

Enabling Advanced Bioprocessing

Innovative solutions that
challenge the status quo

Capabilities Catalog

Bioprocessing solutions built to empower your success

Since 1981, Repligen has been a trusted partner to biopharmaceutical manufacturers, driving progress through innovative, high-value bioprocessing solutions.

We understand the challenges you face—reducing production time, lowering costs, improving yields, and ensuring top-tier product quality. That’s why our cutting-edge technologies and flexible solutions are designed to meet your specific needs at every critical stage of biologic drug production.

Repligen redefines what is possible in bioprocessing by delivering innovative tools and expert guidance that help you streamline workflows, accelerate process development, and achieve optimal results in both clinical and commercial manufacturing. Whether you’re scaling up or fine-tuning, our solutions are built to empower your success.

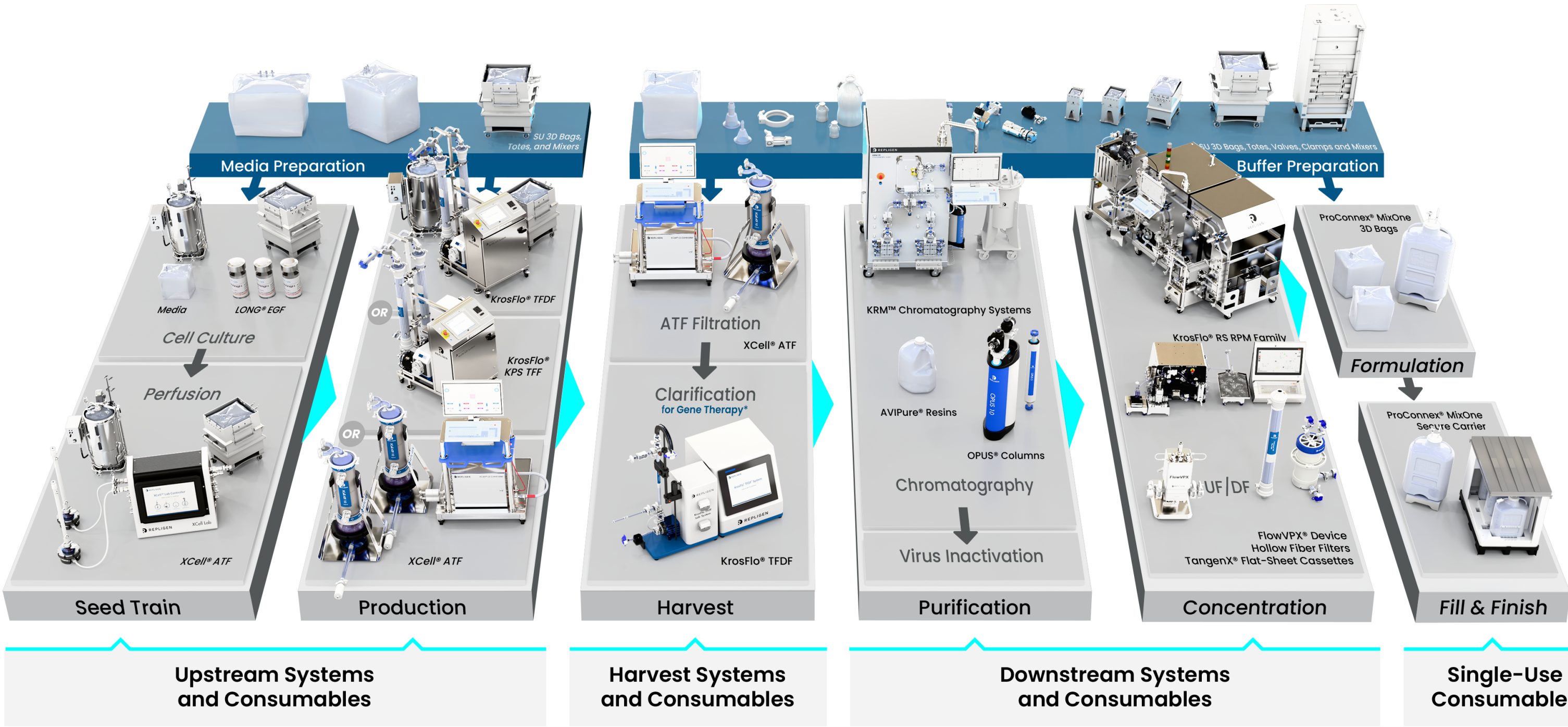


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Empowering productivity and facility efficiency in bioprocessing

Repligen products across the bioprocessing workflow



Ensure product availability with manufacturing redundancy and a secure supply chain

Global network designed to meet our customer's needs



- Waltham, MA (HQ)**
- Manufacturing Sites**
 - Hopkinton, MA
 - Marlborough, MA
 - Auburn, MA
 - Lebanon, NH
 - Clifton Park, NY
 - Bridgewater, NJ
 - Irving, TX
 - Anaheim, CA
 - Rancho Dominguez, CA
 - Waterford, Ireland
 - Breda, The Netherlands
 - Ravensburg, Germany
 - Lund, Sweden
 - Mölnådal, Sweden
 - Tallinn, Estonia
 - Toulouse, France
- Asia-Pacific Commercial Offices**
 - Shiga, Japan
 - Gyeonggi-do, Korea
 - Shanghai, China
 - Bangalore, India
 - Singapore

-  **Multi-site Manufacturing**
-  **Safety Stock Management Program**
-  **Secure Raw Material Supply Chains**
-  **Complete Regulatory Support Packages**
-  **Hands-on Service**

[Learn more about our global locations](#)

Increase yield and improve efficiency with process intensification

XCell® ATF Systems

Why process intensification?

Process intensification improves traditional fed-batch process results by boosting productivity and reducing manufacturing costs. By raising viable cell density and increasing product yield 10X over fed-batch, customers can reduce whole unit operations and time to production bioreactor by 15 – 30 days.

XCell® ATF Systems enable continuous, intensified bioprocessing using Alternating Tangential Flow (ATF) technology.

- **XCell® ATF Devices** use alternating bidirectional flow that generates a backflush action that cleans the filter, minimizing clogging and fouling.
- **XCell® ATF Controllers** provide precise control, maintaining flow rates and monitoring filter health to enable up to 60 days of continuous perfusion without filter changeout.

Intensified processes using XCell® ATF Systems optimize space-time yield, achieving higher viable cell densities in smaller bioreactors, reducing facility footprint, and significantly increasing overall productivity and yield from process scale to commercial scale.



[Learn more about XCell® ATF Systems](#)

Simplify and intensify viral vector bioprocessing

KrosFlo® TFDF® Systems

KrosFlo® TFDF® Technology
The KrosFlo® Tangential Flow Depth Filtration (TFDF®) Systems simplify and enhance viral vector bioproduction by increasing viable cell density, productivity, yield, and recovery for a more robust and efficient process. Combining the benefits of tangential flow filtration (TFF) with the efficiency of depth filtration, KrosFlo® TFDF® Technology delivers a scalable, high-performance solution for applications such as perfusion, continuous viral particle harvest, and clarification.

ProConnex® TFDF® Flow Paths
ProConnex® TFDF® Flow Paths are ready-to-use, single-use assemblies that arrive gamma-irradiated, dry, and preservative-free. Requiring zero flushing, each assembly includes a TFDF® filter, a disposable pump head, integrated sensors, tubing, and aseptic connectors, ensuring seamless set-up and sterile operation.



[Learn more about KrosFlo® TFDF® Systems](#)

Optimize cell culture growth and productivity

LONG® R³ IGF-I and LONG® EGF Cell Culture Supplements

Optimizing cell culture growth and productivity is a key to cell culture expansion. Recombinant growth factors reduce stress, support long-term growth and enhance the productivity of chemically defined media.



LONG® R³ IGF-I is a recombinant analog of human insulin-like growth factor-I (IGF-I) specifically engineered to enhance cell culture performance. More biologically potent in vitro than either insulin or native IGF-I, LONG® R³ IGF-I is ideal for systems utilizing serum-free or low-level serum application.



LONG® EGF is a recombinant analog of human epidermal growth factor (EGF), designed as a direct replacement for native or recombinant human EGF targeting the ErbB-1 receptor and used to boost cell productivity.

[Learn more about our powerful growth factors](#)

Improve yield and increase efficiency with a single-use chromatography platform

KRM™ Chromatography Systems and ProConnex® Flow Paths

KRM™ Chromatography Systems are scalable, single-use platforms that use advanced hardware engineering, fluid management, and process control to enhance scalability, improve recovery, and accelerate batch changes, thereby improving facility efficiency.

- Unified, optimized design across four system sizes, supporting flow rates from 1 L/h to 3600 L/h for seamless experience and reproducibility across scales.
- Integrated multi-valve manifolds create an efficient flow path with minimized hold-up volume and reduced turbulence.
- User-friendly design allows rapid batch changeovers in under 30 minutes without tools, ensuring operational simplicity and enhanced yield.
- Over-molded tubing connections within the **ProConnex® Flow Paths** eliminate risk of leaks common with hose barbs and zip ties.



Learn more about [KRM™ Chromatography Systems](#)

Achieve consistent performance and improved operational efficiency with pre-packed columns

OPUS® Pre-packed Chromatography Columns

OPUS® Pre-packed Chromatography Columns streamline downstream processes, ensuring supply chain robustness and improving facility efficiency. Columns are pre-packed with user-specified resin and delivered ready-to-use for GMP processing, providing flexibility and scalability for process development, process validation, and large-scale manufacturing.

OPUS® Columns offer the highest level of consistency in downstream processing for biological drug purification and are used in the manufacturing of hundreds of clinical and commercial molecules.



Learn more about [ready-to-use OPUS® Pre-packed Columns](#)

Gently process shear-sensitive molecules with ultimate flexibility

KrosFlo® KTF+ TFF Systems

KrosFlo® KTF+ TFF Systems combine gentle processing for shear-sensitive molecules with robust configurability to support multiple unit operations. Volumes spanning 10 to 5,000 L provide the flexibility to process both small and large batch sizes within the same platform.

Leverage KrosFlo® KTF+ TFF Systems for cell expansion in perfusion mode, clarification, volume reduction prior to column loading, and UF/DF applications.

DOWNSTREAM



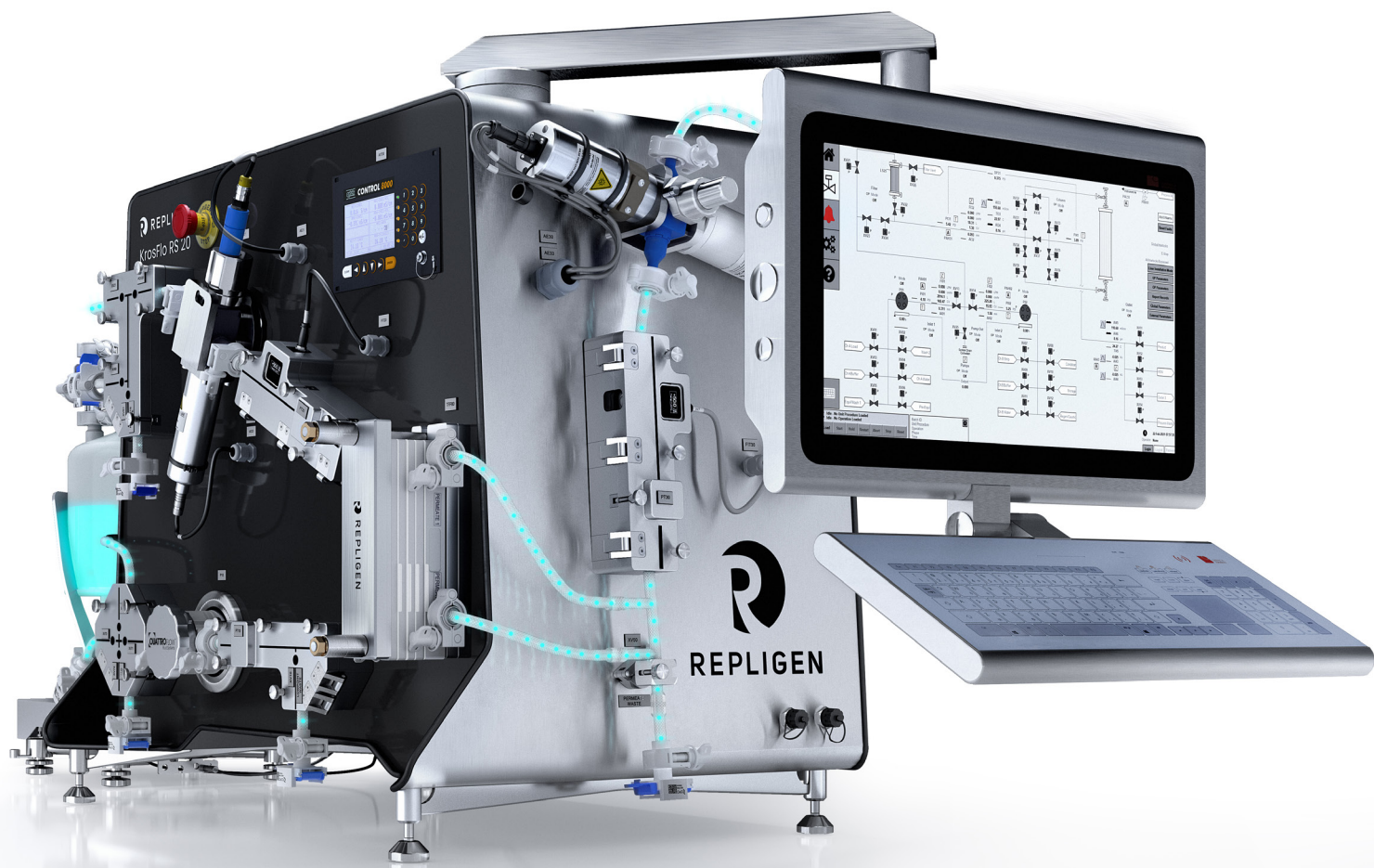
Learn more about [KrosFlo® KTF+ TFF System](#)

Maximize performance with production-ready systems and end-to-end automation

KrosFlo® RS TFF Systems

KrosFlo® RS TFF Systems maximize performance with intelligent controls, allowing users to automate the entire operation for reliability and repeatability across batches, providing superior yields for processes from 20 mL to 2000 L.

Easily create, edit, and modify recipes using the **KlariFi™** recipe editor without compromising performance or compliance.



DOWNSTREAM

Learn more about [KrosFlo® RS Systems](#)

Automate TFF processes with plug-and-play technology

KrosFlo® KR2i, KMPi, and FS TFF Systems

The widely-used **KrosFlo® KR2i, KMPi, and FS TFF Systems** support volumes of 2 mL to 500 L and feature a modular design with a peristaltic or diaphragm feed pump and 13 automated process modes to reduce manual operations.



[Learn more about KrosFlo® TFF Systems](#)



Precisely measure concentration directly within the process stream

KrosFlo® RPM™ TFF Systems



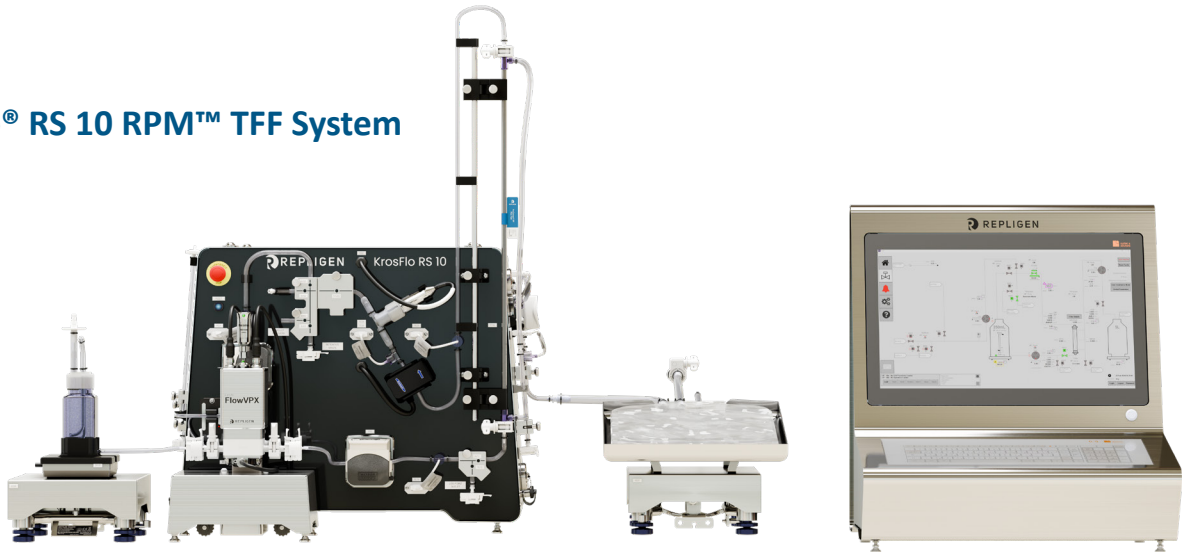
Process Analytics Technology-driven TFF systems

By seamlessly integrating the **CTech™ FlowVPX® in-line spectrophotometer** with **KrosFlo® TFF Systems**, precise concentration measurements are taken directly within the process stream, ensuring continuous monitoring and optimization of protein concentration. Through automation driven by Process Analytical Technology (PAT) principles, **KrosFlo® RPM™ Systems** streamline UF/DF processes, consistently achieving desired concentration targets while reducing cycle time and enhancing overall process efficiency. Controlled by direct concentration measurement, KrosFlo® RPM™ Systems provide unparalleled insight and control over bioprocessing operations.

KrosFlo® KR2i RPM™ System



KrosFlo® RS 10 RPM™ TFF System



[Learn more about KrosFlo® RPM™ Systems](#)

Achieve superior bioprocessing efficiency with precision purification solutions

Protein A ligands and AVIPure® Affinity Resins

The world leader in protein affinity ligands

NGL-Impact® A, rSPA, Native Protein A Ligands

Repligen native and recombinant Protein A ligands meet the strict demands of drug manufacturers in terms of purity, reproducibility, binding capacity, and specificity.



Learn more about our complete line of [industry-leading protein A ligands](#)

High-performance, cost-effective affinity resins

Captiva®, Protein A, AVIPure® AAV, dsRNA Clear Resins

Repligen offers a robust and dependable supply of high-performance affinity purification resins for antibodies, proteins, viral vectors, IgGs, dsRNA, and Fc fragments.

- **Captiva® Protein A Affinity Resin** delivers industry-standard results at a fraction of the cost of traditional resins.
- **AVIPure® AAV Affinity Resins** are powerful tools for gene therapy manufacturing.
- **AVIPure® dsRNA Clear Resin** is designed for the capture and removal of dsRNA from mRNA feedstocks.
- **Affinity resins** are available bulk or in pre-packed **OPUS® Columns** for process development and rapid GMP implementation.



Learn more about our [high-performance affinity resins](#)

Execute reliable and scalable UF/DF processes with cost-effective solutions

Spectrum® Hollow Fiber Filters and TangenX® TFF Cassettes

Spectrum® Hollow Fiber Filter Modules

Ideal for UF/DF and microfiltration of shear-sensitive modalities, single-use hollow fiber filters for tangential flow filtration are packed in housings engineered to handle high pressures.

Spectrum® Hollow Fiber Filter Modules for TFF are industry standards in the filtration and concentration of biologics. These unique hollow fiber filters are offered with a broad range of sizes, surface areas, and membrane chemistries designed to facilitate plug-and-play assembly and easy scale-up from small-volume process development and R&D applications to commercial production.



[Learn more about Spectrum® Hollow Fiber Filters](#)

TangenX® SC

TangenX® SC Devices: Self-contained, gamma-irradiated, cross-scalable TFF devices do not require a holder, eliminating the hassle and inefficiency that comes with traditional downstream filtration cassette formats, enabling users to reduce set-up time, eliminate decommission time, and minimize product loss risk.



TangenX® SIUS® and SIUS® Gamma

TangenX® SIUS® TFF Cassettes: Providing cost and process efficiencies while eliminating tedious clean-in-place (CIP) and sanitization steps, these innovative cassettes can help reduce filter costs by 80%, reduce labor costs by 50%, and reduce buffer and water usage by 75% compared to traditional reusable cassettes.

TangenX® SIUS® Gamma TFF Devices: Combining the performance and efficiency of SIUS® Cassettes with a convenient, fully assembled, closed, and sterile system, TangenX® SIUS® Gamma TFF Devices provide up to 30% flux increase over conventional membranes, simplified connectivity, and a library of configurations.

TangenX® PRO

TangenX® PRO Cassettes: Built to withstand multiple cleaning and reuse cycles while maintaining consistent performance, TangenX® PRO Cassettes are engineered with optimized channel geometry and enhanced device rigidity to ensure that hydraulic performance is maintained during processing and scale-up.

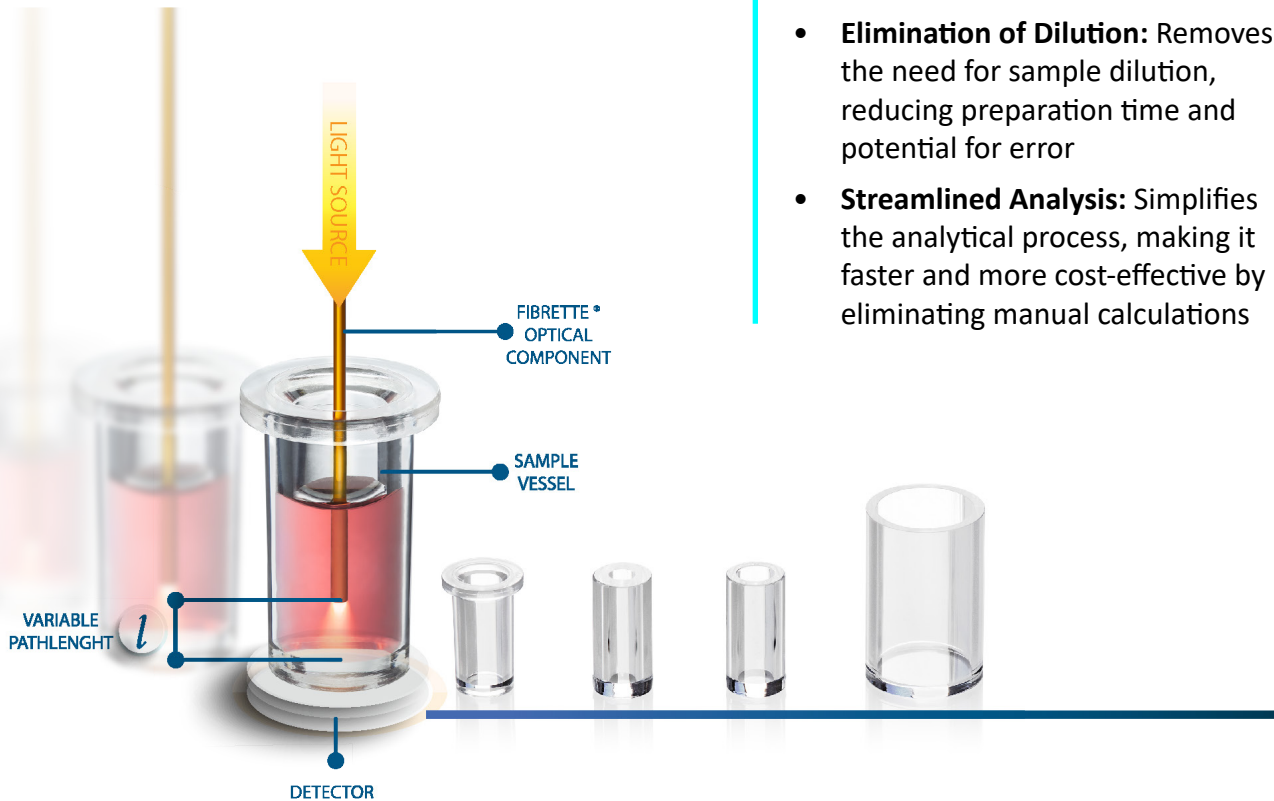


[Learn more about TangenX® TFF Cassettes](#)

Drive downstream process efficiencies with Process Analytical Technology (PAT) solutions

CTech™ SoloVPE® PLUS System and CTech™ FlowVPX® System

Variable Pathlength Spectroscopy improves bioprocess concentration measurements by dynamically adjusting pathlength to capture multiple absorbance readings. This slope-based analysis delivers precise results without dilution or manual calculations, surpassing traditional fixed-path UV-Vis methods.



- **Dynamic Measurement:** Adjusts the pathlength dynamically, enabling multiple data points for more precise and robust analysis
- **Elimination of Dilution:** Removes the need for sample dilution, reducing preparation time and potential for error
- **Streamlined Analysis:** Simplifies the analytical process, making it faster and more cost-effective by eliminating manual calculations



- **At-line Concentration Measurement:** The CTech™ SoloVPE® PLUS System harnesses patented Variable Pathlength Technology (VPT) to deliver rapid, accurate concentration measurements without dilution. By enabling at-line analysis, it provides real-time process insights, helping to identify key characteristics and optimize workflows within minutes, enhancing efficiency and decision-making.
- **In-line, continuous concentration measurement:** The CTech™ FlowVPX® System delivers real-time, highly accurate concentration measurements without the limitations of fixed-path UV-Vis solutions. Designed for GMP environments, it integrates seamlessly into process streams, revealing hidden process characteristics and supporting every stage of downstream bioprocessing.
- The app-based CTech™ ViPER® ANALYTX software automates your analysis, so you can focus only on your process and the resulting report. The intuitive software detects changes in absorbance, and auto adjusts pathlength accordingly.



[Learn more about our PAT solutions](#)

Streamline operations with innovative, designed-for-purpose storage and transfer solutions

ProConnex® Fluid Management and MixOne Mixing Solutions

ProConnex® Flow Paths

ProConnex® Flow Paths for TFF and chromatography processes are single-use and engineered for optimum performance, reproducibility, and time savings.

- System-specific flow paths provide speed and reliability.
- Configured flow paths prioritize process requirements and sterility.
- Designed to streamline operations, provide time savings, and mitigate error, ProConnex® Flow Paths are uniquely suited for applications where every mL is precious, and mistakes are costly.
- Available gamma-irradiated, and endotoxin- and particulate-free.

Contain

Robust, high-purity containment solutions
2D bags, 3D bags, bottles, carboys

Mix

Consistent, low-shear mixing
Single-use rigid carboy and flexible bag mixers

Deploy

Customizable, ergonomic designs
Totes, carts, cleanroom furniture

Connect

Security at the point of connection
Clamps, adapters, overmolding

Control

Precise, configurable flow control
Manual and pneumatic valves, steam valves

Transfer

Optimize transfer of high-value liquids
Silicone & TPE tubing, tubing management systems

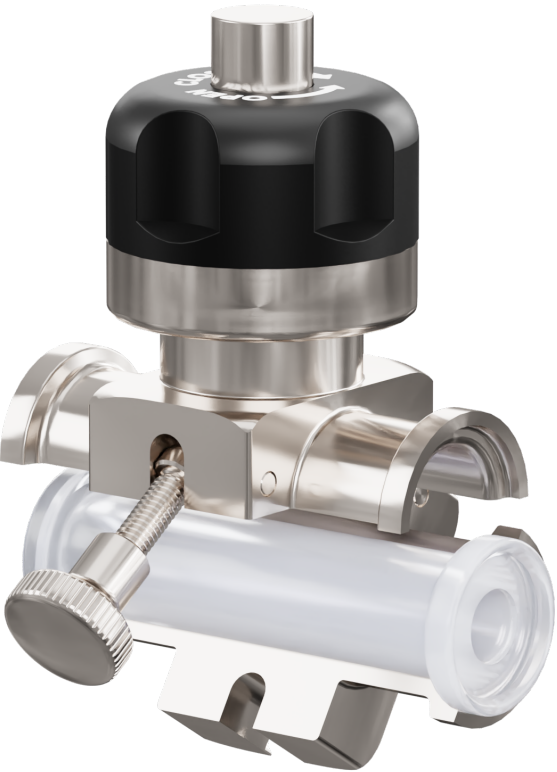
Learn more about our [Fluid Management solutions](#)

Realize efficient, reliable bioprocessing flow control

ProConnex® Single-use Valve Technologies

Revolutionize your bioprocessing workflows with the Repligen **ProConnex® Single-use Valve Solutions**, designed to simplify fluid control while enhancing efficiency and safety. A range of valve types, from Diaphragm Replacement Valves to Pinch Valves, Steam Valves, and more, provides key benefits that align with the demands of modern biomanufacturing.

ProConnex® Valves enable seamless, high-performance fluid control, delivering higher yields, reduced waste, and enhanced operational efficiency.



- **Reduced Downtime:** Tool-free, intuitive set-up minimizes installation time and eliminates cleaning validation.
- **Increased Flow Rates:** Full-bore, encapsulated designs reduce hold-up volumes and flow restrictions for higher process yields.
- **Enhanced Safety and Reliability:** Minimizes shear stress and cross-contamination risks, and ensures dependable performance at point-of-use.
- **Cost Efficiency:** No cleaning required; eliminates batch-to-batch cross-contamination, minimizing waste and operational costs.

[Learn more about ProConnex® Single-use Valve Technologies](#)



Valve Types

- ProConnex® Diaphragm Replacement Valves (DRV):** Enables easy drop-in replacement for traditional stainless steel valves with no cleaning and increased process safety.
- ProConnex® Pinch Valves:** Ideal for precise flow control in tubing paths, with a reliable closure mechanism that maintains consistency even after multiple cycles.
- ProConnex® Steam2 Valves:** Safe, leak-free design for aseptic fluid transfer at industrial scale with minimized dead legs and no tools required.
- ProConnex® Chromatography Column Valves:** Lightweight and gamma-irradiated for a simplified, reliable connection to **OPUS® Pre-packed Columns**, ensuring easy, efficient operation.

Ensure efficient, reliable bioprocessing mixing and handling

ProConnex® MixOne CB-X Carboy and Bag Systems and ProConnex® MixOne RG-X Single-Use Mixing Systems

ProConnex® MixOne CB-X Carboy and Bag Systems

Repligen ProConnex® MixOne CB-X Carboy and Bag Systems deliver cutting-edge mixing solutions for bioprocessing, combining ease-of-use, superior mixing, and secure handling.

- **Ease-of-Use:** Both systems feature user-friendly installation and operation, enabling quick set-up, reliable mixing results, and reduced risk of operator error.
- **Superior Mixing:** The ProConnex® MixOne Carboy and Bag Systems utilize advanced mixing technologies from Metenova, ensuring high-efficiency, low-shear mixing ideal for high-value bioprocess products.
- **Enhanced Safety and Reliability:** Eliminates shear stress and cross-contamination risks, and ensures dependable performance at point-of-use.
- **Scalability and Flexibility:** Providing the rigidity and safety of a carboy or the scalability of a bag, both systems offer reliable mixing performance across a wide range of process sizes and applications.



[Learn more about ProConnex® MixOne Carboy and Bag Systems](#)

ProConnex® MixOne RG-X Single-Use Mixing Systems

- **Superior Mixing with Confidence:** Metenova® Zero Gravity mixing technology and optimized vessel geometry ensure high efficiency mixing and low shear.
- **Scalability in Every Way:** Confidently scale up processes every time with cross-platform compatibility and operational flexibility.
- **Outstanding User Experience:** An intuitive user interface and modular design ensures safe and easy installation. Simply load, lock, and mix.
- **Smarter Mixing for a More Sustainable Process:** Safely remove and reclaim the magnets for a more sustainable workflow. Be part of this next-generation, eco-conscious solution.



[Learn more about ProConnex® MixOne RG-X Single-Use Mixing Systems](#)

Our team of experts ensures rapid solution implementation and optimization

A commercial and technical team committed to supporting you

- **Local Sales Specialists:** Experienced account managers with deep industry background act as one point of contact for customers.
- **Field Application Scientists:** Technical experts provide process design optimization, and post-sales support.
- **Bioprocess Systems Specialist:** Specialists with application, design, and automation knowledge supporting large system projects.
- **Project Managers:** A single point of contact for managing a project from concept to delivery.
- **Automation and Process Engineers:** Software engineers with application knowledge that support system connectivity with other unit operations.
- **Field Service Engineers:** Field-based engineers professionally trained for optimal start-up and post-sales support.

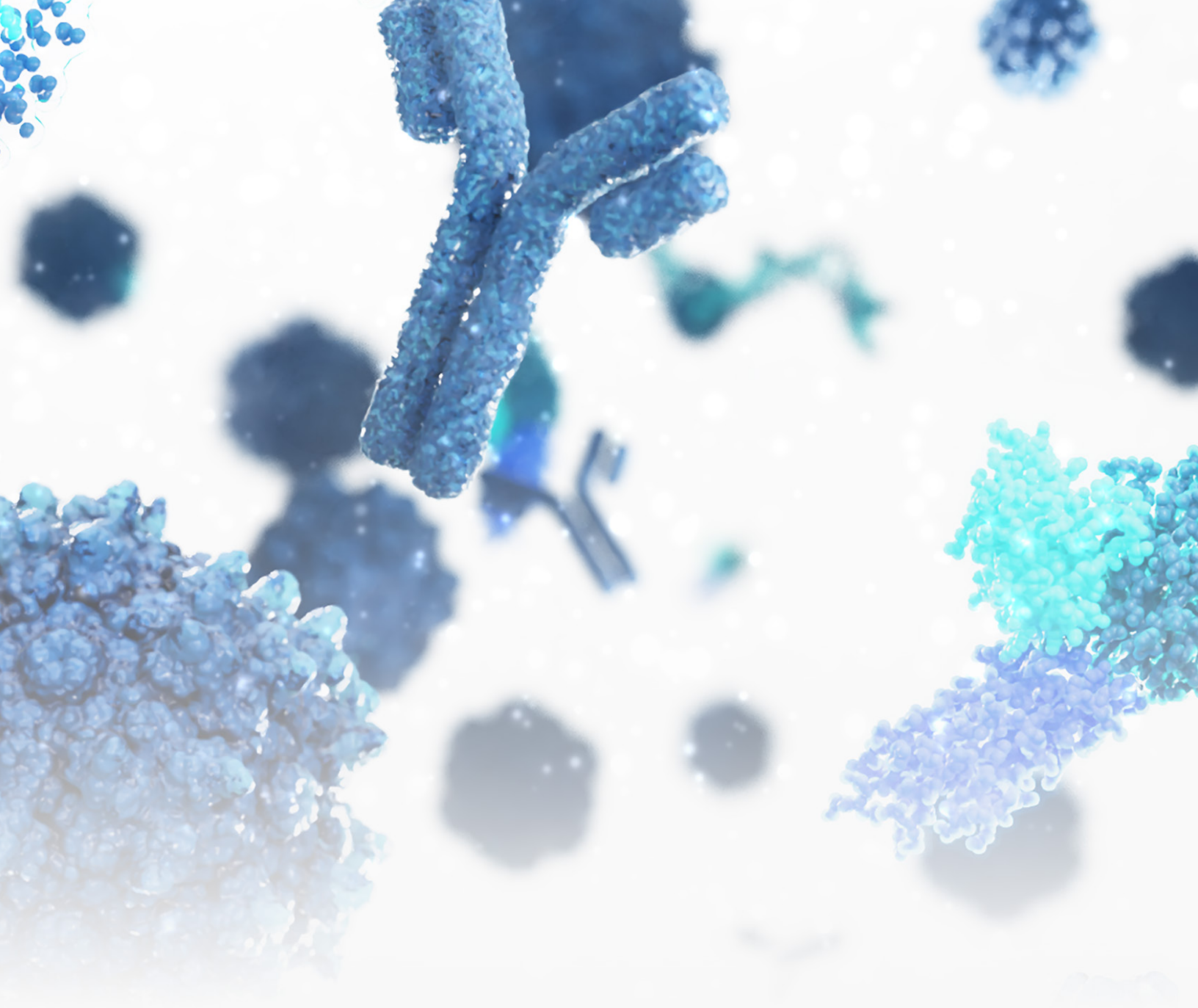


[Contact us for support](#)

Sustainability at Repligen

Repligen remains committed to disciplined climate stewardship and making meaningful, measurable impacts. Motivated by doing the right thing and creating value, our action-oriented team continues to advance our sustainability strategy and raise ambitions year over year.

[Access the Repligen 2024 Sustainability Report](#)



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