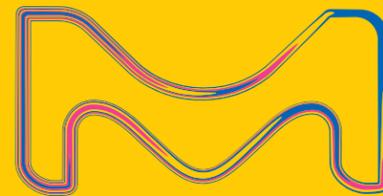




Meet  
**BROOKE  
GILLIAM**

Gilliam helps researchers with custom  
MILLIPLEX® MAP assay solutions



*“While we utilize more than 600 validated antibody pairs, if you’re interested in an analyte not in our current commercial portfolio or need to tweak your assay format, just ask.”*

What do you do when commercially available multiplex kits are not optimally configured to meet your experimental needs? Custom immunoassay development might be the right solution for you if you want to combine analytes across existing panels, include off-menu analytes, or conjugate a specific antibody to xMAP® beads with robust analytical validation. Meet Brooke Gilliam, MS, who has 15 years of immunoassay development experience, and learn more about the custom assay development process.

**What do you do at MilliporeSigma?**

**Brooke Gilliam (BG):** I’m the lead MILLIPLEX® MAP custom assay development ([EMDMillipore.com/customassay](https://www.emdmillipore.com/customassay)) scientist at MilliporeSigma. I spend my time consulting with customers on new assay feasibility, as well as overseeing the scientific development process, which includes:

- Developing new analytes
- Combining currently available analytes into custom panels
- Considering cross-reactivity and sample dilution for analyte compatibility
- Generating work plans and conducting project milestone calls with customers and our project management team
- Reviewing customer data and making suggestions
- Keeping customers informed throughout the project

**What aspect of your job do you enjoy most?**

**BG:** I like consulting with customers and providing solutions to their unique challenges. I have the pleasure of directly interacting with customers to collaboratively develop and implement assay solutions. It’s gratifying to see the assays that I helped to develop working well for customers in their labs, as many of my customers come to us because they previously struggled with lot-to-lot variation, sensitivity, or assay validation issues with commercially available kits.

**Tell me something about MilliporeSigma most people don’t know.**

**BG:** While we utilize more than 600 validated antibody pairs, if you’re interested in an analyte not in our current commercial portfolio, just ask. We publish new analytes in our Analyte Quarterly brochure, but additional analytes may also be in development or available.

We often include new analytes into our development pipeline based on customer demand. If you’re interested in a specific analyte, the best way to get started is to contact our custom assay team directly via our website at [EMDMillipore.com/customassay](https://www.emdmillipore.com/customassay).

**If you could solve any scientific challenge or human health crisis, what would it be?**

**BG:** Before I started at MilliporeSigma, I was a researcher working in academic labs that focused on autoimmune inflammatory disorders, specifically rheumatoid arthritis and Lupus. I was moved when writing the patient demographics section for a manuscript of a large Lupus study; many of the patient participants were young children, so I would hope for a cure or even a targeted treatment for Lupus.

**How do you spend your time away from work?**

**BG:** I chauffeur my kids to various sports and activities. Outside the organized activities, I enjoy spending time together with my family at home.

**Not sure if your targets are available in a commercial kit?**

Email a custom assay scientist to discuss feasibility of your assay at [customassay@emdmillipore.com](mailto:customassay@emdmillipore.com)

# 5 Tips for custom MILLIPLEX® MAP Assays

Brooke Gilliam is the lead custom multiplex assay development scientist at MilliporeSigma and is based in downtown Saint Louis, Missouri. Gilliam shares a few best practices based on her 15 years of experience developing immunoassays.

## 1 What information is required to confirm the feasibility of a custom MILLIPLEX® MAP assay?

To get started, we need to know your species and sample type and whether or not the customer would like QC ranges established for their assay.

## 2 What parameters do you typically consider for assessing the feasibility of a custom assay?

We assess all of the following up front (as required or known): sample dilution, sample preparation, serum matrix solution compatibility (for dilution of standards in serum/plasma samples), bead regions, type of Luminex instrument and analysis software, analyte cross-reactivity, and desired assay format.

## 3 Can you give me some examples of customers who may require a custom multiplex assay?

Our most popular request is for combining analytes between panels, or for validating an assay on a new sample type or species. We also do quite a bit of development work for new analytes or proprietary customer targets. While the biomarker detection field is rapidly evolving, it is not always possible to have every analyte available, and this is the rationale behind our development offerings. Finally, some customers require enhanced verification/validation depending on their assay needs or developing an assay in a new format. We do all that as well. Lastly, we do offer services to assist our customers. Examples include our Core Lab MapMate program, bead conjugations, biotinylation, iodination, and data analysis.

## 4 What is one important tip that all customers should know?

Every customer's sample is different; not all serum/plasma samples are created equally. For example, I have seen proteins at off the chart levels in some diseased patients or mouse samples. We encourage customers to send us a subset of their samples to use when developing a custom assay to ensure we hit the range they need to measure all of their analytes. This will avoid customers running (and wasting) a kit and then having to adjust the dilution factor because their analyte is abnormally high. If that's not possible, we will send a test kit for customers to run in-house and can modify the assay depending on the customer's results before we send the final kitted assay. This two-way partnership is essential and is one way that we deliver the highest quality assay possible.

## 5 What types of assay validation do you offer in your custom assays?

I can't stress enough the importance of the assay quality. At a bare minimum, we always measure analyte cross-reactivity, determine a minimum required dilution for the customer's sample type, establish an assay range to ensure samples read in the linear portion of the curve, and supply an optimal serum matrix solution for dilution of the standards (serum/plasma samples). We also consider lot #1 to be our gold standard reference lot and match the performance of subsequent assays back to our gold standard. Beyond this, we offer a menu of validation services depending on the nature of your work or your specific validation requirements. An example could include spike-recovery in samples.

## Ready to get started?

Connect with a custom assay scientist by visiting: [EMDMillipore.com/customassay](https://www.millipore.com/customassay)

"Every customer's sample is different; not all serum/plasma samples are created equally."

