

NEWS on diagnostics

2024 Volume 1



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Welcome to the first issue of News on Diagnostics for 2024. This volume will focus on the essential products that are necessary for optimal laboratory function. Commodities like, solvent, buffers, detergents & labware are sometimes overlooked, but are nonetheless fundamental to assay development.



Biological Buffers

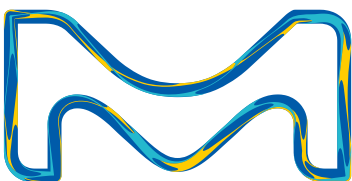
We are a world leader in manufacturing and distribution of high-quality biological buffers with expertise and capacity to meet customer's needs ranging from a few grams to multi metric tons.

What makes us your trusted partner from bench to bulk? It's important to protect the integrity of your biomolecules and reagents by choosing the right biological buffer systems. We offer an extensive portfolio of biological buffers for a wide variety of applications, including cell culture buffers, PCR buffers, HEPES buffers, and assay buffers.

Key features of our advanced buffer systems:

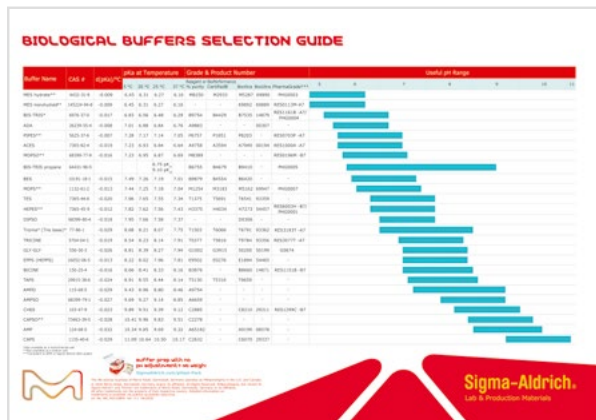
- High-purity solutions available in a wide range of grades
- Multiple and user-friendly packaging options
- Assured solution stability with pH control
- No interference with biological processes
- Critical salts and nutrients added to cells and tissues
- Scalable from early research to commercial applications
- Customised blending

Our buffer systems can bring phenomenal stability to your cell culture, polymerase chain reaction (PCR), drug screening, bioprocessing, purification, and final formulation-based applications. All our products can be scaled from early research to commercial applications.



Biological Buffers (continued)

We provide a comprehensive selection of high-quality biochemicals in a wide range of buffer grades and innovative, user-friendly packaging options. In addition to off-the-shelf products, we offer custom reagent manufacturing and customised blending.



Request your **Buffer Selection Guide**

The Biological Buffers Selection Guide can be a great reference piece to hang in your lab.

Need help making a buffer?

Our **buffer preparation calculator** helps you to quickly calculate buffer molarity, mass, and volume.

Detergents

Detergents are surfactants or compounds that decrease the surface tension between two liquids or liquids and solids by solubilising hydrophobic molecules.

We offer a broad range of biological detergents and surfactants to meet your research and manufacturing needs, including biodegradable alternatives per OECD 301F, such as TERGITOL™ 15-S and ECOSURF™ surfactants. Our detergent products include: anionic detergents, cationic detergents, zwitterionic detergents, non-ionic detergents, and anti-foaming agents. Our portfolio of chemically-stable products spans from reagent grade for general lab use to highly purified grades for the most demanding applications. Bulk and custom ordering options provide the same product from bench top to large scale manufacturing under ISO 90001:2008 certifications.



Read the technical article **Detergent Solubilisation of Membrane Proteins**

Need more help on choosing a detergent? **Download our Detergents Poster**

Solvents

We are committed to providing you with the right solvent for your specific application. All our products undergo stringent controls and continuous development to meet your exacting requirements. Our comprehensive portfolio of solvents can be found under three of our Portfolio Brands: Supelco® products for analytical chemistry, Sigma-Aldrich® materials for lab and production, SAFC® products for biopharmaceutical and pharmaceutical development and manufacturing. All our products are designed to fit your application requirements and are available in a variety of sizes, packaging materials, and with the supporting documentation you need.

For example, the EMSURE® brand designates our premium grade Inorganics and Solvents, which are optimised for regulated analyses and advanced lab applications. These products offer the highest quality and an unmatched scope of specifications to give you complete control of test conditions and eliminate uncertainties.

EMPLURA®	EMPARTA®	EMSURE®
<ul style="list-style-type: none"> • MQ Segment: MQ200 • Regulatory Support <ul style="list-style-type: none"> - CoA's - MSDS 	<ul style="list-style-type: none"> • MQ Segment: MQ200 • Regulatory Support <ul style="list-style-type: none"> - CoA's - MSDS - BSE/TSE or AO certificates 	<ul style="list-style-type: none"> • MQ Segment: MQ300 • Regulatory Support <ul style="list-style-type: none"> - CoA's - MSDS - BSE/TSE certificates - Special documentation on request

Learn more about our EMPOWER portfolio by downloading our brochure [here](#).

Blockers

It is well recognized that immunoassays, particularly in sandwich formats, are subject to interference from a range of endogenous antibodies. These include anti-animal antibodies, rheumatoid factor, other auto-antibodies and heterophilic antibodies. They can be from all classes (IgG, IgA, IgM or IgE) and can bind to antibodies from other species, as well as other cell fractions or assay components. There are no perfect solutions and every assay needs optimisation. We offer a range of products to combat interference from broad spectrum blocking solutions to individual components.

Ideal blocking agents have the following characteristics:

1. Effectively block nonspecific binding of assay reactants to the surface of the well.
2. Do not disrupt the binding of assay components that have been adsorbed to the well.
3. Act as a stabiliser (prevent denaturation) of assay reactants on the solid phase.
4. Do not cross-react with other assay reactants.
5. Do not possess enzymatic activity that might contribute to signal generation of the substrate or degradation of the reactants.
6. Perform consistently across various lots.

Blockers (continued)

Probumin® Bovine Serum Albumin

With over six decades protein fractionation expertise, we are the world's largest and most experienced manufacturer for multiple grades of high-quality albumins in powder or solution formats for the diagnostic and culture market.



What is Probumin® Bovine Serum Albumin Diagnostic Grade?

Probumin® diagnostic grade BSA is highly purified and tested to meet strict quality and performance standards. This product is manufactured by a proprietary heat-shock purification process, using caprylic acid as an albumin stabilizer. It is processed to demonstrate undetectable levels of residual protease activity. This product may be used in development or as a raw material for IVD development, including immunoassays like ELISAs, where BSA is often used as a blocking agent and stabiliser for protein reagents requiring low IgG levels to improve assay specificity and sensitivity. Each lot of Probumin® BSA is accompanied by a Certificate of Analysis and Certificates of Origin detailing complete product testing and specifications. We can provide an EDQM Certificate of Suitability upon request.

Recombinant Mouse IGG Antibody

Finding the right blocker against a disruptive protein present in immunoassay test samples can be difficult given the constraints on consistency, reliability, and availability. For this reason, we have developed a novel, sustainable replacement for mouse IgG purified from animal serum. The new recombinant mouse IgG antibody provides immunoassay manufacturers with a tightly controlled, non-animal derived blocking solution to efficiently reduce nonspecific antibody interference while improving lot reproducibility and test accuracy.

We offer two animal-free mouse IgG blocker antibody formulations: Recombinant Mouse IgG B1 and Recombinant Mouse IgG B2, both supported by a secure supply chain. These new blends were developed from unique clones produced in stable cell lines expressed in CHO cells.

- Recombinant Mouse IgG B1 is formulated as a direct alternative to serum-derived mouse IgG and employs a passive blocking approach to eliminate interfering antibodies from immunoassay systems using capture and detection antibodies.
- Recombinant Mouse IgG B2 is an enhanced formulation of B1, designed to deliver a targeted blocking strategy against anti-mouse antibodies in immunoassay sample serums.

To request a sample, or chat with one of our experts, please visit our dedicated [webpage](#).

Labware Partners

In addition to manufacturing our own labware products, such as Millex® Filters, and Stericup® E products, we are proud to partner with well-known companies to bring you the highest quality labware. Our labware partners include the BRAND®, Corning®, Cytiva™, and Eppendorf® product portfolios. Explore these product portfolios to find the right product for your labware needs.

BRAND® Products

BRAND® GmbH and BRANDTECH® glassware and plasticware, lab storage solutions, bottletop dispensers, pipettes and pipette tips, cuvettes, and cell culture and PCR consumables for laboratories. [SigmaAldrich.com/BRAND](https://www.sigmaaldrich.com/BRAND)



Corning® Products & Labware

Corning® brand glass and plastic labware, filtration membranes, cell culture supplies, and equipment for life sciences.

[SigmaAldrich.com/corning](https://www.sigmaaldrich.com/corning)

Cytiva™ Products

Cytiva™ products for drug Discovery® research and therapeutics bioprocess manufacturing including Whatman® lab filtration products, Amersham™ chromatography columns and resins, tissue culture reagents, and products for protein sample preparation, blotting, and analysis.

[SigmaAldrich.com/cytiva](https://www.sigmaaldrich.com/cytiva)



Eppendorf® Products

Eppendorf® brand conical and microfuge tubes, pipettes and pipette tips, dispensers, centrifuges, microtiter plates, mixers, spectrometers, and PCR equipment for laboratories.

[SigmaAldrich.com/eppendorf](https://www.sigmaaldrich.com/eppendorf)

Reduced Lab Plastic Waste with Stericup® E Filters

Stericup® E and Steritop® E systems are funnel-less filter products for use in the sterile vacuum filtration of aqueous solutions such as tissue culture media and buffers. The two new formats (38 mm and 45 mm thread-compatible connector) are designed specifically for direct attachment to all commercially-available media and buffer bottles. Our video gives more information on this environmentally friendly alternative for your sterile filtration needs:

[SigmaAldrich.com/Stericup-E](https://www.sigmaaldrich.com/Stericup-E)

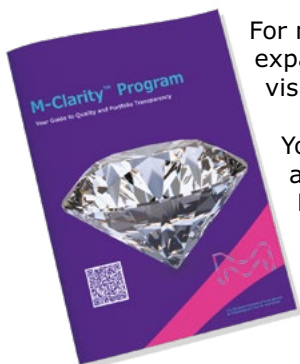


M-Clarity™ Program

In highly regulated Life Science industries, robust quality programs from suppliers help to support manufacturing-driven needs, such as risk mitigation. The quality segment of the M-Clarity™ Program provides transparency so that you can choose, with confidence, suitable products that meet your needs with respect to:

- Compliance with the appropriate quality and regulatory standards
- Portfolio transparency
- Change notification support
- Documentation support

Initially, the M-Clarity™ Program focused on chemicals and consumables, with six quality segments (MQ100-MQ600), differentiated by both application and quality attributes. To make this program even more relevant and useful for our customers, we have expanded this program to include some equipment (segmented as EQ1-EQ4) and spare parts (segmented as SP1-SP2).



For more information about our expanded M-Clarity™ Program, please visit SigmaAldrich.com/mclarity

You can also download information about the DQA, Change Notification, and the M-Clarity™ Matrix on this page.

@TheLabBench

If you work to develop and manufacture *in vitro* diagnostic tests, then come and hang out with us @The Lab Bench. Enjoy informal discussions with bench scientists on topics related to diagnostic test development.

An illustration of a laboratory bench with various pieces of equipment including flasks, test tubes, a microscope, and a pipette. The background is a mix of yellow and pink.

@The Lab Bench
An IVD R&D focused discussion series

In this series of informal discussions with research and development scientists we aim to illuminate some of the not so obvious tips, trick, and insider information on developing novel IVD molecular assays.

Scan QR code to watch now!

SigmaAldrich.com/atlb

Did YOU KNOW...

We believe sustainability is rooted in responsibility?

We'll keep you updated on sustainability topics, webinars, new product introductions and offers.

See more at SigmaAldrich.com/gogreener



Keep up to date with all our News on Diagnostics by subscribing to future editions at SigmaAldrich.com/newsondiagnostics

