

# Analyte Quarterly

Vol. 2 2018

Your comprehensive guide to multiplex and single protein detection

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



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

**Millipore®**

Preparation, Separation, Filtration & Testing Products

# 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.



## 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, 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 or LLOQ) 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

## Reproducible Results you can Trust

### Stability

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

### Precision and Accuracy

- Intra-assay and inter-assay precision levels are typically within 10-15%
- Accuracy is normally within  $\pm 20\%$

### 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  $\pm 20\%$

### Lot-to-Lot Consistency

- A "gold standard" calibrator is used as a reference for all future production lots

### Dedicated Support

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

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

# 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, or robust ELISAs 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 |
|---|---|--------------|-------------|---------------|---------------|---|----------------------|
| <b>Luminex® platform</b>  |   |              |             |               |               |   |                      |
|  | Multiplex detection<br>Flexible platform        | Yes          | pg/mL       | ≤ 25 µL       | •••           |  | Yes                  |
| <b>SMCxPRO™ or Erenna® system</b>   |   |              |             |               |               |   |                      |
|  | Ultrasensitivity<br>High performance            | Yes          | fg/mL       | 5–100 µL      | •••           |  | Yes                  |
| <b>ELISA</b>  |   |              |             |               |               |   |                      |
|  | Plate reader compatibility<br>Most widely cited | Yes          | pg/mL       | 50–100 µL     | ••            |  | Yes                  |

• Good Performance    •• Strong Performance    ••• Superior Performance     Not Recommended     Recommended

## NEW IMMUNOASSAY PRODUCTS

### NEW! MILLIPLEX® MAP and Single Protein Detection Kits

| Description  | Species           | Cat. No.     |
|--|-------------------|--------------|
| <b>MILLIPLEX® MAP Panels</b>                       |                   |              |
| Aging Panel 1                                      | Human             | HAGE1MAG-20K |
| Cancer Autoantibody                                | Human             | HCABMAG-13K  |
| IL-18 Singleplex                                   | Human             | HIL18MAG-66K |
| <b>SMC™ Streamlined Kits</b>                       |                   |              |
| Amyloid Beta 1-40 High Sensitivity Immunoassay Kit | Human, Mouse, Rat | 03-0145-00   |
| IL-1β High Sensitivity Immunoassay Kit             | Human             | 03-0160-00   |
| IL-4 High Sensitivity Immunoassay Kit              | Human             | 03-0161-00   |
| IL-13 High Sensitivity Immunoassay Kit             | Human             | 03-0156-00   |
| IL-17A High Sensitivity Immunoassay Kit            | Human             | 03-0159-00   |
| IL-17F High Sensitivity Immunoassay Kit            | Human             | 03-0164-00   |
| IL-23 High Sensitivity Immunoassay Kit             | Human             | 03-0157-00   |
| TNFα High Sensitivity Immunoassay Kit              | Human             | 03-0163-00   |
| <b>Instrumentation</b>                             |                   |              |
| 50 TS Plate Washer, BioTek                         | N/A               | 40-301       |
| 800 TS Absorbance Reader-Basic, BioTek             | N/A               | 40-300       |
| 800 TS Absorbance Reader-Gen 5 Software            | N/A               | 40-006       |
| 800 TS Absorbance Reader-Gen 5 Secure              | N/A               | 40-007       |

### Coming Soon

| Description                             | Species | Cat. No.     |
|---|---------|--------------|
| <b>MILLIPLEX® MAP Panels</b>            |         |              |
| Cytokine Panel                          | Bovine  | Coming Soon! |
| Pituitary Panel                         | Canine  | Coming Soon! |
| <b>SMC™ Streamlined Kits</b>            |         |              |
| BAFF High Sensitivity Immunoassay Kit   | Human   | Coming Soon! |
| MIP-1β/CCL4 Plate-based Immunoassay Kit | Human   | Coming Soon! |
| IL-1α High Sensitivity Immunoassay Kit  | Human   | Coming Soon! |
| IL-5 High Sensitivity Immunoassay Kit   | Human   | Coming Soon! |
| IL-22 High Sensitivity Immunoassay Kit  | Human   | Coming Soon! |
| Plate Washer Verification Kit           | N/A     | Coming Soon! |

### 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



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# 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. HCP2MAG-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. HCP3MAG-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 ▲ |
| Lymphotoxin/XCL1 |               |

### Human Cytokine/Chemokine Panel IV

- ☐ (Cat. No. HCP4MAG-64K)
- 21 (Cat. No. HCY4MG-64K-PX21)
- 21 (Cat. No. HCP4MG64KPX21BK)

|                 |                  |
|-----------------|------------------|
| APRIL/TNFSF13   | IL-28B/IFNλ3     |
| BAFF/Blys       | IL-32α           |
| BRAX/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 IL-18 Singleplex

(Cat. No. HIL18MAG-66K) **NEW**

|       |
|-------|
| IL-18 |
|-------|

### 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 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        | MIP-3α/CCL20             |
| IL-15        | TNFα                     |
| IL-17A/CTLA8 | TNFβ/Lymphotoxin-α (LTA) |

### 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        |

#### 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
- Bulk indicates Space Saver Packaging

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

- Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ☐ Available for custom premix
- Analyte requires a different sample dilution from others in panel

**Human Soluble Cytokine Receptor**

(Cat. No. HSCRMAG-32K)

⑭ (Cat. No. HSCRMAG32KPX14)

⑭ (Bulk Cat. No. HSCRMAG32PMX14BK)

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

**Human Complement Panel 1**

(Cat. No. HCMP1MAG-19K)

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

**Human Complement Panel 2**

(Cat. No. HCMP2MAG-19K)

|          |                    |
|----------|--------------------|
| C1q      | 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 TGF $\beta$  – Singleplex**

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

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

TGF $\beta$ 1**Multi-Species TGF $\beta$  – 3 Plex ▼**

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

**NON-CONFIGURABLE KIT**

|               |               |
|---------------|---------------|
| TGF $\beta$ 1 | TGF $\beta$ 3 |
| TGF $\beta$ 2 |               |

**Immune Response****Human Autoimmune Autoantibody\*\***

(Cat. No. HAIAB-10K)

|   |  |
|---|--|
| $\beta$ 2-Glycoprotein                      | Ribosomal P RNP  |
| C1q   | (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  | SSA/Ro60 (Sjögren's Syndrome-related antigen A/Ro60 kDa) |
| Myeloperoxidase (MPO)                       | SB/La (Sjögren's Syndrome-related antigen B/La)          |
| PCNA (Proliferating Cell Nuclear Antigen A) |  |
| PL-12 (Alanyl-tRNA Synthetase)              |  |
| 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-1 $\alpha$ /CCL3 |
| HSP70         | MIP-1 $\beta$ /CCL4  |
| IL-1 $\alpha$ | 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-1 $\beta$ | MCP-1/CCL2 |
| IL-6         | NGF        |
| IL-8/CXCL8   | TNFA       |
| Insulin      |            |

**Human Adipocyte (Cell culture samples)**

(Cat. No. HADCYMAG-61K)

|              |               |
|--------------|---------------|
| Adiponectin  | MCP-1/CCL2    |
| HGF          | NGF           |
| IL-1 $\beta$ | PAI-1 (total) |
| IL-6         | Resistin      |
| IL-8/CXCL8   | TNFA          |
| Leptin       |               |

**Human Diabetes ▼**

⑤ (Cat.No. HDIAB-34K-PMX5)

⑤ (Bulk Cat. No. HDIAB34KPMX5BK)

**NON-CONFIGURABLE KIT**

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

**Human Metabolic Hormone**

(Cat. No. HMHEMAG-34K)

|                   |                             |
|-------------------|-----------------------------|
| Amylin (active)▶  | IL-6                        |
| Amylin (total)▶   | Insulin                     |
| C-Peptide         | Leptin                      |
| Ghrelin (active)▶ | MCP-1/CCL2                  |
| GIP (total)       | Pancreatic Polypeptide (PP) |
| GLP-1 (active)▶   | PYY (total)                 |
| GLP-1 (total)▶    | TNFA                        |
| 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 Aging Panel 1**(Cat. No. HAGE1MAG-20K) **NEW**

|             |        |
|-------------|--------|
| CTACK/CCL27 | IL-10* |
| FGF-21      | IL-18  |
| GDF-11      | Jag1   |
| GDF-15      | Leptin |
| GnRH        | Wnt-3a |
| IL-6        |        |

**Human Liver Protein**

(Cat. No. HLPPMAG-57K)

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

**Human IGF Binding Protein**

(Cat. No. HIGFBMAG-53K)

|        |        |
|--------|--------|
| IGFBP1 | IGFBP5 |
| IGFBP2 | IGFBP6 |
| IGFBP3 | IGFBP7 |
| IGFBP4 |        |

**Human IGF**

(Cat. No. HIGFMAG-52K)

|       |       |
|-------|-------|
| IGF-1 | IGF-2 |
|-------|-------|

**Human Pituitary Panel 1**

(Cat. No. HPTP1MAG-66K)

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

**Multi-Species Hormone**

(Cat. No. MSHMAG-21K)

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

**Cardiovascular****Human CVD Panel 1**

(Cat. No. HCVD1MAG-67K)

|                   |                                |
|-------------------|--------------------------------|
| BNP               | 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. HRNKL MAG-51K-01)

|       |
|-------|
| RANKL |
|-------|

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

(Cat. No. HCKPMAG-11K)

|              |       |
|--------------|-------|
| 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 Cancer Autoantibody\*\***(Cat. No. HCABMAG-13K) **NEW**

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

**Human Circulating Cancer Biomarker Panel 1**

(Cat. No. HCCBP1MAG-58K)

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

**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
- Bulk indicates Space Saver Packaging

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

- Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ⊗ Available for custom premix
- Analyte requires a different sample dilution from others in panel

**Human Circulating Cancer Biomarker Panel 2**

(Cat. No. HCCBP2MAG-58K)

|  |  |
|--|--|
| Antithrombin III<br>Complement Factor<br>H (CFH) | Extracellular Matrix<br>Protein 1 (ECM1)<br>Vitamin D Binding<br>Protein |
|--|--|

**Human Circulating Cancer Biomarker Panel 3**

(Cat. No. HCCBP3MAG-58K)

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

**Human Circulating Cancer Biomarker Panel 4**

(Cat. No. HCCBP4MAG-58K)

|   |   |
|---|---|
| ALDH1A1<br>Carbonic Anhydrase<br>9 (CA9)<br>CD44<br>EpCAM<br>Hepsin | Kallikrein-6<br>Mesothelin<br>Midkine<br>NCAML1/L1CAM/<br>CD171<br>Transglutaminase 2<br>(TGM2) |
|---|---|

**Human Cancer/Metastasis Biomarker Panel 1**

(Cat. No. HCMBMAG-22K)

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

**Human Angiogenesis/Growth Factor Panel 1**

(Cat. No. HAGP1MAG-12K)

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

**Human Angiogenesis Panel 2**

(Cat. No. HANG2MAG-12K)

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

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

(Cat. No. HNABTMAG-68K)

|  |                              |
|--|------------------------------|
| Amyloid beta 1-40<br>Amyloid beta 1-42 | pTau (Thr181)<br>Tau (total) |
|--|------------------------------|

**Human Neuroscience Panel 1 (CSF samples)**

(Cat. No. HNS1MAG-95K)

|  |  |
|--|--|
| $\alpha$ -Synuclein<br>Glial Fibrillary Acidic<br>Protein (GFAP)<br>Neuron-specific<br>Enolase (NSE) | PARK5/UCLH1<br>PARK7/DJ1<br>Transglutaminase 2<br>(TGM2) |
|--|--|

**Human Neuroscience Panel 2**

(Cat. No. HNS2MAG-95K)

|  |   |
|--|---|
| Angiogenin (ANG) <sup>o</sup><br>ApoE4 <sup>o</sup><br>FABP3<br>Ferritin | Neurogranin (NRGN)<br>PRNP (Prion Protein)<br>TREM2 |
|--|---|

**Human Neurodegenerative Disease Panel 1**

(Cat. No. HNDG1MAG-36K)

|  |   |
|--|---|
| $\alpha$ -2-Macroglobulin<br>Apo AI<br>Apo CIII<br>Apo E | Complement Factor<br>C3<br>Complement Factor<br>H (CFH) |
|--|---|

**Human Neurodegenerative Disease Panel 2**

(Cat. No. HNDG2MAG-36K)

|   |  |
|---|--|
| $\alpha$ -1-Antitrypsin (A1AT)<br>C4<br>CRP | MIP-4/PARC/CCL18<br>PEDF<br>Serum Amyloid P<br>(SAP) |
|---|--|

**Human Neurodegenerative Disease Panel 3**

(Cat. No. HNDG3MAG-36K)

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

**Human Neurodegenerative Disease Panel 4 (CSF samples)**

(Cat. No. HNDG4MAG-36K)

|  |                |
|--|----------------|
| Amyloid beta 1-40<br>Amyloid beta 1-42<br>GDNF | sRAGE<br>S100B |
|--|----------------|

**Human Neurological Disorders Panel 3**

(Cat. No. HND3MAG-39K)

|  |   |
|--|---|
| Angiotensinogen<br>(AGT)<br>Contactin-1<br>Fetuin A <sup>o</sup><br>Kallikrein-6 | Osteopontin (OPN)<br>Soluble Superoxide<br>Dismutase 1 (sSOD1)<br>Soluble Superoxide<br>Dismutase 2 (sSOD2) |
|--|---|

**Human Neuropeptide** ■ ^

(Cat. No. HNPMMAG-35K)

|  |                         |
|--|-------------------------|
| $\alpha$ -MSH<br>$\beta$ -Endorphin<br>Neurotensin | Oxytocin<br>Substance P |
|--|-------------------------|

**Human Circadian Stress** ■ ^

(Cat. No. HNCSTMAG-35K)

|          |           |
|----------|-----------|
| Cortisol | Melatonin |
|----------|-----------|

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

(Cat. No. HKI1MAG-99K)

|   |   |
|---|---|
| Calbindin<br>Collagen IV<br>FABP1<br>GST $\alpha$<br>IP-10/CXCL10 | KIM-1<br>Osteoactivin<br>Renin<br>TFF-3<br>TIMP-1 |
|---|---|

**Human Kidney Injury Panel 2 (Urine samples)**

(Cat. No. HKI2MAG-99K)

|   |  |
|---|--|
| $\alpha$ -1-Microglobulin<br>Albumin<br>Clusterin<br>Cystatin C | EGF<br>NGAL/Lipocalin-2<br>Osteopontin (OPN) |
|---|--|

**Human Kidney Injury Panel 3 (Urine samples)**

(Cat. No. HKI3MAG-99K)

|                                  |            |
|----------------------------------|------------|
| $\beta$ -2-Microglobulin<br>RBP4 | Uromodulin |
|----------------------------------|------------|

**Human Kidney Injury Panel 4 (Serum/Plasma samples)**

(Cat. No. HKI4MAG-99K)

|                                       |                                   |
|---------------------------------------|-----------------------------------|
| EGF<br>FABP1<br>IP-10/CXCL10<br>KIM-1 | Osteopontin (OPN)<br>PTH<br>Renin |
|---------------------------------------|-----------------------------------|

**Human Kidney Injury Panel 5 (Serum/Plasma samples)**

(Cat. No. HKI5MAG-99K)

|  |                                      |
|--|--------------------------------------|
| $\alpha$ -1-Microglobulin<br>Collagen IV<br>NGAL/Lipocalin-2 | Osteoactivin<br>TIMP-1<br>Uromodulin |
|--|--------------------------------------|

**Human Kidney Injury Panel 6 (Serum/Plasma samples)**

(Cat. No. HKI6MAG-99K)

|                                       |                    |
|---------------------------------------|--------------------|
| $\beta$ -2-Microglobulin<br>Clusterin | Cystatin C<br>RBP4 |
|---------------------------------------|--------------------|

**Human Liver Injury**

(Cat. No. HLINJMAG-75K)

|                                   |             |
|-----------------------------------|-------------|
| 5'NT/CD73<br>ARG1<br>GST $\alpha$ | MDH1<br>SDH |
|-----------------------------------|-------------|

# PRIMATE

## Immunology

### Non-Human Primate Cytokine/Chemokine Panel 1

- ☐ (Cat. No. PRCYTOMAG-40K)
- 23 (Cat. No. PCYTMG-40K-PX23)
- 25 (Bulk Cat. No. PRCYMG40PMX23BK)

|              |                      |
|--------------|----------------------|
| sCD40L       | IL-12/23 (p40)       |
| G-CSF        | IL-13                |
| GM-CSF       | IL-15                |
| IFN $\gamma$ | IL-17A/CTLA8         |
| IL-1 $\beta$ | IL-18                |
| IL-1Ra       | MCP-1/CCL2           |
| IL-2         | MIP-1 $\alpha$ /CCL3 |
| IL-4         | MIP-1 $\beta$ /CCL4  |
| IL-5         | TGF $\alpha$         |
| IL-6         | TNF $\alpha$         |
| IL-8/CXCL8   | VEGF-A               |
| IL-10        |                      |

### Non-Human Primate Cytokine/Chemokine Panel 2

- ☐ (Cat. No. PRCYT2MAG40K)
- 24 (Cat. No. PRCYT2MAG40K-PX24)
- 23 (Bulk Cat. No. PRCYT2MAG40PMX24BK)
- 25 (Cat. No. PRCYT2MAG40K-PX25)
- 25 (Bulk Cat. No. PRCYT2MAG40PMX25BK)

|                          |                                    |
|--------------------------|------------------------------------|
| sCD137/4-1BB/<br>TNFRSF9 | IL-17E/IL-25                       |
| Eotaxin/CCL11            | IL-21                              |
| sFasL                    | IL-22                              |
| FGF-2/FGF-basic          | IL-28A/IFN $\lambda$ 2             |
| Fractalkine/CX3CL1       | IL-31                              |
| Granzyme A               | IL-33/NF-HEV                       |
| Granzyme B               | (mature)                           |
| IL-1 $\alpha$            | IP-10/CXCL10                       |
| IL-2                     | MIP-3 $\alpha$ /CCL20              |
| IL-4                     | Perforin                           |
| IL-6                     | RANTES/CCL5 ▲                      |
| IL-16                    | TNF $\beta$ /Lymphotoxin- $\alpha$ |
| IL-17A/CTLA8             | (LTA)                              |

### Multi-Species TGF $\beta$ – Singleplex

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

TGF $\beta$ 1

### Multi-Species TGF $\beta$ – 3 Plex ▼

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

**NON-CONFIGURABLE KIT**

TGF $\beta$ 1                      TGF $\beta$ 3  
TGF $\beta$ 2

## 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       |
| GLP-1 (active)▶   | Polypeptide (PP) |
| Glucagon▶         | PYY (total)      |
| IL-6              |                  |

### Non-Human Primate Pituitary Panel 1

(Cat. No. NHPPT1MG-46K)

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

### Multi-Species Hormone ■ ▲

(Cat. No. MSHMAG-21K)

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

# MOUSE

## Immunology

### Mouse Cytokine/Chemokine Panel 1

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

|                 |                         |
|-----------------|-------------------------|
| Eotaxin/CCL11   | IL-13◆                  |
| G-CSF◆          | IL-15◆                  |
| GM-CSF◆         | IL-17A/CTLA8◆           |
| IFN $\gamma$ ◆  | IP-10/CXCL10◆           |
| IL-1 $\alpha$ ◆ | KC/GRO $\alpha$ /CXCL1◆ |
| IL-1 $\beta$ ◆  | LIF                     |
| IL-2◆           | LIX                     |
| IL-3            | MCP-1/CCL2◆             |
| IL-4◆           | M-CSF                   |
| IL-5◆           | MIG/CXCL9               |
| IL-6◆           | MIP-1 $\alpha$ /CCL3◆   |
| IL-7◆           | MIP-1 $\beta$ /CCL4◆    |
| IL-9◆           | MIP-2/CXCL2◆            |
| IL-10◆          | RANTES/CCL5◆            |
| IL-12 (p40)◆    | TNF $\alpha$ ◆          |
| IL-12 (p70)◆    | VEGF-A                  |

### Mouse Cytokine/ Chemokine Panel 2

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

|                           |                       |
|---------------------------|-----------------------|
| Erythropoietin (EPO)      | IL-17A/F              |
| Exodus-2/<br>CCL21/6CKine | IL-20                 |
| Fractalkine/CX3CL1        | MDC/CCL22             |
| IFN $\beta$ 1             | MCP-5/CCL12           |
| IFN $\gamma$              | MIP-3 $\alpha$ /CCL20 |
| IL-11                     | MIP-3 $\beta$ /CCL19  |
| IL-16                     | TARC/CCL17            |
|                           | TIMP-1                |

### Mouse High Sensitivity T Cell

(Cat. No. MHSTCMAG-70K)

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

|               |                        |
|---------------|------------------------|
| GM-CSF        | IL-10                  |
| IFN $\gamma$  | IL-12 (p70)            |
| IL-1 $\alpha$ | IL-13                  |
| IL-1 $\beta$  | IL17A/CTLA8            |
| IL-2          | KC/GRO $\alpha$ /CXCL1 |
| IL-4          | LIX                    |
| IL-5          | MCP-1/CCL2             |
| IL-6          | MIP-2/CXCL2            |
| IL-7          | TNF $\alpha$           |

### 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                             |
| IFN $\gamma$ | IL-21                              |
| IL-1 $\beta$ | IL-22                              |
| IL-2         | IL-23                              |
| IL-4         | IL-27                              |
| IL-5         | IL-28B/IFN $\lambda$ 3             |
| IL-6         | IL-31                              |
| IL-10        | IL-33/NF-HEV                       |
| IL-12 (p70)  | (mature)                           |
| IL-13        | MIP-3 $\alpha$ /CCL20              |
| IL-15        | TNF $\alpha$                       |
| IL-17A/CTLA8 | TNF $\beta$ /Lymphotoxin- $\alpha$ |
|              | (LTA)                              |

### Mouse CD8+ T Cell

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

|                          |                     |
|--------------------------|---------------------|
| sCD137/4-1BB/<br>TNFRSF9 | IL-4                |
| sFas/TNFRSF6             | IL-5                |
| sFasL                    | IL-6                |
| GM-CSF                   | IL-10               |
| Granzyme B               | IL-13               |
| IFN $\gamma$             | MIP-1 $\beta$ /CCL4 |
| IL-2                     | RANTES/CCL5         |
|                          | TNF $\alpha$        |

### 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
- Bulk indicates Space Saver Packaging

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

- Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ◻ Available for custom premix
- Analyte requires a different sample dilution from others in panel

### Mouse Soluble Cytokine Receptor

(Cat. No. MSCRMAG-42K)

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

### Mouse MMP Panel 1 (Serum/Plasma samples)

(Cat. No. MMMP1MAG-79K)

|       |       |
|-------|-------|
| MMP-2 | MMP-8 |
| MMP-3 |       |

### Mouse MMP Panel 2 (Serum/Plasma samples)

(Cat. No. MMMP2MAG-79K)

|          |        |
|----------|--------|
| proMMP-9 | MMP-12 |
|----------|--------|

### Mouse MMP Panel 3 (Cell culture samples)

(Cat. No. MMMP3MAG-79K)

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

### Multi-Species TGF $\beta$ – Singleplex

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

|               |
|---------------|
| TGF $\beta$ 1 |
|---------------|

### Multi-Species TGF $\beta$ – 3 Plex ▼

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

**NON-CONFIGURABLE KIT**

|               |               |
|---------------|---------------|
| TGF $\beta$ 1 | TGF $\beta$ 3 |
| TGF $\beta$ 2 |               |

## 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     | TNF $\alpha$  |
| MCP-1/CCL2 |               |

### Mouse Adipocyte (Cell culture samples)

(Cat. No. MADCYMAG-72K)

|             |               |
|-------------|---------------|
| Adiponectin | PAI-1 (total) |
| IL-6        | Resistin      |
| Leptin      | TNF $\alpha$  |
| MCP-1/CCL2  |               |

### Mouse Adiponectin – Singleplex (Serum/Plasma samples)

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

|             |
|-------------|
| Adiponectin |
|-------------|

### Mouse Metabolic Hormone

(Cat. No. MMHMAG-44K)

|                   |                             |
|-------------------|-----------------------------|
| Amylin (active)▶  | Leptin                      |
| C-Peptide 2       | MCP-1/CCL2                  |
| Ghrelin (active)▶ | Pancreatic Polypeptide (PP) |
| GIP (total)       | PYY (total)                 |
| GLP-1 (active)▶   | Resistin                    |
| Glucagon▶         | TNF $\alpha$                |
| 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)

|              |              |
|--------------|--------------|
| 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                   |
| $\alpha$ -1-Acid Glycoprotein (AGP) | Haptoglobin           |
| $\alpha$ -2-Macroglobulin           | Serum Amyloid P (SAP) |

## Bone

### Mouse Bone

(Cat. No. MBNMAG-41K)

|         |                       |
|---------|-----------------------|
| ACTH    | Leptin                |
| DKK1    | Osteoprotegerin (OPG) |
| FGF-23  | Sclerostin (SOST)     |
| IL-6    | TNF $\alpha$          |
| Insulin |                       |

## 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-1 $\alpha$ /CCL3             |
| Endoglin          | Placental Growth Factor (PLGF-2) |
| Endothelin-1      | Prolactin                        |
| sFasL             | SDF-1/CXCL12                     |
| FGF-2/FGF-basic   | TNF $\alpha$                     |
| Follistatin (FST) | VEGF-A                           |
| G-CSF             | VEGF-C                           |
| HGF               | VEGF-D                           |
| IL-1 $\beta$      |                                  |

## 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                 | TNFA         |
|                      | 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 | TNFA          |
| Leptin  |               |

### Rat Adipocyte (Cell culture samples)

(Cat. No. RADPCMAG-82K)

|             |               |
|-------------|---------------|
| Adiponectin | MCP-1/CCL2    |
| IL-1β       | PAI-1 (total) |
| IL-6        | TNFA          |
| 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 †         | TNFA                        |
| IL-6               |                             |

### Rat Myokine

(Cat. No. RMYOMAG-88K)

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

### Rat Pituitary

(Cat. No. RPTMAG-86K)

|      |           |
|------|-----------|
| ACTH | LH        |
| BDNF | Prolactin |
| FSH  | TSH       |
| GH   |           |

### Rat Stress Hormone ■

(Cat. No. RSHMAG-69K)

|                  |             |
|------------------|-------------|
| ACTH             | Melatonin ^ |
| Corticosterone ^ |             |

### Multi-Species Hormone ■ ^

(Cat. No. MSHMAG-21K)

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

### Rat Thyroid

(Cat. No. RTHYMAG-30K)

|      |     |
|------|-----|
| T3 ^ | TSH |
| T4 ^ |     |

## Cardiovascular

### Rat Cardiac Injury Panel 1

(Cat. No. RCI1MAG-87K)

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

### Rat Vascular Injury Panel 1 (Serum/Plasma samples)

(Cat. No. RV1MAG-26K)

|  |               |
|--|---------------|
| Caveolin-1                             | IL-6          |
| Connective Tissue Growth Factor (CTGF) | MCP-1/ CCL2   |
| GROα/KC/CINC-1/CXCL1                   | PAI-1 (total) |
|  | TIMP-1        |
|  | TNFA          |
|  | VEGF          |

### Rat Vascular Injury Panel 2 (Serum/Plasma samples)

(Cat. No. RV2MAG-26K)

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

### 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
- Bulk indicates Space Saver Packaging

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

- Serum/Plasma only
- ★ Tissue Culture samples only
- ^ Competitive assay format
- ☉ Available for custom premix
- Analyte requires a different sample dilution from others in panel



**Rat Vascular Injury Panel 3**  
(Serum/Plasma samples)

(Cat. No. RV3MAG-26K)

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

**Bone**

**Rat Bone Panel 1**  
(Serum/Plasma samples)

(Cat. No. RBN1MAG-31K)

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

**Neuroscience**

**Rat Neuropeptide** ■ ^

(Cat. No. RMNPMAG-83K)

|             |             |
|-------------|-------------|
| α-MSH       | Oxytocin    |
| β-Endorphin | Substance P |
| Neurotensin |             |

**Toxicity**

**Rat Kidney Toxicity Panel 1**  
(Urine samples)

(Cat. No. RKT1MAG-37K)

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

**Rat Kidney Toxicity Panel 2**  
(Urine samples)

(Cat. No. RKT2MAG-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)
- 15 (Cat. No. CCYTMG-90K-PX13)
- 15 (Bulk Cat. No. CCYTMG90KPX13BK)

|            |              |
|------------|--------------|
| 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      |              |

**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               |              |

**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)  |              |

**Porcine Cytokine/Chemokine**

- ☐ (Cat. No. PCYTMAG-23K)
- 15 (Cat. No. PCYTMG-23K-13PX)
- 15 (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**

**Canine Gut Hormone**

(Cat. No. CGTMAG-98K)

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

**Canine Pituitary**

(Cat. No. CPTMAG-96K)

|      |     |
|------|-----|
| ACTH | GH  |
| BDNF | TSH |
| FSH  |     |

**Feline Metabolic Hormone**

(Cat. No. FMHMAG-29K)

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

**Multi-Species Hormone** ■ ^

(Cat. No. MSHMAG-21K)

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

**Toxicity**

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

(Cat. No. CKT1MAG-97K)

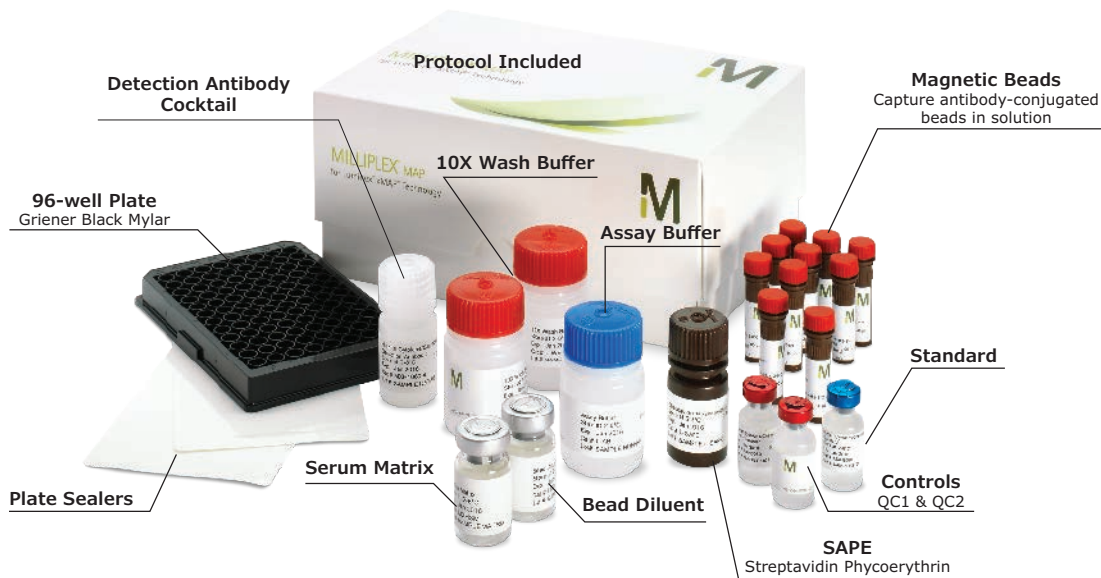
|            |                   |
|------------|-------------------|
| Clusterin  | MCP-1/CCL2        |
| Cystatin C | NGAL/Lipocalin-2  |
| IL-8/CXCL8 | Osteopontin (OPN) |
| KIM-1      |                   |

**Canine Kidney Toxicity Panel 2**  
(Urine samples)

(Cat. No. CKT2MAG-97K)

|                   |       |
|-------------------|-------|
| Albumin           | RBP4  |
| β-2-Microglobulin | TFF-3 |

## What's in the MILLIPLEX® kit?



## Cell Signaling MILLIPLEX® MAP Assays

### Uncover how your cells communicate

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

1. Phosphoprotein or total protein (or mixed) multiplex assays ( $\geq 3$ -plex)
2. Same protein phosphoprotein and total protein in the same assay (2-plex)
3. Singleplex MAPmate™ kits you can plex on your own

#### Akt/mTOR (Phosphoprotein) – 11 Plex

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

| Analyte       | Total            | Phosphorylated |  |
|---------------|------------------|----------------|--|
| Akt/PKB       | ✓ (Ser473)       | H, M, R        |  |
| GSK3 $\alpha$ | ✓ (Ser21)        | H, M, R        |  |
| GSK3 $\beta$  | ✓ (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        |  |
| GSK3 $\alpha$ | ✓     | H, M, R        |  |
| GSK3 $\beta$  | ✓     | H, M, R        |  |
| IGF1R         | ✓     | H, M, R        |  |
| IR            | ✓     | H, R           |  |
| IRS1          | ✓     | H, M, R        |  |
| mTOR          | ✓     | H, M, R        |  |
| p70S6 Kinase  | ✓     | H, M, R        |  |
| PTEN          | ✓     | H, M, R        |  |
| RPS6          | ✓     | H, M, R        |  |
| TSC2          | ✓     | H, M, R        |  |

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

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

**H** Human  
**M** Mouse  
**R** Rat

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

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

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

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

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

| Analyte                     | Total | Phosphorylated |   |
|-----------------------------|-------|----------------|---|
| Bcl-2                       | ✓     |                | H |
| Bcl-xL                      | ✓     |                | H |
| Mcl-1                       | ✓     |                | H |
| NOXA/Mcl-1<br>(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       |
| PDGFR $\alpha$   |       | (pan Tyr)      | H, M, R |
| PDGFR $\beta$    |       | (pan Tyr)      | H       |
| TIE1             |       | (pan Tyr)      | H       |
| TIE2             |       | (pan Tyr)      | H       |
| VEGFR1/Flt-1     |       | (pan Tyr)      | H       |
| VEGFR2/KDR/Flk-1 |       | (pan Tyr)      | H       |
| VEGFR3/Flt-4     |       | (pan Tyr)      | H, M, R |

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

| Analyte       | Total | Phosphorylated    |         |
|---------------|-------|-------------------|---------|
| Akt/PKB       |       | ✓ (Ser473)        | H, M, R |
| CREB          |       | ✓ (Ser133)        | H, M, R |
| Erk/MAPK 1/2  |       | ✓ (Thr185/Tyr187) | H, M, R |
| JNK/SAPK1     |       | ✓ (Thr183/Tyr185) | H, M, R |
| NF $\kappa$ B |       | ✓ (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 |
| NF $\kappa$ B | ✓     |                | 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       |

**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 |

- 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

**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 |

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

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

**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 |

**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 |

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

| Analyte | Total | Phosphorylated |         |
|---------|-------|----------------|---------|
| IRS1    |       | ✓ (Ser636)     | H, M    |
| IRS1    | ✓     |                | 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 |

**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 |

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



## Cell Signaling MAPmate™ 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 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 on our custom immunoassay program, contact your sales specialist or email us at [customassay@emdmillipore.com](mailto:customassay@emdmillipore.com).

### Important MAPmate™ Guidelines

- Consult the protocol prior to use
- Use the Cell Signaling Buffer & Detection Kit (**48-602MAG**), which contains all necessary reagents except the MAPmate™ assay
- 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  $\beta$ -Tubulin MAPmates™ can be used for normalization with any of the MAPmates™
- Note: additional lysates are available to order upon request

| MAPmate™ Kits                | Species Homology | Cat. No.  |
|------------------------------|------------------|-----------|
| $\beta$ -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 |



# Custom MILLIPLEX® MAP Assay Development

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

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

Get started today!

## STEP 1

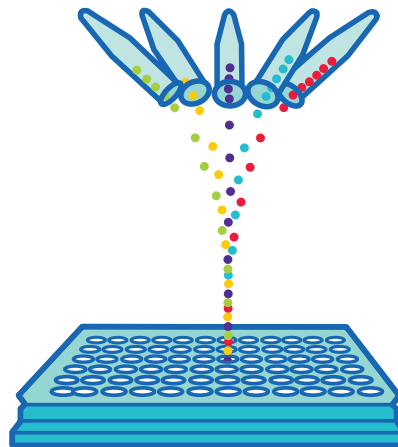
Submit full protein names, species and sample type for feasibility assessment to [customassay@emdmillipore.com](mailto:customassay@emdmillipore.com)

## STEP 2

Receive work plan and quotation from sales specialist

## STEP 3

Place purchase order and participate in project kickoff call





Download our new custom menu of services brochure for a complete listing of services at [MerckMillipore.com/customassay](https://www.MerckMillipore.com/customassay)



### Single analyte detection customized.

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SMCxPRO™



ELISA Plate Reader

# Custom MILLIPLEX® MAP Analytes

| Human   |                                      |
|---|--------------------------------------|
| Analyte   | Sample                               |
| α 1-Acid Glycoprotein (AGP)                     | Urine                                |
| B-cell Maturation Antigen (BCMA)                | Serum/Plasma                         |
| Calprotectin                                    | Serum/Plasma                         |
| CD13 Aminopeptidase N                           | Serum/Plasma                         |
| Ceruloplasmin                                   | Urine                                |
| Collagen 1                                      | Multiple                             |
| CSTB (Cystatin B)                               | Serum/Plasma                         |
| Elafin  | Serum/Plasma                         |
| Galectin-1                                      | Serum/Plasma                         |
| GRP78   | Serum/Plasma                         |
| Lecithin-cholesterol Acyltransferase (LCAT)     | Serum/Plasma                         |
| Lipocalin like prostaglandin D synthase (LPGDS) | Urine                                |
| Semaphorin 3A                                   | Cell and Tissue Culture Supernatants |
| ST2 (Suppressor of Tumorigenicity 2)            | Serum/Plasma                         |
| sTM (Soluble Thrombomodulin)                    | Serum/Plasma                         |
| Transferrin                                     | Urine                                |
| VE Cadherin/Cadherin 5                          | Serum/Plasma                         |

| Mouse and/or Rat |              |
|------------------|--------------|
| Analyte          | Sample       |
| BMP-9            | Serum/Plasma |
| Galectin-1       | Serum/Plasma |
| Galectin-3       | Serum/Plasma |
| HGFR/cMET        | Serum/Plasma |
| IGF-1            | Serum/Plasma |
| Periostin        | Serum/Plasma |
| sAXL             | Serum/Plasma |
| Tenascin C       | Serum/Plasma |
| TRAIL            | Serum/Plasma |
| Vasopressin      | Plasma       |
| Vitronectin      | Serum/Plasma |

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| sCD14.....   | 9                 | sVCAM-1.....  | 8, 9, 10         | <b>Y</b>                         |                          |
| sCD163.....  | 9                 | sVEGFR1/sFlt-1.....   | 8, 10, 12, 16    | Yes (Tyr421).....                | 17                       |
| sCD30.....   | 8, 12             | sVEGFR2/sKDR/sFlk-1.....  | 8, 10, 12, 16    | YKL40/CHI3L1.....                | 7, 10                    |
| sCD31/sPECAM-1.....  | 9, 10, 12         | sVEGFR3/sFlt-4.....   | 8, 10, 12, 16    | <b>Z</b>                         |                          |
|  |                   |   |                  | ZAP-70 (panTyr).....             | 17                       |

Human pp. 7-10; Primate p. 11; Mouse pp. 11-13; Rat pp. 13-14;  
Other Species p. 14; Cell Signaling pp. 15-19.

# 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<br>~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, Consumables and Training

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

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

## Service Contracts

| Luminex® System<br>1 Year Warranty Plans | Unlimited<br>Remote<br>Support | Unlimited<br>Emergency<br>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  |
| Handheld Magnetic Separator Block                        | 1 each            | 40-285        |

## 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

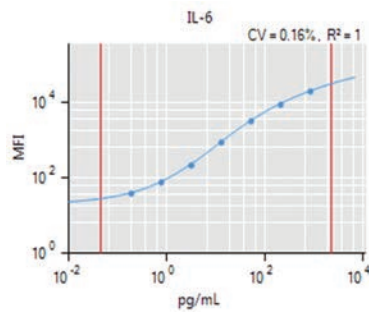
MILLIPLEX® Analyst 5.1 “Flex” software was designed to focus on data derived from the low and high ends of standard curves. Data in these regions can be important and are commonly missed by existing multiplex data analysis packages.

In developing the curve-fitting algorithms for MILLIPLEX® Analyst 5.1 “Flex” Software,

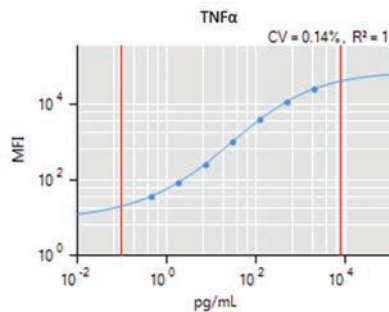
simulations were run on 600+ data sets using actual experimental standard curves to determine the fit that would give the lowest CVs at the low and high ends of the curves, and that work well even with standard curves of low quality. With its dongle-activated format, MILLIPLEX® Analyst 5.1 “Flex” Software 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%, R<sup>2</sup> = 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%, R<sup>2</sup> = 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 |
|-------------|-----------|-------|-----------|-------|------------|-------------|
| <b>IL-6</b> |           |       |           |       |            |             |
| 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     |             |
| <b>TNFα</b> |           |       |           |       |            |             |
| 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.

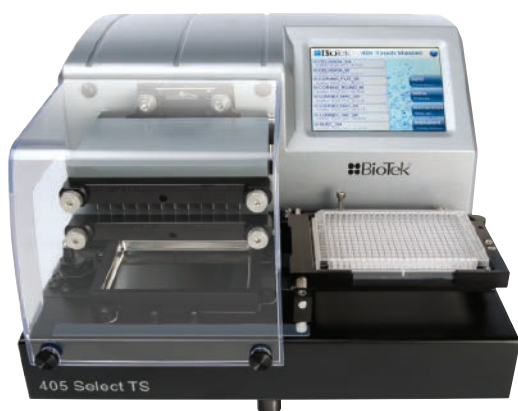
| Description                            | Cat. No. |
|--|----------|
| MILLIPLEX® Analyst 5.1 “Flex” Software | 40-086   |



# BioTek® Washing & Dispensing Solutions for MILLIPLEX® MAP 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. For those looking for a more automated assay format, the MultiFlo™ FX will allow users to dispense kit reagents in a timely and uniform fashion, to ensure excellent assay reproducibility.



BioTek® 405™ Select TS (touch screen) Washer

## 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

## 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   |

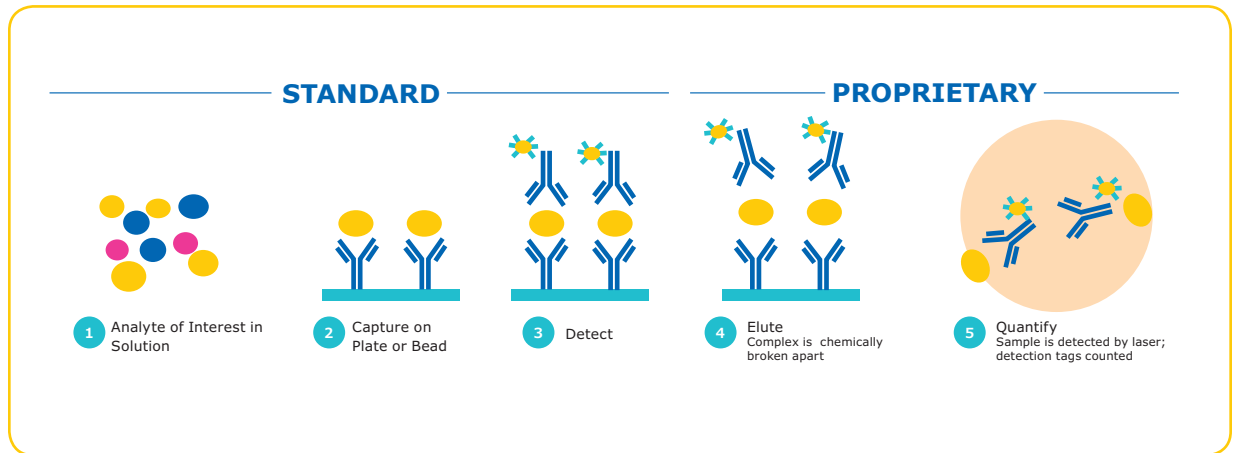


# SMC™ Technology

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

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

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



### Steps 2-3

Antibodies translate each biomarker into a signal

### Step 4

Fluorescent dye-labeled detection antibodies dissociate from the immunocomplex

### Step 5

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

### Digital counting improves sensitivity and dynamic range

The SMCxPRO™ and Erenna® instruments capture the sum of all digital events counted above a background threshold. This model can have limited dynamic range, so at higher concentrations on the ErennaR 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.

# SMC™ Immunoassay Kits

| Analyte                                     | LLOQ (pg/mL) <sup>1</sup> | Median Endogenous (pg/mL) <sup>2</sup> | Species <sup>3</sup> | Sample Type <sup>4</sup> | MTO or STOCK | Cat. No.   |
|---|---------------------------|--|----------------------|--------------------------|--------------|------------|
| Akt1 (Ser473)                               | 0.98                      | NA                                     | H, M, R              | L                        | MTO          | 03-0100-01 |
| Akt1 (total)                                | 7.8                       | NA                                     | H, M, R              | L                        | MTO          | 03-0099-01 |
| Amyloid beta 1-40 <sup>6,7</sup> <b>NEW</b> | 5.86                      | P: 152; CSF: 1366                      | H, M, R              | C, P                     | STOCK        | 03-0145-00 |
| Amyloid beta 1-42 <sup>6,7</sup>            | 0.98                      | P: 15; CSF: 191                        | H, M, R              | C, P                     | STOCK        | 03-0146-00 |
| cTnI <sup>6</sup>                           | 0.69                      | 1.75                                   | H, Cy, R, C, GP      | P, S                     | STOCK        | 03-0092-00 |
| cTnI <sup>6,7</sup>                         | 0.69                      | 1.75                                   | H, Cy, R, C, GP      | P, S                     | STOCK        | 03-0154-00 |
| G-CSF                                       | 0.08                      | 17                                     | H                    | P                        | MTO          | 03-0047-00 |
| GM-CSF                                      | 0.02                      | 0.2                                    | H                    | P                        | MTO          | 03-0067-00 |
| GLP-1 (active)                              | 0.4                       | 3.46                                   | H, M, R, C           | P                        | MTO          | 03-0024-03 |
| GLP-1 (total)                               | 0.39                      | 17.8                                   | H, M, R, C           | P                        | MTO          | 03-0025-06 |
| Glucagon <sup>6,7</sup>                     | 0.781                     | 44                                     | H, M, R              | P                        | STOCK        | 03-0153-00 |
| IFN-γ                                       | 0.2                       | 0.79                                   | H                    | P                        | STOCK        | 03-0049-00 |
| IL-1α                                       | 0.39                      | 1.06                                   | H                    | P                        | STOCK        | 03-0072-00 |
| IL-1β <sup>6</sup> <b>NEW</b>               | 0.2                       | P: 0.45; S: 1.08                       | H                    | P                        | STOCK        | 03-0028-00 |
| IL-1β <sup>6,7</sup> <b>NEW</b>             | 0.2                       | P: 7.4; S: 0.12                        | H                    | P, S                     | STOCK        | 03-0160-00 |
| IL-2  | 0.2                       | 0.21                                   | H                    | P, S                     | MTO          | 03-0051-00 |
| IL-4 <sup>6</sup> <b>NEW</b>                | 0.04                      | 0.12                                   | H                    | P                        | STOCK        | 03-0052-00 |
| IL-4 <sup>6,7</sup> <b>NEW</b>              | 0.04                      | P: 0.18; S: 0.18                       | H                    | P, S                     | STOCK        | 03-0161-00 |
| IL-5  | 3.91                      | 4.52                                   | H                    | P                        | STOCK        | 03-0053-00 |
| IL-6 <sup>6</sup>                           | 0.08                      | 1.3                                    | H                    | P, S                     | STOCK        | 03-0089-01 |
| IL-6 <sup>6,7</sup>                         | 0.08                      | 1.3                                    | H                    | P, S                     | STOCK        | 03-0155-00 |
| IL-7  | 0.39                      | 4.91                                   | H                    | P, S                     | MTO          | 03-0094-00 |
| IL-8 / CXCL8                                | 0.24                      | 3.6                                    | H                    | P, S                     | MTO          | 03-0055-00 |
| IL-10                                       | 0.39                      | 1.01                                   | H                    | P                        | STOCK        | 03-0056-00 |
| IL-12                                       | 0.05                      | 0.13                                   | H                    | P, S                     | STOCK        | 03-0057-00 |
| IL-13 v2 <sup>6</sup>                       | 0.04                      | 0.21                                   | H                    | P, S                     | STOCK        | 03-0109-02 |
| IL-13 <sup>6,7</sup> <b>NEW</b>             | 0.04                      | P: 0.39; S: 0.33                       | H                    | P, S                     | STOCK        | 03-0156-00 |
| IL-15                                       | 0.1                       | 3.38                                   | H                    | P, S                     | MTO          | 03-0058-00 |
| IL-17A v2                                   | 0.03                      | 0.12                                   | H                    | P, S                     | STOCK        | 03-0103-00 |
| IL-17A <sup>6,7</sup> <b>NEW</b>            | 0.07                      | P: 0.31; S: 0.30                       | H                    | P, S                     | STOCK        | 03-0159-00 |
| IL-17F v2                                   | 0.2                       | 0.86                                   | H                    | P, S                     | STOCK        | 03-0102-00 |
| IL-17F <sup>6,7</sup> <b>NEW</b>            | 0.2                       | P: 1.1; S: 1.2                         | H                    | P, S                     | STOCK        | 03-0164-00 |
| IL-17A/F Heterodimer v2                     | 1.2                       | 2.75                                   | H                    | P, S                     | STOCK        | 03-0119-00 |
| IL-21                                       | 0.2                       | 0.53                                   | H                    | S                        | MTO          | 03-0014-07 |
| IL-22 <sup>6</sup>                          | 0.2                       | 3.3                                    | H                    | P                        | STOCK        | 03-0059-01 |
| IL-23 <sup>6</sup> <b>NEW</b>               | 0.1                       | 0.18                                   | H                    | P, S                     | STOCK        | 03-0112-00 |
| IL-23 <sup>6,7</sup> <b>NEW</b>             | 0.1                       | P: 0.65; S: 0.46                       | H                    | P, S                     | STOCK        | 03-0157-00 |
| KIM-1 <sup>5</sup>                          | 3.91                      | P: 65; S: 75; U: 147                   | H                    | P, S, U                  | MTO          | 03-0118-00 |
| TNFα <sup>6</sup> <b>NEW</b>                | 0.2                       | 2.3                                    | H                    | P                        | STOCK        | 03-0088-00 |
| TNFα <sup>6,7</sup> <b>NEW</b>              | 0.2                       | P: 0.85; S: 0.78                       | H                    | P, S                     | STOCK        | 03-0163-00 |
| TNFα  | 0.4                       | 38.6                                   | M                    | S                        | MTO          | 03-0108-00 |
| VEGF  | 0.2                       | 66.5                                   | H                    | P                        | STOCK        | 03-0068-00 |

<sup>1</sup> LLOQ: Lowest point on standard curve with CV < 20% and accuracy within 20% of expected values.

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

<sup>3</sup> 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

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

<sup>5</sup> Plate-based assay.

<sup>6</sup> Assay characteristic data is representative for both Erenna® and SMCxPRO™.

<sup>7</sup> New streamlined format kit. For list of changes refer to the new kits section.

For a complete list of kits qualified on both the SMCxPRO™ and Erenna® instruments, visit [MerckMillipore.com/smcxpro](https://www.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) | Median Endogenous (pg/mL) | Species | Sample Type | Cat. No.   |
|--------------|--------------|---------------------------|---------|-------------|------------|
| Mouse IL-4   | 0.49         | NA                        | M       | S           | 03-0136-00 |
| Mouse IL-5   | 0.24         | 6.1                       | M       | S           | 03-0132-00 |
| Mouse IL-10  | 6.2          | 8.3                       | M       | S           | 03-0134-00 |
| Mouse IL-13  | 3.91         | 12.0                      | M       | S           | 03-0133-00 |
| Mouse IL-17A | 0.98         | 9.2                       | M       | S           | 03-0123-00 |
| Mouse IL-17F | 0.49         | 2.2                       | M       | S           | 03-0125-01 |
| Mouse IL-21  | 4.9          | 44.0                      | M       | S           | 03-0126-00 |
| Mouse IL-22  | 100          | 195                       | M       | S           | 03-0127-00 |
| Mouse TNFα   | 0.49         | 28.4                      | M       | S           | 03-0137-00 |



# Expert Custom Assays & Sample Testing for SMC™ Technology

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

Our services include:

## Collaborative Biomarker Discovery & Development

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

## Biotherapeutic Development

- Pharmacokinetics
- Pharmacodynamics
- Immunogenicity

## Reagent Selection

- Reagent sourcing
- Screening and selection
- Antibody derivatization

## Sample Testing

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

We are happy to announce the launch of our new SMCxPlore Services, customized streamlined options to “explore” SMC™ technology with your analyte of interest or critical samples.

## SMCxPlore Assay Development Feasibility:

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

## SMCxPlore Assay Conversion to SMC™:

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

## SMCxPlore Proof of Concept Sample Testing:

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



CUSTOM

SMC™ (SINGLE MOLECULE COUNTING) CUSTOM ASSAYS AND SERVICES

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

# SMCxPRO™ Immunoassay System Specifications



| SMCxPRO™ & Ancillary Product Services              | Cat. No.   |
|--|------------|
| SMCxPRO™ Complete System                           | 95-0100-00 |
| Standard SMCxPRO™ Installation                     | 96-2011-00 |
| SMCxPRO™ System Training – 1 day                   | 96-2022-00 |
| SMC™ Advanced Training – 3 days                    | 96-2023-00 |
| SMCxPRO™ IQ/OQ Installation                        | 96-2012-00 |
| SMCxPRO™ PQ Service                                | 96-2013-00 |
| BioTek® 405 Touch Microplate Washer with MAG plate | 95-0004-05 |
| 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 <sup>1</sup> |
| Background               | <3 response/fM <sup>1</sup>   |
| Limit of Detection (LoD) | <1 fM                         |
| Precision                | <10% CV <sup>2</sup>          |
| Dynamic Range            | >4 logs                       |

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

<sup>2</sup> 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

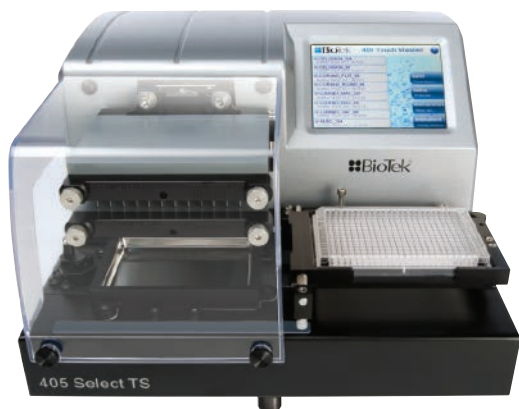
Take advantage of ultrasensitive digital (SMC™) technology while developing your own application-specific immunoassays in either bead- or plate-based assay format. We offer hands-on training at your facility or at one of our global training centers. This training will provide the tools you need to develop 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 |



# Ancillary Equipment to Optimize your SMC™ Assays

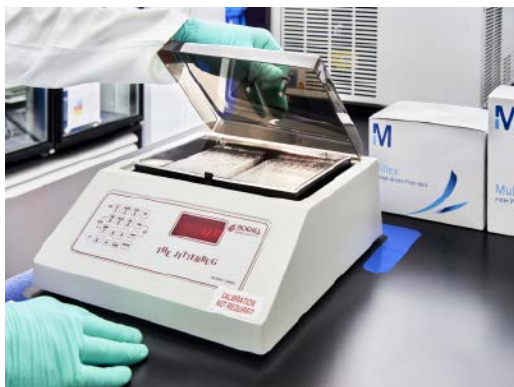
## BioTek® 405TS 384 Well Plate Washer



In partnership with BioTek®, we offer the latest advancements in 384-well plate washing: a fully automated system designed to quickly wash an entire plate through biomagnetic separation, washing and vacuum filtration. The system comes specifically optimized for use with SMC™ assays with the inclusion of a specially designed magnetic plate and customized pre-programmed plate washing protocols. The 405™ TS model offers an easy-to-use and glove touchable screen.

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

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



This heated microplate shaker is ideal for Immunoassays like SMC™ requiring heating and shaking of microplates. Includes inner lid to reduce risk of contamination.

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

## Tecan® HydroFlex™ 8 Channel Plate Washer



The HydroFlex™ microplate washer is a flexible washer with automated microplate strip washing, magnetic bead washing and vacuum filtration in 96-well plate formats. Along with microplate shaking and automated buffer switching included, the system comes specifically optimized for use with SMC™ assays with the inclusion of a specially designed magnetic plate and customized pre-programmed plate washing protocols.

| Description                              | Cat. No.   |
|--|------------|
| Tecan® HydroFlex™ 8 Channel Plate Washer | 95-0014-00 |



# Millipore Brand ELISAs

## Metabolic/Endocrine ELISAs

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

| Description                                | Species           | Standard Curve Range | Sensitivity | Sample Volume | Cat. No.      | Bulk Packaging Cat. No.* |
|--|-------------------|----------------------|-------------|---------------|---------------|--------------------------|
| Adiponectin                                | Human             | 1.56–200 ng/mL       | 0.2 ng/mL   | 10 µL         | EZHADP-61K    | EZHADP-61BK              |
| Adiponectin (High Molecular Weight)        | Human             | 1.5–200 ng/mL        | 0.5 ng/mL   | 10 µL         | EZHMWAN-65K   |                          |
| Adiponectin                                | Mouse             | 1–50 ng/mL           | 0.2 ng/mL   | 10 µL         | EZMADP-60K    | EZMADP-60BK              |
| Adiponectin                                | Rat               | 3.125–200 ng/mL      | 0.4 ng/mL   | 10 µL         | EZRADP-62K    |                          |
| Amylin (active)                            | Human             | 1–100 pM             | 0.7 pM      | 50 µL         | EZHA-52K      | 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

# Millipore Brand ELISAs & RIAs

## Neuroscience ELISAs

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

| Description                                    | Species           | Standard Curve Range                       | Sensitivity  | Sample Volume | Cat. No.     |
|--|-------------------|--|--------------|---------------|--------------|
| 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 |

## Radioimmunoassays (RIAs)

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

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

# ELISA Reading and Washing Equipment in Partnership with BioTek®

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

## BioTek® 800 TS Absorbance Reader

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 <b>NEW</b> | 40-006   |
| BioTek® 800 TS Absorbance Reader, Gen 5 Secure <b>NEW</b>   | 40-007   |
| BioTek® 800 TS Absorbance Reader, Basic <b>NEW</b>          | 40-300   |

## 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 <b>NEW</b> | 40-301   |

# Millipore®

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Frankfurter Strasse 250  
64293 Darmstadt, Germany

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