan Tyr)	MK		
VEGFR3/Flt-4 (pan Tyr)	MK	MK	MK
Yes (Tyr421)	MK	MK	MK
ZAP-70 (pan Tyr)	MK		

MK = MILLIPLEX® MAP Kit
M2 = MILLIPLEX® MAP Phospho/Total 2 Plex Kit
MM = MILLIPLEX® MAP MAPmate™ assay
S = SMC™ assay

Look closer

All biomarker kits are not created equal

Your time and samples are too precious to trust to anything but the most highly validated kits available. With assay performance data included in every protocol, you can discover with confidence.



Reproducible Results you can Trust

Stability

- All kits are rigorously tested for shipping stability at a range of temperatures to determine impact on each analyte
- Sample stability is examined at a range of temperatures, and by freeze/thaw; if samples require specific storage and handling for any analytes, it is noted in the protocol

Precision and Accuracy

- Intra-assay and inter-assay precision levels are typically within 10-15%
- Accuracy is typically within ± 20%

Linearity of Dilution

- Spike recovery in sample is performed for each analyte at three concentrations on the standard curve; diluted sample results must be directly proportional to the concentration of analyte in the sample, typically within ± 20%

Lot-to-Lot Consistency

- At development, a "gold standard" calibrator is prepared and is used as a reference for all future production lots

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Lit. No. MK_BR1709EN
2018 - 10193
05/2018