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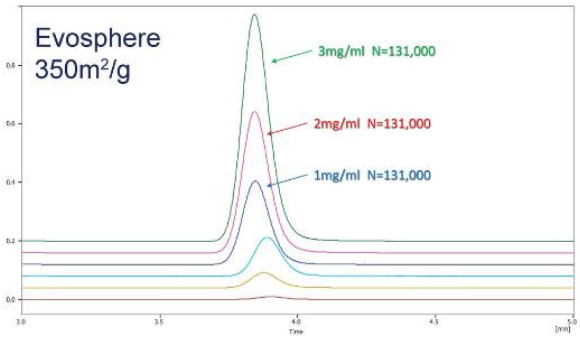

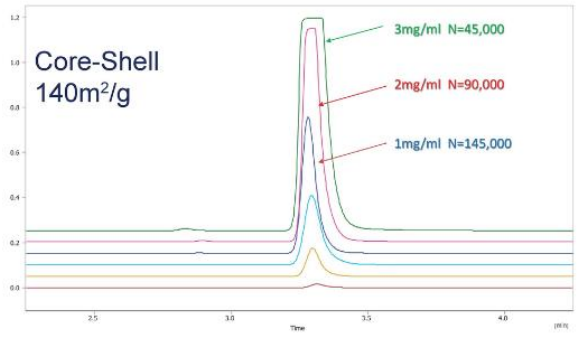

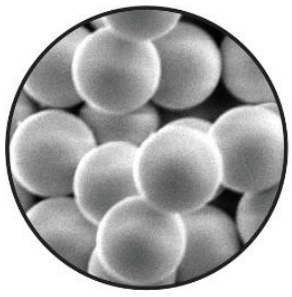

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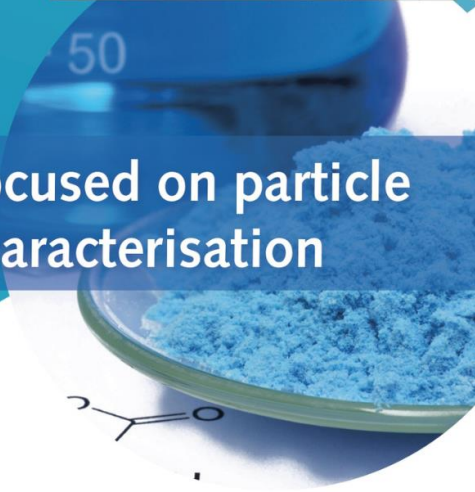

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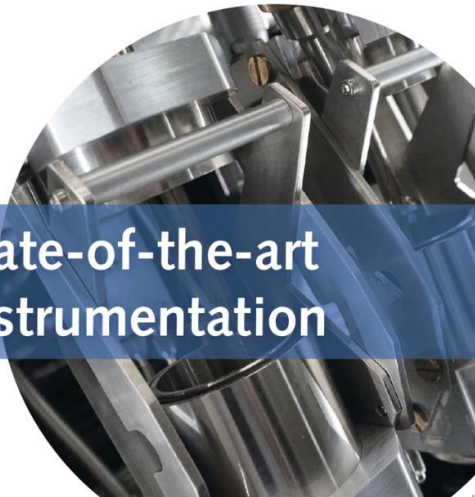

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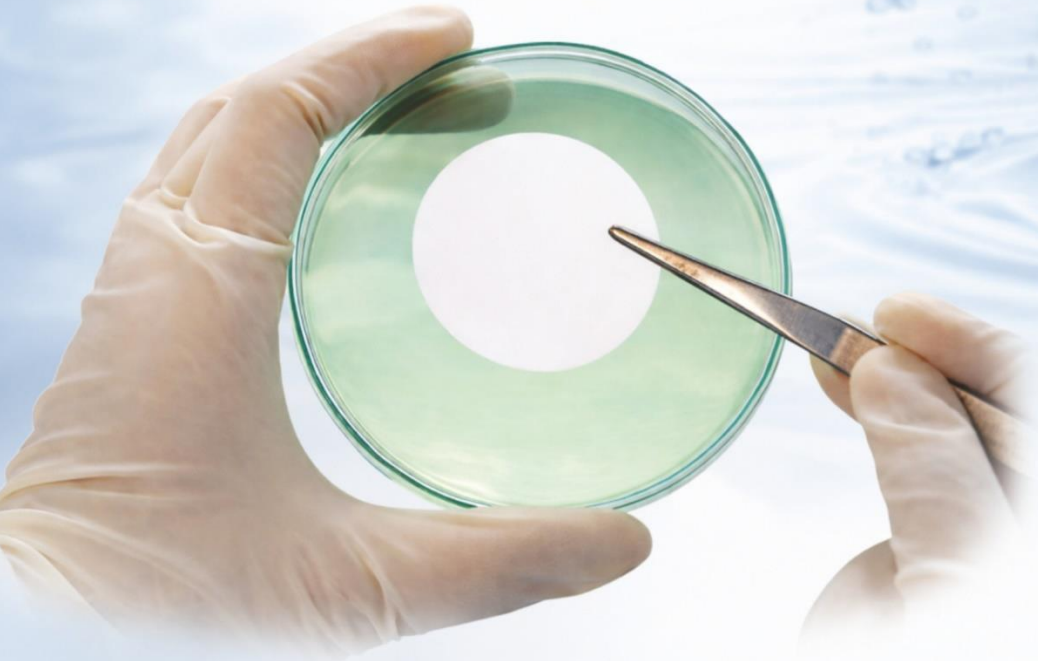

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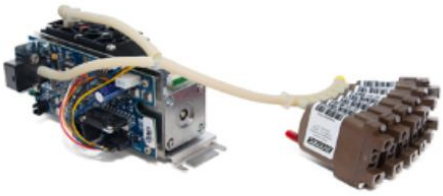

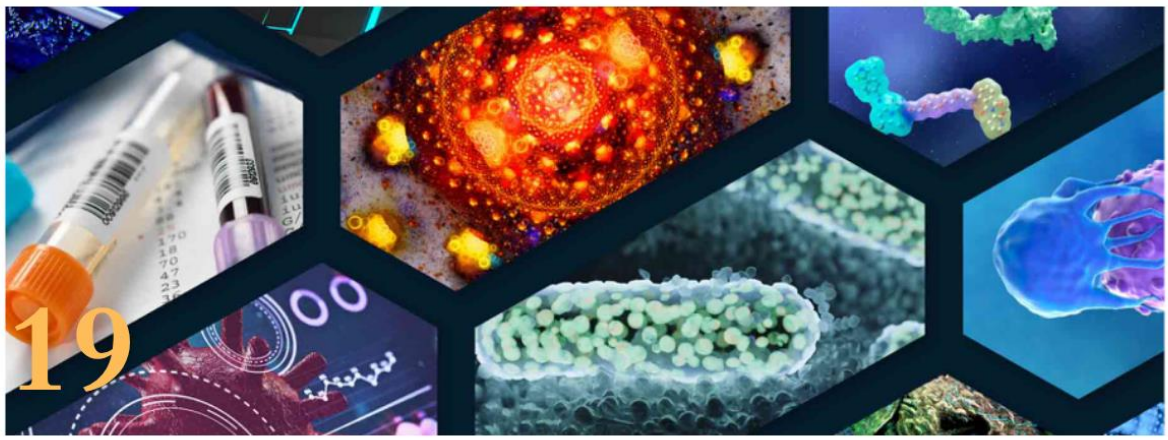

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Editor's Word

ear Readers,
Welcome to a fresh and forward-looking edition of Microbioz India.
In an era where science and innovation are evolving at an unprecedented pace, our mission remains clear—to bring you content that not only informs but also inspires new perspectives and possibilities.
This issue has been thoughtfully curated to reflect the dynamic landscape of the pharma, biopharma, laboratory, and analytical industries, offering you a blend of insights, innovation, and industry intelligence.
Our cover story, "**The Power of Accuracy: Innovations in Analytical Technologies**," takes you into the heart of how scientific breakthroughs are being transformed into scalable, impactful solutions. It explores the strategies, challenges, and vision that define success in today's highly competitive environment.
Adding further depth to this edition, we feature "Why Single-Use Bags Fail and How to Address the Issue," contributed by Ami Polymer—an article that highlights technological advancements shaping efficiency and precision in modern bioprocessing.
As we continue to embrace the digital evolution, Microbioz India is expanding beyond print—bringing you closer to real-time updates, multimedia experiences, and interactive engagement through our online platforms. We encourage you to explore more on our website and stay connected with us across our digital channels.
Your feedback remains at the core of our growth. It is your trust and engagement that drive us to continuously raise the bar and deliver meaningful, high-quality content tailored to your interests.
Thank you for being a valued part of the Microbioz India community. We hope this edition sparks ideas, fuels innovation, and keeps you informed on the trends shaping our industry.
Enjoy the read!

Warm regards,
Kumar

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THE POWER OF ACCURACY

INNOVATIONS IN ANALYTICAL TECHNOLOGIES

In the current technologically-driven Pharma and biotechnology industry, applications and solutions backed by dependable, repeatable and accurate data will have the most value. Data collection, analysis, and assurance will be core elements of applications supporting different operational stages and decision-making in the Pharma and biotechnology industry. Analytical technologies, when used in the Pharma and biotechnology sector, have the potential to enhance data-driven decision-making, thereby supporting innovation and compliance.

Accuracy and Its Role in Competitive Advantage

The Continuous Development of Analytical Technologies

The field of Analytical Sciences has advanced from traditional, manual, time-consuming, and labor-intensive activities to highly developed, automated processes. Earlier techniques involved manual interpretation and therefore, analytical methods had the potential for error.

Today, digital intelligence and advanced instruments with large analytical capabilities have improved analytical methods.

Today's laboratories are technologically advanced and automated. Digital intelligence and lab automation facilitate ultra-accurate results with a minimal human element.

The Innovations that Make Accuracy Possible

1. AI in Data interpretation

AI and machine learning are beginning to revolutionize what data interpretation in analytics looks like. AI enables data analysts to perform the following:

1. Detect patterns that humans cannot see
2. Decrease the margin for analytical error
3. Understanding what in the future can be achieved with predictive analytics

AI empowers analysts and increases productivity with ultra-accuracy, and efficiency in the data interpretation cycle. This is especially evident in laboratories with a high volume of analytical needs.

2. Superior Chromatography

With the developments that have come to chromatography, namely, Ultra-High-Performance Liquid Chromatography (UHPLC), greater efficiency and smaller separative and analytical limits have been achieved. This has allowed scientists to work in the domains of previously impossible analytical precision, and is essential for modern drug development and ensuing quality assurance.

3. Spectroscopy

The latest iterations of Spectroscopy tools realize a higher degree of detail and a faster cadence of analysis.

Penetrating higher degrees of insight of the nuclides of the molecules has profound implications on the our understanding of pharmaceuticals, food safety and materials science. NMR and FTIR are impressive innovations in the field.

4. Automation and Robotics

Automation reduces the margin for human error, a core cause of inaccuracy. Robotics manages tedious and repetitive tasks such as sample preparation and analysis. This results in a consistent and reproducible outcome of each intervention of an experiment.

5. IoT Real-Time Monitoring

Before, accessible, real-time monitoring was a thought. IoT made the accessible real-time monitoring a reality. Quality assurance improved with real-time monitoring and data access. This enabled manufacturing and research processes to improve dynamically.

Effect on Other Industries

Pharmaceuticals & Biopharma

Testing analysis for advanced pharmaceuticals maintains and fortifies safety, efficacy, and compliance in a heavily regulated environment. Technology has made advanced innovations and discovery a reality.

Clinical Diagnostics

Analytic interfaces support the innovations of healthcare and in the improvement of saving lives. This achieves the dynamic improvement of treatment regimens and the early intervention of disease.

Environmental Analysis

Achieving global goals of sustainability requires diligence and the commitment to enlightened stewardship of our environment. Analysis support of dynamic innovations fills that gap.

Food & Beverages
Safety is paramount for analysis within the industry.

Reach requires a committed dynamic improvement for the forging change to stem the tide of unsanctioned commerce. Safety requires a committed change and dynamic commitment.

Challenges and the Road Ahead

Advancements play at the edge of promise.

Possibilities are mired by the realities of instrument costs, sheer complexity and the data management at scale. Level of accessible sophistication is a will and is achieved by committed improvement and research.

The future of analytical technology is lightweight devices that are completely automated and seamlessly integrated into digital ecosystems.

Personal analytical devices and cloud data canvases will change the where and what of analysis.

Conclusion: Precision Sparks Creativity

The future of innovation lies in the power of analytical precision and is opening previously closed doors in innovation and Analytical technologies.

Creating and implementing solutions that have the ability to improve the level and quality of accuracy will place an organization ahead of its counterparts in the era of data.

It is no longer an option for either the science and technology industry or the Analytical technology to appreciate and adopt to the level of excellence and the quality of Analytical technologies Precision is a trade of the business, for the sustainable advancement and growth of the business.

Future-Ready Labs: Innovation **Driving Scientific Excellence**

Modern laboratories are shifting from traditional physical spaces brimming with tools to intelligent infrastructures. Advanced digital and automated technologies, combined with data-centric smart technologies, are reshaping traditional laboratories. The increasing demand for timely, more accurate, and compliant regulatory results from industry players amplify the need for labs on the cutting edge of technology, establishing lab-based scientific endeavours as pivotal.

Evolution of Smart Labs

From pharmaceutical research and development, to clinical diagnostics and environmental analysis, laboratories of the present day are acquiring enhanced productivity, reliability, and competitiveness on the global market.

Components of a Cutting Edge Lab

A cutting edge lab is built utilizing scalable intelligent systems.

Advanced technologies are employed to streamline technical procedures, reducing manual participation, and maintaining excellence in outcomes.

Digitally integrated frameworks will ensure the seamless flow of data, and processes will be automated to improve efficiency. These labs will possess frameworks for adaptive real-time analysis and enhanced global compliance.

Key technologies disrupting contemporary laboratories

1. Digital Lab Ecosystems (Integration of LIMS and ELN)

The integration of Laboratory Information Management Systems (LIMS) with Electronic Lab Notebooks (ELN) is changing the ways we record, store, and share lab data. These systems enable us to eliminate most manual documentation errors, allow us to collaborate in real time, and enhance our regulatory compliance and data traceability.

The leap to paperless labs is not a matter of convenience, it creates a robust, credible, and expandable data infrastructure.

Laboratory Automation and Robotics

Automation is transforming laboratory processes by eliminating the chances of errors and increasing speed. These robotic systems are capable of:

1. Sample preparation
2. Pipetting and liquid handling
3. High-throughput screening

Automation improves repeatability of experiments and allows scientists to concentrate more on analysis and other novel activities.

AI and Predictive Analytics

AI-based instruments have the potential to convert raw data into useful analysis. In advanced laboratories AI is used to:

1. Predict and quantify risks of experimental outcomes
2. Improve and simplify procedures and methodologies
3. Distinguish irregularities in data

AI predictive functions decrease time and aid in research and the development of products.

IoT and Intelligent Devices

Devices integrated with IoT functions:

1. Allow continuous real-time monitoring of laboratory devices.
2. Provide remote access to devices and real-time tracking of laboratory activities.
3. Predictive maintenance ensures the devices are always operational.

Intelligent devices increase the efficiency of laboratories.

Cloud Computing and Data Security

Centralized data with the support of the cloud is transforming data research and protective collaborations. Cloud is becoming the and provides broader and seamless storage facilitations and rapid release of advanced oxidation within high volumes and mixed data analyses.

Talent and Technological Innovation

Biopharmaceutical Services

Future-ready laboratories are expediting the process of design, optimizing compliance with stringent laws, and decreasing time to release life-saving solutions.

Clinical and Diagnostic Laboratories

Advanced laboratory systems are improving diagnostic precision, facilitating customized medicative alternatives, and enhancing patient outcomes through time-efficient and result proven reliable outcomes.

Environmental & Food Testing

Advanced contamination detection allows industries to uphold safety standards and assist help sustain ecological balance.

Academic & Research Institutions

Smarter labs, increased creative thinking, and holistic cooperation are the outcomes of the adoption of transformative lab systems in the field of research and education.

Barriers to Transitioning to Future-Ready Labs

There are numerous challenges in transitioning, including:

1. Adoption of advanced technologies
2. Skilled resource & training requirements
3. Compatibility with existing systems
4. Protection & compliance of information

To tackle these challenges, careful planning, gradual execution of the strategy, and the continuous improvement of the workforce are required.

The Future of Laboratories

The focus of future laboratories will be systems that are completely self-sufficient and are capable of further optimizing all systems.

Some of the advancements expected are:

1. Use of AI for self-directed labs and labs
2. Simulated labs using Digital Twin Technology
3. Labs which are designed to be decentralized and mobile
4. Labs which are designed to be sustainable and require fewer resources

The enhancements will also optimize the way research is done and lead to increased efficiency.

Summary: Designing the Future of Laboratories

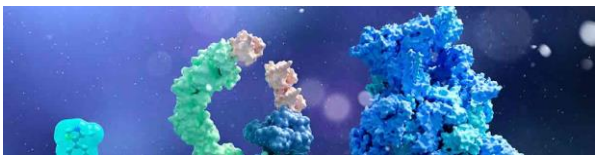
To provide the world with atomic and subatomic technology and systems, we require labs that are easier to navigate and use. For the future technology such labs will be constructed for use with legacy systems, and fully automated, adaptive and intelligent systems that will integrate into labs to provide an unprecedented level of efficiency.

> For the organizations pursuing a goal of supremacy in scientific pursuit, the most primitive level of achievement is a fully developed lab. This illustrates the advancement of scientific gain amid fierce competition and a reliance on knowledge systems.

Innovations in **Drug Discovery**: Trends **Redefining Pharma R&D**

Can gene editing be used as a life-saving treatment? Could antiviral drugs that target human proteins be more effective than those than target the viruses themselves? The constant evolution of drug discovery is one of the most exciting aspects of modern medicine, and new research is leading to breakthroughs in precision medicine, cancer immunotherapy, neurodegenerative disease detection, and much more. Let's take a closer look at eight key trends happening in drug discovery today.

Driving E3 ligase discovery through commercial PROTAC momentum



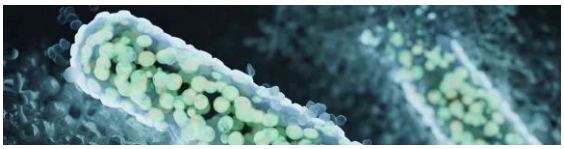
PROteolysis **Ta**rgeting **C**himeras (PROTACs) are small molecules that drive protein degradation by bringing together the target protein with an E3 ligase.

To date, more than 80 PROTAC drugs are in the development pipeline, and over 100 commercial organizations are involved in this field of research. We've seen in the CAS Content Collection™, the largest human-curated repository of scientific information, a sharp increase in PROTAC-related publications in less than 10 years, which demonstrates their therapeutic potential. Cancer is the leading disease in PROTAC-related literature, but neurodegenerative, infectious, and autoimmune diseases are represented as well.

Despite the diversity of E3 ubiquitin ligases, however, most designed PROTACs act via one of four E3 ligases: cereblon, VHL, MDM2 and IAP. Efforts are now underway to identify new ligases and utilize others already known beyond the main four. These include DCAF16, DCAF15, DCAF11, KEAP1, and FEM1B. New insights into the structure and functionality of different ligases could enable targeting of various proteins that were previously inaccessible, and it may lead to fewer off-target effects.

Expect to see new PROTAC drug designs entering the preclinical pipeline as researchers continue expanding the E3 ligase toolbox.

Expanding probiotic use beyond gut health for systemic diseases



The human microbiome — the vast community of bacteria, viruses, fungi, and other microbes living in and on our bodies — plays a crucial role in maintaining health.

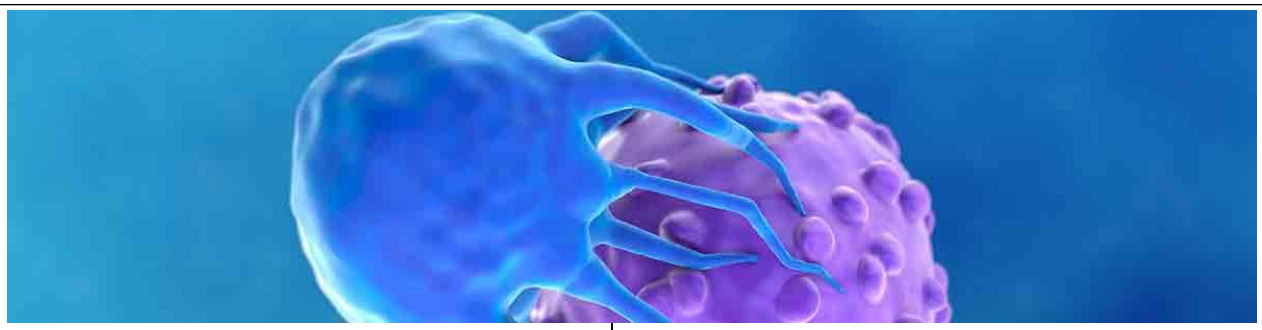
Far from being passive bystanders, these microbial ecosystems influence digestion, immunity, mental health, and even chronic disease risk. Researchers are harnessing the power of gut bacteria to treat antibiotic-resistant infections, metabolic disorders, and mental health conditions.

For example, fecal microbiota transplants (FMT) have been approved by the FDA to treat recurrent *Clostridioides difficile* infections. As of 2025, over 180 microbiome-targeted therapies were in development for many conditions. A greater understanding of the microbiome's role in chronic diseases may also result in early-life interventions and dietary recommendations that are low-cost, long-term improvements to many aspects of human health.

Delivering precision oncology through radiopharmaceutical conjugates

Drug conjugates are innovative molecules that combine a targeting moiety (such as an antibody, peptide, or small molecule) with a potent therapeutic payload (e.g., chemotherapy agents, toxins, or radionuclides), enabling selective delivery to diseased cells while sparing healthy tissues.

There are several types in existence, such as antibody-drug conjugates, and now researchers are making progress with radiopharmaceutical conjugates. This form of nuclear medicine combines targeting molecules with radioactive isotopes for imaging or therapy. These conjugates offer dual benefits — real-time imaging of drug distribution and highly localized radiation therapy. For cancer treatments, radiopharmaceutical conjugates can reduce off-target effects and toxicity by directing drugs to specific cells. These drugs can also improve efficacy through better targeting of tumors with a lethal payload. We expect to see increased use of these theranostic approaches as several radiopharmaceuticals have entered late-stage clinical trials or received regulatory designations.



Scaling CAR-T therapy for solid tumors with next-generation platforms

Immunotherapy has become a pillar of cancer treatment, along with surgery, chemotherapy, and radiation. The number of immunotherapy drugs is constantly growing, and CAR-T therapies, which use a patient's own genetically engineered cells to attack and kill cancer cells, have been found particularly effective. Yet their cost and the development time from an individual's cells make them prohibitive for most cancer patients. Advances in allogeneic and armored CAR-T cells are overcoming problems of cost and scale as well as drug efficacy, and they may hold the key to expanding the use of these cancer treatment options to more patients:

- **Allogeneic CAR-T:** These are donor-derived or gene-edited cells that are faster and more affordable to develop than autologous (patient-derived) CAR-T cells. By providing an off-the-shelf option, these treatments could become more accessible to a larger pool of patients.
- **Dual-target and armored CAR-T:** Dual-target CAR-T cells recognize two antigens, while armored CAR-Ts are engineered to secrete cytokines or resist immunosuppression, which enhances efficacy and durability.
- Several dual-target CAR-Ts (e.g., AUTO1/22, CD19/CD22) are in clinical trials (CAR-T for pancreatic cancer; CAR-T for solid tumors), and armored CAR-Ts like ATA3271 are being developed to overcome tumor escape and exhaustion.
- These innovations aim to reduce relapse rates and improve outcomes in cancers with high antigen variability or immunosuppressive environments.

Enabling early diagnosis of neurodegenerative diseases with biomarkers

Biomarkers are measurable biological indicators in blood, tissue, or bodily fluids that reflect normal or pathological processes, and they play a pivotal role in detecting diseases at their earliest, most treatable stages.

In cancer treatment, for example, BRCA1/2 genetic mutations are an important component of preventive care for breast and ovarian cancers.

Now, blood-based and imaging biomarkers are being developed to detect early signs of neurodegenerative diseases like Alzheimer's and Parkinson's before clinical symptoms appear.

Recent studies have also validated plasma biomarkers (e.g., phosphorylated tau) that correlate with early Alzheimer's pathology, enabling earlier diagnosis and trial enrollment.

Early detection could allow for timely intervention, improve clinical trial design, and shift the focus from symptom management to disease prevention.

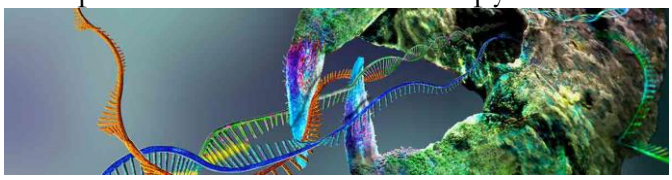
Transforming drug development with AI-powered trial simulations

AI in healthcare is pushing all sorts of new boundaries, and the technology is constantly improving. Not only are AI models and platforms capable of designing novel drug candidates and predicting protein structures, but they're now accelerating the clinical trial process.

Quantitative systems pharmacology (QSP) models and "virtual patient" platforms simulate thousands of individual disease trajectories, allowing teams to test dosing regimens and refine inclusion criteria before a single patient is dosed. AI-powered digital twins are also transforming clinical development and translational research.

For example, Unlearn.ai has validated digital twin-based control arms in Alzheimer's trials, demonstrating that AI-augmented virtual cohorts can reduce placebo group sizes considerably, thereby ensuring faster timelines and more confident data without losing statistical power.

Launching rapid-response gene editing with personalized CRISPR therapy

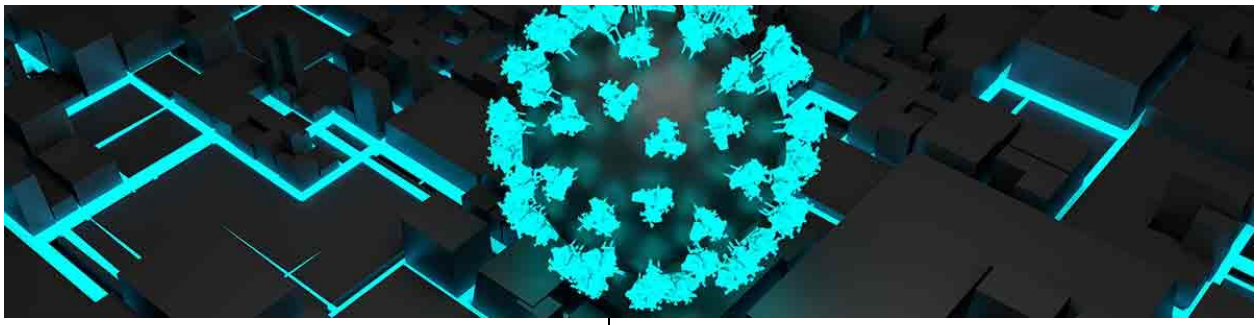


In 2025, a seven-month-old infant with CPS1 deficiency received personalized CRISPR base-editing therapy developed in just six months.

This treatment was delivered via lipid nanoparticles to correct a life-threatening mutation and marked the first use of CRISPR tailored to a single patient.

By demonstrating the feasibility of rapid, individualized gene editing, even for life-threatening conditions, this breakthrough could lead to new options for rare diseases that have no existing treatments.

Beyond this type of personalized medicine, *in vivo* CRISPR therapies may be the next evolution in treating cardiovascular and metabolic diseases. For example, CRISPR Therapeutics' CTX310 reduced LDL by 86% in Phase 1 trials, and Intellia's NTLA-2002 for hereditary angioedema has entered Phase 3 with strong early efficacy.



Accelerating antiviral discovery with AI to fight future pandemics : Antiviral drugs work by disrupting a virus's ability to infect and replicate, targeting stages like cell entry, replication, or release. Traditionally tailored to specific viruses, these treatments are now evolving into broad-spectrum antivirals and host-directed therapies — approaches that target shared viral mechanisms or the human cellular pathways that viruses exploit. To accelerate development, researchers are leveraging AI and machine learning to identify and design promising compounds, often before a new virus even appears.

- Broad-spectrum antivirals **(BSAs)** are designed to target conserved viral elements or host pathways shared across multiple virus families, enabling a single drug to work against diverse pathogens. These could serve as a first line of defense in future outbreaks by buying time until pathogen-specific treatments are developed.
- **Host-derived antivirals (HDAs)** target human proteins or pathways that viruses require, rather than the virus itself. They may provide more durable antiviral protection from rapidly mutating viruses.
- **Machine learning** is screening compound libraries, predicting viral protein structures, and identifying host-virus interaction networks before new pathogens emerge.
- Global initiatives like PANVIPREP in the EU and the U.S. Antiviral Program for Pandemics are investing in AI-driven platforms to preemptively identify antiviral candidates. These innovations can enable a proactive rather than reactive response to a new outbreak or pathogen.

Additionally, last month (August 2025), researchers at MIT reported the invention of antibiotics using generative AI against drug-resistant strains of gonorrhea and *Staphylococcus aureus*. While still in the early stages, this breakthrough is likely to be a beacon of hope for antibiotic research.

Drug discovery is always in motion, and with AI-driven tools and the rise of personalized medicine, we can expect to see more breakthroughs in 2025 and beyond. At CAS, we're keeping our finger on the pulse of new innovations in drug discovery, and you can stay up-to-date on the latest research here.

To know more:

https://www.cas.org/resources/cas-insights
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PRODUCT PORTFOLIO

CRM	Application	Pack Size
Potassium Hydrogen Phthalate	**Acid-base titration**	45 g
Sodium Carbonate	**Acid-base titration**	45 g
Sodium Chloride	**Argentometric titration**	45 g
Potassium Chloride	**Conductivity / Calibration**	45 g
Potassium Dichromate	**Redox titration**	45 g

APPLICATION AREAS

- Pharmaceutical Quality Control
- Research & Development Laboratories
- Analytical Method Validation
- Environmental & Chemical Testing etc..
- Calibration of Volumetric Solutions

ADVENT

Potassium Hydrogen Phthalate

Certified Reference Material

CAS No. [877-24-7]
$C_8H_5KO_4$
FW : 204.22

PRODUCT CODE : 77003-45 G
PACK SIZE : 45 G

RC-1043

Certified Value 99.92% Ucrm ±0.09

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AD-CERT™

Storage : Store at 15.0-35.0 °C in original packing at a clean, dry and well-ventilated place.
Keep the container tightly closed away from source of ignition; handle at inert atmosphere.

Purpose : Use as a Primary standard for testing, calibration and method validation.

Warning : It may cause skin and eyes irritation. If exposed, rinse repeatedly with water.

Batch No.	: G26B0015
Mfg. Date	: 09 February 2026
Exp. Date	: 08 February 2029

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Advancing Pharma Quality **Control with Microbial Control**

The safety and quality of produced medicines is extremely important when manufacturing. Integrating adequate microbial control into quality control (QC) processes is one of the factors that helps achieve this.

These controls are vital for protecting the safety of patients and satisfying the rigorous global legal requirements.

Ensuring Safety and Compliance

Contamination by microbes at any process level during the production of a **pharmaceutical product** is a possibility. Contamination, even at the smallest level, is a serious risk to the health of the consumer and the financial health of the company.

Since the integrity of the product is at stake, the importance of the control of microbes is obvious. An effective control program contains a validated cleaning/sanitization step, and, of course, a plan for environmental monitoring and a plan concerning staff.

Most importantly, and particularly for the sake of world health, is effective control of **microbial tracking** and trending of environmental isolate(s). **Contamination control** is key to identifying weak points in the control and to help eliminate unwanted recurrent trends.

Control of microbial tracking and trending of environmental isolates is a key principle of control, and Laboratories of all Sectors of Technology Manufacturing, including pharmaceuticals, nutraceuticals, devices, personal care, and food manufacture, are responding accordingly.

Microbiologics, as an example, is responding to this need by offering comprehensive solutions for the effective environmental isolate management. Environmental isolates that are controlled through this process are microbial, meaning that they are living.

Microbiologics is really hitting the ball out of the park with environmental monitoring. Environmental isolates of a microbial nature are being effectively controlled for quality.

Microbiologics offers an excellent **environmental monitoring program**.

Why Microbiologics?

- Over 40 years of experience developing and producing microbial controls
- Extensive range of simple and reliable qualitative and quantitative formats
- Independent external controls for accurate and reliable results
- Convenient test-ready formats that save time and operational costs
- Easy and economical storage without the need for freezing
- Technical support experts available for guidance
- Industry-leading quality system including ISO 17034 certification

Applications in Quality Control

To align with **pharmacopeial standards** such as those outlined in the **United States Pharmacopeia**, microbial controls are widely applied across various QC processes.

Using well-characterized environmental isolates as test controls supports compliance in critical applications, including:

- **Antimicrobial Effectiveness Testing** – USP <51>
- **Aseptic Processing Environment Monitoring** – USP <1116>

Disinfectant Qualification – USP <116>

- **Growth Promotion Testing** – USP <61>, <62>, <71>
- **Suitability Testing** – USP <51>, <61>, <62>, <71>
- **Validation of Neutralization Methods** – USP <1227>
- **Water for Pharmaceutical Purposes** – USP <1231>

These applications are vital to the examination of the performance of methods, the verification of the system's suitability, and the protection of microbiological control, during all the stages of manufacturing.

Regulatory authorities such as the World Health Organization and the U.S. Food and Drug Administration emphasize the importance of controlling microbial limits and contamination as well as proper Good Manufacturing Practice (GMP) implementation.

Microbial control practices may arise from legal requirements, but they are also seen as a major component of quality assurance in the pharmaceutical sector. The implementation of these practices will enable companies to safeguard their products, remain compliant, and ultimately, safeguard the health of patients.

To know more:

JUNE ENTERPRISES PVT. LTD.

Email: micro@june4gmp.com
Mobile: 99303835

Conductivity Measurement in Pharma: Ensuring Quality and Safety

In the production of Active Pharmaceutical Ingredients (APIs), especially within the pharmaceutical industry, measuring conductivity is necessary. It is a crucial aspect of the integrity of measurement formulations of water, assurance of the completion of cleaning procedures, and the evaluation of chemical levels. Therefore, conductivity is warranted, and the selection of conductivity sensors is pivotal at each stage of the manufacturing process.

Importance of Conductivity Measurement

When developing APIs, the major goal is to manufacture safe and efficient therapeutic molecules. For this, it is important to obtain pure products, free of any unwanted substances that may hinder post purification processes, or that may be detrimental to the patients.

Conductivity is one of the important indicators in numerous pharmaceutical activities, including:

1. Verification of the Purity of Pharmaceutical Grade Water: Conductivity is used to verify the level of ionic impurities within the water that is used in the processes of formulation.
2. Evaluation of the Effectiveness of Cleaning - in - Place (CIP) and Sterilization - in - Place (SIP) :
3. Conductivity checks if the cleaning solutions are effective and residues are destroyed.
4. Determining the Level of Phase Separation and Concentration of Chemicals: It offers excellent control of the level of concentration at different stages of the process.

Selecting the Right Conductivity Sensor

Choosing the appropriate conductivity sensor is vital for accurate readings. Conductivity sensors are categorized into two main types: contacting (with electrodes in direct contact with the sample) and inductive (operating without electrodes).

Key Selection Criteria

Conductivity Range:

Low Conductivity: The range for pharmaceutical waters samples is 0.001 - 2,000 µS/cm.

Medium Conductivity: The range for buffer formulations and CIP/SIP processes is 0.02 - 500 mS/cm.

High Conductivity: The range for chemical concentration control and phase separation is 0 - 2,000 mS/cm.

Cell Constant: Cell Constant shows the spacing plus area preference ratio of the electrodes and is a geometric factor in the cell. Dedicated constant for low conductivity is high (0.1cm^-1) while low cell constant is required for medium and high conductivity measurements.

Temperature Considerations: Conductivity is influenced and determined by temperature, hence the choice of a sensor integrated with a temperature probe is crucial. This assures temperature compensations and measurements become more accurate for adherence to standards such as the DS 645 and DS 1644.

Construction Materials: Materials such as 316L stainless steel are the most suitable sanitary materials. For sensor longevity in corrosive environments, PEEK or PFA materials are preferred.

Sensor Length and Fitting: The length and fitting of a sensor is determined by the measurement needs and extended to the most optimal point in the process in order to provide a comprehensive interpretation of the process. Fittings such as NPT, DN, and Tri -Clamp as well as lengths of differing measurements are available.

Conductivity Measurements Across API Production Steps

1. Production of Pharmaceutical Waters (Low Conductivity)

Conductivity measurement is vital for controlling ionic impurities in pharmaceutical grade waters. Continuous monitoring through online sensors is recommended to eliminate contamination risks associated with grab sampling.
An example of a suitable sensor is the UniCond 2-E, which features Plug and Measure functionality and an integrated measuring circuit.

2. CIP/SIP Processes and Formulation (Medium Conductivity)

In CIP processes, conductivity measurements confirm the required strength of cleaning liquids and ensure no residues remain.
A 4-electrode sensor, such as the InPro 7100i, is ideal due to its minimal polarization effects and reduced susceptibility to fouling, ensuring reliable measurements.

3. Phase Separation and Chemical Concentration Control (High Conductivity)

Conductivity sensors are crucial in phase separation processes, where readings indicate when to interrupt flow and allow for optimal separation. The InPro 7250 inductive sensor, designed with no wetted metal parts, offers excellent chemical resistance and is suitable for aggressive environments.

Conclusion: Measuring conductivity, in this sector, remains a key concern to ascertain the safety and quality of the final product. Pharmaceutical manufacturers are enabled to ensure quality and reliability by tailoring their sensor selection based on conductivity range, temperature, construction, as well as process safety concerns. Consequently, it assists the suppliers in delivering safe medication and in enduringly observing the standards.

About METTLER TOLEDO: METTLER TOLEDO is a leading global manufacturer of precision instruments. The Company is the world's largest manufacturer and marketer of weighing instruments for use in laboratory, industrial and food retailing applications. The Company also holds top-three market positions for several related analytical instruments and is a leading provider of automated chemistry systems used in drug and chemical compound discovery and development. Additional information about METTLER TOLEDO is available at www.mt.com.

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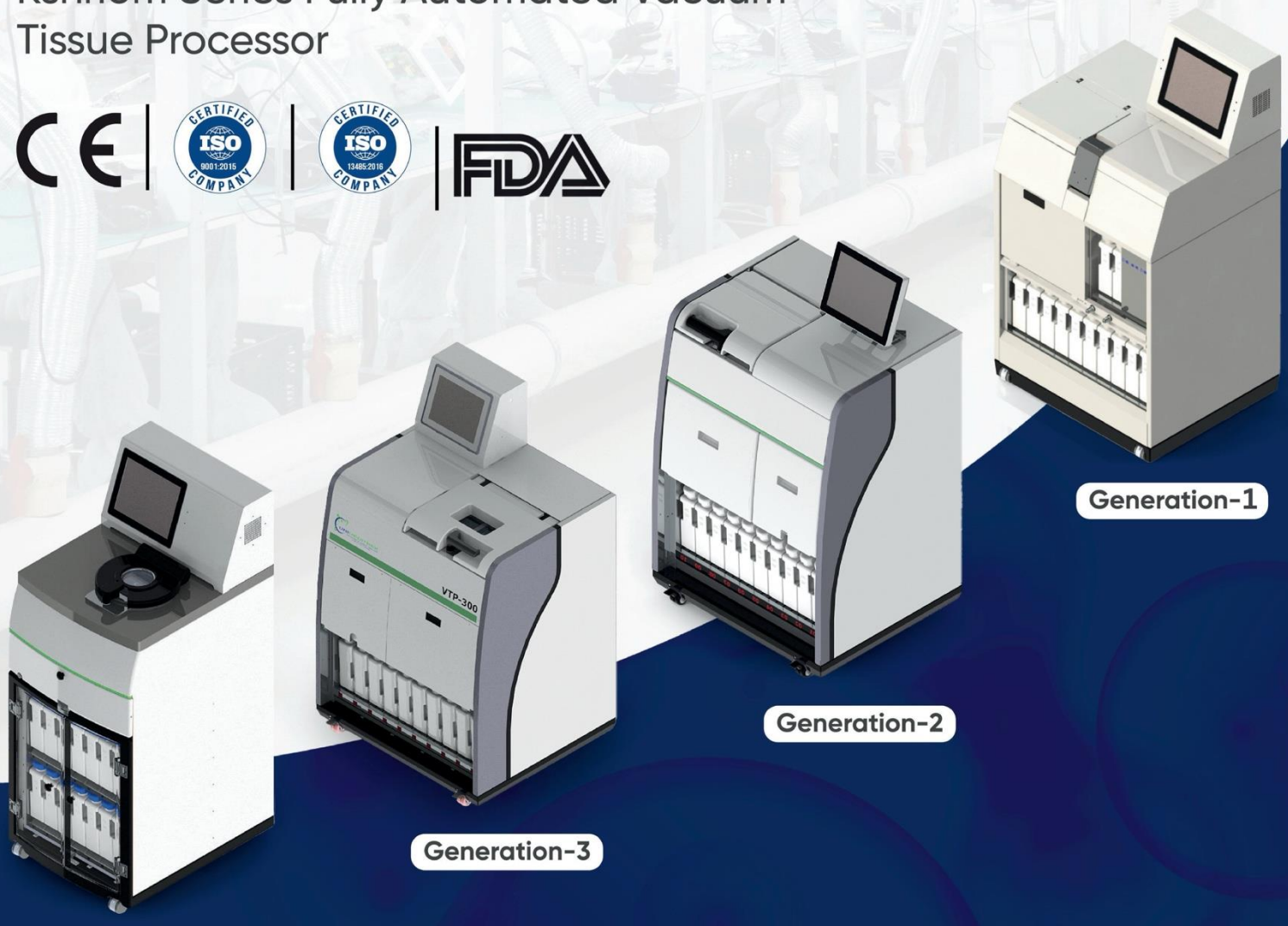

Generation-1

Generation-2

Generation-3

UPCOMING

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Why **Single-Use Bags** Fail and How to Address the Issue

In biopharma manufacturing, Single-Use Technology (SUT) has allowed for much greater flexibility and responsiveness. But, this comes with significant cost. Loss of integrity with any of the bags used in SUT systems is a danger. All that is needed is a tiny pinhole in the seam, and a sensitive high-value batch of media or drug substance can become a total loss. Knowing the cause of the loss and understanding the conditions to avoid it is essential to keep the process sterile and efficient.

The Potential Problems with Sealing

The center of what can be achieved with SUT is the multilayer polymer films. The ability to it into the thermoplastics is a standard of the industry. Other options for things that are more apart of the delicate and or heat sensitive applications, Ultrasonic Bonders can create an airtight seal. Tube welding allows the connection to the C-Flex thermoplastic tubes to a closed system.

The Causes of Single-Use Bag Failure

Though SUT is a relatively new technology, bags have been failing for a long time because of what is called the Sealing Paradox. The bags are multilayered and are composed of a strong outer layer, either of Nylon or of PE, and an inner, sealing layer, which can either be EVA or LDPE.

The Narrow Sealing Window

Being precise in this instance is extremely important.

If the sealer is a mere 2 degrees cooler than it should be, it results in a seal that is temporary and yields to the pressure of the replete bag.

If, however, the heat is too great, it erodes away the polymer and makes it extremely brittle.

Interface Contamination:

If even a minuscule droplet of protein media splashes onto the area where the seals interact before fusion occurs, this creates a barrier which would prevent the polymers from knitting together to cause a "channel leak."

Flex Cracking: "sloshing" of the liquid during the transport creates a repeated folding stress on the corner of the bags.

As bags are made of a single sheet of material this eventually leads to plastic insanity (bags collapsing in on themselves)

Layering Difficulties

Each layer containing seals on a five-layer laminated film presents increasing difficulty in comparison to sealing a simple plastic bag. The biggest challenge would be thermal lag, it would be imperative for the heat to seep through protective layers in order to activate the sealant in the middle of the layers.

The "T-junctions" where the side seals intersect with the port sealing layers, would be nearly impossible to achieve a uniform seal, because of the intersecting layers of film. Also, materials such as EVA possess while "material memory" are attempting to return to their original form upon cooling, will result in internal stress, progressively worsening the seal.

Next Steps on the Topic

Quality by Design (QbD) has become the appropriate approach in the industry going forward.

Technical Innovations: Laser welding has enabled the heat to be localized to the middle of the sealant. This change has introduced a margin of safeness through the implementation of Redundant Sealing (double seals).

Rigorous Testing: The development of Helium Integrity Testing has enabled the detection of extremely small leaks to match an even finer scale as compared to traditional pressure testing.

Process Improvements: Innovations in the design of secondary packaging and use of foam inserts has greatly reduced the "slosh factor" observed during shipping. The use of sensor-integrated containers has provided advances in leakage prevention by issuing preemptive alerts of increased levels of moisture.

EVA is still the go-to for gas permeability, but many plants prefer Polyethylene (PE) blends for large-volume storage due to their greater mechanical strength and resistance to "creep." With advancements in material science and consistent workflow sealing, biopharma can finally close the gap on bag failures.

Written By: **Priyabrata Pattnaik**
Chief Executive Officer (CEO)
Mail Id: pattnaik.p@amipolymer.com

PEAK International Group launch upgraded brand identity

PEAK International Group unveiled its new brand identity at Analytica Munich 2026. The rebrand aligns PEAK Scientific, Noblegen Cryogenics and PEAK Gas Generation under the PEAK International Group umbrella, empowering the unique identity of each brand, supported by direct service throughout the globe as part of the PEAK International Group. While the values and mission of the PEAK International Group remain firmly rooted in a customer first approach, the new branding and structure will reinforce the company's purpose and sets a strong foundation for the next phase of business growth.

For PEAK, this rebrand signifies more than a logo change, the company is announcing a new identity with which it aims to strengthen its proposition across all brands by focusing on its core pillars of success: customer first, service and technology. By unifying the three brands under the PEAK International Group, PEAK will be able to roll out the excellence in customer experience, service and technology PEAK Scientific was built upon across all brands.
This includes leveraging expertise and facilities, implementing cutting edge technology across their range of liquid nitrogen, nitrogen, hydrogen and zero air generators and delivering the best-in-class on-site service and support to all brands in the group.

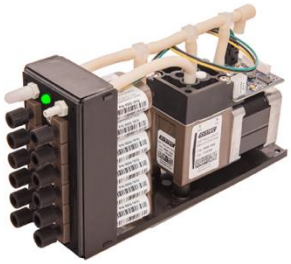
Bruce Peat, PEAK International Group's Head of Marketing, said of the rebrand, "The new identity and rebrand of the PEAK International Group is a fantastic way for us to create a bolder visual structure which unifies us as one group with many specialities.

The use of the existing pyramid split into three elements was a conscious choice to convey the importance of each brand in their own right, PEAK Scientific, Noblegen Cryogenics and PEAK Gas Generation, while also showing the integrated nature of the Group.
All elements of the pyramid are required for it to stand strong."

While the PEAK International Group has restructured its existing brands, it is not distancing itself from its core values and company purpose of keeping customers at the heart of everything it does. By introducing this new iteration of its brand, its grounding these values into the heart of all brands in the group; continuing to put customers first and delivering exceptional service to everyone.
You can read more about the rebranding at www.peakscientific.com/peak-international-group-rebranding

Instrument optimized **vacuum degassers**

Biotech Fluidics is a leading supplier of optimized **degassing modules** designed to seamlessly fit into **analytical, diagnostic** and **process instruments / systems** to improve their performance.



These OEM degassers are compact, integrated vacuum systems designed by Biotech Fluidics to remove dissolved gases from liquids, preventing bubbles that cause baseline noise, retention shifts, and instrument errors.

OEM degassers from Biotech Fluidics use a vacuum pump and degassing chambers with semi-permeable Systec AF membranes that allow dissolved gases to escape the liquid but not the liquid itself, preventing bubble formation in the flow path.

BIOTECH FLUIDICS

These compact, chemically inert degassers use trusted DEGASi® degasser parts, combined in a manner optimized to your specific system requirements. Many of Biotech Fluidics more popular OEM degasser modules, are available from stock or can be assembled within a few days for fast delivery. High performance components for OEM vacuum degasser modules

Biotech Fluidics offer OEM degasser solutions for specific flow rates, channel configurations, control features, and output options, thereby ensuring the stable operation of almost any fluidic instrument. Built for reliability these tailored degasser systems include advanced vacuum control and fault detection for consistent performance and long operating life.

Vacuum degassers are essential tools used to remove dissolved gases and microbubbles from fluids in applications including liquid chromatography, flow chemistry, clinical analysis, micro / nanofluidics, dissolution testing, chemical synthesis and reagent dispensing.

For further information on OEM vacuum degassers please visit https://biotechfluidics.com/products/degassing-debubbling/degasi-inline-degassers/oem-degassers/ or contact Biotech Fluidics on + 46 300 56 91 80 / + 1-612-703-5718 / info@biotechfluidics.com.

Biotech Fluidics is a leading supplier of fluidic system solutions, liquid transfer components, degassing systems, and innovative laboratory technology to instrument developers, manufacturers, and distributors all around the world. The company's mission is to empower its customers by designing and assembling unique products, being a dependable partner, offering first-class service, in-depth knowledge, and offering advanced technical support for all the items it provides. For further information - www.biotechfluidics.com

Alembic Pharmaceuticals Limited announces **USFDA Final Approval for Dapagliflozin** Tablets, 5 mg and 10 mg

Alembic Pharmaceuticals Limited (Alembic) today announced that it has received final approval from the US Food & Drug Administration (USFDA) for its Abbreviated New Drug Application (ANDA) Dapagliflozin Tablets, 5 mg and 10 mg.

The approved ANDA is therapeutically equivalent to the reference listed drug product (RLD), Farxiga Tablets, 5 mg and 10 mg, of AstraZeneca AB (AstraZeneca).

Dapagliflozin tablet is a sodium-glucose cotransporter 2 (SGLT2) inhibitor indicated: i) to reduce the risk of hospitalization for heart failure in adults with type 2 diabetes mellitus and either established cardiovascular disease or multiple cardiovascular risk factors, and ii) as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus. Refer label for a detailed indication.

Alembic was one of the first ANDA applicants to submit a substantially complete ANDA with a paragraph IV certification for Dapagliflozin Tablets, 5 mg and 10 mg. Therefore, with this approval, Alembic is eligible for 180 days of shared generic drug exclusivity.

Dapagliflozin tablets, 5 mg and 10 mg, have an estimated market size of US$ 10,487 million for twelve months ending December 2025 according to IQVIA.

Alembic has a cumulative total of 235 ANDA approvals (217 final approvals and 18 tentative approvals) from USFDA.

About Alembic Pharmaceuticals Limited

Alembic Pharmaceuticals Limited, a vertically integrated research and development pharmaceutical company, has been at the forefront of healthcare since 1907. Headquartered in India, Alembic is a publicly listed company that manufactures and markets generic pharmaceutical products all over the world. Alembic's state of the art research and manufacturing facilities are approved by regulatory authorities of many developed countries including the USFDA.

Alembic is one of the leaders in branded generics in India. Alembic's brands, marketed through a field force of over 5500 are well recognized by doctors and patients.

Information about the Company can be found at www.alembicpharmaceuticals.com; (Reuters:ALEM.NS) (Bloomberg:ALPM) (NSE:APLLTD) (BSE:533573)

Alembic Pharmaceuticals Limited announces USFDA Final Approval for Paroxetine Extended-Release Tablets

Alembic Pharmaceuticals Limited (Alembic) today announced that it has received final approval from the US Food & Drug Administration (USFDA) for its supplemental Abbreviated New Drug Application (sANDA) Paroxetine Extended-Release Tablets USP, 12.5 mg.

Alembic
Touching Lives over 100 years

The approved sANDA is therapeutically equivalent to the reference listed drug product (RLD), Paxil CR Tablets, 12.5 mg, of Apotex Inc. Paroxetine extended-release tablets are indicated for the treatment of Major depressive disorder (MDD), Panic disorder (PD), Social anxiety disorder (SAD), and Premenstrual dysphoric disorder (PMDD). Refer label for a detailed indication.

Alembic has a cumulative total of 235 ANDA approvals (216 final approvals and 19 tentative approvals) from USFDA.

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Cipla Receives Two USFDA Observations After Routine Inspection at Goa Plant

Cipla conducted a routine current Good Manufacturing Practices and pre-approval inspection at its manufacturing facility in Verna, Goa, from 6 to 17 April 2026. At the close of the inspection, the regulator issued two inspectional observations on Form 483, which the company has pledged to address comprehensively within the stipulated timeframe in consultation with the agency.

While the observations indicate certain compliance gaps at the Goa site, Cipla's prompt engagement with the U.S. regulator suggests an effort to limit any potential disruption to approvals or supplies to the U.S. market.

Stakeholders will be watching how quickly and effectively the company remediates the issues, given the strategic importance of U.S.-bound production for its growth and regulatory track record.

More about Cipla Ltd

Cipla Ltd is a leading Indian pharmaceutical company focused on developing, manufacturing and marketing generic medicines and active pharmaceutical ingredients for global markets. The company supplies a broad portfolio of therapies to regulated markets, including the U.S., relying on multiple manufacturing facilities across India to support its international business.

Lupin launches **generic diabetes** drug in US after USFDA approval

The tablets, available in multiple strengths, are bioequivalent to Xigduo XR, a widely used anti-diabetic medication

Pharma major Lupin Ltd on Wednesday announced the launch of its generic version of anti-diabetic medicine dapagliflozin and metformin hydrochloride extended-release tablets in the US following approval by the country's health regulator.

The launched Dapagliflozin and metformin hydrochloride extended-release tablets in the US are of strengths 5 mg/500 mg, 5 mg/1,000 mg, 10 mg/500 mg, 10 mg/1,000 mg, Lupin said in a regulatory filing.

The launch follows the approval for the company's abbreviated new drug application from the USFDA as bioequivalent to Xigduo XR, the company said.

Supriya Lifescience's manufacturing unit clears USFDA inspection

Supriya Lifescience announced that the U.S. Food and Drug Administration (US FDA) conducted an inspection at the Company's manufacturing facility located at Lote, Parshuram Industrial Area, Maharashtra, India, from 2 February 2026 to 6 February 2026. The inspection concluded with the issuance of a Form 483 containing one (1) minor observation.

SUPRIYA LIFESCIENCE LTD.

The Company has adequately addressed the observation and has received the Establishment Inspection Report (EIR) indicating Voluntary Action Indicated (VAI), signifying a successful completion of the inspection.

Aurobindo Pharma Hits 52-Week High on Twin USFDA Approvals

Shares of Aurobindo Pharma Limited touched a 52-week high of Rs 1,396.60 on the BSE on 20 April, rising 0.79% from the previous close of Rs 1,385.65, after the company secured two product approvals from the U.S. Food and Drug Administration.

AUROBINDO

The pharma firm received USFDA approval for Dextromethorphan Polistirex extended-release oral suspension (30 mg/5 mL, OTC), a cough relief formulation bioequivalent to its reference listed drug. The product will be manufactured at Unit-IV of APL Healthcare Private Limited, a wholly owned subsidiary of Aurobindo Pharma, with a planned launch in Q2 FY27. In a separate approval, the USFDA cleared Glycerol Phenylbutyrate Oral Liquid (1.1 g/mL), bioequivalent to Ravicti Oral Liquid marketed by Horizon Therapeutics U.S. Holding LLC. This product will be manufactured at Unit-III of the company. Aurobindo Pharma plans an immediate market launch for this one.

On the financial front, Aurobindo Pharma reported standalone revenue of Rs 2,747.28 crore in Q3 FY26, with net profit coming in at Rs 582.07 crore for the quarter ended December 2025.

At 1:16 pm on BSE, shares were trading down by 1.14% at Rs 1,369.80, retreating from the session high. The stock's 52-week range stands at Rs 1,017.00 to Rs 1,396.60.

Aurobindo Pharma Secures USFDA Approval for Glycerol Phenylbutyrate Oral Liquid

Aurobindo Pharma has announced that it has received approval from the US Food and Drug Administration (USFDA) for its Glycerol Phenylbutyrate Oral Liquid, marking a significant addition to its portfolio of specialty and complex formulations. The approved product is a generic equivalent of Ravicti Oral Liquid and is indicated for the chronic management of patients with Urea Cycle Disorders (UCDs).

AUROBINDO

These rare genetic conditions impair the body's ability to remove ammonia from the bloodstream, potentially leading to serious health complications if left untreated. The medication plays a critical role in helping patients manage ammonia levels and improve long-term health outcomes.

This approval underscores Aurobindo Pharma's continued focus on expanding its presence in the specialty and rare disease segments, particularly in the United States, one of its key markets.

The addition of Glycerol Phenylbutyrate Oral Liquid further strengthens the company's differentiated product pipeline and enhances its ability to address unmet medical needs.

According to the company, the product will be manufactured at its USFDA-approved facilities, ensuring adherence to stringent global quality and compliance standards.

The launch is expected to improve patient access to an affordable treatment alternative, especially in a therapeutic area where options are limited and often costly.

Aurobindo Pharma has steadily built a strong presence in the global generics market, with a diversified portfolio spanning antibiotics, antiretrovirals, cardiovascular, central nervous system, and gastroenterology products. The company has also been increasing its investments in complex generics, injectables, and specialty formulations to drive long-term growth.

The USFDA approval is expected to contribute to Aurobindo Pharma's revenue growth in the coming years, while reinforcing its reputation as a reliable supplier of complex generic medicines. It also aligns with the company's broader objective of enhancing healthcare accessibility and supporting patients with critical medical needs.

Founded in 1986, Aurobindo Pharma is a leading global pharmaceutical company headquartered in India. It develops, manufactures, and markets a wide range of generic and branded pharmaceutical products across more than 150 countries. The company operates a robust manufacturing and R&D infrastructure, supported by regulatory approvals from major global agencies, including the USFDA.

Alembic Pharma USFDA Approval Boosts Portfolio; Shares Rise 1.63%

Alembic Pharmaceuticals Limited has received final approval from the US Food and Drug Administration for its Methotrexate Injection, adding another product to its steadily expanding US generics portfolio.

The approval covers both multi-dose and single-dose formats. Specifically, 50 mg/2 mL multi-dose vials and 1 g/40 mL single-dose vials.

These fall under the abbreviated pathway, meaning they are therapeutically equivalent to an already approved reference drug.

Methotrexate is not a niche therapy. It sits across multiple treatment areas, from oncology indications such as leukaemia and lymphoma to chronic autoimmune conditions like rheumatoid arthritis and psoriasis. It tends to support consistent demand, even if pricing dynamics in the US generics space remain competitive.

The company noted that this takes its cumulative USFDA approvals to 236, including 218 final clearances.

Stock Market Snapshot

Alembic Pharmaceuticals share price moved up following the announcement, though the reaction remained contained rather than sharp.

As of 11:27 IST on April 16, 2026, the stock was trading at ₹746.80, up ₹12.00 or 1.63% from the previous close of ₹734.80, according to exchange data. During the session, it traded between ₹733.25 and ₹753.65.

The move suggests that while the approval is directionally positive, the market may be viewing it as incremental. Approvals in isolation rarely drive sharp re-rating unless backed by meaningful revenue contribution or limited competition.

Strategy Focused On Complex And Regulated Markets

Alembic Pharmaceuticals has been gradually sharpening its focus on regulated markets, particularly the United States. Within that, injectables and niche formulations have become an area of interest.

These segments tend to offer relatively better entry barriers compared to plain-vanilla generics. They also require more specialised manufacturing capabilities and regulatory compliance, which can support more stable positioning over time.
The company continues to build its pipeline through ANDA filings and approvals, aiming for a steady flow of launches rather than dependence on a few large products.

Breakthrough Eye Cancer Therapy: IDEAYA & Servier Move Closer to FDA Approval

A major breakthrough in oncology has emerged as IDEAYA Biosciences and Servier announced positive late-stage trial results for their experimental drug **darovasertib**. The therapy, used in combination with Pfizer's cancer drug **Xalkori**, targets uveal melanoma, a rare but aggressive eye cancer.

Clinical trial data revealed a significant improvement in progression-free survival, nearly doubling outcomes compared to existing off-label treatments such as Merck's **Keytruda** and Bristol Myers Squibb's **Opdivo** and **Yervoy**.

Importantly, the study demonstrated complete tumor response in several patients—an outcome not observed in the control group. This positions darovasertib as a potentially first-in-class targeted therapy for this indication.

Another notable benefit is the drug's ability to prevent enucleation (eye removal) in a majority of high-risk patients, representing a major quality-of-life improvement.

IDEAYA plans to file for FDA approval later this year, signaling a major milestone for precision oncology and rare cancer treatment.

If approved, analysts estimate the therapy could achieve blockbuster status, with projected annual sales nearing $1.7 billion.

GSK's Antibody-Drug Conjugate Shows Promise in Resistant Ovarian Cancer

GSK has reported highly encouraging early-stage clinical results for its novel cancer therapy **Mocertatug Rezetecan (Mo-Rez)**, an advanced antibody-drug conjugate (ADC).

The therapy demonstrated tumor shrinkage or elimination in over 60% of ovarian and endometrial cancer patients who had previously failed chemotherapy treatments.

Mo-Rez works by selectively delivering cytotoxic agents directly to cancer cells, improving efficacy while minimizing systemic toxicity—an approach gaining rapid traction in oncology pipelines.

The drug, acquired from Hansoh Pharma, has already been tested in global trials involving over 200 patients, showing strong tolerability and limited side effects.

GSK is now accelerating the program into multiple late-stage trials, aiming to fast-track regulatory approval.

With expectations of generating over £2 billion annually, Mo-Rez could become a cornerstone therapy in women's cancer treatment.

This development underscores the growing importance of ADC technologies in next-generation oncology innovation.

FDA Accelerated Approval Pathway Faces Scrutiny Amid Transparency Concerns

The accelerated drug approval pathway of the U.S. Food and Drug Administration is under renewed scrutiny following a critical report by the Institute for Clinical and Economic Review.

The pathway, designed to fast-track drugs for serious conditions using surrogate endpoints, has enabled quicker patient access but raised concerns regarding insufficient clinical validation.

A notable example cited is Biogen's Alzheimer's drug **Aduhelm**, which was controversially approved but later discontinued due to questionable efficacy.

ICER has recommended stricter evaluation criteria, mandatory confirmatory trials, and increased transparency in regulatory decisions.

The report also suggests linking drug pricing to clinical value and improving enforcement of post-approval commitments.

While industry stakeholders argue that the pathway accelerates innovation, critics emphasize the need for stronger safeguards to ensure patient safety.

The FDA has acknowledged these concerns and is working on updated guidelines to improve the process.

Pharma Tariffs Shake Industry: Pfizer, Merck Face Strategic Pricing Decisions

New tariff proposals targeting pharmaceutical imports are creating significant ripple effects across the global biopharma industry.

Major players like Pfizer and Merck are evaluating voluntary pricing agreements to avoid additional costs, while smaller biotech firms face greater challenges adapting to the new landscape.

The policy aims to boost domestic manufacturing and reduce reliance on foreign supply chains, particularly from China. However, the financial burden may disproportionately impact emerging biotech companies with limited pricing flexibility.

Certain categories, including orphan drugs and advanced therapies like gene and cell treatments, may be exempt—offering some relief to innovation-driven segments. Companies have been given a 180-day window to respond before tariffs are implemented.

This shift is expected to redefine pricing strategies and global supply chain decisions in the pharmaceutical sector.

Big Pharma Shifts Strategy: Surge in Mid-Sized Biotech Deals

The pharmaceutical M&A landscape is undergoing a strategic transformation, with major companies favoring smaller, targeted acquisitions over mega-mergers.

Industry leaders such as Merck, Eli Lilly, and Gilead Sciences are driving this trend. In 2026 alone, nearly 20 deals exceeding $1 billion have already been announced, none surpassing $10 billion—highlighting a shift toward "bolt-on" acquisitions.

This strategy allows companies to diversify pipelines, reduce risk, and address upcoming patent expirations. For biotech startups, this trend presents increased funding opportunities and a faster route to commercialization. Investors have responded positively, with biotech indices outperforming broader markets.

The evolving deal landscape reflects a more agile, innovation-focused pharmaceutical ecosystem.

India Pharma 2026: Vision for Global Leadership in Biologics & Innovation

At the prestigious **India Pharma 2026** event, J.P. Nadda outlined a bold roadmap for India's pharmaceutical future. The vision emphasizes transitioning from a global leader in generics to a powerhouse in biologics, biosimilars, and specialty medicines.

India's strong manufacturing base, combined with increasing R&D investments, positions it to play a critical role in global healthcare innovation.

The government is actively encouraging collaboration between academia, industry, and global stakeholders to accelerate drug development.

Focus areas include advanced therapies, regulatory harmonization, and digital transformation in pharma manufacturing.

With supportive policy frameworks and growing global demand, India is poised to emerge as a major innovation hub.

This strategic shift could significantly enhance India's contribution to next-generation therapeutics and global health solutions.

Sanofi Expands India GCC: Hyderabad Emerges as Global Pharma Innovation Hub

French pharma giant Sanofi has announced a major expansion of its Global Capability Centre (GCC) in Hyderabad, reinforcing India's growing role as a global innovation powerhouse.

The company plans to increase its workforce from over 2,600 to more than 4,500 employees, backed by a multi-hundred-million-euro investment. This expansion is part of Sanofi's broader strategy to shift from cost-driven operations to innovation-led global hubs.

The Hyderabad GCC will focus on high-value capabilities including artificial intelligence, data analytics, medical affairs, and advanced R&D functions.

This move aligns with a wider trend of multinational pharma companies such as Eli Lilly and Novo Nordisk strengthening their India presence through innovation centers.

India's talent pool, regulatory ecosystem, and cost efficiencies are key drivers behind this transformation into a global pharma capability hub.

The expansion highlights a strategic shift where India is no longer just a manufacturing base, but a center for digital pharma and next-gen drug development.

India's Obesity Drug Market Heats Up: Sun Pharma vs Global Giants

India's pharma business landscape is witnessing a major transformation as Sun Pharmaceutical Industries enters the high-growth obesity drug segment. The company has received regulatory approval to launch **generic semaglutide**, competing directly with blockbuster brands like Novo Nordisk's Wegovy and Ozempic, and Eli Lilly's Mounjaro.

Sun Pharma's products, branded as **Noveltreat** and **Sematrinity**, are expected to significantly reduce treatment costs and expand accessibility across India.

Simultaneously, Dr. Reddy's Laboratories has also entered the segment, intensifying competition in what is projected to be a $150 billion global market.

This aggressive expansion marks a turning point where Indian companies are not only dominating generics but also competing in high-value chronic disease therapies.

The obesity drug race is expected to reshape pricing strategies, patient access, and pharma marketing in India and across APAC.

₹10,000 Crore 'Biopharma Shakti' Initiative Set to Transform India's Manufacturing Landscape

In a major policy push, the Government of India has launched the **Biopharma Shakti initiative**, ₹10,000 crore program aimed at strengthening domestic biopharmaceutical manufacturing.

Announced by Finance Minister Nirmala Sitharaman, the initiative focuses on developing capabilities in biologics, biosimilars, and advanced therapies. The program is expected to benefit leading Indian players such as Biocon, Serum Institute of India, and Zydus Lifesciences.

A key objective is to reduce dependence on imports for critical biologics while enhancing India's global competitiveness in high-value drug segments.

The initiative also emphasizes R&D investments, infrastructure development, and industry-academia collaboration.

Experts believe this move could accelerate India's transition from a "pharmacy of the world" to a global biopharma innovation hub.

India Pharma Exports Face Sharp Decline Amid Global Supply Chain Disruptions

India's pharmaceutical exports have taken a significant hit, falling over 23% in March 2026 due to geopolitical tensions in West Asia.

Major exporters such as Cipla, Aurobindo Pharma, and Lupin Limited are facing rising logistics costs and disrupted shipping routes.

Industry estimates suggest losses ranging between ₹2,500 crore and ₹5,000 crore, marking the steepest decline in five years. The crisis has also led to delays in API shipments and increased freight costs, affecting both exports and domestic supply chains. Despite the short-term setback, India's pharma exports had previously shown strong growth, reaching over $28 billion in FY26.

This situation underscores the vulnerability of global pharma supply chains and the need for diversification and resilience strategies.

APAC Pharma Deal Activity Surges: Focus Shifts to Strategic Licensing & Partnerships

The Asia-Pacific pharma market is witnessing a surge in strategic collaborations, with companies focusing on licensing deals and co-development agreements.

Japanese firms like Daiichi Sankyo and Suntory are restructuring portfolios through divestments and partnerships. Meanwhile, companies such as Hansoh Pharma are actively collaborating with global players to expand oncology pipelines.

Indian firms like Glenmark Pharmaceuticals are also engaging in cross-border licensing deals, strengthening their global footprint.

These collaborations are driven by rising R&D costs, the need for faster market access, and increasing competition in specialty therapies.

The trend signals a shift from traditional expansion to partnership-led growth across APAC pharma markets.

Cost Pressures Mount: **API Price Surge** Challenges Indian Pharma Profitability

Indian pharmaceutical manufacturers are facing intense cost pressures due to rising prices of key raw materials and APIs.

Essential drugs like **metformin** and **paracetamol** have seen price increases of up to 90% and 50%, respectively, impacting companies across the value chain. Leading manufacturers in Gujarat and other pharma hubs are struggling to maintain margins, particularly for price-controlled medicines.

Companies such as Torrent Pharmaceuticals and Cadila Pharmaceuticals are particularly affected due to their large generics portfolios.

Supply disruptions, currency fluctuations, and volatile global markets have further intensified the situation. Industry leaders are calling for policy support and supply chain diversification to stabilize costs and ensure long-term sustainability.

WIGGENS Roller Rack CO_2 Incubator (WCI-180R): **Efficient Dynamic Cell Culture**

The WIGGENS GmbH Roller Rack CO_2 Incubator (WCI-180R) is designed to provide precise environmental conditions combined with dynamic cell culture capability. It integrates a roller mechanism the incubation chamber, allowing both static and continuous culture processes in a single system, making it highly suitable for biotechnology and research laboratories.

The built-in roller rack enables smooth and consistent rotation of culture vessels, improving gas exchange and nutrient distribution. This results in better cell growth and uniformity. The removable roller system also offers flexibility for conventional incubation when required.

Key Features:

Capacity: 180 L chamber with uniform air-jacket heating

Temperature Control: RT +5°C to 60°C with ±0.1°C stability

CO_2 Control: ±0.1% accuracy with dual IR sensor

Roller System: 2–30 rpm adjustable speed (±1 rpm accuracy)

Construction: SS 304 chamber with ≥70% humidity at 37°C

The incubator maintains accurate control of temperature and CO_2 levels, ensuring stable conditions for sensitive applications. Uniform heating across the chamber minimizes variation and supports reproducible results.

A low-noise DC motor drives the roller system, reducing vibration and protecting delicate cell cultures.

INNOVATIVE LABORATORY TECHNOLOGY

With adjustable rolling speed and external control access, users can easily optimize operating conditions without disturbing the internal environment.

The stainless-steel chamber and high humidity capability further support contamination control and long-term durability.

Suitable for applications such as cell culture, vaccine research, tissue engineering, and protein expression, the WCI-180R improves workflow efficiency by combining multiple functions into one unit.

In summary, this system offers a practical and reliable solution for laboratories seeking controlled and efficient dynamic cell culture performance.

To know more:

Robust inline **pH probe**

Biotech Fluidics announces the **mikron 91 -** a compact **pH probe** for inline analytical or preparative chromatography and continuous bioprocessing applications.

This robust flow-through sensor delivers accurate, temperature-compensated pH measurements of liquids flowing through either of its two flow cell design options. Both the analytical and preparative versions of the mikron 91 allow a flow rate of up to 1,000 ml/min without building up more than 1 bar (14.5 psi) back pressure. Additional access to the liquid path makes calibration quick and easy.

Runge Mikron 91 pH probe operating with a preparative chromatography system

With a diameter of just 32 mm (1.25") and a length of only 115 mm (4.5"), the mikron 91 can be installed in almost any application. The mikron 91 contains a fully temperature-compensated pH-meter including a long-life ISFET measuring electrode, plus a KCl or Ag/AgCl reference electrode designed to provide accurate, temperature-compensated measurement of the pH value. The robust measuring cell of the mikron 91 is fully biocompatible and is available certified for use in USP Class VI cleanroom environments.

Runge Mikron 91 pH probe

Designed to enhance your productivity, the mikron 91 not only stores calibration data and the operating time for the measuring and reference electrodes, but also the time exposure for each pH range. This makes predictive maintenance easier and reduces operational downtime. The mikron 91 pH probe is designed to be quick, easy, and low cost to maintain. Mikron detectors are easy to connect as they communicate through and draw power from a single USB-C port. Drivers are provided for several popular chromatography software packages, alternatively an open protocol can be used for customized implementation. The detectors conform to international standards and are CE marked.

For further information about the Mikron 91 pH probe please visit https://biotechfluidics.com/a-robust-miniature-ph-meter-for-liquid-chromatography-detection or contact Biotech Fluidics on + 46 300 56 91 80 / + 1-612-703-5718 / info@biotechfluidics.com.

Biotech Fluidics is a leading supplier of fluidic system solutions, liquid transfer components, degassing systems, and innovative laboratory technology to instrument developers, manufacturers, and distributors all around the world. The company's mission is to empower its customers by designing and assembling unique products, being a dependable partner, offering first-class service, in-depth knowledge, and offering advanced technical support for all the items it provides.

SPT Labtech and EMBL GeneCore Partner to Advance Automated Genomics Workflows

Story source/Credit: SPT Labtech

The collaboration focuses on implementing a liquid handling platform to streamline end-to-end laboratory processes and protocol development.

SPT Labtech and the European Molecular Biology Laboratory Genomics Core Facility (EMBL GeneCore) have announced a collaboration to develop fully walkaway automated genomics workflows.

As part of the agreement, SPT Labtech has installed its firefly+ liquid handling platform at the EMBL GeneCore facility in Heidelberg, Germany.

Through the installation, EMBL GeneCore will expand its capacity to develop new protocols and optimize existing workflows for applications such as metagenomics and low-input samples. The firefly+ platform is an all-in-one instrument that integrates pipetting, dispensing, incubating, and shaking technologies into a single system.

"The installation of SPT Labtech's firefly+ platform as part of our collaboration underscores our commitment to remain at the forefront of scientific innovation," says Vladimir Benes, head of genomics core facility at EMBL, in a release. "Fully walkaway automation will address key bottlenecks in genomics workflows, helping us develop high-quality, scalable [next-generation sequencing] protocols."

The automated protocols utilize New England Biolabs (NEB) next-generation sequencing, known as NEBNext, to produce high-yield libraries from various input ranges. These kits are designed to enable the development of high-sensitivity next-generation sequencing protocols while minimizing plastic waste.

"Our latest collaboration with EMBL GeneCore marks a significant step towards advancing fully walkaway automation, providing end-to-end genomics workflows for a much wider range of applications, including environmental and rare species research," says Morten Frost, chief commercial officer at SPT Labtech, in a release.

The integration of the liquid handling platform with NEB library preparation kits is intended to create a foundation for end-to-end workflows, allowing laboratories to scale automation more easily.

"Integration of our library prep kits with SPT Labtech's firefly+ platform at EMBL GeneCore creates a compelling opportunity for faster, scalable DNA and RNA-Seq workflows, and we look forward to working together to develop novel solutions to overcome persistent challenges in genomics research," says Bjoern Textor, PhD, sales and senior applications manager at New England Biolabs GmbH, in a release.

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New Electronic Pipette Features High-Resolution Touchscreen

Story source/Credit: Thermo Fisher Scientific

The device incorporates intelligent power management and advanced programming capabilities to enhance reproducibility in laboratory workflows.

Thermo Fisher Scientific has introduced the Fluid Ease Pro ClipTip electronic pipette, which includes what the company says is the first large, high-resolution pipette touchscreen on the market.

The pipette features intelligent power management and advanced programming capabilities designed to support reproducible pipetting across routine and demanding laboratory workflows. The device is combined with the Thermo Scientific ClipTip attachment, which secures tips through a consistent, reliable seal between pipette and tip.

The company says the system offers one of the widest speed selections available, giving users control over pipetting behavior across applications, liquid types, and workflow demands. The touchscreen approach transforms setup and protocol execution into a visual experience, reducing complexity and shortening training time for both new and experienced users.

"Labs are facing increasing research demands, emphasizing the importance of small, but necessary procedures like pipetting," says Karolina Pranckevičiūtė, Thermo Fisher global product manager, in a release. "The new Fluid Ease Pro ClipTip is designed to help not only enhance the pipetting process but to help create reproducible results across research teams all at a faster speed."

Ergonomic Design and User Profiles

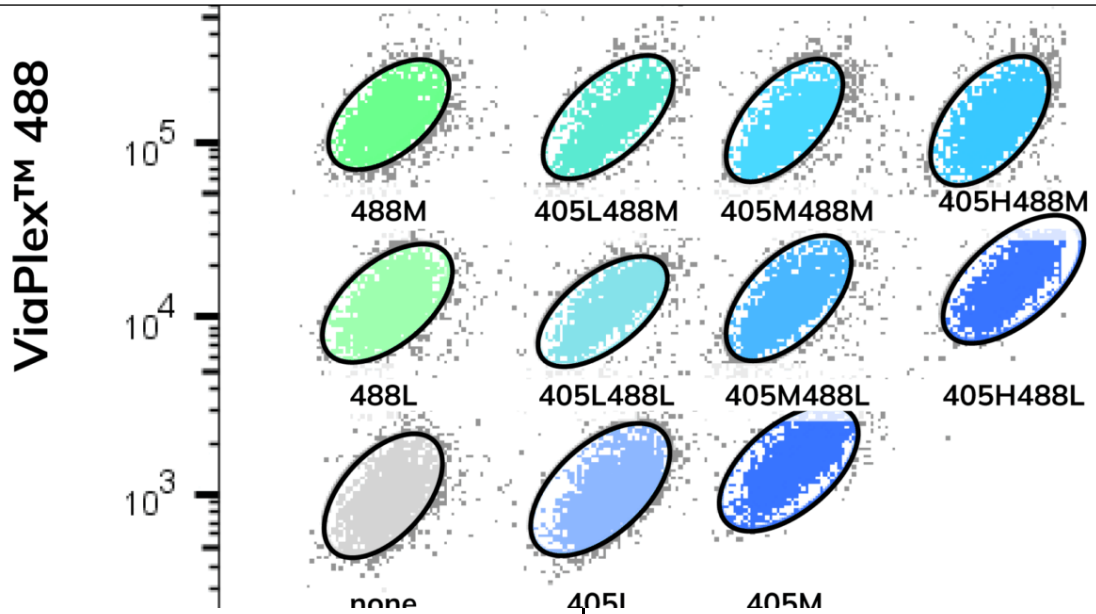
The pipette's ergonomic design helps reduce strain during extended use throughout the workday, supporting both routine and high-throughput applications. The device features electronic tip ejection, reducing the force required during tip removal for safer, more comfortable operation during repetitive tasks. Fluid Ease Pro pipettes unify operations across users and global laboratory networks with an interface that supports five language options and up to five user profiles.

The structured interface includes shared preset protocols and custom calibration options to align performance to specific liquids or laboratory conditions.

Teams can align on workflows and achieve consistent results between regions and sites, supporting scalable laboratory operations worldwide, according to the company.

Applications and Capabilities

Key applications include pharmaceutical and biotechnology companies testing drug products in quality control laboratories or conducting micro incubation in research and development labs. Academic laboratories can use the device for stability testing, plant growth studies, and animal hatching experiments. Industrial and applied laboratories can apply it to cosmetics, packaging, and food and beverage shelf life testing. The Fluid Ease Pro pipette can adapt to various tasks with gentle handling for sensitive or viscous samples. Users can tailor dispense speeds to fit a range of research applications. Flexible charging solutions and power-safe mode functions help protect battery performance while keeping pipettes ready for use in demanding laboratory environments. The system supports up to five user profiles and shared preset protocols to help ensure consistent execution across the laboratory and reduce user-dependent variability.



Biotium's New Cell Barcoding Kit Allows Up to 15-Sample Multiplexing in a **Single Flow Cytometry Tube**

Story source/Credit:Biotium

The ViaPlex 2-Color Cell Barcoding Kit uses two reactive fluorescent dyes to combine up to 15 distinct cell populations in one tube, reducing reagent use and run time.

Biotium has released the ViaPlex 2-Color Cell Barcoding Kit, a fluorescent cell barcoding tool that allows researchers to label and pool up to 15 distinct cell populations into a single tube for multiplex flow cytometry analysis, according to a release from the Fremont, CA-based company.

The kit combines two cell-permeant reactive fluorescent dyes—ViaPlex 405 Barcoding Dye, optimized for the 405 nm laser/Pacific Blue filter, and ViaPlex 488 Barcoding Dye, optimized for the 488 nm laser/fluorescein isothiocyanate (FITC) filter—used at varying concentrations to generate a 15-plex barcoding matrix. An optional 16th barcode can be incorporated using stain-specific compensation, according to the company.

Once cell populations are barcoded, they can be combined into a single tube for antibody staining and later distinguished during analysis.

The approach reduces the number of individual samples that need to be run, lowering reagent consumption and shortening overall run times, according to the release.

"The ViaPlex Cell Barcoding Kit is an exciting new product that should be very useful for researchers doing drug screening or other cellular screening by flow," says Alexis Madrid, PhD, assistant director of Biotium's Bioscience department, in a release.

Workflow Flexibility and Live Cell Compatibility

A notable feature of the ViaPlex kit, according to Biotium, is that its barcoding process does not require fixation or permeabilization, enabling its use with live cells. Barcoding can be performed either before or after cell treatment, which Biotium says accommodates a wide range of experimental designs.

The kit is compatible with both surface and intracellular antibody staining workflows. The covalent dye labeling also remains stable if cells are subsequently fixed and permeabilized for intracellular detection, according to the company.

Addressing Throughput Demands in Drug Discovery and Immunology

As demand for faster and more cost-effective drug discovery and immunology workflows continues to rise, cell barcoding offers laboratories a way to increase throughput while maintaining data quality, according to the release. By pooling samples prior to staining, the technique also reduces technical variation between samples and improves sample-to-sample consistency, Biotium says.

The ViaPlex kit is designed for use with flow cytometry platforms equipped with 405 nm and 488 nm lasers and is compatible with high-throughput screening applications.

The release states that key advantages of the kit include:

- Combining up to 15 cell samples in a single staining reaction
- An optional 16th barcode with stain-specific compensation
- Reduced reagent use and fewer flow samples to run
- Improved sample-to-sample consistency
- Compatibility with surface and intracellular staining
- Live cell compatibility, with optional fixation after barcoding
- Stable covalent fluorescent dye labeling for clean population separation
- Optimized for the 405 nm (Pacific Blue) and 488 nm (FITC) channels

The ViaPlex 2-Color Cell Barcoding Kit expands Biotium's portfolio of flow cytometry reagents, which also includes validated antibodies with CF dyes against common immune targets and Live-or-Dye Fixable Viability Stains for dead cell labeling in 18 colors, according to the company.

PACIFIC BLUE is a registered trademark of Thermo Fisher Scientific. CF is a registered trademark of Biotium, Inc.

Photo caption: ViaPlex 2-Color Cell Barcoding Kit

Cenevo Launches Labguru **Customer Portal to Extend Lab Workflows** to External Partners

Story source/Credit: Cenevo

The platform integrates with existing lab management systems to centralize workflows and provide real-time visibility for external clients.

Cenevo has launched the Labguru Customer Portal, a platform designed to streamline communications for contract research organizations (CROs), contract development and manufacturing organizations, and diagnostic labs. Integrated with the company's electronic lab notebook and laboratory information management system, the portal extends internal workflows to external collaborators. This structured approach is intended to increase efficiency while minimizing version conflicts and human error, according to the company.

Centralizing Lab Operations

CROs and CDMOs often operate in high-throughput environments where transparency is critical. The new portal allows these facilities to centralize operational visibility across departments and manage multiple client programs at scale. Clients using the portal can submit requests, monitor project progress, and access results with real-time visibility into turnaround times. Simultaneously, lab managers can use the system to gain insights into equipment and consumables usage, client activity trends, and regulatory compliance across individual or aggregate client accounts.

Cenevo
mosaic · labguru

Data Security and Efficiency

The system centralizes sample submission and results delivery to reduce administrative overhead and manual coordination. To maintain data integrity and security, the portal uses granular data permissions to ensure clients see only relevant samples and reports. Lab personnel can also create reusable forms and templates within the interface to simplify sample intake and delivery processes.

"Our goal is to make our clients' operations run more smoothly," says Eran Sandman, product manager, Cenevo, in a release. "High-performing CROs are moving toward shared digital environments.

With the Customer Portal, CROs and their clients are able to see the same information, and collaboration becomes faster and more strategic. Lab managers don't have to spend all their time on back-and-forth communications. Instead, they focus their time on delivering results."

Bruker Corporation Unveils MyGenius PRO®: A Game-Changer in Molecular Diagnostics Automation

In a major breakthrough for clinical microbiology labs, Bruker Corporation has launched its advanced **MyGenius PRO® molecular diagnostics system** at ESCMID Global 2026.

The system is a fully automated **sample-to-answer (S2A) PCR-based platform**, designed to streamline the entire diagnostic workflow—from sample loading to final results. This eliminates multiple manual intervention points, significantly improving lab productivity.

One of the key highlights of MyGenius PRO® is its **high-throughput capability with continuous sample loading**, allowing laboratories to process large volumes without interruptions.

This is particularly critical in infectious disease diagnostics where turnaround time is crucial.

The platform supports assays for Cytomegalovirus (CMV), Epstein-Barr virus (EBV), and BK virus (BKV), with expansion planned for HIV, Hepatitis B, and Hepatitis C testing.

Developed in collaboration with Hitachi High-Tech Corporation, the system integrates cutting-edge automation with precision diagnostics.

This launch reinforces Bruker's position as a leader in next-generation microbiology solutions and signals a shift toward fully integrated, automated lab ecosystems.

Thermo Fisher Scientific **Launches PowerFlex™ Thermal Cycler to Revolutionize PCR Workflows**

Thermo Fisher Scientific has introduced its latest innovation, the **Applied Biosystems™ PowerFlex™ Thermal Cycler**, aimed at enhancing PCR efficiency and flexibility in modern laboratories.

Designed for high-performance molecular biology applications, the system enables **simultaneous multi-block PCR runs**, allowing researchers to optimize different experiments within a single instrument.

The PowerFlex™ system significantly improves lab productivity by offering **rapid thermal ramping speeds and flexible configurations**, making it ideal for genomics, drug discovery, and clinical diagnostics.

Another standout feature is its intuitive user interface and connectivity, enabling seamless integration into digital lab environments.

With increasing demand for high-throughput molecular testing, this launch positions Thermo Fisher at the forefront of PCR innovation.

The system is expected to be widely adopted across pharma R&D labs and diagnostic centers globally.

Agilent Technologies **Introduces Infinity III LC Series with Smart Automation**

At Pittcon 2026, Agilent Technologies showcased its next-generation **Infinity III LC Series**, marking a significant advancement in liquid chromatography systems.

The platform is the first HPLC family to feature **InfinityLab Assist Technology**, which provides real-time diagnostics, guided maintenance, and automated troubleshooting.

This innovation is designed to reduce downtime and enhance operational efficiency, particularly in high-demand pharmaceutical quality control labs.

The system also supports remote notifications and automated workflows, aligning with the industry's shift toward **smart and connected laboratories**.

Biocompatible versions of the system expand its usability in biologics and sensitive sample analysis.

With increasing regulatory pressure for data integrity and reproducibility, Agilent's Infinity III series is poised to become a cornerstone in analytical labs worldwide.

AnalytiChem **Expands Microbiology Portfolio with Redipor® Legionella Plates**

AnalytiChem has announced the launch of its **Redipor® Legionella Plates**, a ready-to-use culture media solution designed for pharmaceutical and environmental microbiology testing.

These plates are developed in accordance with ISO 11731 standards, ensuring accurate detection and enumeration of **Legionella species** in water and clinical samples.

The launch addresses growing regulatory requirements for microbiological monitoring in pharma manufacturing and healthcare environments.

In addition to Redipor®, the company introduced a new suite of **Certified Reference Materials (CRMs)** for trace metal and critical mineral analysis.

These innovations support high-precision analytical workflows, enabling laboratories to generate globally comparable data.

AnalytiChem's expanded portfolio reflects the increasing demand for reliable, ready-to-use solutions in quality control and compliance testing.

QIAGEN **Advances Automation with Next-Gen Sample Preparation Systems**

QIAGEN is accelerating its lab automation strategy with the upcoming launch of three innovative sample preparation instruments, including **QIAsymphony Connect**, **QIAmini**, and **QIAsprint**.

These systems are designed to enhance efficiency across a wide range of applications, including oncology, genomics, and liquid biopsy workflows.

The QIAsymphony Connect, a next-generation flagship platform, offers improved automation and scalability, addressing the growing need for high-throughput sample processing.

Meanwhile, QIAmini and QIAsprint target smaller labs with compact, flexible solutions.

These launches highlight QIAGEN's commitment to enabling **fully automated, scalable laboratory environments**. With over 3,300 installations of its existing systems, the company aims to strengthen its leadership in sample preparation technologies.

CS Analytical **Launches RM Analytical Platform for Advanced Pharma Testing**

CS Analytical has expanded its capabilities with the launch of its **RM Analytical platform**, designed for pharmaceutical raw material and finished product testing.

The platform integrates advanced analytical tools and services, enabling precise evaluation of drug quality and compliance with regulatory standards.

This launch comes at a time when pharmaceutical companies are under increasing pressure to ensure **stringent quality control and regulatory compliance**.

RM Analytical supports a wide range of testing applications, including impurity profiling, stability analysis, and material characterization. The platform is expected to enhance efficiency in pharmaceutical manufacturing and quality assurance workflows. This move strengthens CS Analytical's position as a key player in analytical testing solutions for the pharma industry.

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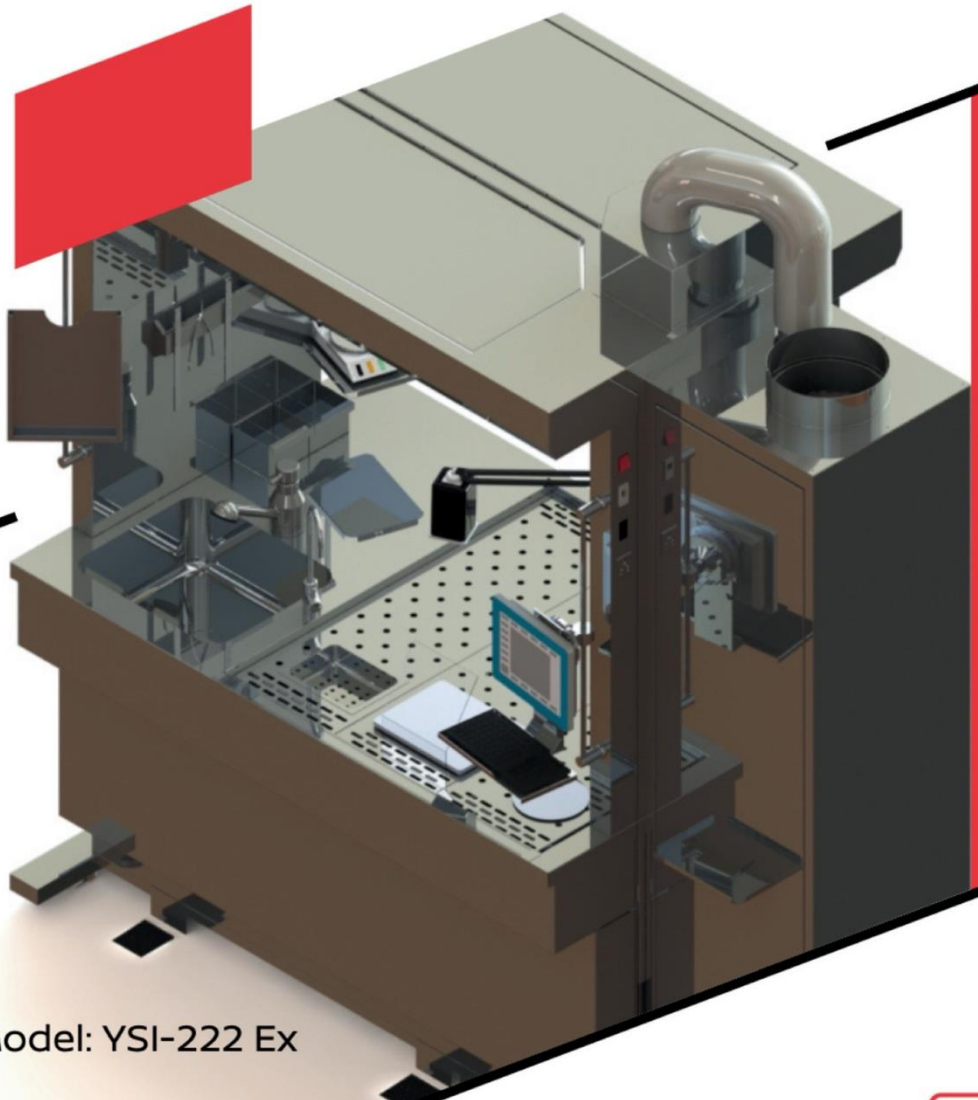

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