TROY TECHNICAL

CELL CULTURE TECHNOLOGY

WEEKLY REPORT

September 12 - September 18, 2026 | Issue 2026-W37

Cell quality, process control, scale-up and release evidence

15	10
ANALYZED ARTICLES	PRIORITY THEMES

Issued 2026-09-18 | English edition | fixed approved cover artwork

Cell Culture Technology: the boundary moved from isolated claims to qualification evidence

15 English articles were reviewed independently from the Japanese edition. Ten themes are retained for management decisions.

SIGNAL 01 | CELL LINE

Northway Biotech Unveils €61M Personalized Medicine & CAR-T Manufacturing Plant in Lithuania, Accelerating

CDMO Northway Biotech has invested €61 million to open a state-of-the-art cell therapy and personalized medicine center in Vilnius, Lithuania.

SIGNAL 02 | MEDIA & MATERIALS

Lonza Expands US Manufacturing with New Spray Drying Facility; Samsung Biologics Secures $262M

Lonza announced a significant expansion of its U.S. manufacturing capabilities with a new commercial spray drying facility in Bend, Oregon, projected for completion by 2029 and creating 80 new jobs.

SIGNAL 03 | BIOPROCESS

Lonza to Build Large-Scale Commercial Spray-Drying Facility in Bend, Oregon, Enhancing US Drug

Lonza, a leading CDMO, has announced plans for a large-scale commercial spray-drying facility in Bend, Oregon.

SIGNAL 04 | ANALYTICS & RELEASE

Exreprotein Launches Animal-Derived Component-Free Cell Culture Supplement for Immune and Stem Cell Research

Exreprotein has introduced the 'Exreprotein Cell Culture Supplemental Mix,' an advanced formulation specifically designed for immune and stem cell research.

DECISION

Focus this week's management attention on cell quality, process control, scale-up and release evidence. Move only when the linked evidence can be reproduced under your own operating conditions.

THREE MANAGEMENT MOVES

1. Buyers: define critical quality attributes and comparability before changing media, vessels or automation.
2. Suppliers: link media, sensors and equipment to yield, phenotype, contamination control and traceability.
3. Executives: track scale effects, variability, sterility, analytics, cost and regulatory comparability.

EVIDENCE DISCIPLINE

FACT states what the collected English source reports. BUSINESS READ and ACTION are editorial interpretations. UNKNOWN lists information that the source file does not establish. A linked article is not treated as independent confirmation of every claim.

Five numbers or evidence anchors that require conditions

61 million
A03

SOURCE-BOUND CONDITION
CDMO Northway Biotech has invested €61 million to open a state-of-the-art cell therapy and personalized medicine center in Vilnius, Lithuania.

$262 million
A15

SOURCE-BOUND CONDITION
Concurrently, Samsung Biologics inked a substantial $262 million long-term manufacturing agreement with an undisclosed European pharmaceutical company, committing to provide biopharmaceutical manufacturing services from.

1.94 million
A12

SOURCE-BOUND CONDITION
Äio and TFTAK have received €1.94 million in funding for their 'DigiFoundry 2.0' project, an AI-driven digital platform aimed at accelerating waste-derived microbial fat production.

P04
A09

SOURCE-BOUND CONDITION
Exreprotein has introduced the 'Exreprotein Cell Culture Supplemental Mix,' an advanced formulation specifically designed for immune and stem cell research.

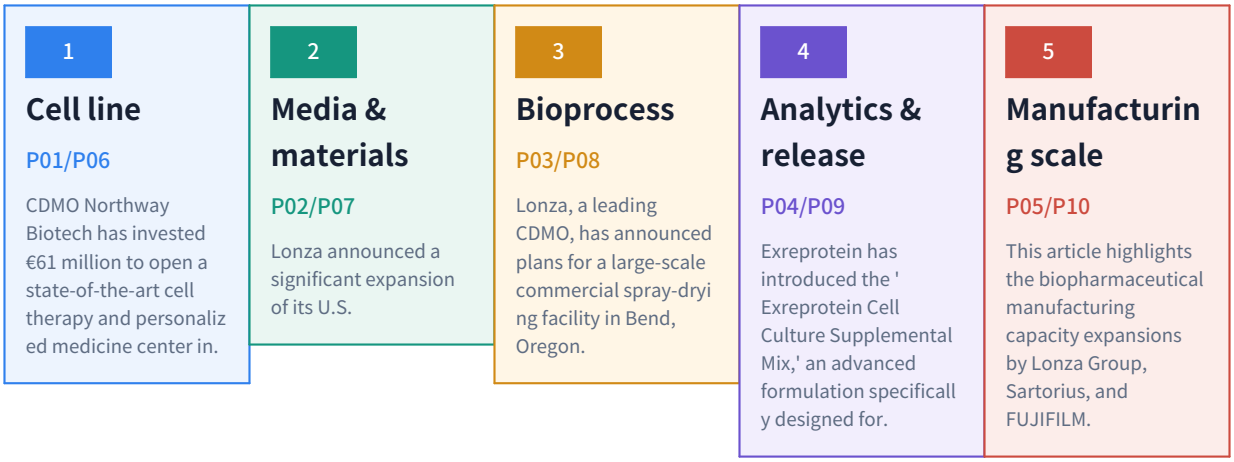
P05
A11

SOURCE-BOUND CONDITION
This article highlights the biopharmaceutical manufacturing capacity expansions by Lonza Group, Sartorius, and FUJIFILM Diosynth Biotechnologies, as noted in the " Biopharmaceutical Fermentation Market" report.

HOW TO USE THESE NUMBERS
Each value is shown with the condition stated in the collected English article. Do not compare values across different test methods, device sizes, operating temperatures or commercial stages without normalizing those conditions.

Where the value chain moved

Each stage combines one leading theme and one supporting theme. The report treats handoffs as evidence transfers, not decorative arrows.



EVIDENCE REQUIRED AT EACH HANDOFF

Cell line to Media & materials	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck scale effects, variability, sterility, analytics, cost and regulatory comparability.
Media & materials to Bioprocess	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck scale effects, variability, sterility, analytics, cost and regulatory comparability.
Bioprocess to Analytics & release	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck scale effects, variability, sterility, analytics, cost and regulatory comparability.
Analytics & release to Manufacturing scale	Transfer test conditions, acceptance criteria, failure data, owner and decision date. Recheck scale effects, variability, sterility, analytics, cost and regulatory comparability.

COMMON CONTROL POINT

No theme moves to a commercial commitment until a named owner has reproduced the relevant evidence and documented scale effects, variability, sterility, analytics, cost and regulatory comparability.

Priority map: maturity and business impact

P01	Northway Biotech Unveils €61M Personalized Medicine & CAR-T Manufacturing Plant in Lithuania, Accelerating
P02	Lonza Expands US Manufacturing with New Spray Drying Facility; Samsung Biologics Secures $262M
P03	Lonza to Build Large-Scale Commercial Spray-Drying Facility in Bend, Oregon, Enhancing US Drug
P04	Exreprotein Launches Animal-Derived Component-Free Cell Culture Supplement for Immune and Stem Cell Research
P05	Lonza, Sartorius, and FUJIFILM Diosynth Bolster Biopharmaceutical Manufacturing Capacity, Highlighting Single-Use Technology as
P06	AI/ML and Digital Twins Spearhead Bioprocess Digitalization for Microbial Lipid Production and Downstream
P07	Äio and TFTAK Secure €1.94M for ' DigiFoundry 2.0' Project to Accelerate Waste-Derived Microbial
P08	MatriChem Ltd. Unveils 3D Bioprinted Cancer Model Reproducing Tumor-Vessel Interface Dynamics for Drug
P09	Asahi Kasei Bioprocess Launches VANTIJ® SU-VFC Benchtop to Elevate Efficiency and Consistency in
P10	CNPEM Develops Microfluidic 3D Cell Culture Platform Simulating Human Tissue, Enhancing Animal Testing

REPRODUCIBLE POSITIONING RULE

Horizontal position uses five discrete stages: Research, Prototype, Joint evaluation, Product adoption and Scale. Vertical position uses three impact levels: single use, multiple customers and multiple supply tiers. Bubble diameter reflects the editorial score inherited from the weekly selection rubric.

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P01 Northway Biotech Unveils €61M Personalized Medicine & CAR-T Manufacturing Plant in Lithuania, Accelerating

A03 | Cell line | Product adoption

Date not stated

FACT

CDMO Northway Biotech has invested €61 million to open a state-of-the-art cell therapy and personalized medicine center in Vilnius, Lithuania. The facility is actively pursuing GMP manufacturing qualification and expects to receive formal approval from the Lithuanian State Medicines Control Agency within six months. This plant is equipped for industrial-scale CAR-T cell therapy manufacturing and viral vector production, significantly boosting Europe's cell and gene therapy supply chain.

WHY IT MATTERS

The decision relevance is cell quality, process control, scale-up and release evidence. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, link media, sensors and equipment to yield, phenotype, contamination control and traceability.

ACTION

Within 30 days, define critical quality attributes and comparability before changing media, vessels or automation; record the evidence and owner against P01.

UNKNOWN

Still unproven or incompletely stated: scale effects, variability, sterility, analytics, cost and regulatory comparability.

EDITORIAL SCORE 23/25 | MATURITY 4/5 | IMPACT 3/3

P02 Lonza Expands US Manufacturing with New Spray Drying Facility; Samsung Biologics Secures $262M

A15 | Media & materials | Product adoption

Date not stated

FACT

Lonza announced a significant expansion of its U.S. manufacturing capabilities with a new commercial spray drying facility in Bend, Oregon, projected for completion by 2029 and creating 80 new jobs. Concurrently, Samsung Biologics inked a substantial $262 million long-term manufacturing agreement with an undisclosed European pharmaceutical company, committing to provide biopharmaceutical manufacturing services from its Songdo, South Korea site through 2033.

WHY IT MATTERS

The decision relevance is cell quality, process control, scale-up and release evidence. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, link media, sensors and equipment to yield, phenotype, contamination control and traceability.

ACTION

Within 30 days, define critical quality attributes and comparability before changing media, vessels or automation; record the evidence and owner against P02.

UNKNOWN

Still unproven or incompletely stated: scale effects, variability, sterility, analytics, cost and regulatory comparability.

EDITORIAL SCORE 22/25 | MATURITY 4/5 | IMPACT 3/3

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P03 Lonza to Build Large-Scale Commercial Spray-Drying Facility in Bend, Oregon, Enhancing US Drug

A02 | Bioprocess | Product adoption

Date not stated

FACT

Lonza, a leading CDMO, has announced plans for a large-scale commercial spray-drying facility in Bend, Oregon. This investment solidifies Lonza's position as a premier CDMO provider for commercial-scale spray-dried dispersion (SDD) PSD-4 capabilities in the US. Slated for completion in 2029, the facility will create over 80 new jobs and significantly bolster manufacturing capacity for complex drug formulations, supporting clients from drug discovery through commercialization.

WHY IT MATTERS

The decision relevance is cell quality, process control, scale-up and release evidence. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, link media, sensors and equipment to yield, phenotype, contamination control and traceability.

ACTION

Within 30 days, define critical quality attributes and comparability before changing media, vessels or automation; record the evidence and owner against P03.

UNKNOWN

Still unproven or incompletely stated: scale effects, variability, sterility, analytics, cost and regulatory comparability.

EDITORIAL SCORE 22/25 | MATURITY 4/5 | IMPACT 2/3

P04 Exreprotein Launches Animal-Derived Component-Free Cell Culture Supplement for Immune and Stem Cell Research

A09 | Analytics & release | Product adoption

Date not stated

FACT

Exreprotein has introduced the 'Exreprotein Cell Culture Supplemental Mix,' an advanced formulation specifically designed for immune and stem cell research. This supplement is chemically defined, animal-derived component-free, and serum-free, significantly reducing batch-to-batch variability in cell culture. By improving media performance, the product enhances research reproducibility and is expected to be a foundational technology for cell therapy development.

WHY IT MATTERS

The decision relevance is cell quality, process control, scale-up and release evidence. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, link media, sensors and equipment to yield, phenotype, contamination control and traceability.

ACTION

Within 30 days, define critical quality attributes and comparability before changing media, vessels or automation; record the evidence and owner against P04.

UNKNOWN

Still unproven or incompletely stated: scale effects, variability, sterility, analytics, cost and regulatory comparability.

EDITORIAL SCORE 20/25 | MATURITY 4/5 | IMPACT 1/3

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P05 Lonza, Sartorius, and FUJIFILM Diosynth Bolster Biopharmaceutical Manufacturing Capacity, Highlighting Single-Use Technology as

A11 | Manufacturing scale | Product adoption

Date not stated

FACT

This article highlights the biopharmaceutical manufacturing capacity expansions by Lonza Group, Sartorius, and FUJIFILM Diosynth Biotechnologies, as noted in the " Biopharmaceutical Fermentation Market" report. Lonza expanded its manufacturing capacity in 2026, maintaining robust growth in its contract manufacturing business. Sartorius strengthened its portfolio with new single-use bioreactor technology and increased manufacturing capacity.

WHY IT MATTERS

The decision relevance is cell quality, process control, scale-up and release evidence. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, link media, sensors and equipment to yield, phenotype, contamination control and traceability.

ACTION

Within 30 days, define critical quality attributes and comparability before changing media, vessels or automation; record the evidence and owner against P05.

UNKNOWN

Still unproven or incompletely stated: scale effects, variability, sterility, analytics, cost and regulatory comparability.

EDITORIAL SCORE 20/25 | MATURITY 4/5 | IMPACT 2/3

P06 AI/ML and Digital Twins Spearhead Bioprocess Digitalization for Microbial Lipid Production and Downstream

A10 | Cell line | Product adoption

Date not stated

FACT

The Norwegian University of Life Sciences (NMBU) and University College Dublin (UCD) have launched PhD scholarship programs focused on AI/ML frameworks for bioprocess digitalization. NMBU's "fermentAtIon" project aims to build AI-driven digital twins for real-time fermentation monitoring and control in microbial lipid production. UCD's program leverages generative AI, ML, and CFD for novel downstream biomanufacturing process design, signaling a significant investment in next-generation bioeconomy technologies.

WHY IT MATTERS

The decision relevance is cell quality, process control, scale-up and release evidence. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, link media, sensors and equipment to yield, phenotype, contamination control and traceability.

ACTION

Within 30 days, define critical quality attributes and comparability before changing media, vessels or automation; record the evidence and owner against P06.

UNKNOWN

Still unproven or incompletely stated: scale effects, variability, sterility, analytics, cost and regulatory comparability.

EDITORIAL SCORE 20/25 | MATURITY 4/5 | IMPACT 2/3

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P07 Äio and TFTAK Secure €1.94M for 'DigiFoundry 2.0' Project to Accelerate Waste-Derived Microbial

A12 | Media & materials | Product adoption

Date not stated

FACT

Äio and TFTAK have received €1.94 million in funding for their 'DigiFoundry 2.0' project, an AI-driven digital platform aimed at accelerating waste-derived microbial fat production. This three-year initiative integrates synthetic biology, precision fermentation, and real-time digital process control to shorten development cycles and reduce scaling costs. The technology holds significant potential for licensing in sustainable food production and industrial biotechnology.

WHY IT MATTERS

The decision relevance is cell quality, process control, scale-up and release evidence. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, link media, sensors and equipment to yield, phenotype, contamination control and traceability.

ACTION

Within 30 days, define critical quality attributes and comparability before changing media, vessels or automation; record the evidence and owner against P07.

UNKNOWN

Still unproven or incompletely stated: scale effects, variability, sterility, analytics, cost and regulatory comparability.

EDITORIAL SCORE 20/25 | MATURITY 4/5 | IMPACT 2/3

P08 MatriChem Ltd. Unveils 3D Bioprinted Cancer Model Reproducing Tumor-Vessel Interface Dynamics for Drug

A07 | Bioprocess | Pilot

Date not stated

FACT

Bulgarian SME MatriChem Ltd., in collaboration with the Medical University of Plovdiv, has developed a novel 3D bioprinted cancer model, the '3DCAM platform,' that accurately replicates the critical tumor-vessel interface. This platform integrates cancer cells, endothelial cells, and proprietary biomaterials into a structured 3D environment, allowing for enhanced study of tumor angiogenesis and metastasis.

WHY IT MATTERS

The decision relevance is cell quality, process control, scale-up and release evidence. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, link media, sensors and equipment to yield, phenotype, contamination control and traceability.

ACTION

Within 30 days, define critical quality attributes and comparability before changing media, vessels or automation; record the evidence and owner against P08.

UNKNOWN

Still unproven or incompletely stated: scale effects, variability, sterility, analytics, cost and regulatory comparability.

EDITORIAL SCORE 20/25 | MATURITY 2/5 | IMPACT 2/3

FACT is source-bound. BUSINESS READ, ACTION and UNKNOWN are explicit editorial layers.

P09 Asahi Kasei Bioprocess Launches VANTIJ® SU-VFC Benchtop to Elevate Efficiency and Consistency in

A14 | Analytics & release | Research

Date not stated

FACT

Asahi Kasei Bioprocess has introduced the VANTIJ® SU-VFC Benchtop, a novel small-format, automated, single-use virus filtration system for gene therapy manufacturing. This system is designed to significantly enhance the efficiency and consistency of virus filtration in laboratory-scale and process development settings. It maintains the VANTIJ family's automation and reproducibility while offering a compact design compatible with PlanovaTM 35N virus-removal filters.

WHY IT MATTERS

The decision relevance is cell quality, process control, scale-up and release evidence. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, link media, sensors and equipment to yield, phenotype, contamination control and traceability.

ACTION

Within 30 days, define critical quality attributes and comparability before changing media, vessels or automation; record the evidence and owner against P09.

UNKNOWN

Still unproven or incompletely stated: scale effects, variability, sterility, analytics, cost and regulatory comparability.

EDITORIAL SCORE 20/25 | MATURITY 1/5 | IMPACT 2/3

P10 CNPEM Develops Microfluidic 3D Cell Culture Platform Simulating Human Tissue, Enhancing Animal Testing

A05 | Manufacturing scale | Pilot

Date not stated

FACT

Researchers at the Brazilian National Center for Research in Energy and Materials (CNPEM) have developed an innovative microfluidic-based microscopic platform for 3D cell culture. This new device accurately replicates human tissue structure and function, reducing the need for animal testing in toxicology assessments of pharmaceuticals, nanomaterials, and environmental pollutants. The technology is expected to significantly contribute to more efficient drug discovery and ethical research practices.

WHY IT MATTERS

The decision relevance is cell quality, process control, scale-up and release evidence. The signal should be tested at the application and operating-system level, not accepted from a headline alone.

BUSINESS READ

For operating companies, compare the reported change with current qualification, sourcing and product-roadmap assumptions. For suppliers, link media, sensors and equipment to yield, phenotype, contamination control and traceability.

ACTION

Within 30 days, define critical quality attributes and comparability before changing media, vessels or automation; record the evidence and owner against P10.

UNKNOWN

Still unproven or incompletely stated: scale effects, variability, sterility, analytics, cost and regulatory comparability.

EDITORIAL SCORE 19/25 | MATURITY 2/5 | IMPACT 2/3

Playbook and 0-5 year roadmap

STAKEHOLDER	NOW | 0-30 DAYS	NEXT | 1-12 MONTHS	LATER | 1-5 YEARS
Operating companies	define critical quality attributes and comparability before changing media, vessels or automation	Run production-like qualification with explicit acceptance and stop criteria.	Build a portfolio and architecture that can absorb technology and supplier changes.
Materials, equipment and technology suppliers	link media, sensors and equipment to yield, phenotype, contamination control and traceability	Create shared reliability, process-window and failure-analysis data with customers.	Standardize interfaces, traceability, lifecycle support and recovery services.
Trading, investment and legal teams	Map scale effects, variability, sterility, analytics, cost and regulatory comparability.	Contract for capacity, quality, change notice, liability, alternatives and exit.	Diversify regional, technical and customer concentration risk.

ROADMAP

NOW | 0-30 DAYS
Evidence ledger
Owner: Strategy + quality
Deliverable: claim, source, condition, owner

NOW | 0-30 DAYS
Risk screen
Owner: Procurement + legal
Deliverable: unknowns, alternatives, stop

NEXT | 1-12 MONTHS
Joint qualification
Owner: R&D + supplier
Deliverable: process window and failure data

NEXT | 1-12 MONTHS
Commercial gate
Owner: Business + finance
Deliverable: unit economics and capacity

LATER | 1-5 YEARS
Platform strategy
Owner: Executive team
Deliverable: portfolio and interface roadmap

LATER | 1-5 YEARS
Service layer
Owner: Operations + channel
Deliverable: monitoring, maintenance and recovery

GO / NO-GO GATES

GATE	OWNER	REQUIRED EVIDENCE	NO-GO CONDITION
G1 Evidence	**Quality**	Source, test conditions and reproducibility	No traceable evidence
G2 Integration	**R&D**	Interface, process window and failure analysis	Cannot meet system conditions
G3 Commercial	**Business**	Capacity, total cost, contract and alternatives	Economics or supply cannot be supported
G4 Lifecycle	**Operations**	Monitoring, maintenance, change notice and exit	No accountable operating plan

ANALYZED ARTICLES | ITEMS 01-15

Every title and URL is displayed in full. URLs wrap without shortening and remain clickable. A verified-reference label means the translated HTML did not retain its original source URL.

ID	FULL ARTICLE TITLE	FULL SOURCE / VERIFIED REFERENCE URL - CLICKABLE
A01	Digital Twins Revolutionize Bioprocessing: Predictive Models Boost Efficiency in Upstream, Downstream, and Fill-Finish Operations	https://www.bioprocessintl.com/pat/equipment-level-digital-twins-for-bioprocessing-practical-models-for-upstream-downstream-fill-finish-and-life-cycle-controls
A02	Lonza to Build Large-Scale Commercial Spray-Drying Facility in Bend, Oregon, Enhancing US Drug Manufacturing Capacity by 2029	https://247biopharma.com/news/lonza-further-strengthens-us-manufacturing-presence-with-addition-of-a-commercial-spray-drying-facility-in-bend-oregon/
A03	Northway Biotech Unveils €61M Personalized Medicine & CAR-T Manufacturing Plant in Lithuania, Accelerating European CGT Hub Formation	https://european-biotechnology.com/latest-news/northway-opens-e61m-vilnius-plant-built-for-personalized-medicine/
A04	Six Modeling Approaches, Including Digital Twins, Unlock Complex Bioprocess Data for Optimized Manufacturing	https://www.bioprocessonline.com/doc/modeling-approaches-that-make-complex-bioprocess-data-useful-0001
A05	CNPEM Develops Microfluidic 3D Cell Culture Platform Simulating Human Tissue, Enhancing Animal Testing Alternatives	https://www.eurekalert.org/news-releases/1144285
A06	BIANCA CLINIC Offers Autologous Adipose-Derived Stem Cell IV Therapy for Back Pain in Japan, Following Regenerative Medicine Regulatory Reforms	https://biancaclinic-tokyo.com/regenerativemedicine/back-pain-blog/
A07	MatriChem Ltd. Unveils 3D Bioprinted Cancer Model Reproducing Tumor-Vessel Interface Dynamics for Drug Discovery	https://www.eurobioimaging.eu/news/advanced-microscopy-supports-bulgarian-sme-in-developing-3d-bioprinted-cancer-model/
A08	Upstream Process Optimization Drives Biologics Production Efficiency Towards Continuous and Perfusion Systems	https://www.worldpharmatoday.com/production-manufacturing/upstream-process-optimization-for-biologics-production-efficiency/
A09	Exreprotein Launches Animal-Derived Component-Free Cell Culture Supplement for Immune and Stem Cell Research, Enhancing Consistency and Performance	https://www.terristeffes.com/2026/09/7-key-features-of-exreprotein-cell.html
A10	AI/ML and Digital Twins Spearhead Bioprocess Digitalization for Microbial Lipid Production and Downstream Design	https://www.applykite.com/positions/phd-in-aiml-frameworks-for-advancing-bioprocess-digitalization-mtoerdobrt
A11	Lonza, Sartorius, and FUJIFILM Diosynth Bolster Biopharmaceutical Manufacturing Capacity, Highlighting Single-Use Technology as Key	https://www.snsinsider.com/reports/biopharmaceutical-fermentation-market-11113
A12	Äio and TFTAK Secure €1.94M for 'DigiFoundry 2.0' Project to Accelerate Waste-Derived Microbial Fat Production via AI-Driven Digital Platform	https://www.mycostories.com/post/%C3%A4io-and-tftak-win-1-94m-to-build-a-digital-platform-for-waste-derived-microbial-fats
A13	BIANCA CLINIC Pioneers Regenerative Medicine in Japan with Autologous Adipose Stem Cells and Exosome Therapy under Strict Regulatory Compliance	https://biancaclinic-tokyo.com/regenerativemedicine/stem-cell-benefits-blog/
A14	Asahi Kasei Bioprocess Launches VANTIJ® SU-VFC Benchtop to Elevate Efficiency and Consistency in Gene Therapy Manufacturing	https://www.asahi-kasei.com/news/2026/e260915
A15	Lonza Expands US Manufacturing with New Spray Drying Facility; Samsung Biologics Secures $262M European CDMO Deal	https://endpoints.news/lonza-to-build-new-us-factory-samsung-bio-signs-262m-contract/

CellCultureTechnology — Selected Articles

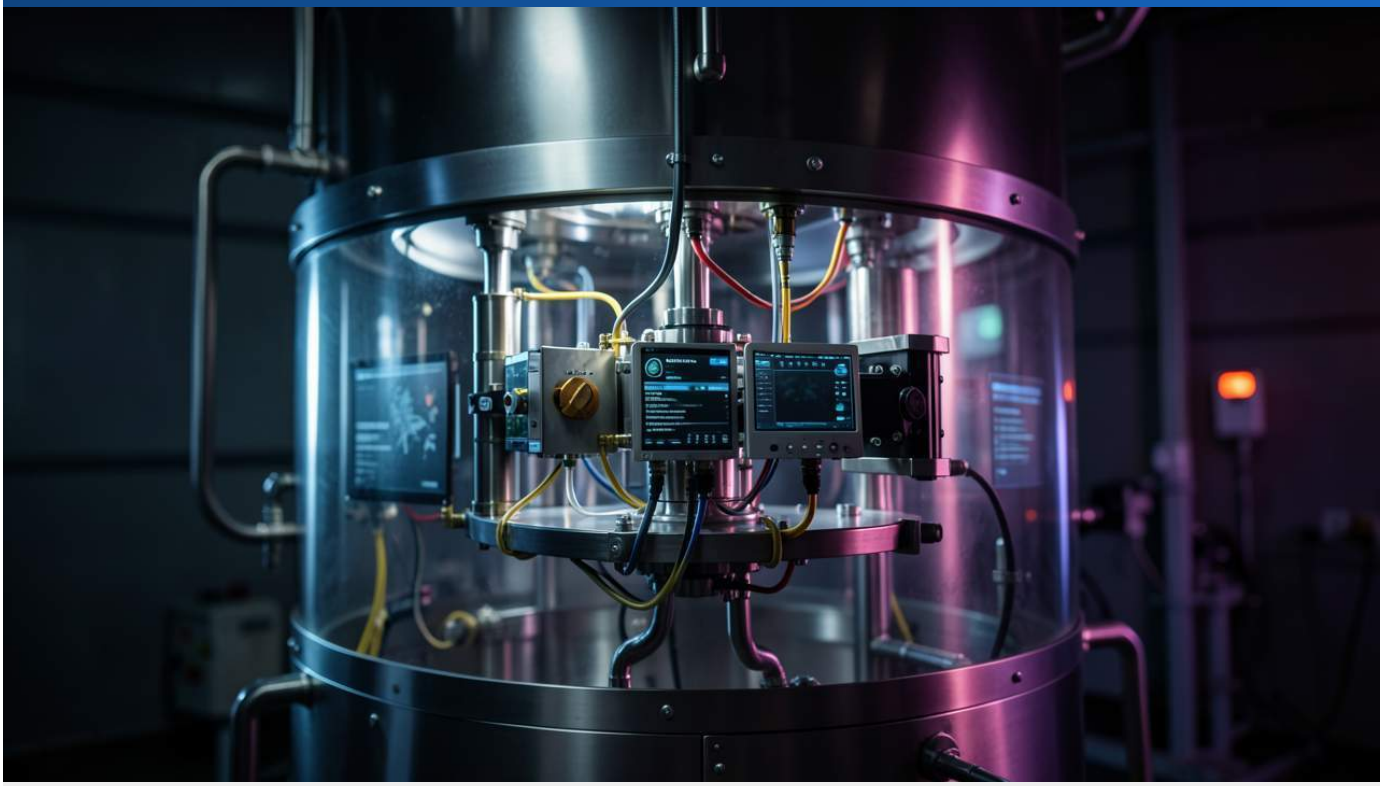
Date: 2026-09-20

Articles: 15

Table of Contents

#01 Digital Twins Revolutionize Bioprocessing: Predictive Models Boost Efficiency in Upstream, Downstream, and Fill-Finish Operations

Published September 10, 2026 BioProcess International USA



OVERVIEW

Equipment-level digital twin models are now practical in bioprocessing, enabling enhanced prediction and optimization across upstream, downstream, and fill-finish stages. These models integrate real-time physical data from bioreactors and other equipment to forecast endpoints, issue deviation warnings, and recommend optimal operating windows. This technology significantly improves process understanding, batch trajectory monitoring, early deviation detection, and predictive maintenance, leading to substantial improvements in manufacturing efficiency and product consistency.

IN DEPTH

Key Findings

The bioprocessing industry is witnessing a practical application of equipment-level digital twins, enabling comprehensive prediction and optimization throughout upstream, downstream, and fill-finish operations. This innovative technology creates virtual models of individual bioprocess units, such as stirred-tank and perfusion bioreactors, that synchronize with real-time physical data. This synchronization allows for accurate forecasting of future process behavior and proactive flagging of deviations, shifting biomanufacturing from empirical approaches to data-driven, advanced process control.

Technical/Clinical Details

Digital twin models continuously collect and integrate diverse data from physical bioprocess equipment, including temperature, pH, dissolved oxygen, cell density, and metabolite concentrations. Utilizing machine learning and advanced algorithms, these virtual models monitor culture batch trajectories, predict yield and quality endpoints, and detect potential process deviations. For example, predictive models can issue real-time alerts when current culture conditions drift from set targets, recommending adjustments for optimal performance. This capability significantly contributes to shorter production cycles, improved yields, and consistent product quality. Furthermore, integrated predictive maintenance functions can identify equipment failure risks in advance, minimizing costly downtime.

Background & Context

The increasing demand for complex biopharmaceuticals necessitates robust solutions for manufacturing efficiency and quality assurance. Traditional bioprocesses, owing to their intricate biological nature, have often presented challenges in data interpretation and process control. Digital twin technology emerges as a powerful tool to overcome these hurdles by providing real-time synchronization between physical and virtual systems. In an environment of tightening regulatory requirements, such as ICH Q10 quality systems and Process Analytical Technology (PAT) initiatives, data-driven process management is critical for achieving quality assurance and regulatory compliance. This technology serves as a cornerstone for the digital transformation (DX) of biopharmaceutical manufacturing, paving the way for faster and more cost-effective drug development and production.

Strategic Significance & Outlook

The implementation of digital twin technology enhances the transparency of biopharmaceutical manufacturing processes, facilitating more flexible scale-up and technology transfer. Future developments are anticipated to lead to 'factory-level digital twins,' integrating multiple individual digital twins to optimize entire supply chains and enable fully autonomous smart factories. This progression is expected to accelerate the market entry of novel biopharmaceuticals, ensuring that high-quality therapies reach more patients faster. Ultimately, digital twins will become an indispensable infrastructure, supporting efficient data management and decision-making throughout the entire lifecycle, from early-stage process design to commercial manufacturing.

Source: https://www.bioprocessintl.com/pat/equipment-level-digital-twins-for-bioprocessing-practical-models-for-upstream-downstream-fill-finish-and-life-cycle-controls

Collected: September 18, 2026 | Automated Research System (Gemini API)

#02 Lonza to Build Large-Scale Commercial Spray-Drying Facility in Bend, Oregon, Enhancing US Drug Manufacturing Capacity by 2029

Published September 10, 2026 24/7 BIOPHARMA USA

OVERVIEW

Lonza, a leading CDMO, has announced plans for a large-scale commercial spray-drying facility in Bend, Oregon. This investment solidifies Lonza's position as a premier CDMO provider for commercial-scale spray-dried dispersion (SDD) PSD-4 capabilities in the US. Slated for completion in 2029, the facility will create over 80 new jobs and significantly bolster manufacturing capacity for complex drug formulations, supporting clients from drug discovery through commercialization.

IN DEPTH

Key Findings

Lonza, a global leader in contract development and manufacturing (CDMO) services, has unveiled plans to construct a significant new commercial spray-drying facility in Bend, Oregon, USA. This strategic expansion is designed to cement Lonza's position as a leading CDMO provider for commercial-scale spray-dried dispersion (SDD) PSD-4 technology within the US market. The facility, projected to be operational by 2029, will generate over 80 new jobs and substantially enhance manufacturing capabilities for complex pharmaceutical formulations, thereby robustly supporting pharmaceutical companies in bringing new drugs to market.

Technical/Clinical Details

Spray-dried dispersion (SDD) is a widely utilized technology for enhancing the solubility and bioavailability of poorly soluble drug compounds. Lonza's planned PSD-4 technology specifically enables high-efficiency and high-quality commercial-scale manufacturing of SDD formulations. The process involves dissolving the active pharmaceutical ingredient (API) and a polymer in a solvent, then atomizing this solution into fine droplets within a stream of hot gas. Rapid solvent evaporation results in the formation of a homogeneous amorphous solid dispersion. The new facility will be equipped with state-of-the-art spray dryers and ancillary equipment, capable of handling a diverse range of APIs and adhering to stringent GMP standards. This will maximize the efficacy of oral formulations and provide flexible solutions to meet demands from late-stage clinical development through commercial production.

Background & Context

In contemporary drug development, approximately 70% of new drug candidates face challenges with aqueous solubility. Effective formulation technologies for these poorly soluble drugs are therefore indispensable for ensuring patient access and maximizing therapeutic outcomes. Lonza's heightened investment in SDD technology, as a major CDMO, underscores the pharmaceutical industry's collective effort to address this critical challenge. The expansion of manufacturing presence in the US offers strategic advantages, including strengthening supply chains, reducing lead times, and facilitating rapid response to local clients. This is particularly crucial for accelerating the development of complex small molecule drugs and biologics.

Strategic Significance & Outlook

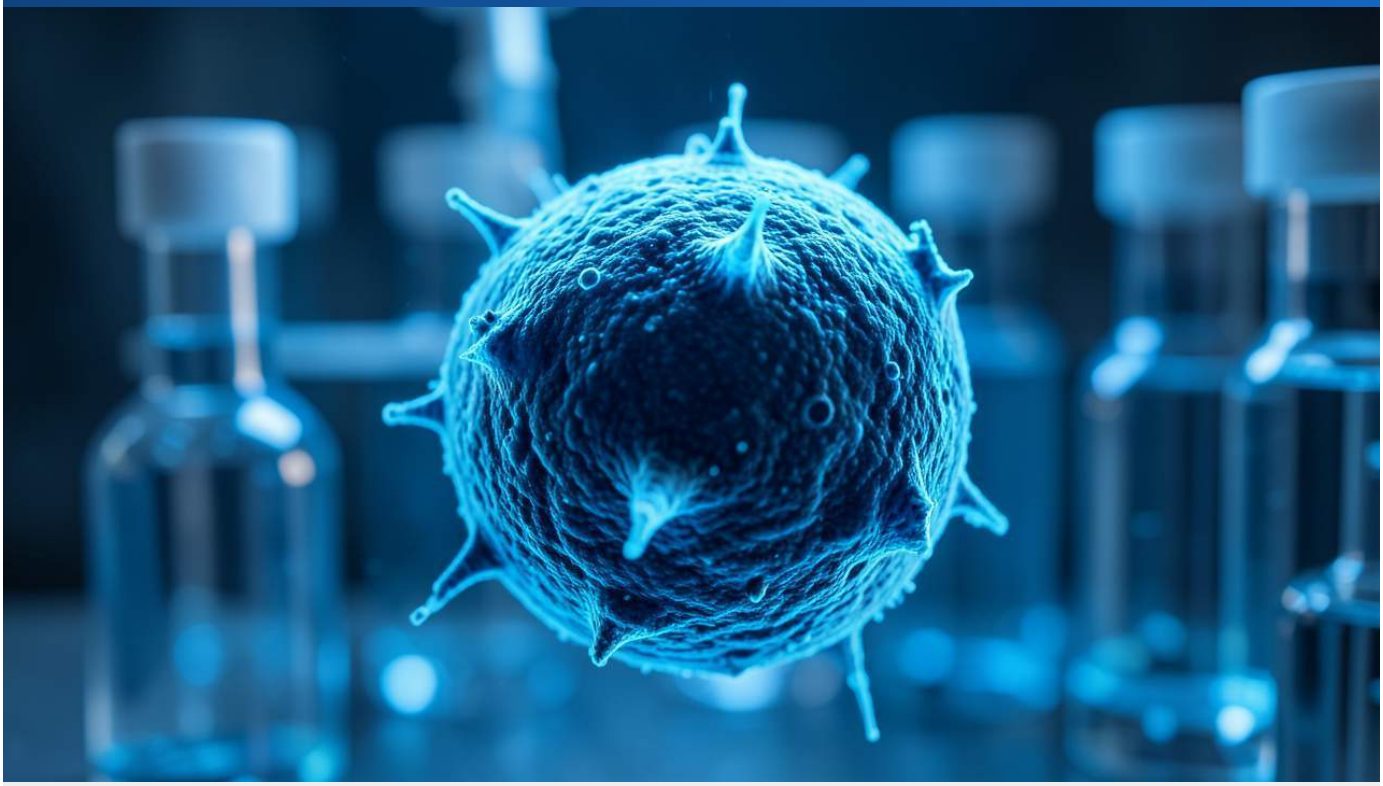
The completion of the new spray-drying facility in Bend, Oregon, is expected to further enhance Lonza's competitive edge as a CDMO, making it an even more attractive partner for clients requiring highly potent compounds and specialized formulations. This facility embodies Lonza's commitment to 'science-based decision-making' and a 'customer-centric approach,' forming a core component of its long-term growth strategy. By offering comprehensive services from early-stage drug development through commercialization, Lonza is poised to further drive innovation and patient contributions within the global pharmaceutical industry. In the future, the facility has the potential to serve as a next-generation pharmaceutical manufacturing platform through the integration of a broader array of formulation technologies and AI-powered process optimization.

Source: https://247biopharma.com/news/lonza-further-strengthens-us-manufacturing-presence-with-addition-of-a-commercial-spray-drying-facility-in-bend-oregon/

Collected: September 18, 2026 | Automated Research System (Gemini API)

#03 Northway Biotech Unveils €61M Personalized Medicine & CAR-T Manufacturing Plant in Lithuania, Accelerating European CGT Hub Formation

Published September 10, 2026　European Biotechnology　リトアニア



OVERVIEW

CDMO Northway Biotech has invested €61 million to open a state-of-the-art cell therapy and personalized medicine center in Vilnius, Lithuania. The facility is actively pursuing GMP manufacturing qualification and expects to receive formal approval from the Lithuanian State Medicines Control Agency within six months. This plant is equipped for industrial-scale CAR-T cell therapy manufacturing and viral vector production, significantly boosting Europe's cell and gene therapy supply chain.

IN DEPTH

Key Findings

Northway Biotech, a Contract Development and Manufacturing Organization (CDMO), has invested €61 million (approximately $65 million USD) to launch a cutting-edge manufacturing facility in Vilnius, Lithuania, specifically dedicated to cell therapy and personalized medicine. This new center is rigorously pursuing Good Manufacturing Practice (GMP) manufacturing qualification, with formal approval from the Lithuanian State Medicines Control Agency anticipated within the next six months. This strategic investment significantly bolsters cell and gene therapy (CGT) manufacturing capacity in Europe and is poised to accelerate advancements in personalized medicine.

Technical/Clinical Details

The newly established facility is engineered to support the industrial-scale manufacturing of complex cell therapeutics such as CAR-T cell therapies. CAR-T cell therapy, a personalized treatment, involves extracting a patient's own T cells, genetically modifying them to enhance their cancer-fighting capabilities, and then reinfusing them. This process demands extremely high technical sophistication and stringent quality control. The plant is set to incorporate closed-system automation and state-of-the-art Process Analytical Technology (PAT) to ensure manufacturing consistency and efficiency. Additionally, it possesses the capability for viral vector production, essential for cell therapy manufacturing, enabling the provision of end-to-end CDMO services to meet diverse client needs.

Background & Context

Personalized medicine, particularly CAR-T cell therapy, has demonstrated remarkable efficacy in treating specific cancers, but manufacturing complexity and high costs remain significant challenges. In Europe, while demand for CGTs is rapidly increasing, the supply of GMP-compliant manufacturing facilities has lagged. Northway Biotech's Vilnius plant addresses this critical manufacturing gap. Lithuania offers a strategic geographic advantage in Eastern Europe and government investment in science and technology, fostering the growth of its biotechnology industry. This investment is expected to play a crucial role in establishing Lithuania as a key CGT manufacturing hub in Europe.

Strategic Significance & Outlook

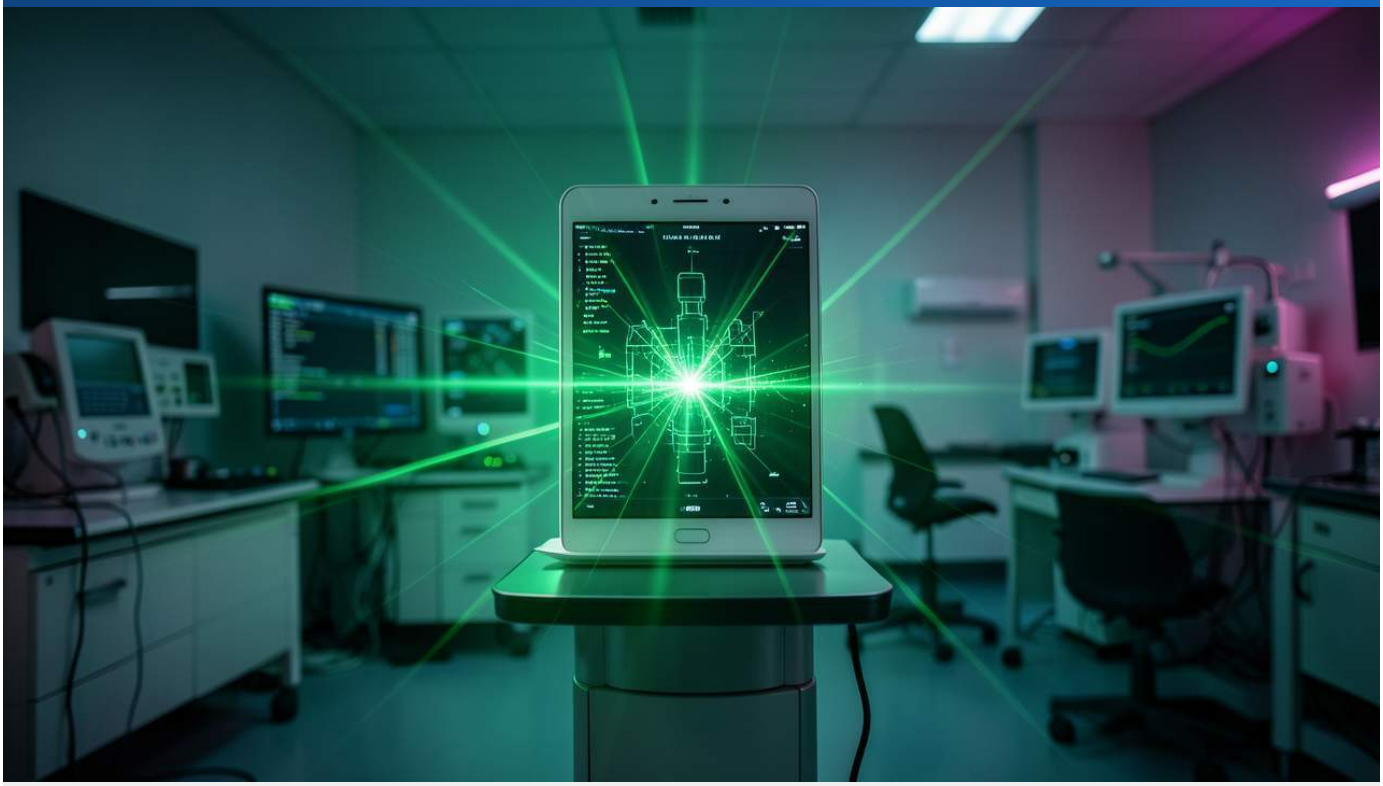
This €61 million investment and impending manufacturing approval lay the groundwork for Northway Biotech to become a major player in the global CGT market. By providing an advanced manufacturing platform specialized in personalized medicine, the company will strongly support pharmaceutical and biotechnology firms in developing and commercializing innovative therapies. Looking ahead, this facility is expected to become a vital supply hub, enabling faster delivery of CAR-T cell therapies and other cell therapeutics to patients across Europe. Furthermore, it will invigorate Lithuania's biotechnology ecosystem, contributing to regional economic growth and the creation of high-value jobs.

Source: https://european-biotechnology.com/latest-news/northway-opens-e61m-vilnius-plant-built-for-personalized-medicine/

Collected: September 18, 2026 | Automated Research System (Gemini API)

#04 Six Modeling Approaches, Including Digital Twins, Unlock Complex Bioprocess Data for Optimized Manufacturing

Published September 14, 2026 BioProcess Online USA



OVERVIEW

Six key modeling approaches, with a strong emphasis on digital twins, are presented for effectively leveraging complex bioprocess data. Digital twins provide a comprehensive virtual representation of physical systems, continuously updated with real-time data to offer immense value in biomanufacturing process prediction and optimization. These modeling techniques form the foundation for deeper process understanding, enhanced efficiency, and consistent product quality.

IN DEPTH

Key Findings

Six pivotal modeling approaches have been presented for maximizing the utility of complex bioprocess data, with particular emphasis on the central role of digital twins. These approaches offer a comprehensive virtual representation of physical biomanufacturing processes, continuously updated by real-time data, thereby providing essential information for process prediction, optimization, and control. This promises significant advancements in efficiency, consistency, and quality within biopharmaceutical manufacturing.

Technical/Clinical Details

The six modeling approaches include physics-based models, statistical models, machine learning models, hybrid models, and digital twins, which integrate these individual methods. Digital twins combine these models to analyze real-time data, such as temperature, pH, dissolved oxygen, cell density, and metabolite concentrations, collected from physical processes, and feed this information back into the virtual model. This enables accurate simulation of process behavior and early identification of potential issues or deviations. For example, predictive analytics can recommend parameter adjustments to maintain optimal culture conditions or forecast final product quality attributes in real-time. This capability minimizes variability between production batches and accelerates time-to-market for products.

Background & Context

Biopharmaceutical manufacturing has historically faced significant challenges in data analysis and process control due to its inherent complexity and variability. While the adoption of Process Analytical Technology (PAT) and industry-wide digital transformation (DX) initiatives have led to the generation of vast amounts of data, the effective utilization of this data remains a key requirement. The modeling approaches discussed, particularly digital twins, provide powerful tools to convert this raw data into meaningful insights, enabling data-driven decision-making. This is crucial for building more robust and better-understood manufacturing processes that comply with quality management guidelines such as ICH Q8, Q9, and Q10.

Strategic Significance & Outlook

These modeling approaches, including digital twins, are critically important in shaping the future of biomanufacturing. In the future, these technologies are expected to evolve further, integrating with AI and IoT to realize more autonomous and adaptive smart manufacturing systems. This will lead to reduced development times, lower manufacturing costs, improved product quality, and ultimately, faster delivery of therapeutic drugs to patients. Furthermore, these models are anticipated to serve as a comprehensive digital infrastructure, supporting process design, optimization, and troubleshooting across the entire lifecycle, from early-stage drug development to commercial production.

Source: https://www.bioprocessonline.com/doc/modeling-approaches-that-make-complex-bioprocess-data-useful-0001

Collected: September 18, 2026 | Automated Research System (Gemini API)

#05 CNPEM Develops Microfluidic 3D Cell Culture Platform Simulating Human Tissue, Enhancing Animal Testing Alternatives

Published September 16, 2026 EurekAlert! ブラジル

OVERVIEW

Researchers at the Brazilian National Center for Research in Energy and Materials (CNPEM) have developed an innovative microfluidic-based microscopic platform for 3D cell culture. This new device accurately replicates human tissue structure and function, reducing the need for animal testing in toxicology assessments of pharmaceuticals, nanomaterials, and environmental pollutants. The technology is expected to significantly contribute to more efficient drug discovery and ethical research practices.

IN DEPTH

Key Findings

A research team at the Brazilian National Center for Research in Energy and Materials (CNPEM) has developed a groundbreaking microfluidic-based microscopic platform for 3D cell culture. This innovative device possesses the capability to more faithfully mimic the complex structure and physiological functions of human tissues compared to conventional 2D cell cultures and animal models. This advancement dramatically improves the accuracy of toxicology testing and efficacy evaluation for drug candidates, nanomaterials, and environmental pollutants, making a significant contribution to reducing animal testing and enhancing research ethics.

Technical/Clinical Details

The developed platform constructs 3D cell culture models on microfluidic chips, integrating intricate fluidic channels and chambers. This design enables cells to engage in three-dimensional interactions closely resembling the in vivo environment, exhibiting tissue-specific physiological responses. Researchers have successfully co-cultured various cell types (e.g., hepatocytes, neurons, tumor cells) within this system, recreating complex biological processes such as angiogenesis and tissue remodeling. Crucially, the platform allows for detailed analysis of drug metabolic pathways and toxicity mechanisms, providing more reliable data during drug discovery's lead optimization phase and toxicology screening. This capability reduces the failure rate of costly and time-consuming animal studies, thereby accelerating progression to clinical trials.

Background & Context

Animal testing in pharmaceutical development has long faced ethical concerns, alongside issues of poor predictability for human outcomes. Approximately 90% of drug candidates fail in clinical trials, partly due to biological differences between animal models and humans. Against this backdrop, the development of in vitro models like 'organ-on-a-chip' and 3D cell culture has intensified. CNPEM's technology offers a highly biomimetic system, enhancing the efficiency and reliability of drug discovery research and marking a significant ethical advancement in animal welfare. It actively promotes research and development compliant with the international '3R principles' (Replacement, Reduction, Refinement).

Strategic Significance & Outlook

The microfluidic 3D cell culture platform developed by CNPEM holds the potential to revolutionize drug discovery and toxicology research. Future applications are expected to expand to the development of multi-organ-on-a-chip systems and the creation of complex disease-specific in vitro models (e.g., tumor microenvironments, neurodegenerative disease models). This will contribute to the advancement of personalized medicine, with potential use as a tool for predicting individual patient drug responses. The widespread adoption of this technology will enable faster and more cost-effective research and development across pharmaceutical companies, chemical manufacturers, and environmental science sectors, ultimately leading to safer and more effective products for society.

Source: https://www.eurekalert.org/news-releases/1144285

Collected: September 18, 2026 | Automated Research System (Gemini API)

#06 BIANCA CLINIC Offers Autologous Adipose-Derived Stem Cell IV Therapy for Back Pain in Japan, Following Regenerative Medicine Regulatory Reforms

Published September 11, 2026 BIANCA CLINIC Japan

OVERVIEW

BIANCA CLINIC in Japan is offering intravenous (IV) therapy using autologous adipose-derived stem cells for back pain, aligning with Japan's legal framework reforms for regenerative medicine in 2025. This doctor-led treatment minimizes rejection risk by utilizing the patient's own cells, aiming to alleviate chronic back pain and improve quality of life. The initiative exemplifies the practical implementation and expansion of regenerative medicine in Japan.

IN DEPTH

Key Findings

BIANCA CLINIC, a medical institution in Japan, is providing intravenous (IV) therapy for patients suffering from chronic back pain, utilizing stem cells isolated and cultured from their own adipose tissue. This treatment modality adheres to the legal framework reforms for regenerative medicine enacted in Japan in 2025 and is delivered ethically and safely under a physician-led system within a strict regulatory environment. This approach aims for fundamental improvement in back pain by minimizing the risk of rejection through the use of the patient's own cells, while promoting inflammation suppression and tissue repair.

Technical/Clinical Details

The autologous adipose-derived stem cell IV therapy offered at BIANCA CLINIC begins with the collection of a small amount of adipose tissue, typically from the patient's abdomen. From this collected adipose tissue, mesenchymal stem cells (MSCs) with high differentiation potential are isolated and cultured. These stem cells are scientifically supported for their anti-inflammatory, immunomodulatory, and tissue repair-promoting effects. Administered intravenously, they are expected to act systemically to suppress inflammation underlying chronic back pain and promote the regeneration of damaged tissues. This therapy holds the potential to improve not only localized pain but also overall health, offering a new option for patients who have not found relief from conventional conservative treatments or surgical interventions.

Background & Context

Back pain is a common chronic condition affecting a significant portion of the population worldwide, including Japan, incurring substantial healthcare costs and societal burdens. Many patients do not achieve adequate relief from existing treatments, highlighting a need for more effective and safer therapeutic options. Japan has proactively established regulatory frameworks in the field of regenerative medicine, aiming to facilitate patient access and accelerate research and development. The 2025 reforms to regenerative medicine laws have broadened the scope of stem cell therapies, creating an environment where medical institutions can offer innovative treatments more safely and expeditiously. Institutions like BIANCA CLINIC providing high-quality regenerative medicine under this new regulatory framework significantly contribute to the maturation of Japan's regenerative medicine market and the improvement of public health.

Strategic Significance & Outlook

The autologous adipose-derived stem cell IV therapy offered by BIANCA CLINIC has the potential to introduce a paradigm shift in the treatment of chronic back pain. Future accumulation of clinical data and advancement of research are expected to further clarify the efficacy and safety of this treatment. Moreover, there is potential for this technology to be applied to other chronic pain conditions and inflammatory diseases. The dissemination of regenerative medicine and technological innovation is a crucial area that can not only enhance the quality of life for individual patients but also contribute to healthcare cost containment in an aging society. BIANCA CLINIC's efforts will serve as a valuable success story for Japan in its role as a leading nation in regenerative medicine globally.

Source: https://biancaclinic-tokyo.com/regenerativemedicine/back-pain-blog/

Collected: September 18, 2026 | Automated Research System (Gemini API)

#07 MatriChem Ltd. Unveils 3D Bioprinted Cancer Model Reproducing Tumor-Vessel Interface Dynamics for Drug Discovery

Published September 10, 2026　Euro-BioImaging　ブルガリア

OVERVIEW

Bulgarian SME MatriChem Ltd., in collaboration with the Medical University of Plovdiv, has developed a novel 3D bioprinted cancer model, the '3DCAM platform,' that accurately replicates the critical tumor-vessel interface. This platform integrates cancer cells, endothelial cells, and proprietary biomaterials into a structured 3D environment, allowing for enhanced study of tumor angiogenesis and metastasis. The innovation promises to significantly advance drug screening and personalized medicine by providing a more physiologically relevant experimental system.

IN DEPTH

Key Findings

Bulgarian biotechnology company MatriChem Ltd., in partnership with the Medical University of Plovdiv, has successfully developed a 3D bioprinted cancer model, termed the '3DCAM platform,' which precisely mimics the critical characteristics of the tumor-vessel interface. This innovative platform creates a structured 3D environment by combining cancer cells, endothelial cells, and proprietary extracellular matrix-like biomaterials, offering a more physiologically relevant system for studying tumor angiogenesis and metastasis. The model's ability to faithfully replicate the complex interactions within the tumor microenvironment represents a significant advancement over traditional 2D culture methods.

Technical / Clinical Details

The 3DCAM platform leverages MatriChem's unique hydrogel technology and high-resolution 3D bioprinting. This combination enables the fabrication of intricate 3D scaffolds that support cell growth and interaction within a controlled microenvironment. Advanced microscopy techniques, including confocal laser scanning microscopy and electron microscopy, are employed for the detailed validation and analysis of the model. These tools allow for real-time tracking of cellular morphology, proliferation, migration, and gene expression changes. The platform is particularly valuable for evaluating the efficacy and toxicity of anti-cancer drug candidates, especially those targeting angiogenesis, under conditions that are challenging to replicate with conventional 2D cultures or animal models.

Background & Context

Traditional cancer research has heavily relied on 2D cell cultures and animal models, both of which have limitations in fully replicating the complex human physiological environment. 3D cell culture systems, such as organoids and bioprinted models, are emerging as next-generation tools that provide more in vivo-like conditions, thereby improving the predictive accuracy of drug responses. MatriChem's 3DCAM platform specifically addresses the critical aspect of tumor angiogenesis, a bottleneck in many oncology drug development programs, by offering a specialized model to study this process in detail.

Strategic Significance & Outlook

The 3DCAM platform is expected to lead to higher success rates in the early-stage screening of novel anti-cancer drug candidates. Furthermore, its capacity to incorporate patient-derived cancer cells opens avenues for personalized medicine, enabling the optimization of therapeutic choices based on individual patient biology. Beyond oncology, the technology holds promise for applications in regenerative medicine and the development of models for other diseases, positioning it as a fundamental technology within the evolving biotechnology landscape.

Source: https://www.eurobioimaging.eu/news/advanced-microscopy-supports-bulgarian-sme-in-developing-3d-bioprinted-cancer-model/

Collected: September 18, 2026 | Automated Research System (Gemini API)

#08 Upstream Process Optimization Drives Biologics Production Efficiency Towards Continuous and Perfusion Systems

Published September 14, 2026 World Pharma Today Unknown

OVERVIEW

Optimizing upstream processes is critical for enhancing biologics production efficiency, with a strong focus on cell culture media design, feed strategies, and bioreactor control. Chemically defined, serum-free media and advanced feeding protocols maximize cell growth and target protein yields. Furthermore, the transition to continuous manufacturing and perfusion culture systems offers dramatic gains in productivity, cost reduction, and process robustness.

IN DEPTH

Key Findings

Significant optimization in the upstream processes of biopharmaceutical manufacturing, particularly through refined cell culture media design, advanced feeding strategies, and precise bioreactor control, is dramatically enhancing production efficiency. The adoption of serum-free and chemically defined media, alongside the shift towards continuous manufacturing and perfusion culture, is now recognized as indispensable for increasing product yield, reducing manufacturing costs, and improving overall process robustness.

Technical / Clinical Details

Upstream process optimization encompasses several key methodologies:

- **Cell Culture Media Formulation**: The industry is rapidly moving towards chemically defined (CD) and serum-free (SF) media, eliminating animal-derived components. These media improve batch-to-batch consistency, simplify regulatory compliance, and reduce the risk of viral contamination. Optimizing the composition of essential nutrients like amino acids, vitamins, lipids, and trace elements is crucial for boosting cell proliferation rates and enhancing target protein productivity.
- **Feed Strategies**: To prevent nutrient depletion and maintain optimal cellular metabolic states, advanced feeding strategies involving controlled, often continuous, supplementation of key nutrients such as glucose and amino acids are employed. Leveraging Process Analytical Technology (PAT) for real-time monitoring of metabolite concentrations allows for precise adjustments of feed rates, extending culture duration and maximizing volumetric productivity.
- **Bioreactor Control**: Tight control over critical culture parameters such as pH, dissolved oxygen, temperature, and agitation speed is essential. The widespread adoption of single-use bioreactors has improved operational efficiency and reduced cross-contamination risks. Furthermore, sophisticated sensors and control algorithms enable real-time process adjustments, leading to improved culture stability and reproducibility.

- **Continuous Manufacturing and Perfusion Culture**: The shift from batch to continuous manufacturing significantly improves capacity and cost-efficiency. Perfusion culture, by continuously removing spent media and supplying fresh media while retaining cells within the bioreactor, allows for extremely high cell densities and continuous harvest of target proteins. This approach reduces the required bioreactor footprint per unit of product and lessens the burden on downstream purification processes.

The utilization of high-throughput media screening platforms is further accelerating these optimization efforts, enabling rapid identification of optimal conditions.

Background & Context

The burgeoning biopharmaceutical market demands both cost reduction and supply chain reliability. The emergence of new modalities, such as antibody-drug conjugates (ADCs) and gene therapies, necessitates more efficient and flexible production technologies. Upstream process optimization is vital for de-bottlenecking overall manufacturing, ensuring the rapid and economic supply of high-quality biopharmaceuticals.

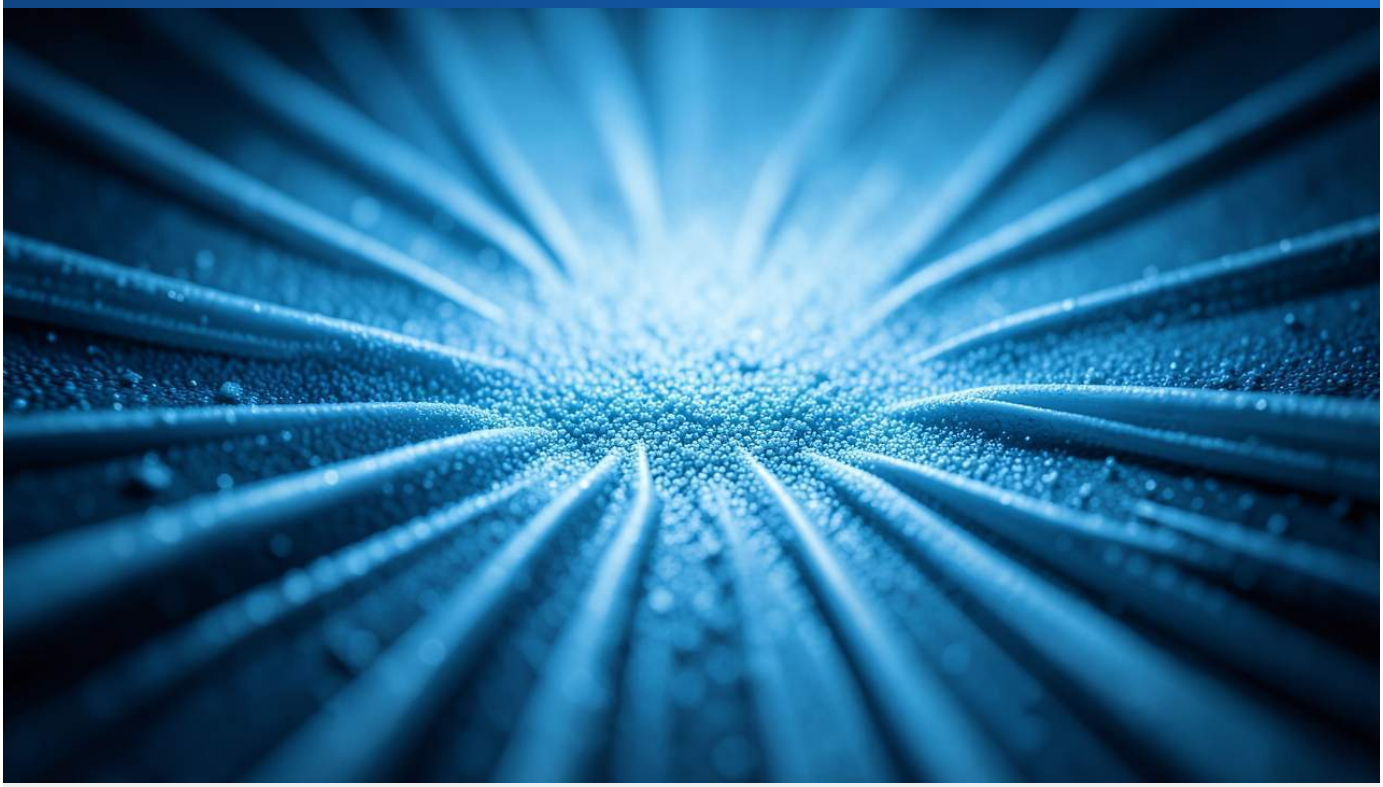
Strategic Significance & Outlook

Future advancements in upstream process optimization are anticipated with the integration of AI and machine learning. Real-time data analytics and predictive modeling will enable autonomous optimization of culture conditions and anomaly detection, shortening process development times and minimizing production losses. Ultimately, these technological innovations are expected to reduce the cost of biopharmaceuticals, making life-saving treatments more accessible to a broader patient population globally.

Source: https://www.worldpharmatoday.com/production-manufacturing/upstream-process-optimization-for-biologics-production-efficiency/

#09 Exreprotein Launches Animal-Derived Component-Free Cell Culture Supplement for Immune and Stem Cell Research, Enhancing Consistency and Performance

Published September 15, 2026 Product information/Industry review Unknown



OVERVIEW

Exreprotein has introduced the 'Exreprotein Cell Culture Supplemental Mix,' an advanced formulation specifically designed for immune and stem cell research. This supplement is chemically defined, animal-derived component-free, and serum-free, significantly reducing batch-to-batch variability in cell culture. By improving media performance, the product enhances research reproducibility and is expected to be a foundational technology for cell therapy development.

IN DEPTH

Key Findings

Exreprotein has launched an innovative cell culture supplement, the 'Exreprotein Cell Culture Supplemental Mix,' specifically engineered for immune cell and stem cell research. This product features a fully chemically defined, animal-derived component-free (ADCF), and serum-free (SF) formulation, fundamentally addressing the long-standing challenge of batch-to-batch variability in traditional cell culture systems. This breakthrough significantly enhances research reproducibility and marks a crucial step forward in cell therapy development.

Technical / Clinical Details

The Exreprotein Cell Culture Supplemental Mix boasts seven key features:

- **Chemically Defined**: All components are known and precisely controlled, increasing the transparency of the culture environment and simplifying the interpretation of experimental results.
- **Animal-Derived Component-Free (ADCF)**: Eliminates potential contamination risks from viruses or prions, streamlining regulatory approval processes—a critical requirement for cell therapy applications.
- **Serum-Free (SF)**: Removes the influence of unknown growth factors or inhibitors present in serum, standardizing culture systems and enhancing reproducibility.
- **Improved Batch-to-Batch Consistency**: Standardized components minimize performance variations between lots, increasing the reliability of experimental data.
- **Enhanced Media Performance**: Contains a balanced blend of nutrients and growth factors optimized for the proliferation, viability, and differentiation capabilities of immune cells and stem cells.
- **Versatile for Various Cell Types**: Demonstrates superior performance, particularly in the culture of T cells, NK cells, Mesenchymal Stem Cells (MSCs), and iPS cells.
- **Ease of Use**: Can be easily added to existing basal media, reducing the burden on researchers.

These features position Exreprotein's supplement to help overcome challenges in the scale-up manufacturing and quality control of cell therapy products, thereby accelerating their translation from research to clinical application.

Background & Context

The rapid advancements in regenerative medicine and cell therapy necessitate the establishment of high-quality and stable cell culture processes. Historically, the use of serum containing animal-derived components presented challenges such as lot-to-lot variability, safety concerns, and regulatory hurdles. The development of ADCF, SF, and CD media supplements like Exreprotein's reflects an industry-wide shift towards more robust and scalable cell manufacturing platforms designed to address these issues.

Strategic Significance & Outlook

The Exreprotein Cell Culture Supplemental Mix is poised to become a standard tool for generating more reliable data in the research and development of immune cell therapies (e.g., CAR-T, CAR-NK) and stem cell treatments. This will accelerate the transition from preclinical to clinical trials and ultimately contribute to shortening the development timeline for innovative therapies reaching patients. In the future, these high-performance media supplements are likely to further drive the automation and closed-system integration of cell manufacturing processes, advancing the realization of personalized medicine.

Source: https://www.terristeffes.com/2026/09/7-key-features-of-exreprotein-cell.html

Collected: September 18, 2026 | Automated Research System (Gemini API)

#10 AI/ML and Digital Twins Spearhead Bioprocess Digitalization for Microbial Lipid Production and Downstream Design

Published September 13, 2026 ApplyKite Europe

OVERVIEW

The Norwegian University of Life Sciences (NMBU) and University College Dublin (UCD) have launched PhD scholarship programs focused on AI/ML frameworks for bioprocess digitalization. NMBU's "fermentAtIon" project aims to build AI-driven digital twins for real-time fermentation monitoring and control in microbial lipid production. UCD's program leverages generative AI, ML, and CFD for novel downstream biomanufacturing process design, signaling a significant investment in next-generation bioeconomy technologies.

IN DEPTH

Key Findings: PhD Programs Launch to Drive Bioprocess Innovation with AI/ML and Digital Twins

The Norwegian University of Life Sciences (NMBU) and University College Dublin (UCD) have announced several PhD scholarship programs designed to advance bioprocess digitalization using AI/Machine Learning (ML) frameworks. These initiatives aim to revolutionize microbial lipid production and the design of novel biomanufacturing processes by integrating AI-driven digital twins for process optimization.

Technical / Clinical Details

- **NMBU's "fermentAtIon" Project:**
  - **Objective:** Optimize microbial lipid production through AI-controlled fermentation.
  - **Technological Focus:** Development of AI-driven digital twins for real-time fermentation monitoring, predictive modeling, and advanced control systems. This approach seeks to reduce batch-to-batch variability and maximize production efficiency.
  - **Application:** Targets microbial-based lipid production, which is crucial for sustainable alternative resources in food, feed, and biofuel industries.
- **UCD Project:**
  - **Objective:** Design novel downstream biomanufacturing processes using a combination of generative AI, ML, and Computational Fluid Dynamics (CFD).
  - **Technological Focus:** AI and ML will streamline traditional trial-and-error process development, while CFD simulates physical phenomena to accelerate the design and optimization of purification and separation steps.
  - **Application:** Critical for enhancing the efficiency and cost-effectiveness of biopharmaceutical and bio-based product manufacturing.

Background & Context

The biomanufacturing sector faces persistent challenges including process complexity, scalability issues, and high operational costs. Biological processes like cell culture and fermentation are particularly susceptible to numerous influencing parameters, making consistent reproducibility and efficiency difficult. AI and digital twin technologies are emerging as powerful tools to address these challenges, offering significant potential to enhance process robustness and productivity through real-time data analysis, predictive modeling, and automated control.

These programs underscore Europe's strategic commitment to fostering a sustainable bioeconomy. By cultivating a new generation of bioprocess engineers and researchers, these initiatives are poised to strengthen the region's innovation ecosystem and leadership in advanced biomanufacturing technologies.

Strategic Significance & Outlook

Successful execution of these research programs promises substantial benefits, including reduced costs and increased productivity in microbial lipid production, accelerating the shift towards sustainable resources. Furthermore, the optimization of downstream processes through generative AI will directly contribute to shorter development timelines and lower manufacturing costs for biopharmaceuticals, making innovative therapies more accessible. This focus on AI/ML and digital twins in biomanufacturing represents a critical trend for researchers, engineers, and investors, signaling a future where advanced digital tools drive efficiency and innovation in the bio-industrial landscape.

Source: https://www.applykite.com/positions/phd-in-aiml-frameworks-for-advancing-bioprocess-digitalization-mtoerdobrt

Collected: September 18, 2026 | Automated Research System (Gemini API)

#11 Lonza, Sartorius, and FUJIFILM Diosynth Bolster Biopharmaceutical Manufacturing Capacity, Highlighting Single-Use Technology as Key

Published September 14, 2026 SNS Insider Unknown

OVERVIEW

This article highlights the biopharmaceutical manufacturing capacity expansions by Lonza Group, Sartorius, and FUJIFILM Diosynth Biotechnologies, as noted in the "Biopharmaceutical Fermentation Market" report. Lonza expanded its manufacturing capacity in 2026, maintaining robust growth in its contract manufacturing business. Sartorius strengthened its portfolio with new single-use bioreactor technology and increased manufacturing capacity. FUJIFILM Diosynth enhanced its cell culture manufacturing capabilities by adding an extra 2,000 liters of single-use capacity. These expansions are strategic moves to meet the growing demand for biopharmaceuticals, improving manufacturing efficiency and flexibility.

IN DEPTH

Key Findings: Lonza, Sartorius, and FUJIFILM Diosynth Strengthen Biopharmaceutical Manufacturing Capabilities, Single-Use Technology Pivotal for Efficiency

This article provides an update on the biopharmaceutical manufacturing capacity expansions by key players such as Lonza Group, Sartorius, and FUJIFILM Diosynth Biotechnologies, as mentioned in a report on the "Biopharmaceutical Fermentation Market." These companies are undertaking strategic investments and capacity enhancements to meet the escalating demand for biopharmaceuticals and to improve the efficiency and flexibility of their manufacturing processes.

Detailed Manufacturing Capacity Expansion by Company

- **Lonza Group:**
  - **Manufacturing Capacity Expansion:** Lonza expanded its biopharmaceutical manufacturing capacity in 2026. This move reinforces its ability to handle a wide range of biopharmaceutical pipelines and ensures robust growth in its Contract Development and Manufacturing Organization (CDMO) business.
  - **Market Position:** Lonza further solidifies its position as a global leader in the contract development and manufacturing of complex biopharmaceuticals.
- **Sartorius:**
  - **Enhanced Bioprocessing Portfolio:** Sartorius has expanded its bioprocessing product and service portfolio through the introduction of new single-use bioreactor technology and an increase in manufacturing capacity.
  - **Benefits of Single-Use Technology:** Single-use systems eliminate the need for cleaning and sterilization, allowing for rapid changeovers, significantly enhancing manufacturing flexibility and cost-efficiency.

- **FUJIFILM Diosynth Biotechnologies:**
  - **Strengthened Cell Culture Manufacturing Capacity:** The company significantly boosted its cell culture manufacturing capabilities by incorporating an additional 2,000 liters of single-use bioreactor capacity.
  - **Purpose of Expansion:** This expansion is specifically aimed at addressing the increasing demand for large-scale manufacturing of monoclonal antibodies and gene therapies, balancing rapid supply with consistent quality for its clients.

Background & Context

The biopharmaceutical market is expanding rapidly, driven by the emergence of innovative therapies addressing unmet medical needs. This growth necessitates increasingly complex manufacturing processes, making efficient and scalable production capabilities indispensable. Single-use technology, in particular, is becoming a mainstream choice in biopharmaceutical manufacturing due to its advantages such as reduced capital investment, lower operational costs, and minimized risk of cross-contamination. The aggressive capacity expansions by these leading companies are crucial for enhancing overall industry productivity and, ultimately, improving patient access to critical medicines.

Strategic Significance & Outlook

These strategic investments by Lonza, Sartorius, and FUJIFILM Diosynth Biotechnologies are expected to further accelerate the growth of the biopharmaceutical manufacturing market. The focus on single-use technology will be a key driver in supporting the rapid development and commercialization of next-generation biopharmaceuticals, increasing market flexibility and responsiveness. Investors will likely view these companies' commitments to manufacturing capacity and technological innovation as indicators of long-term growth and competitive advantage, promising more timely delivery of innovative therapies to patients.

Source: https://www.snsinsider.com/reports/biopharmaceutical-fermentation-market-11113

Collected: September 18, 2026 | Automated Research System (Gemini API)

#12 Äio and TFTAK Secure €1.94M for 'DigiFoundry 2.0' Project to Accelerate Waste-Derived Microbial Fat Production via AI-Driven Digital Platform

Published September 14, 2026 European Biotechnology エストニア

OVERVIEW

Äio and TFTAK have received €1.94 million in funding for their 'DigiFoundry 2.0' project, an AI-driven digital platform aimed at accelerating waste-derived microbial fat production. This three-year initiative integrates synthetic biology, precision fermentation, and real-time digital process control to shorten development cycles and reduce scaling costs. The technology holds significant potential for licensing in sustainable food production and industrial biotechnology.

IN DEPTH

Key Findings

Äio and TFTAK (Estonian Competence Centre of Food and Fermentation Technologies) have successfully secured €1.94 million in funding for their 'DigiFoundry 2.0' project. This ambitious three-year endeavor aims to develop an AI-driven digital platform that will significantly shorten development cycles and reduce the cost of scaling microbial fat production from waste streams.

Technical / Clinical Details

The DigiFoundry 2.0 project is designed to integrate several cutting-edge technologies:

- **Synthetic Biology:** Microorganisms will be genetically engineered and optimized for high-efficiency production of specific fats. This enables the development of sustainable, low-environmental-impact alternatives to traditional fat production methods.
- **Precision Fermentation:** The optimized microorganisms will undergo controlled fermentation processes, maximizing both the yield and quality of the microbial fats. This ensures a consistent and high-performing output.
- **Real-time Digital Process Control:** Data will be collected in real-time during the fermentation process. This data will then be used in conjunction with digital twins and AI models to monitor and optimize the process, allowing for precise intervention, minimizing batch-to-batch variability, and maximizing production efficiency.
- **AI-Driven Digital Platform:** This platform will integrate all these technologies, performing everything from data analysis to process optimization and predictive modeling. This holistic approach is expected to dramatically reduce development cycles and scaling costs for microbial fat production.

This integrated approach is innovative in its potential to overcome bottlenecks in microbial fat production and accelerate time-to-market.

Background & Context

Sustainable food supply and environmental impact reduction are pressing global challenges. Traditional vegetable fat production, such as palm oil, often contributes to deforestation and biodiversity loss. Microbial fats offer an attractive alternative, as they can be produced from various waste materials, aligning with circular economy principles. However, commercial production of microbial fats has been hampered by lengthy development timelines and cost-efficiency issues. The Äio and TFTAK project directly addresses these challenges through the fusion of digital technology and biotechnology.

Strategic Significance & Outlook

The DigiFoundry 2.0 project holds immense potential to drastically reduce microbial fat production costs, thereby facilitating their broader adoption across industries such as food, feed, cosmetics, and fuel. The integration of AI and digital twin technologies makes this a model case for Industry 4.0 application in the biomanufacturing sector. Äio aims to license the technology developed from this platform to other companies, contributing to widespread industrial transformation. This initiative is expected to play a crucial role in building a more sustainable bioeconomy by providing scalable, eco-friendly alternatives to conventional fat sources.

Source: https://www.mycostories.com/post/%C3%A4io-and-tftak-win-1-94m-to-build-a-digital-platform-for-waste-derived-microbial-fats

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#13 BIANCA CLINIC Pioneers Regenerative Medicine in Japan with Autologous Adipose Stem Cells and Exosome Therapy under Strict Regulatory Compliance

Published September 12, 2026 BIANCA CLINIC Japan

OVERVIEW

BIANCA CLINIC in Tokyo is advancing regenerative medicine by offering exosome therapy, purified stem cell culture supernatant, and autologous adipose-derived stem cell therapy, all strictly compliant with Japan's robust regulatory framework. These personalized treatments aim to enhance skin quality, elasticity, and overall wellness. The clinic emphasizes safety and efficacy through cutting-edge techniques and stringent medical oversight.

IN DEPTH

Key Findings: Advanced Regenerative Treatments Offered Under Strict Japanese Regulations

BIANCA CLINIC in Tokyo is at the forefront of regenerative medicine, delivering exosome therapy, high-purity stem cell culture supernatant, and autologous adipose-derived stem cell therapy. These offerings are strictly governed by Japan's Act on the Safety of Regenerative Medicine, ensuring patients receive cutting-edge aesthetic and systemic health improvements compliant with national safety standards. Autologous adipose-derived stem cell therapy, utilizing a patient's own cells, minimizes rejection risk and maximizes natural regenerative potential.

Technical and Clinical Details: Personalized Approaches and Broad Applications

Exosome therapy leverages extracellular vesicles secreted by stem cells to facilitate intercellular communication, promoting tissue repair and regeneration. Stem cell culture supernatant, rich in growth factors and cytokines, supports cell activation and tissue regeneration. These non-cellular therapies are noted for their safety and ease of application. In autologous adipose-derived stem cell therapy, stem cells harvested from the patient's own adipose tissue are expanded and administered directly to target areas. This approach is anticipated to improve skin elasticity, reduce wrinkles, accelerate wound healing, and alleviate chronic pain and joint dysfunction. The clinic tailors treatment plans to individual patient needs, optimizing therapeutic outcomes through a highly personalized approach.

Background and Industry Context: Regulatory Vigilance and Quality Assurance Focus

Japan has rapidly strengthened its regulatory framework for regenerative medicine to ensure both safety and efficacy. BIANCA CLINIC's proactive compliance, including performing treatments in Ministry of Health, Labour and Welfare-approved facilities, establishes high ethical standards and robust quality control systems. This not only builds patient trust but also enhances the overall credibility of Japan's regenerative medicine sector. Regenerative therapies, moving beyond traditional symptomatic treatments, hold significant promise for anti-aging, aesthetic medicine, orthopedics, and intractable diseases, establishing themselves as a critical pillar of future healthcare.

Strategic Significance and Outlook: Expanding Access and Innovating Technologies

BIANCA CLINIC is dedicated to optimizing techniques and broadening clinical applications to make these advanced regenerative therapies accessible to a wider patient population. The integration of regenerative medicine with preventive healthcare and wellness is also progressing, signifying its potential to significantly enhance quality of life beyond merely treating diseases. The clinic plans to continue collaborating with domestic and international research institutions and companies to further improve therapeutic efficacy and explore new indications, thereby contributing to the advancement of regenerative medicine in Japan.

Source: https://biancaclinic-tokyo.com/regenerativemedicine/stem-cell-benefits-blog/

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#14 Asahi Kasei Bioprocess Launches VANTIJ® SU-VFC Benchtop to Elevate Efficiency and Consistency in Gene Therapy Manufacturing

Published September 15, 2026 Asahi Kasei Japan

OVERVIEW

Asahi Kasei Bioprocess has introduced the VANTIJ® SU-VFC Benchtop, a novel small-format, automated, single-use virus filtration system for gene therapy manufacturing. This system is designed to significantly enhance the efficiency and consistency of virus filtration in laboratory-scale and process development settings. It maintains the VANTIJ family's automation and reproducibility while offering a compact design compatible with Planova™ 35N virus-removal filters.

IN DEPTH

Key Findings: New Automated Virus Filtration System Targets Gene Therapy Manufacturing

Asahi Kasei Bioprocess has unveiled the VANTIJ® SU-VFC Benchtop, a new benchtop automated single-use virus filtration system, designed to enhance the critical virus removal step in gene therapy drug manufacturing. This system specifically aims to improve efficiency and consistency during laboratory-scale research and process development by eliminating variability inherent in manual operations. This advancement is expected to accelerate the development and ensure stable supply of high-value gene therapies.

Technical and Clinical Details: Compact Design with Advanced Automation and Filter Compatibility

The VANTIJ® SU-VFC Benchtop inherits the high automation and reliability features of the VANTIJ product family, simplifying complex virus filtration processes with minimal operator intervention. Its compact design facilitates easy integration into limited lab spaces, reducing adoption barriers. The system is fully compatible with Asahi Kasei's renowned Planova™ 35N virus-removal filters, known for their high virus clearance efficiency and excellent protein recovery. This ensures maximum quality and yield of gene therapy vectors, bolstering the foundation for next-generation therapeutic development. The automated process mitigates human error and streamlines traceability and validation in Good Manufacturing Practice (GMP) environments.

Background and Industry Context: Expanding Gene Therapy Market and Manufacturing Challenges

Gene therapy holds immense promise for providing curative solutions to many previously untreatable diseases, including cancers, rare genetic disorders, and infectious diseases. While the market is rapidly expanding, manufacturing complexity, cost, and quality control remain significant challenges. Particularly for gene therapies utilizing viral vectors, efficient virus removal during manufacturing is crucial for patient safety. Traditional manual filtration methods are labor-intensive, time-consuming, and prone to variability. Automated, single-use systems like the VANTIJ® SU-VFC Benchtop are key to overcoming these challenges and accelerating the path to commercial gene therapy production.

Strategic Significance and Outlook: Contributing to Standardization and Efficiency in Gene Therapy Manufacturing

Asahi Kasei Bioprocess aims to seamlessly support the transition from R&D to commercial production for gene therapies with this new benchtop system. Its adoption will be an indispensable tool for standardizing virus filtration processes and reducing risks during manufacturing scale-up. In the long term, this system is expected to promote the broader adoption of automation and single-use technologies across biopharmaceutical manufacturing, thereby improving the speed and efficiency of overall drug development. Asahi Kasei will continue to contribute to advancements in life science through innovation in bioprocessing technology.

Source: https://www.asahi-kasei.com/news/2026/e260915

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#15 Lonza Expands US Manufacturing with New Spray Drying Facility; Samsung Biologics Secures $262M European CDMO Deal

Published September 10, 2026 Endpoints News Switzerland, South Korea, USA

OVERVIEW

Lonza announced a significant expansion of its U.S. manufacturing capabilities with a new commercial spray drying facility in Bend, Oregon, projected for completion by 2029 and creating 80 new jobs. Concurrently, Samsung Biologics inked a substantial $262 million long-term manufacturing agreement with an undisclosed European pharmaceutical company, committing to provide biopharmaceutical manufacturing services from its Songdo, South Korea site through 2033. These strategic moves underscore the industry's focus on bolstering global manufacturing capacity and diversifying supply chain resilience amidst growing demand for complex therapeutics.

IN DEPTH

Key Findings

Global contract manufacturing powerhouse Lonza has announced a substantial expansion of its U.S. manufacturing footprint with the construction of a new commercial spray drying facility in Bend, Oregon. Simultaneously, leading Asian CDMO Samsung Biologics has secured a major long-term manufacturing contract worth $262 million with an unnamed European pharmaceutical firm. These developments highlight strategic investments by key industry players aimed at addressing the escalating demand for biopharmaceuticals, geographically diversifying manufacturing capabilities, and strengthening supply chain stability.

Technical / Clinical Details

Lonza's upcoming spray drying facility in Bend, Oregon, is designed to cater to complex drug formulations, particularly for small molecules and biologics. This advanced drying technology is crucial for enhancing drug stability and improving patient convenience for administration. Scheduled to be operational by 2029, the facility is expected to create over 80 skilled jobs, boosting the local economy. Spray drying is particularly effective for manufacturing heat-sensitive drugs or those difficult to separate from solvents, enabling the formulation of a wide array of pharmaceutical products. Samsung Biologics' $262 million contract specifies long-term manufacturing services from its massive Songdo, South Korea campus until 2033. While specific products remain undisclosed, such substantial agreements typically involve the production of active pharmaceutical ingredients (APIs) for biopharmaceuticals like monoclonal antibodies or other recombinant proteins. The company's cutting-edge bioreactor facilities and purification capabilities will be leveraged to ensure high-quality and large-scale biopharmaceutical supply.

Background & Context

The global biopharmaceutical market has experienced significant growth in recent years, driven by the development of novel drugs across diverse therapeutic areas such as oncology, autoimmune diseases, and rare disorders. This growth has led to a surge in demand for manufacturing capacity, particularly for highly potent drugs and those requiring complex formulation technologies. The CDMO sector is actively responding to this demand by accelerating capital investments and technological innovations. The announcements from Lonza and Samsung Biologics reflect both the intensified competition in this market and the industry's collective commitment to supply chain resilience. Strengthening manufacturing bases in the U.S. and Asia is also crucial for geographical risk diversification and enhancing responsiveness to regional regulatory requirements.

Strategic Significance & Outlook

These strategic initiatives by Lonza and Samsung Biologics signal further growth and evolution within the global biopharmaceutical manufacturing industry. Lonza's U.S. facility will bolster its supply network for the North American market and offer an attractive option for drug development partners. Concurrently, Samsung Biologics' long-term contract solidifies its stable revenue base and reinforces its leadership as a CDMO in Asia. Ultimately, these investments and partnerships lay the groundwork for a more efficient and stable supply of innovative medicines to patients, contributing to the sustainable development of the entire biopharmaceutical sector.

Source: https://endpoints.news/lonza-to-build-new-us-factory-samsung-bio-signs-262m-contract/

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