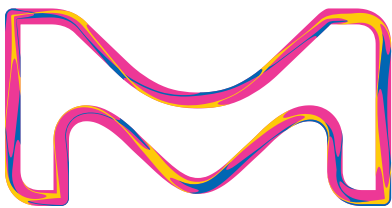
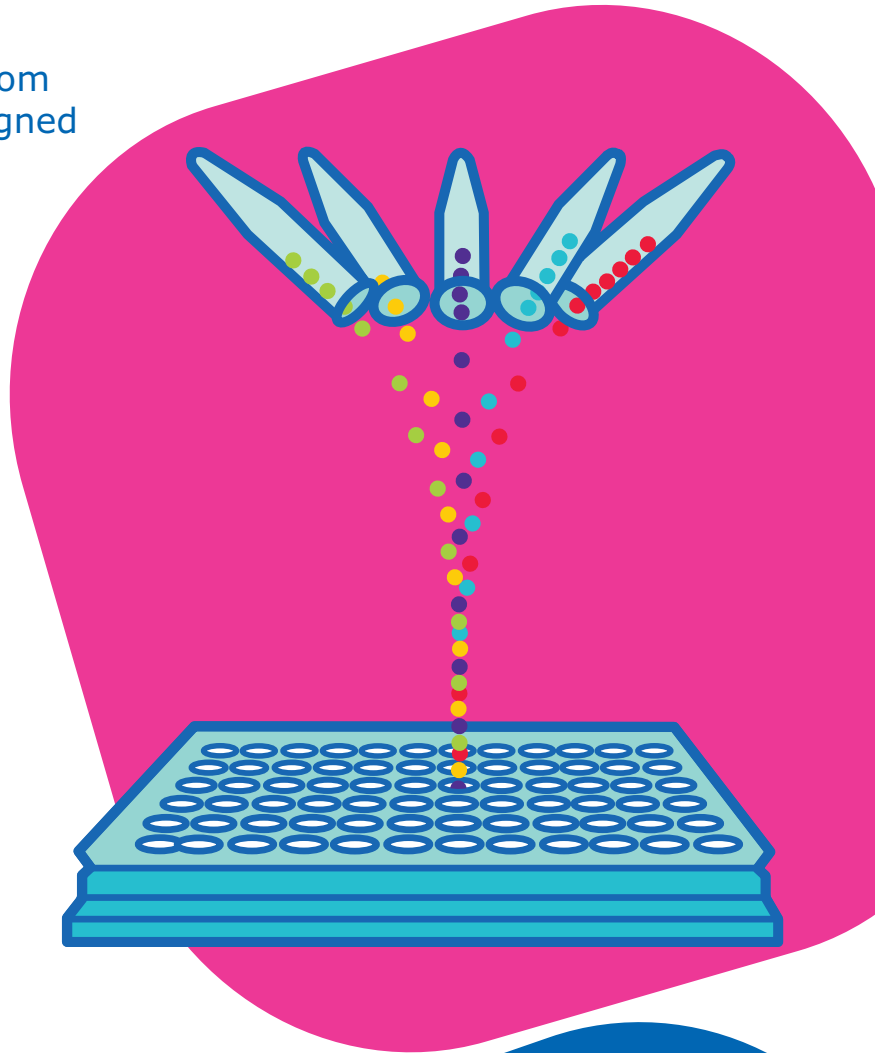


Multiplex it your way

Accelerate your research with Custom MILLIPLEX® and ELISA assays designed for your specific biomarker needs.

- Develop new analytes
- Multiplex new analytes with existing analytes
- Recombine existing analytes into new panels
- Convert existing assays to 384-well format
- Design and verify assays for your samples
- Kit bridging for lot-to-lot consistency
- Custom kit reagents and formatting



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

Millipore®

Preparation, Separation, Filtration & Monitoring Products

Reconfigure existing analytes from our MILLIPLEX® panels

Our Special Product Release (SPR) program allows you to leverage our knowledge base of pre-verified analyte/panel combinations. Select analytes from up to three panels and we will assess the combination feasibility.

For more complex analyte and panel combinations, or for those which have not been pre-verified, we base feasibility upon compatible sample dilution, matrix, sample preparation requirements and known analyte cross-reactivity. Once ordered, and prior to kit release, we test cross-reactivity of antibodies to other analytes in the same custom panel and optimize the final assay and protocol. Should a combination fail testing, we will provide you with alternate assay options.

Example

7-plex Human Cytokine/Metabolic/Sepsis Panel IL-1β, IL-4, IL-6, IL-8, TNFα, Leptin and MMP-8

Human Cytokine/Chemokine Panel 1

- ☐ (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 Metabolic Hormone (Cat. No. HMHEMAG-34K)

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

Human Sepsis Panel 2 (Cat. No. HSP2MAG-63K)

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



Luminex® FLEXMAP 3D®



Luminex® MAGPIX®

Submit your custom assay request at SigmaAldrich.com/customassay

Download a copy of the new Analyte Quarterly brochure for a complete listing of our available analytes and MILLIPLEX® panels at SigmaAldrich.com/milliplex



Develop a New Assay

Our Special Product Release Custom (SPRCUS) program allows you to develop a new MILLIPLEX® or ELISA assay which is fit for your purpose. We follow a milestone-based approach to generate an assay that quantifies your exact proteins of interest. All MILLIPLEX® assays are optimized to run on any Luminex® instrument. A dedicated project manager coordinates updates and data reviews during each milestone, offering you peace of mind that your project is on schedule and meeting specifications.

Milestone 1 New analyte development or testing existing analytes on a new sample type (*as required*)

Milestone 2 Multiplexing of analytes and assay verification

Milestone 3 Kit manufacturing and optional QC range assignment

New Custom Assay Development Request

1. Select species

- Human Mouse Other _____

2. Choose sample type

- Serum/plasma Cell/Tissue Culture
 Urine Other (CSF, tears, synovial fluid, etc.)

3. Select assay development options

- Multiplex ELISA
 Customer supplied antibodies/standards
 Test analytes in new species/sample type Other

4. List desired analytes

New analytes: _____
 Existing analytes: _____

5. Optimizations and verifications included in SPRCUS development

- Standard Curve
- Matrix for dilution of standards (minimize background)
- Sample dilution factor
- Antibody cross-reactivity to other analytes in same panel
- Protocol

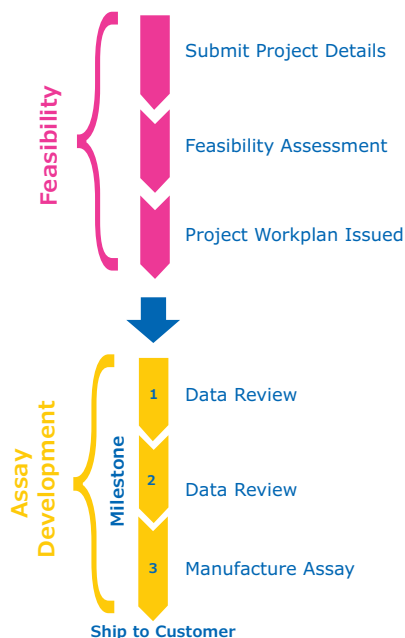
6. Request additional tests or verifications

- Lot-to-lot bridging
 Customer samples
 Extraction procedures
 Other (Sensitivity, Precision, etc.) _____

7. Select final kit format

- 96-well format
 384-well format (for FLEXMAP 3D®)
 High/Low Quality Control Ranges
 Premixed beads
 Bulk packaging
 Other _____

Custom Assay Project Workflow



Submit your custom assay request at [SigmaAldrich.com/customassay](https://www.sigmaaldrich.com/customassay)

New Analytes – Feasibility Assessment

We have a 98% success rate in new analyte development. We assess the feasibility for developing your new analyte assay based upon the availability of quality antibodies and standards from commercial vendors. Clients may also provide their own antibodies and standards for assay development.

Custom Assay Quality

Combinations of existing analytes

When we combine existing analytes from multiple MILLIPLEX® panels to build your custom assay, we use our inventory of off-the-shelf kit components. Each component was built to the specifications set during original panel development and subsequent lot manufacturing quality verification.

We test new analyte combinations for cross-reactivity of antibodies to other analytes in the same custom panel and optimize the panel for sample dilution, matrix and protocol. High/low QC range values are available for an additional testing fee.



New analyte development

For new analyte development, we screen for the best combination of antibodies and standards to build a singleplex assay. We then combine the new analyte(s) with requested existing analytes into as few plexed panels as possible. The resulting custom panel(s) are verified with the following specifications:

- Antibody selectivity, specificity
- Standard curve ranges
- Verified sample type
- Sample dilution
- Serum matrix
- Cross-reactivity with other analytes in panel
- High/Low QC Range values – additional testing fee

Additional verification tests are available upon request. However, most clients prefer to purchase additional kits for their own study-specific verification testing when needed.

Key Points

- All MILLIPLEX® panels, custom assays, reagents and ELISAs are manufactured in facilities which are ISO 9001-2015 compliant and are for research use only (RUO), not for use in clinical or for medical diagnostic purposes.
- Custom kits and reagents are not for resale and may not be repackaged for commercial sale.
- Confidentiality/non-disclosure agreements and time-delimited analyte/kit exclusivity agreements are available upon request.



SMCxPRO™

Leverage the sub-picogram detection capabilities of SMCxPRO™ and the SMC™ Custom Assay Services Team by visiting SigmaAldrich.com/smc