

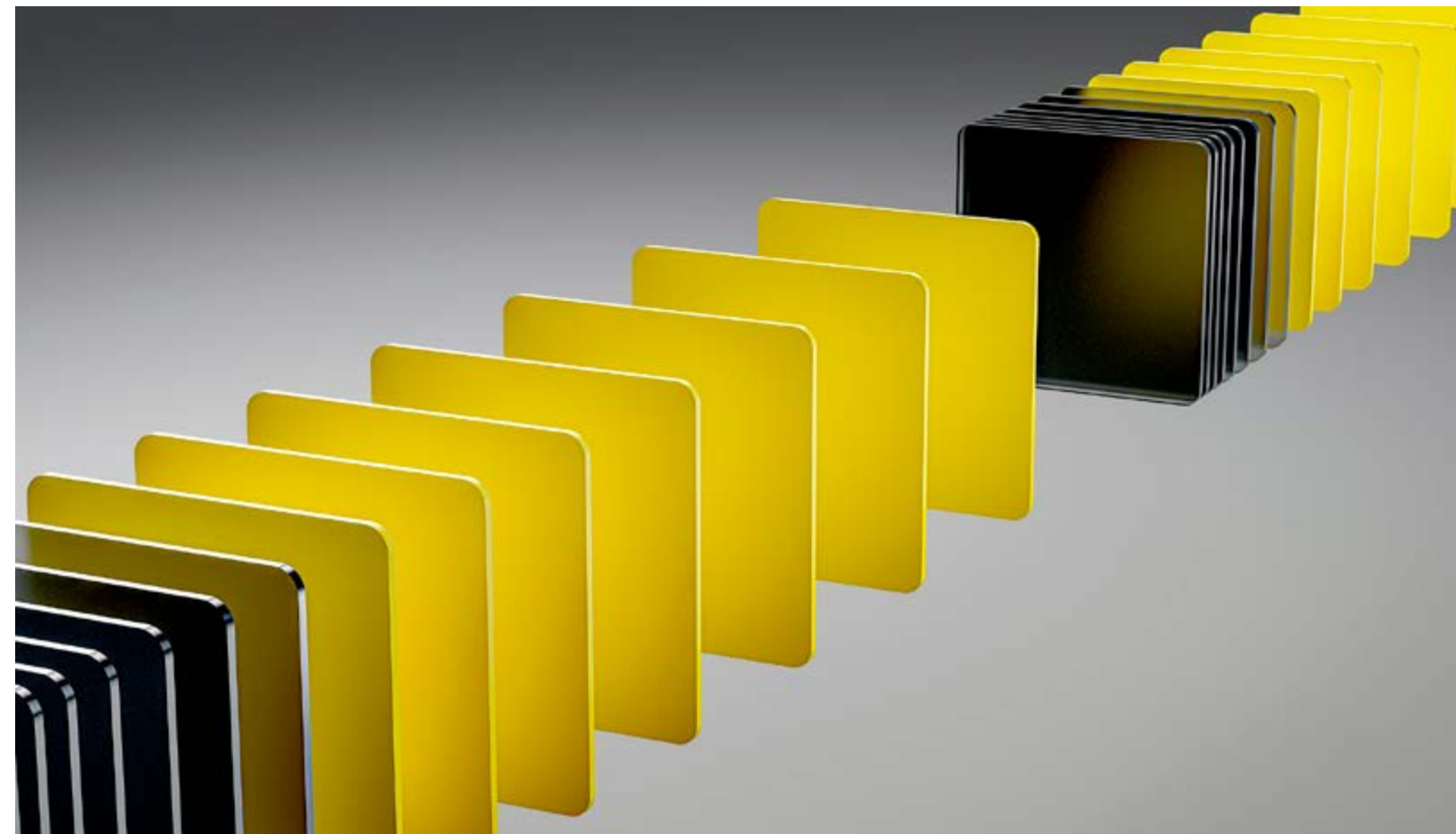
Simplifying Progress

End-To-End Cell and Gene Therapy Solutions

[To Start Click Here](#)

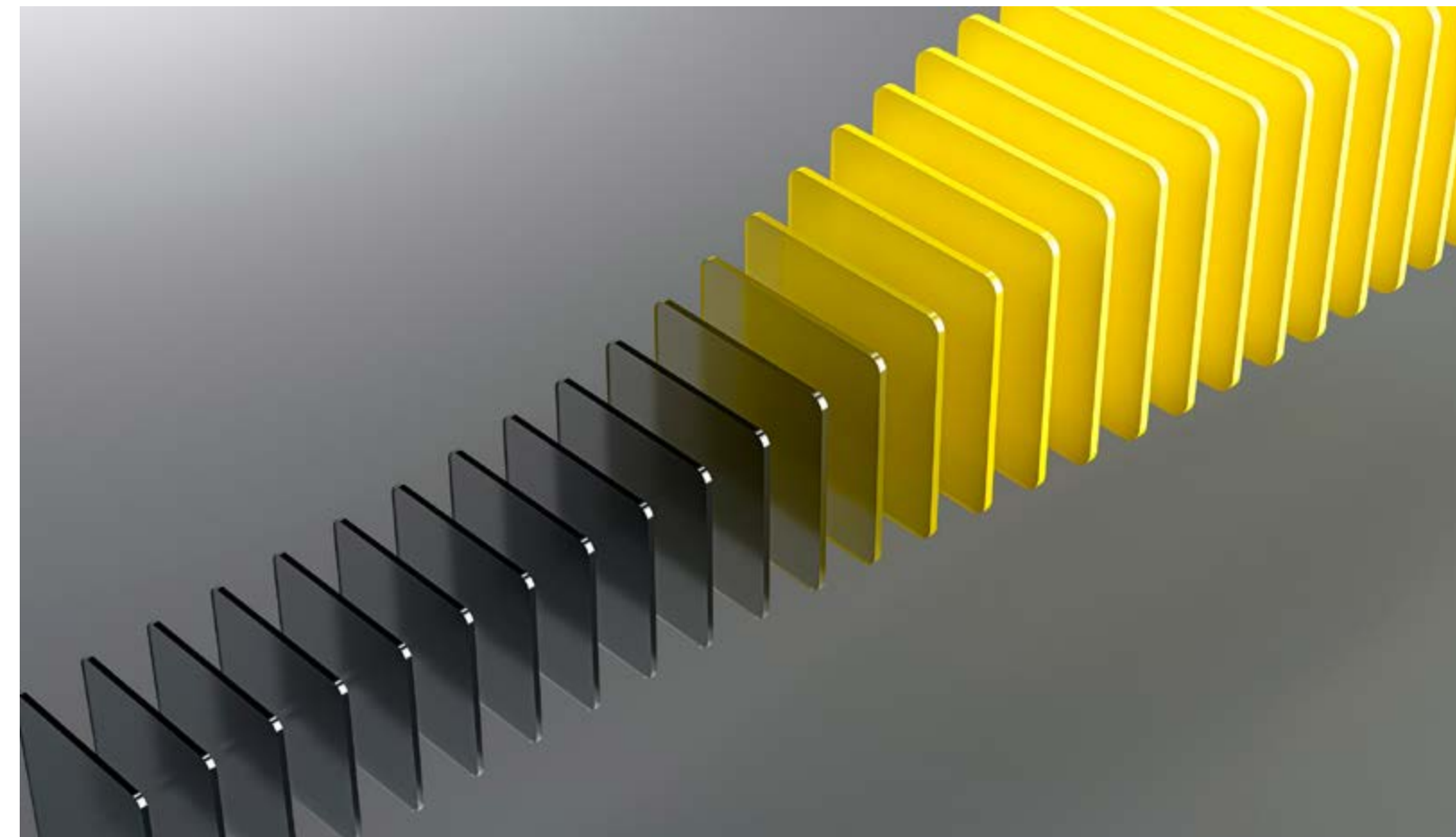
SARTORIUS

Setting the Standard in Cell and Gene Therapy, Together



Setting the Standard in Reproducible Performance

A high-performing process lays the foundation for reproducible results. Accelerate your cell and gene therapy development with high-throughput technologies that promote process efficiency, optimized critical raw materials that improve yield, and intuitive data analytics that inform decision-making.



Setting the Standard in Streamlined Scale-Up

Designed with scalability in mind, our range of cell culture bioreactors, single-use bags, media, and reagents enable seamless process transfer to larger volumes. Streamline revalidation and optimization from the start by leveraging decades of demonstrated expertise in scalable upstream and downstream solutions.

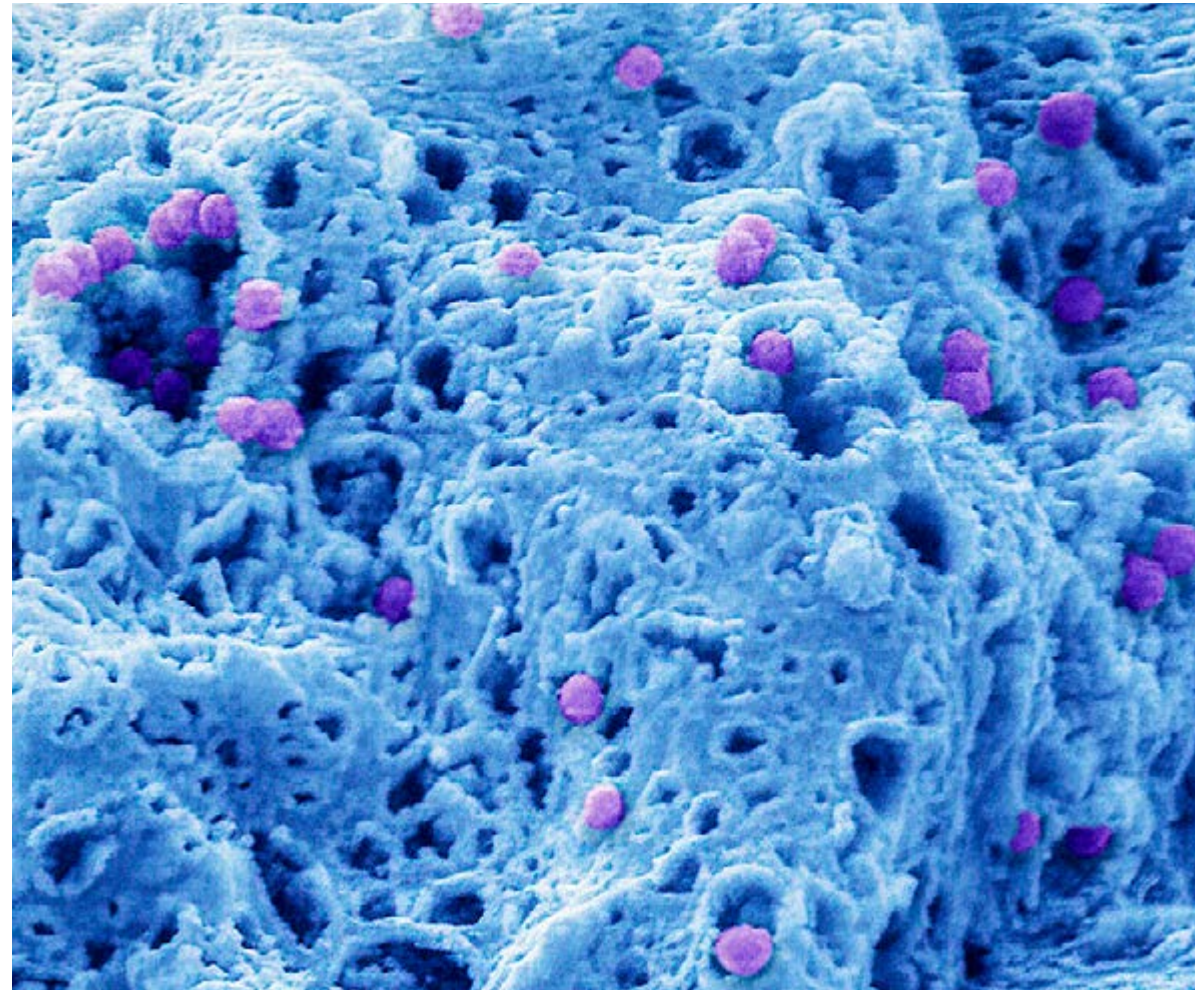


Setting the Standard for a Simplified Path to Regulatory Compliance

In a rapidly changing landscape, adhering to the latest regulatory requirements is critical to simplifying your registrations and interactions with authorities. Meet efficacy and safety standards with products and services backed by rigorous quality-assurance processes and trusted to deliver approved therapeutics world-wide.

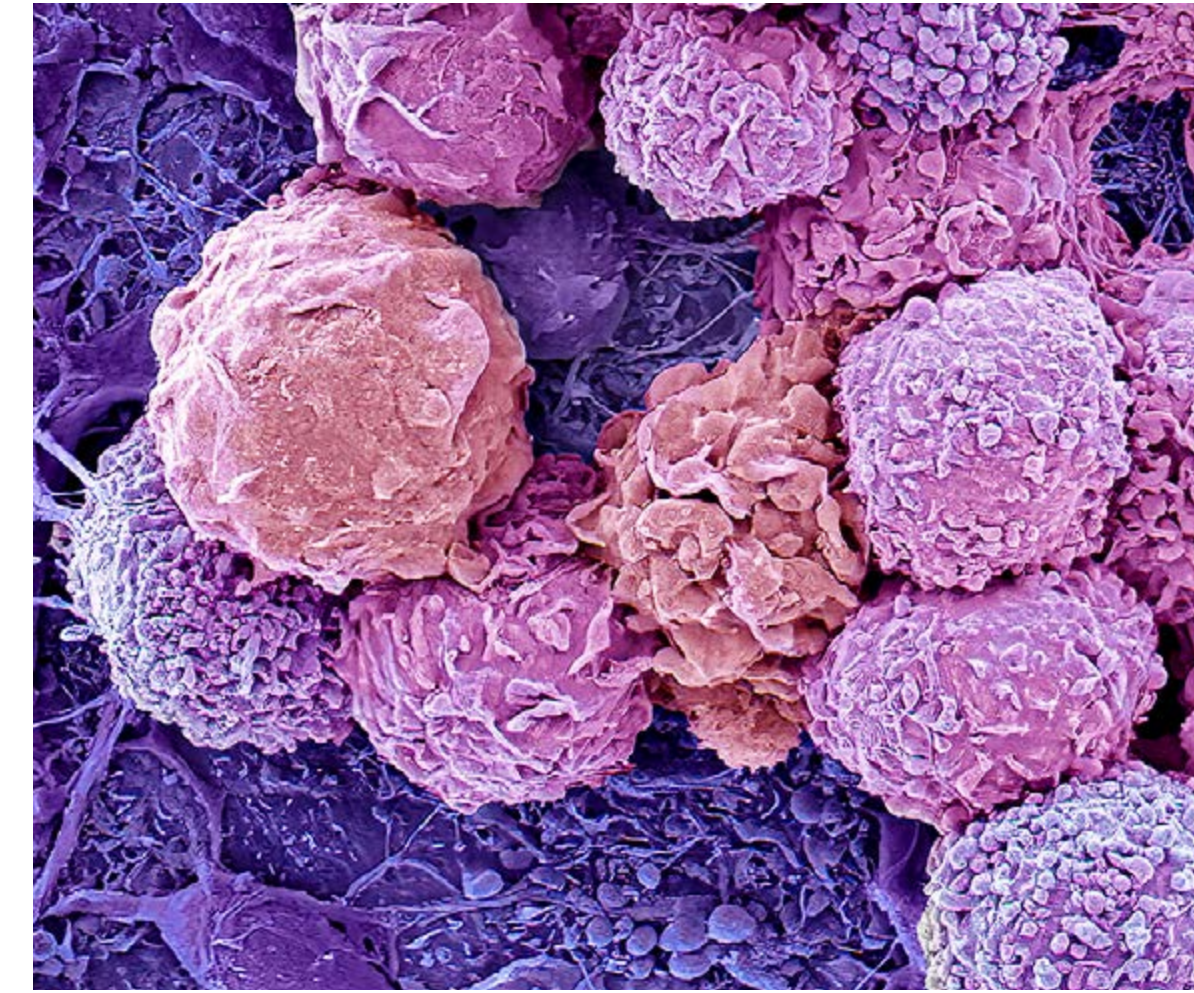
Choose Your Journey

Simplify Your Research, Development, and Manufacturing Workflows



Accelerate your **AAV workflow** with robust, scalable, and high-quality consumables, technologies, and services.

AAV Gene Therapy



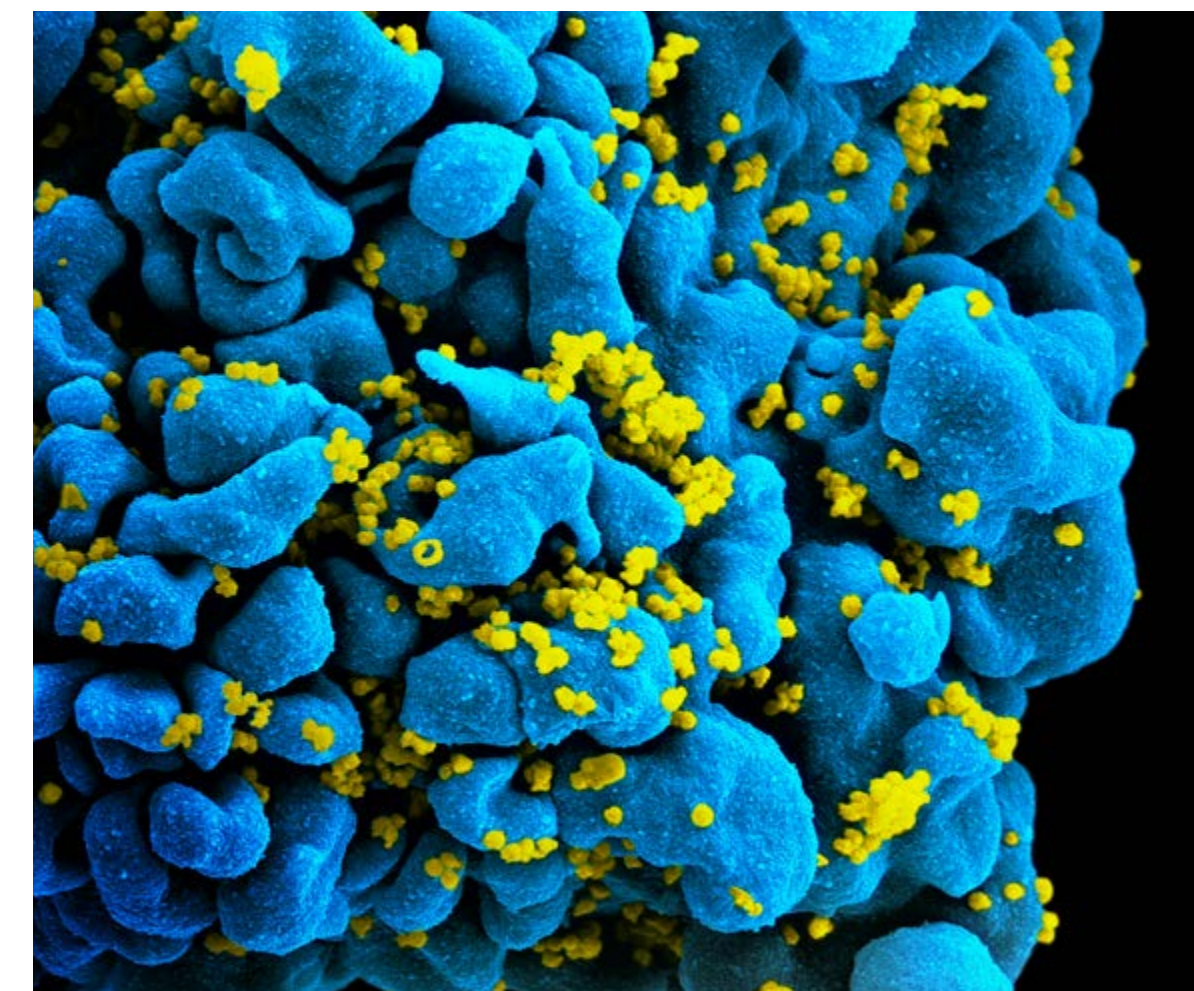
Support each step of **MSC, iPSC, and HSC workflows** from discovery to commercialization.

Stem Cell Therapy



Empower your **immune cell therapy process** with solutions driven by reproducibility, scalability, and quality.

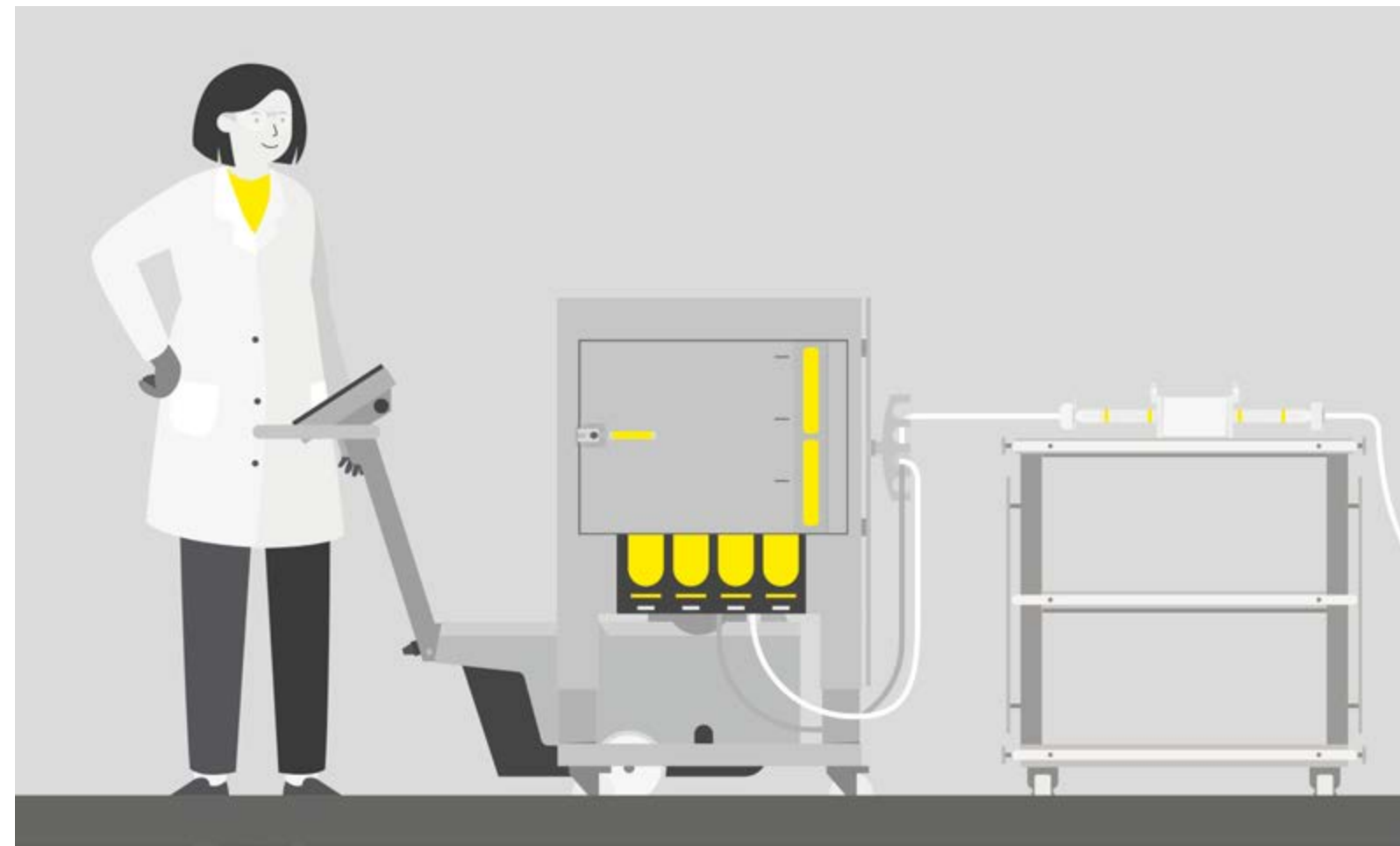
Immune Cell Therapy



Empower your **lentivirus gene therapy process** with solutions driven by performance, scalability, and quality.

Lentivirus Gene Therapy

Solutions for Your AAV Gene Therapy Workflow



1

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3

Fluid Management, Media and Buffer Prep

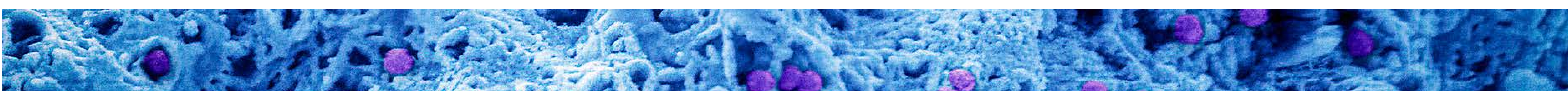
Vector Engineering and Production

Analytics

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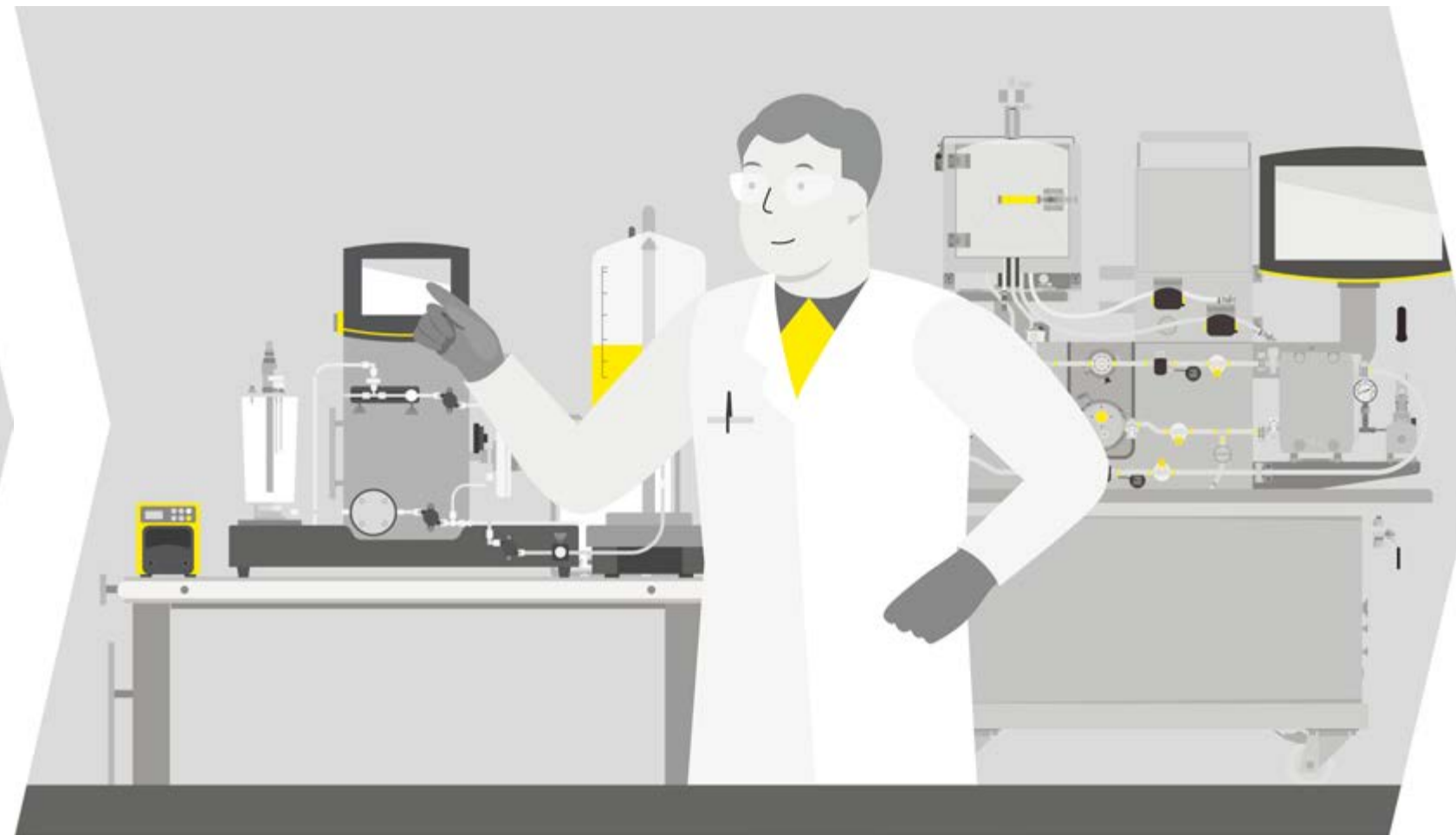
Solutions for Your AAV Gene Therapy Workflow



4

Harvest and Clarification

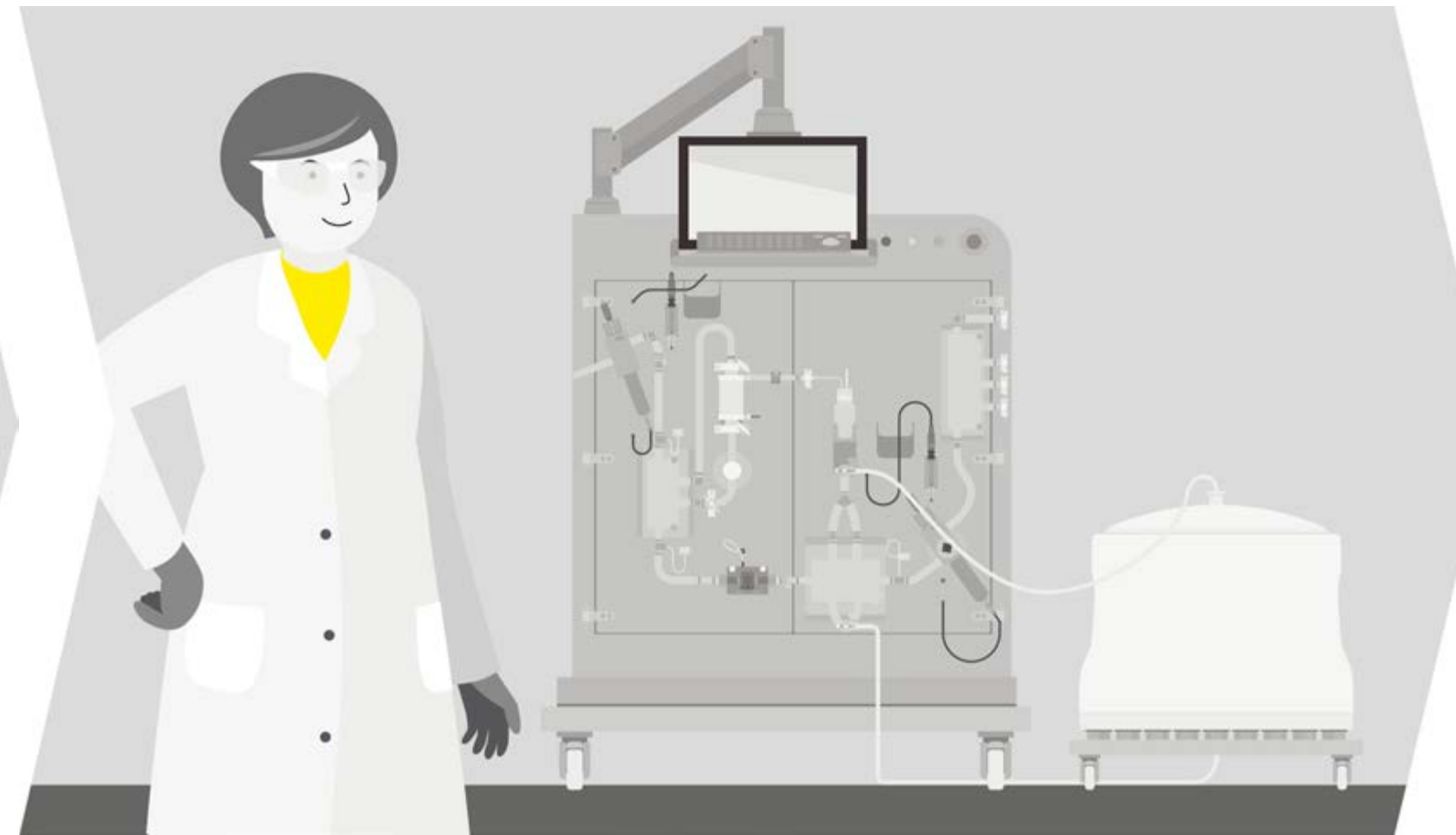
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5

Ultrafiltration and Diafiltration (UF | DF)

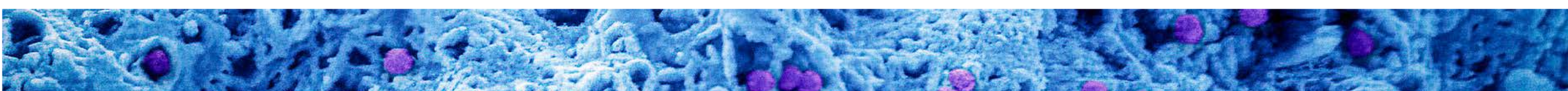
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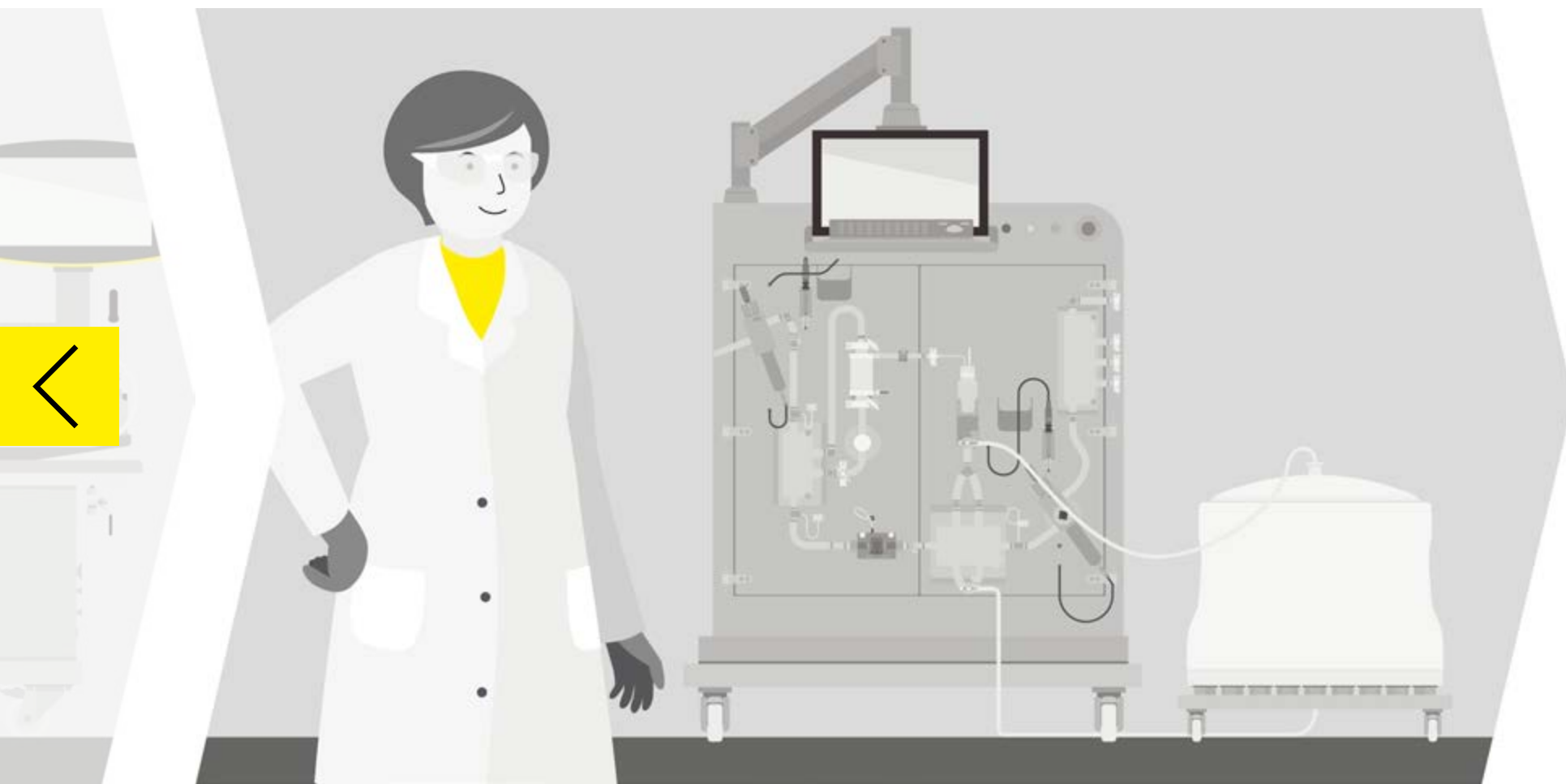
6

Capture and Polishing

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Solutions for Your AAV Gene Therapy Workflow



6

Capture and Polishing

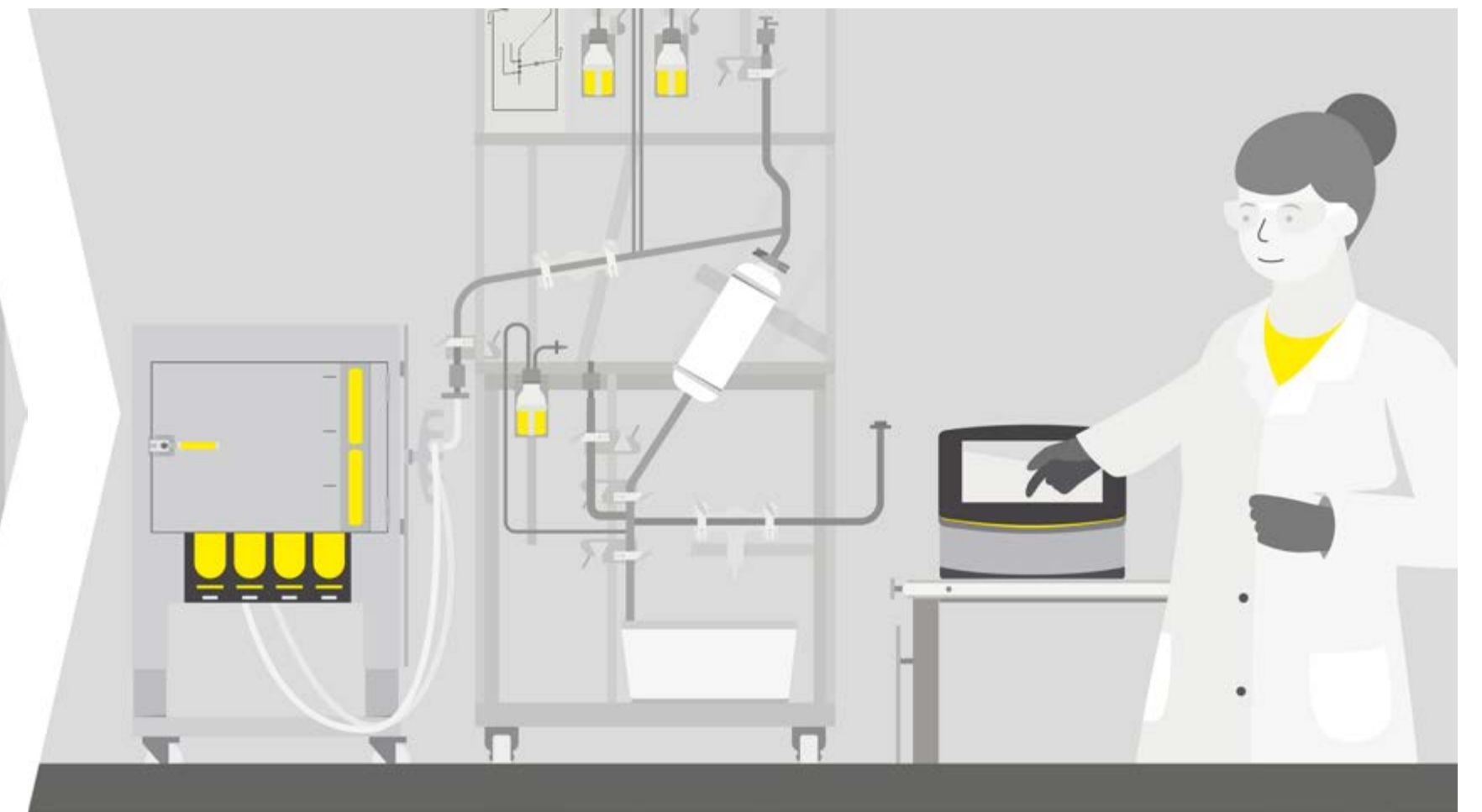
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7

Cold Chain Management

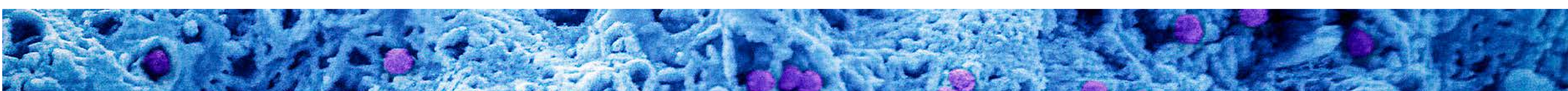
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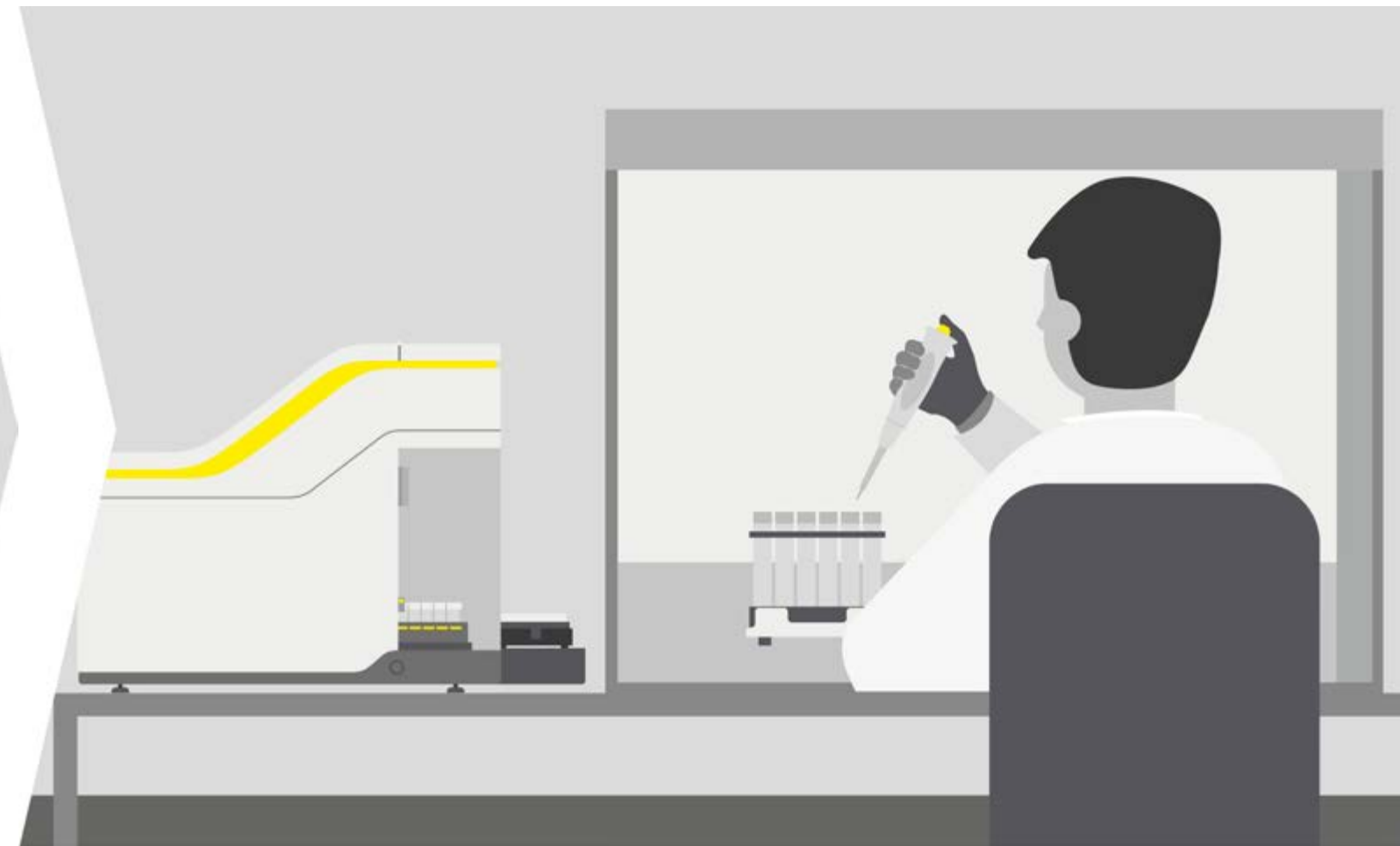
8

Final Filtration, Fill and Finish

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Solutions for Your Stem Cell Therapy Workflow



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Media and Buffer Prep

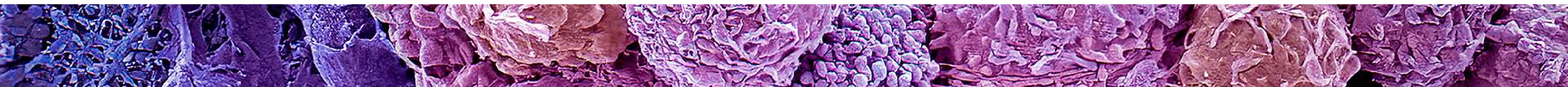
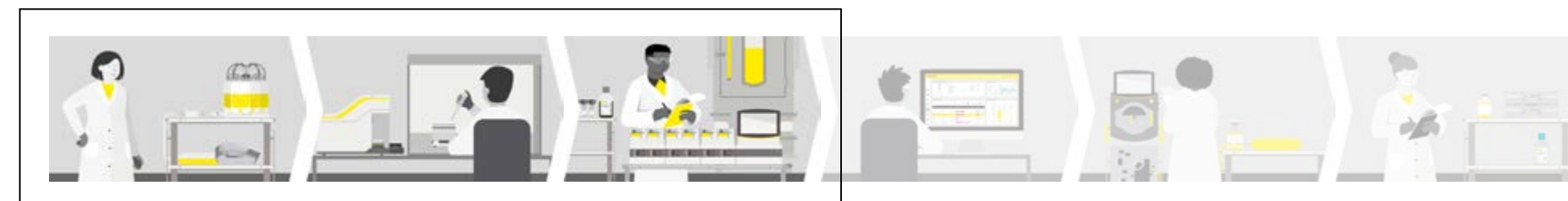
Cell Isolation, Reprogramming, and Banking

Expansion & Differentiation

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Solutions for Your Stem Cell Therapy Workflow



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Analytics

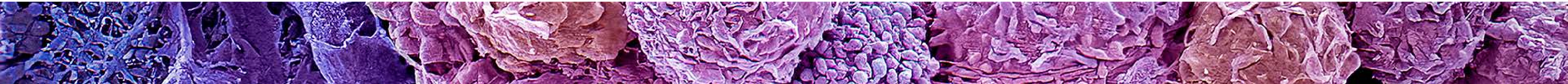
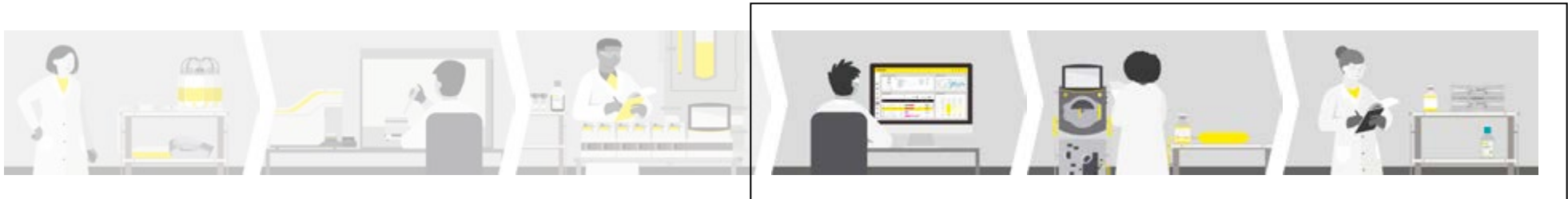
Harvest

Formulation, Fill and Finish

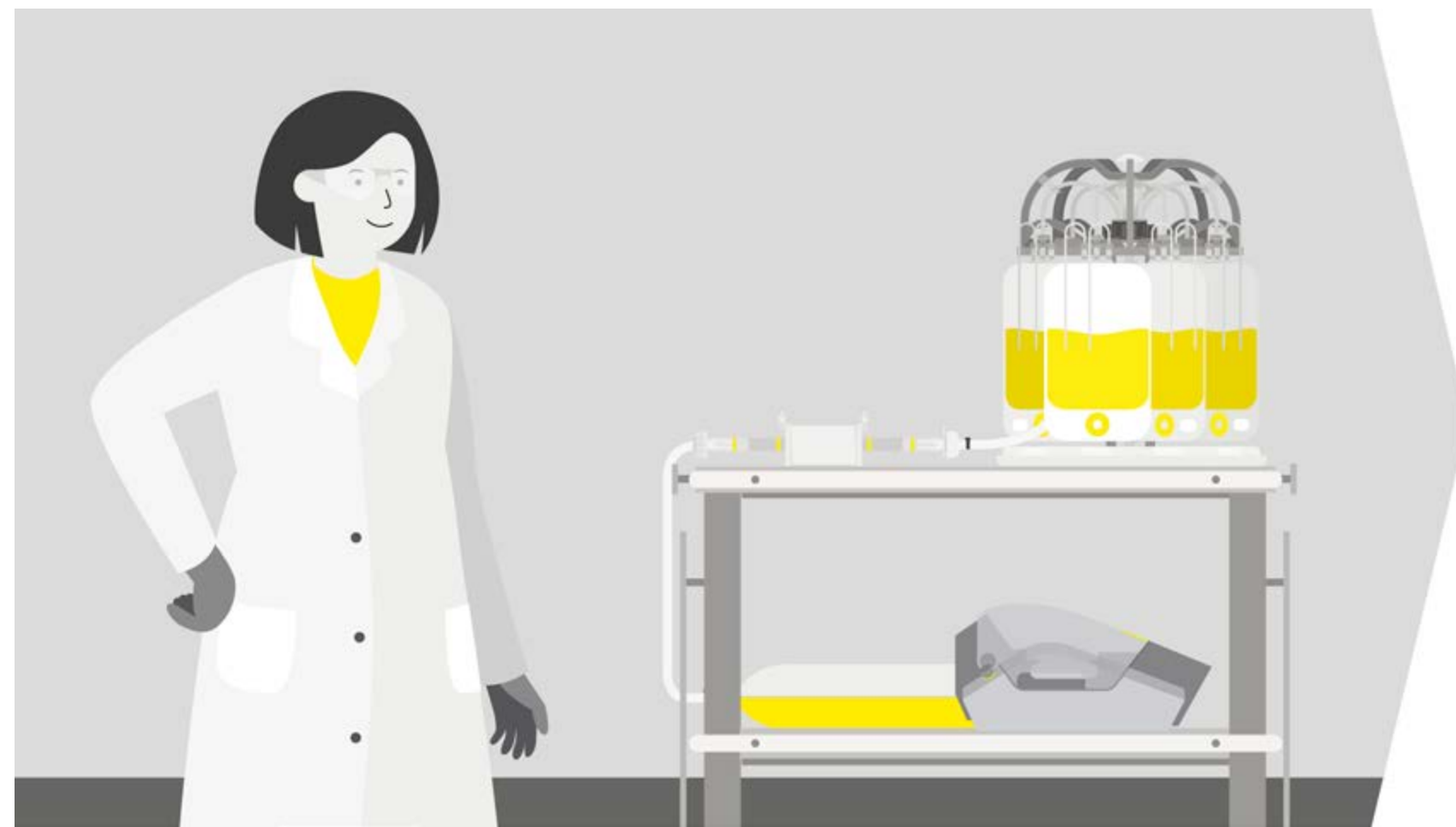
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Solutions for Your Immune Cell Therapy Workflow



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Media and Buffer Prep

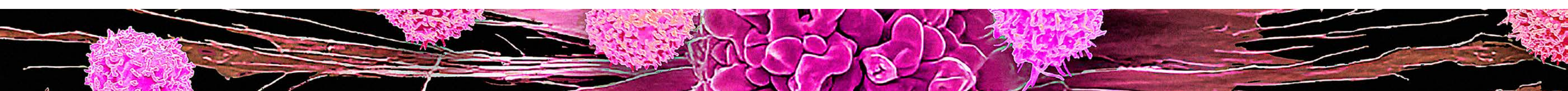
Donor Material Sample | Cell Isolation | Cell Activation

Gene Editing

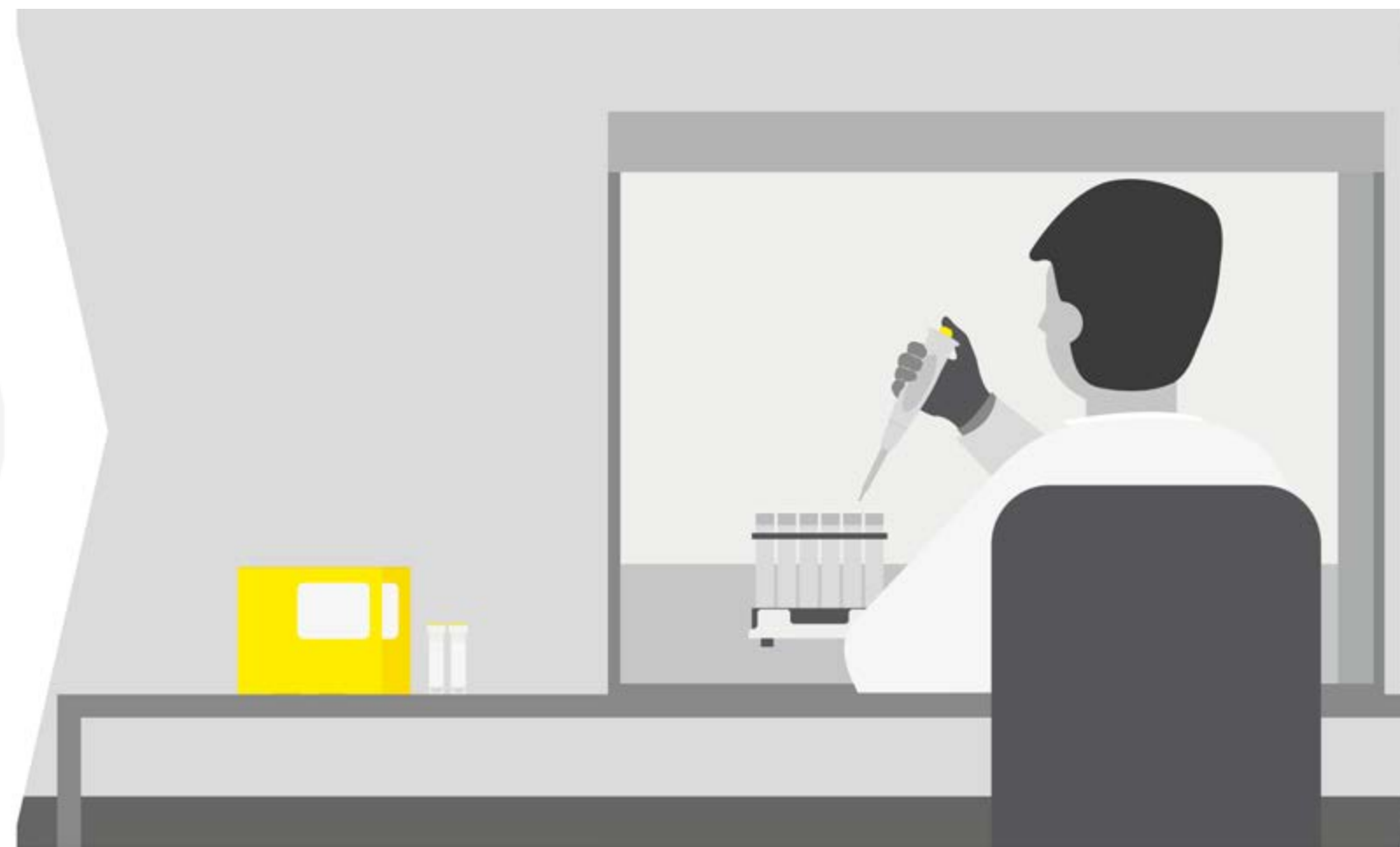
[Learn More](#)

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Solutions for Your Immune Cell Therapy Workflow



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Gene Editing

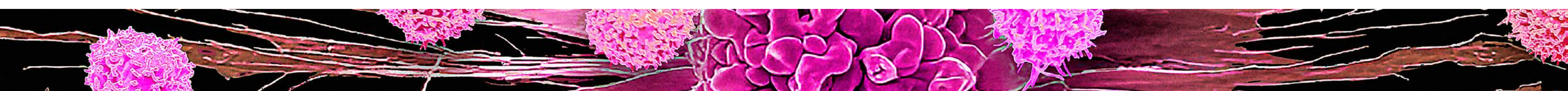
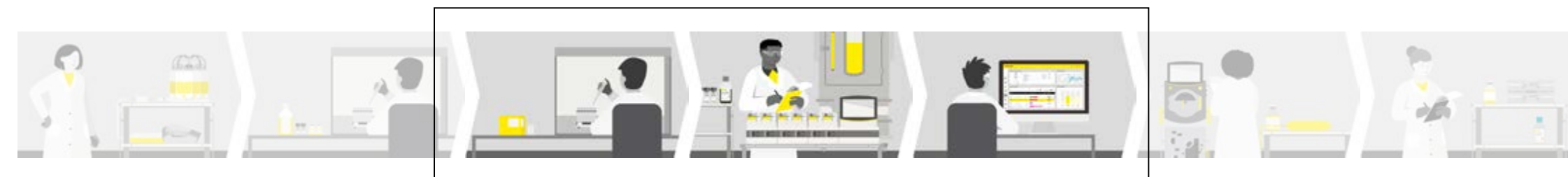
Cell Expansion

Analytics

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Solutions for Your Immune Cell Therapy Workflow



5

Analytics

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6

Harvest

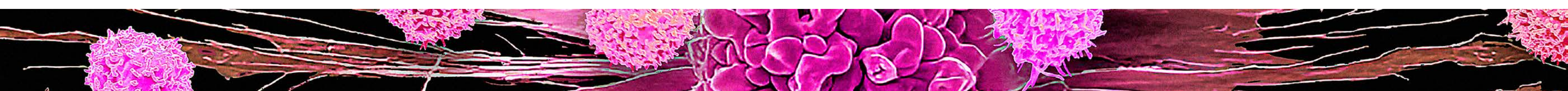
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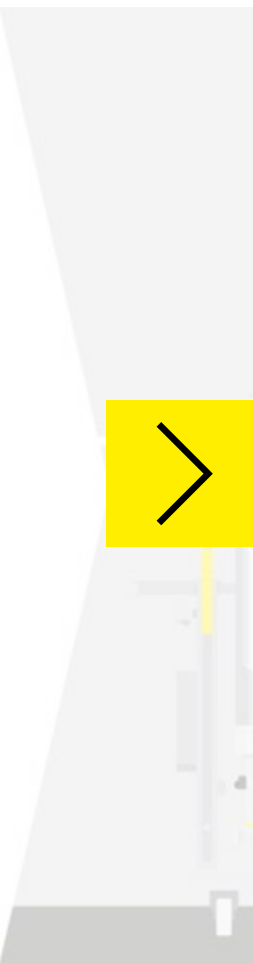
7

Formulation, Fill and Finish

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Solutions for Your Lentiviral Vector Gene Therapy Workflow



1

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3

Fluid Management, Media and Buffer Prep

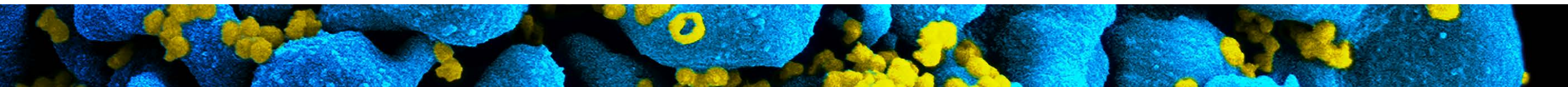
Vector Engineering and Production

Analytics

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Solutions for Your Lentiviral Vector Gene Therapy Workflow



4

Harvest and Clarification

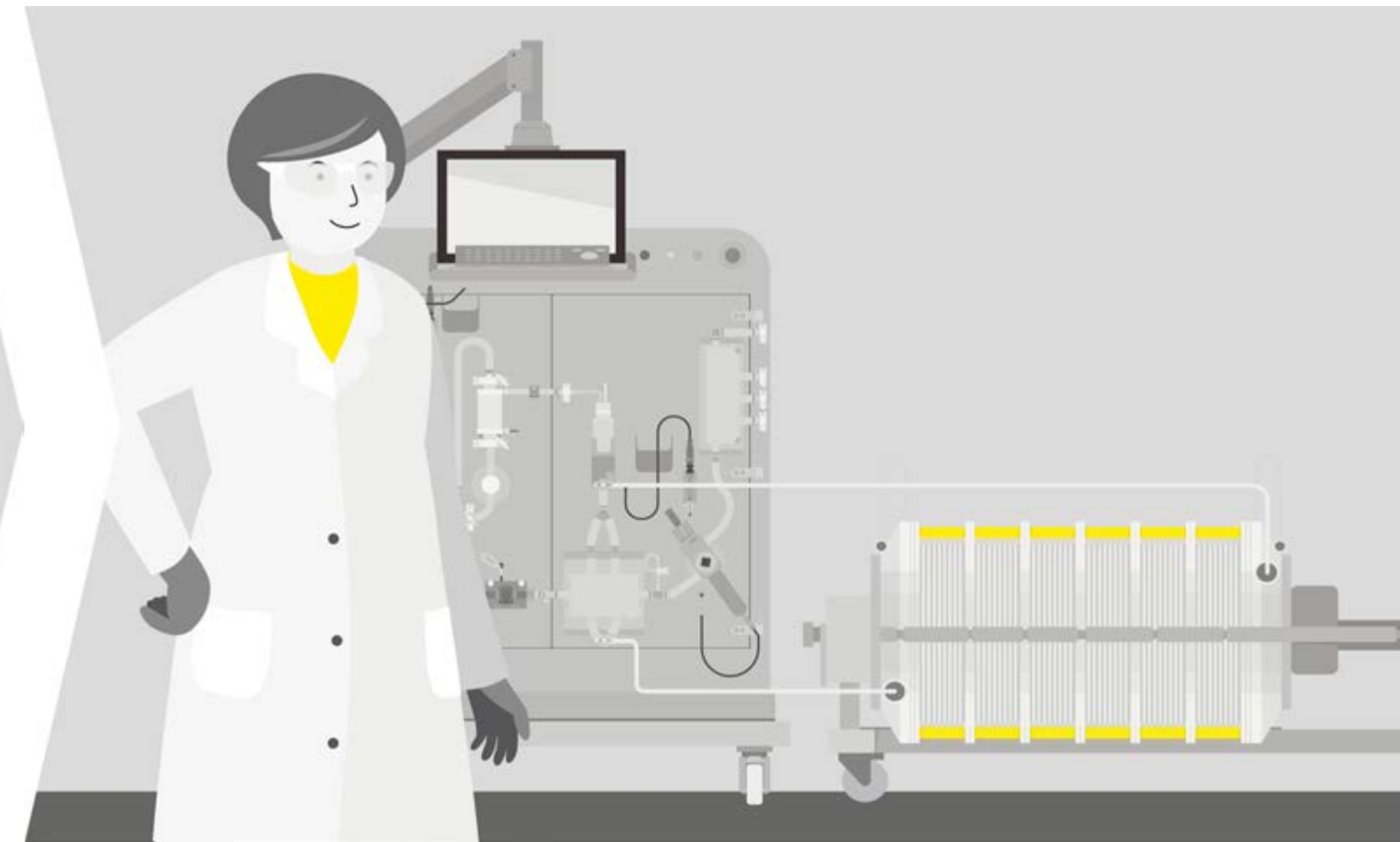
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Ultrafiltration and Diafiltration (UF|DF)

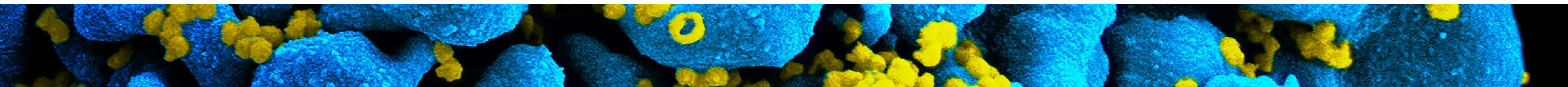
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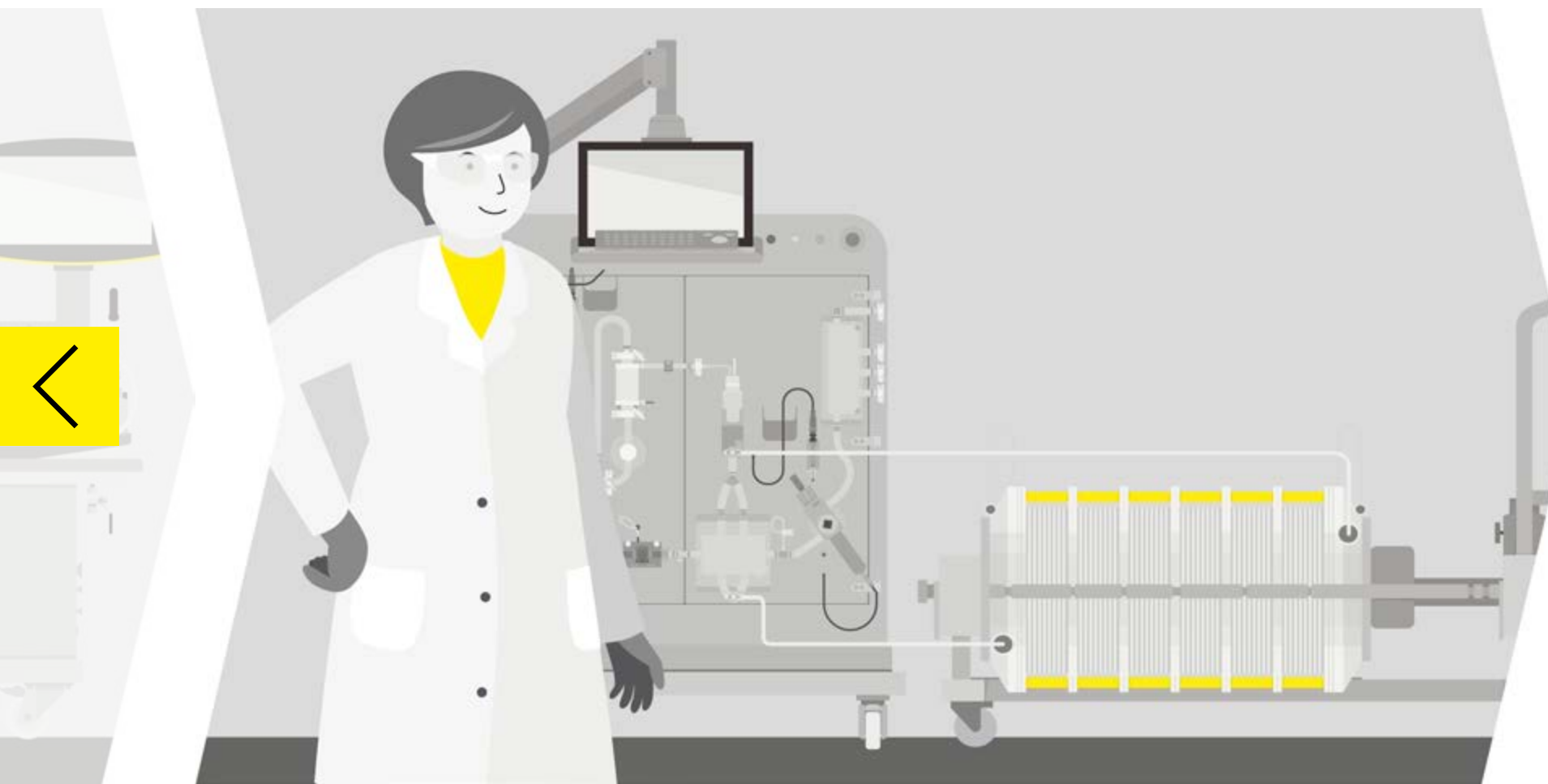
6

Capture

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Solutions for Your Lentiviral Vector Gene Therapy Workflow



6

Capture

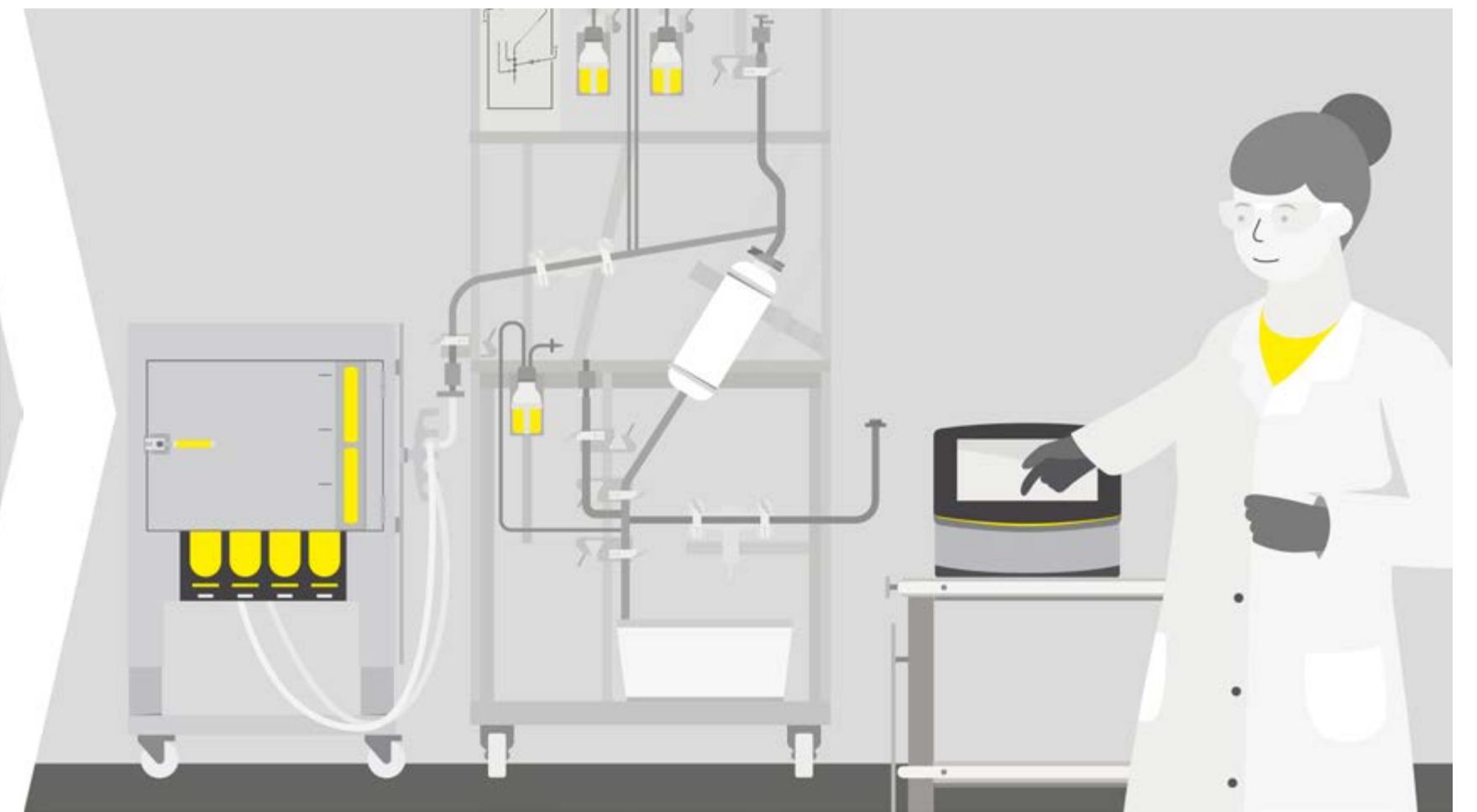
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Cold Chain Management

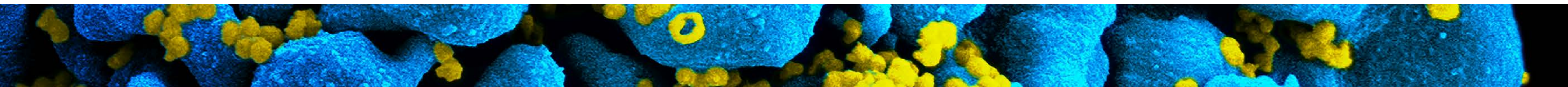
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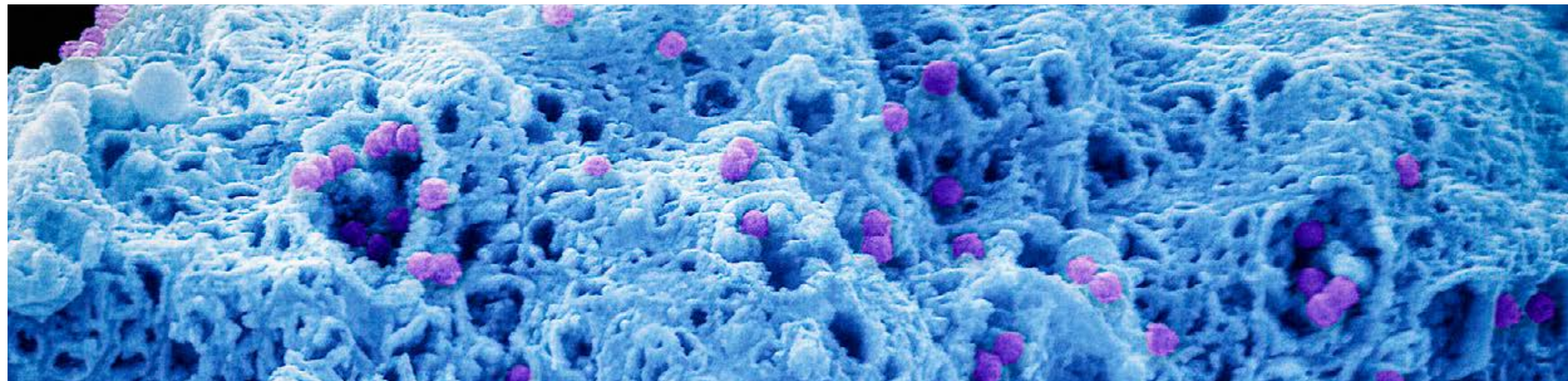
8

Final Filtration, Fill and Finish

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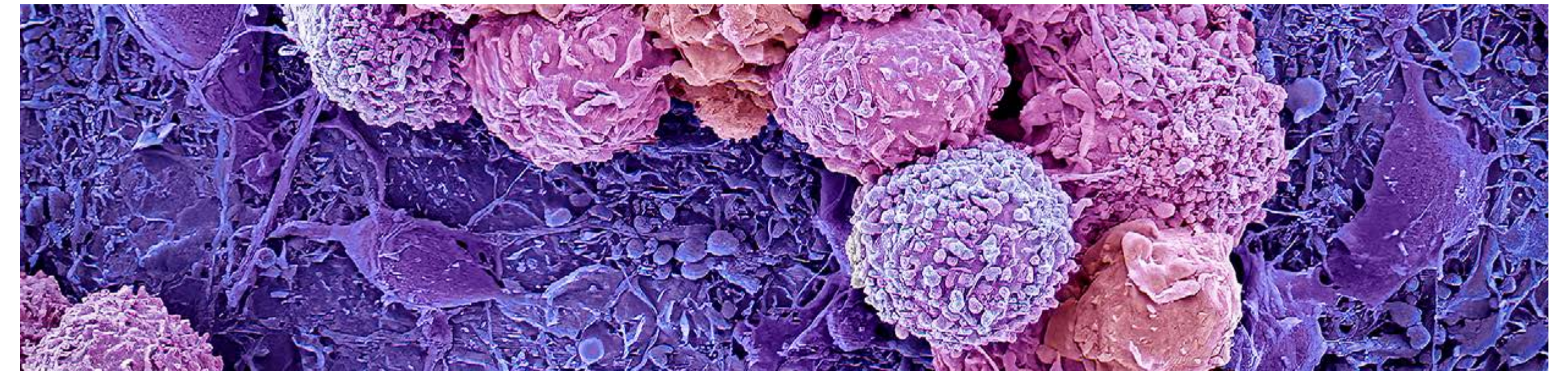


Related Assets



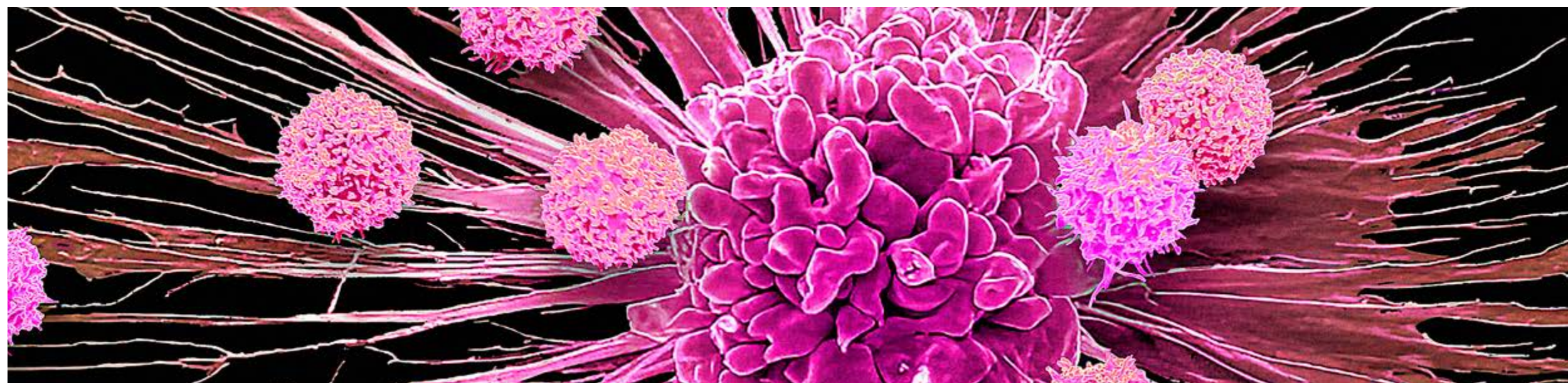
AAV Gene Therapy

See Available Assets



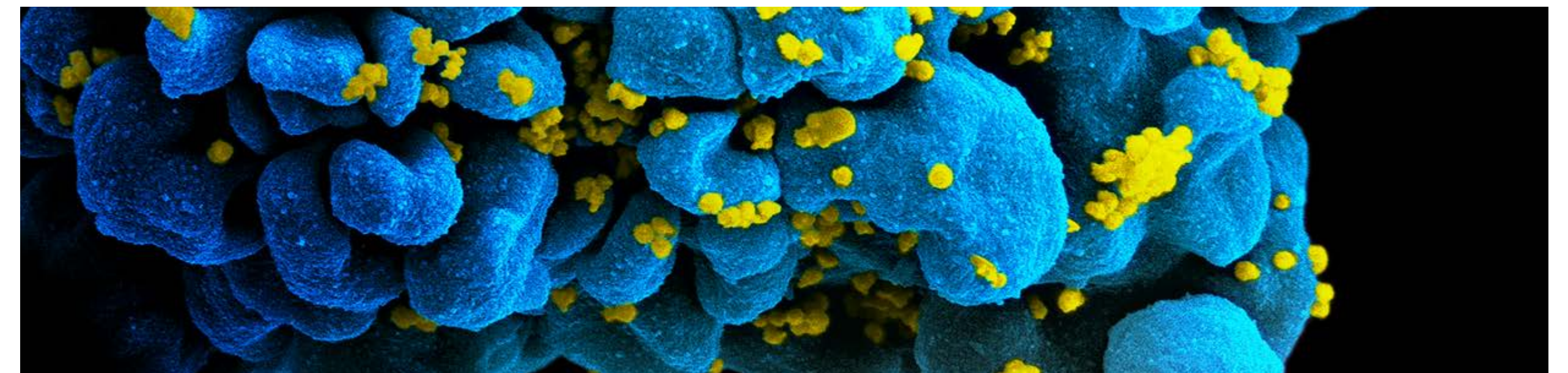
Stem Cell Therapy

See Available Assets



Immune Cell Therapy

See Available Assets



Lentivirus Gene Therapy

See Available Assets



For further information, visit

[sartorius.com/en/applications/cell-and-gene-therapy](https://www.sartorius.com/en/applications/cell-and-gene-therapy)

Germany

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August-Spindler-Strasse 11
37079 Goettingen
Phone +49 551 308 0



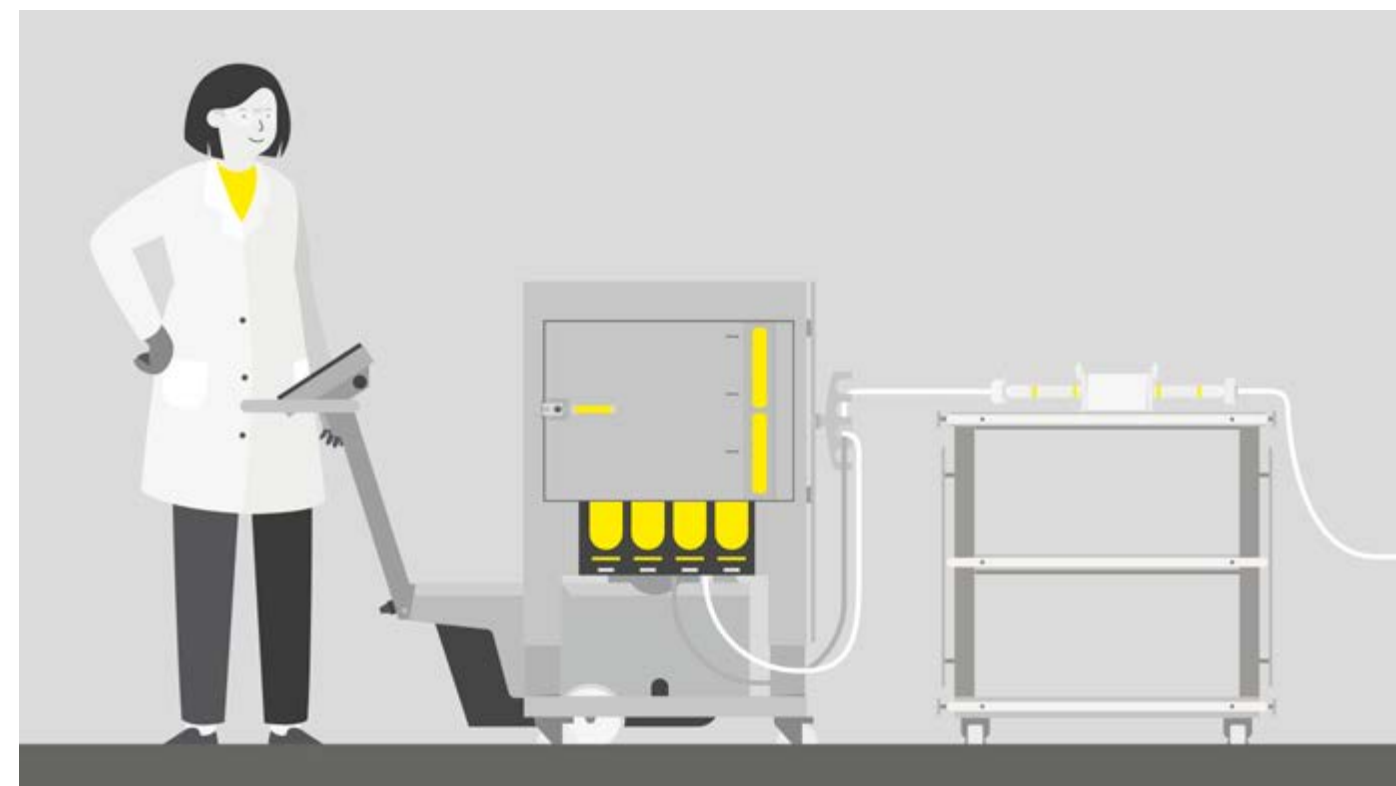
For further information, visit

sartorius.com/en/applications/cell-and-gene-therapy

USA

Sartorius Stedim North America Inc.
565 Johnson Avenue
Bohemia, NY 11716
Toll-Free +1 800 368 7178

Solutions for Your AAV Gene Therapy Workflow



Fluid Management, Media and Buffer Prep

Challenge: Suboptimal media handling with risk of contamination from adventitious agents present in media and buffer.

Solution: Simple and fast media preparation and sterile connection.

Highlighted products:

- [Flexsafe® Pro Mixer](#) for wide range of mixing steps & [Flexsafe® 2D](#) and [3D](#) bags
- [Biowelder® TC](#): Automated aseptic connection of TPE tubing
- [Extractables and leachables testing](#): Data and support
- [Sartopore® 2](#) filter: Sterilizing grade double layer filter 0,45 | 0,2 µm
- [Virosart® Media](#): Viral retention for cell culture media

1

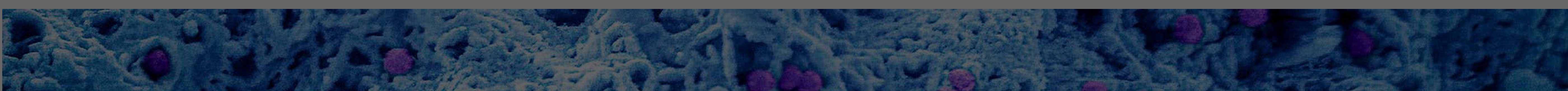
Fluid Management, Media and Buffer Prep

[Learn More](#)

Vector Engineering and Production

[Learn More](#)

Analytics

[Learn More](#)


Solutions for Your AAV Gene Therapy Workflow



Vector Engineering and Production

Challenge: Plasmid selection and design process is complex; media and reagents are unoptimized and have high variability during scale-up.

Solution: Design custom plasmid DNA vectors or acquire them off-the-shelf. Optimize viral vector production using our equipment, raw materials, and services.

Highlighted products:

- [Recombunin® rHA](#) recombinant human albumin as a multifunctional excipient, ancillary, and raw material.
- [FectoVIR® AAV](#) transfection reagent for large-scale AAV manufacturing.
- [pPLUS® plasmids](#) off-the-shelf AAV Helper & RepCap and custom-engineered plasmids.
- [HEK media](#) optimized for AAV transfection and production.
- [Ambr®](#) and [Biostat STR®](#) automated high-throughput and commercial-scale bioreactors.

1

Fluid Management, Media and B...

[Learn More](#)



Solutions for Your AAV Gene Therapy Workflow



Analytics

Challenge: Lengthy and manual process optimization during development and scale-up.

Solution: Optimized analytics, including design of experiments (DOE) and analytical chromatography, enable fast and accurate process optimization. Multivariate data analysis (MVDA) ensures robust process control.

Highlighted products:

- MODDE® DOE you can quickly tap into the power of DOE.
- SIMCA® MVDA tackle ambitious Omics projects, model complex systems and gain the deep process understanding needed to drive growth.
- CIMac™ HPLC analytical columns provide fast and reproducible monitoring and quantitation of empty/full capsids, aggregates, impurities (DNA, proteins), etc.
- Octet® Bio-layer interferometry (BLI) platform rapid quantitation of AAV capsids in bioprocess development for gene therapy.
- PATfix® analytical liquid chromatography which can determine full and empty AAV content for process and product yield monitoring.

1

Fluid Management, Media and B...

Learn More

Solutions for Your AAV Gene Therapy Workflow



Harvest and Clarification

Achieve high AAV recovery from cell lysates with fast, scalable harvest and clarification solutions.

Highlighted products:

- [Sartoclear®](#) which are cellulose-based depth filters with low virus adsorption.
- [Sartopore® 2 XLG](#) filter: Double layer filter 0.8 | 0.2 mm to enhance recovery and high total throughput.
- [Recombunin® rHA](#) recombinant human albumin, a multifunctional excipient, ancillary, and raw material.

4

Harvest and Clarification

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5

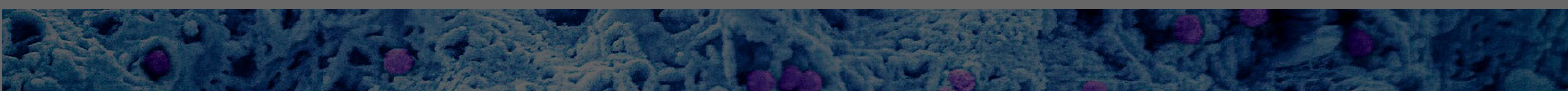
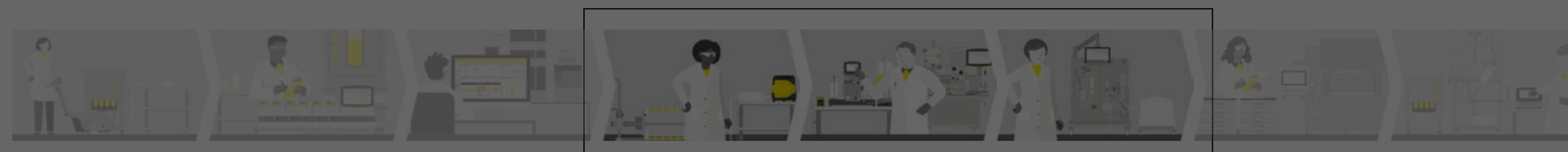
Ultrafiltration and Diafiltration (UF | DF)

[Learn More](#)

6

Capture and Polishing

[Learn More](#)



Solutions for Your AAV Gene Therapy Workflow



Ultrafiltration and Diafiltration (UF | DF)

Tangential Flow Filtration (TFF) enables separation and concentration of AAVs in a gentle and efficient way.

Highlighted products:

- TFF cassettes: Recommended of 30–100KDa cut off Hydrosart. A cellulose based membrane is a low adsorption filter of viral capsid proteins.
- Ambr® Crossflow TFF system for screening conditions using Hydrosart slice 50.
- Sartoflow® Smart and Sartoflow® Expert from benchtop to manufacturing TFF systems.

4

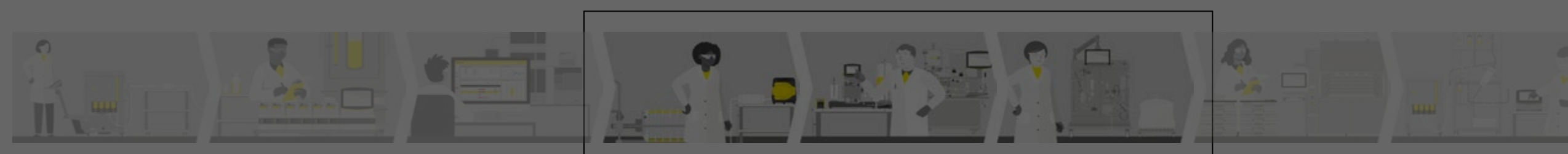
Harvest and Clarification

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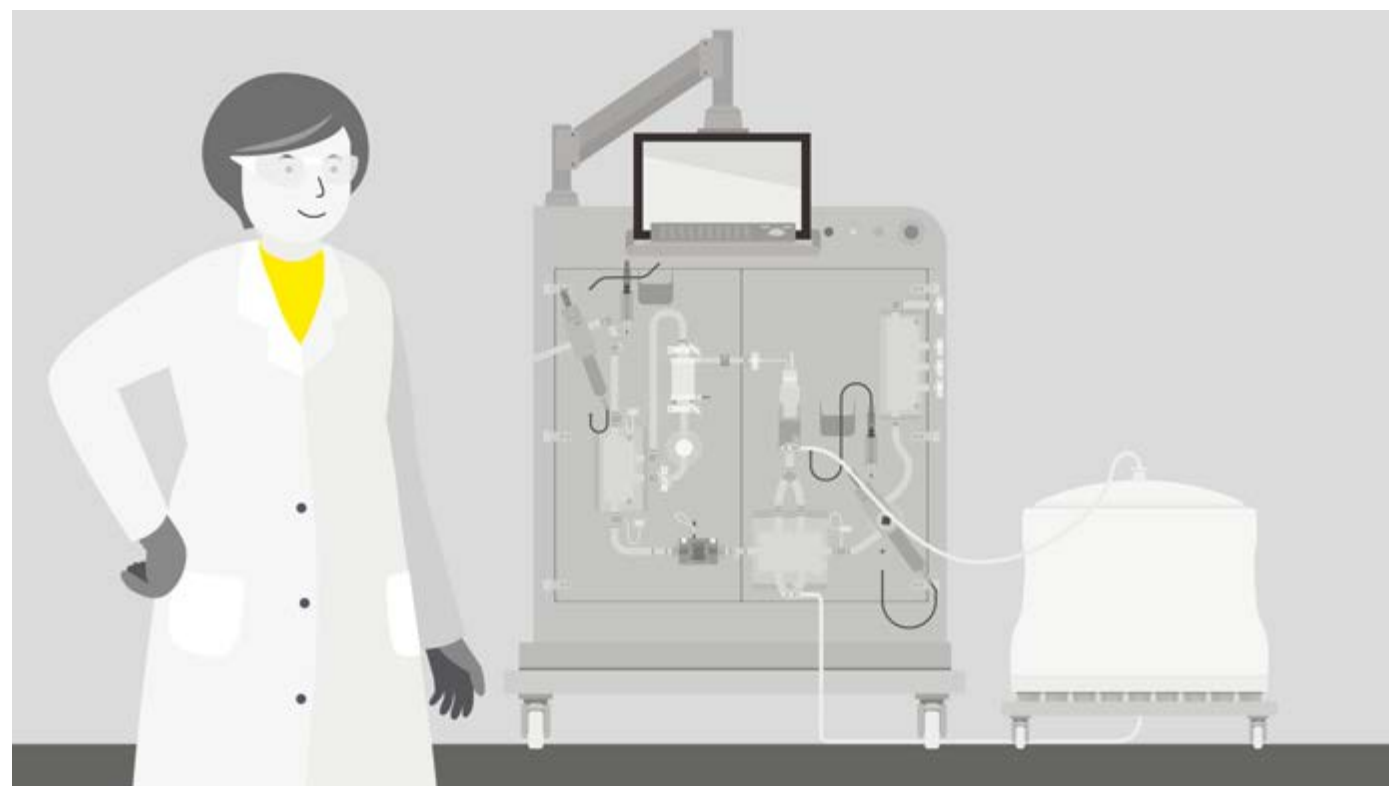
Ultrafiltration and Diafiltration (UF | DF)

[Learn More](#)

Capture and Polishing

[Learn More](#)

Solutions for Your AAV Gene Therapy Workflow



Capture and Polishing

Develop a high-performing chromatography step that removes process- and product-related impurities to achieve a highly pure and potent AAV.

Highlighted products | services:

- CIMmultus® SO3 columns for efficient capture of any AAV serotypes and QA columns for accurate separation of empty/full AAV capsids
- Cornerstone® custom services for optimizing downstream process development and analytics development.

4

Harvest and Clarification

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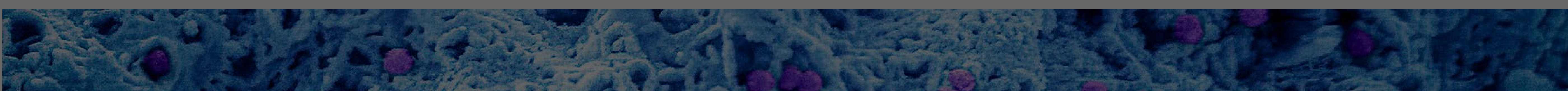
Ultrafiltration and Diafiltration (UF | DF)

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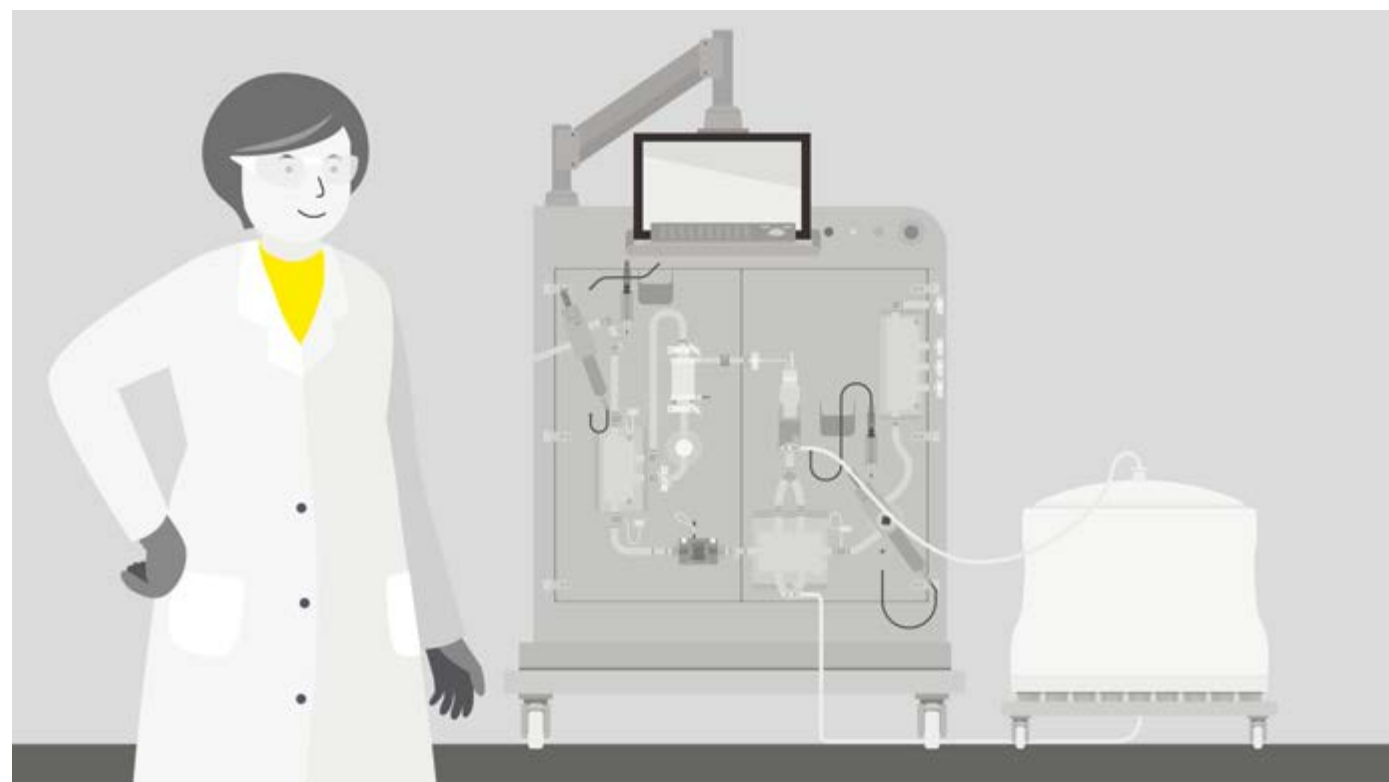
6

Capture and Polishing

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Solutions for Your AAV Gene Therapy Workflow



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Capture and Polishing

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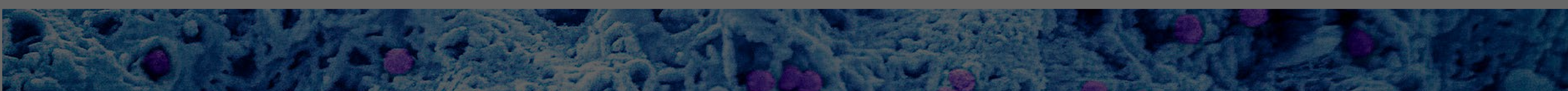
Cold Chain Management

[Learn More](#)

8

Final Filtration, Fill and Finish

[Learn More](#)



Solutions for Your AAV Gene Therapy Workflow



Cold Chain Management

Controlled freeze-thaw and validated shipping solutions for confident storage and transportation of sensitive drug substances | products.

Highlighted products:

- Celsius® freezing platform incl. containers, shippers and accessories

6

Capture and Polishing

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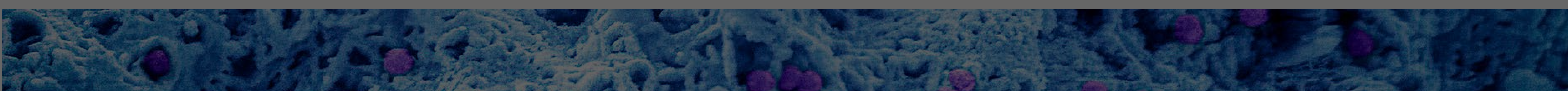
Cold Chain Management

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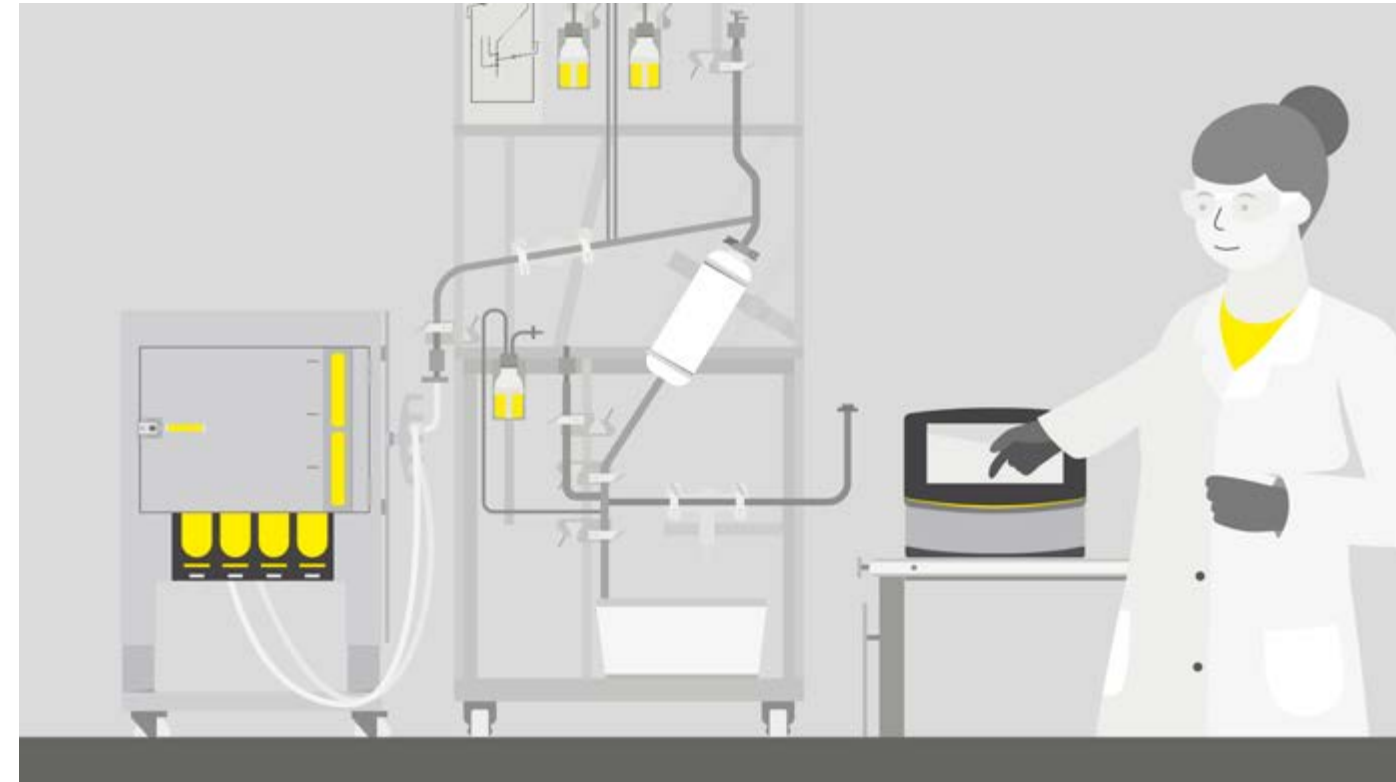
8

Final Filtration, Fill and Finish

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Solutions for Your AAV Gene Therapy Workflow



Final Filtration, Fill and Finish

Challenge: Inconsistent filling accuracy, low product recovery, contamination risk.

Solution: Filtration with high performance, yield, and recovery.

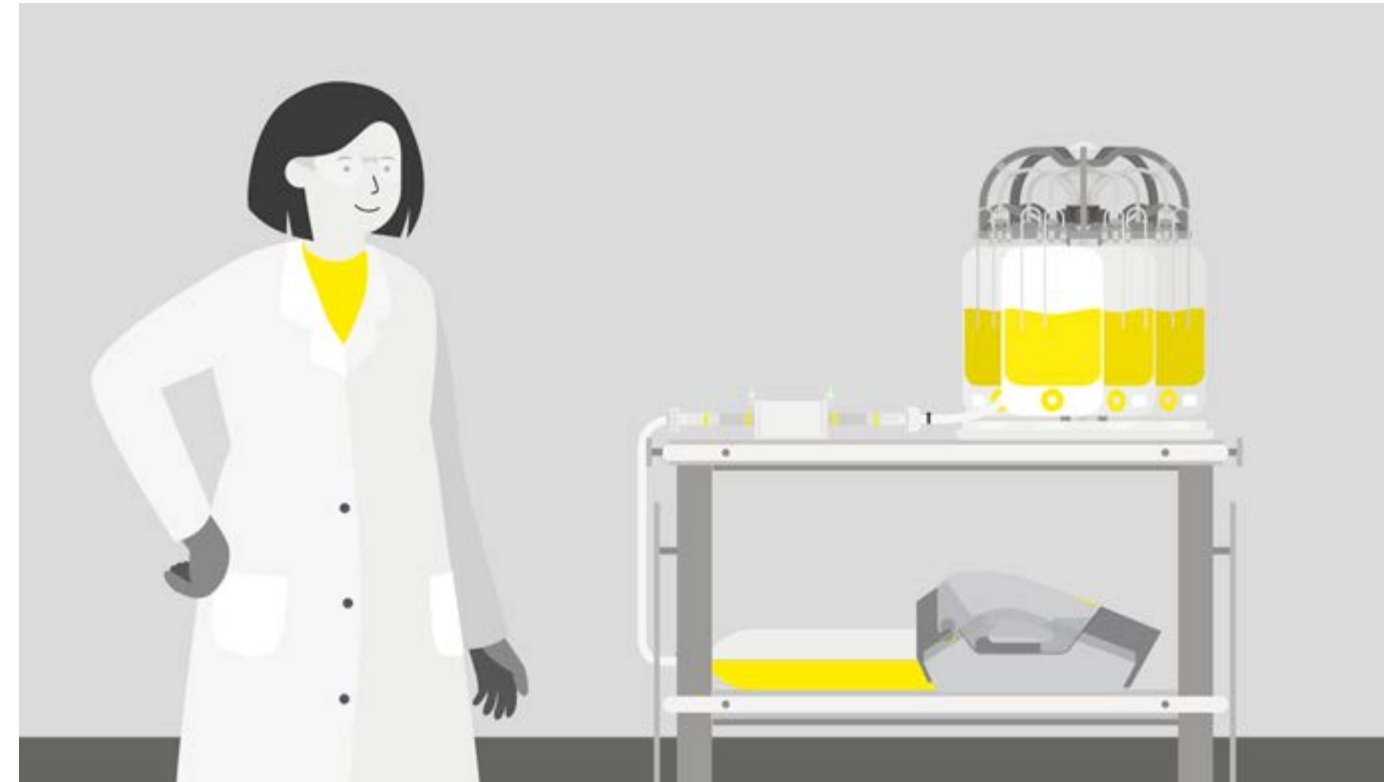
Highlighted products:

- Sartopore® 2 XLG filter: Double layer filter 0.8 | 0.2 mm to enhance recovery and high total throughput. Standard PUPSIT design available.
- Sartocheck® 5 Plus: Filter integrity testing that meets industry requirements and GMP environment.
- Biosafe® Port + RAFT bags: For sterility assurance in aseptic processing.
- Octopus FF®: Single-use system for accurate and individual filling
- Recombunin® rHA: Recombinant human albumin, a multifunctional excipient, ancillary, and raw material.

6

Capture and Polishing[Learn More](#)

Solutions for Your Stem Cell Therapy Workflow



Media and Buffer Prep

Challenge: Suboptimal media handling with risk of contamination from adventitious agents present in media and buffer.

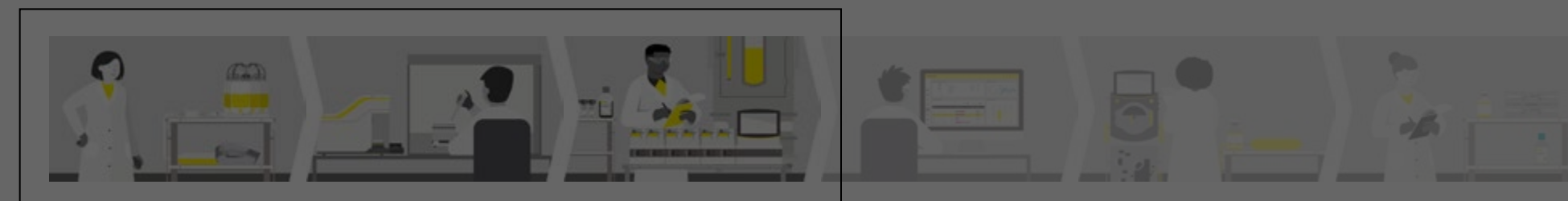
Solution: Simplify, automate, and de-risk your media and buffer preparation processes.

Highlighted products | services:

- [Linkit® AX](#) Automated aliquoting solution for small volumes.
- [Stem cell media](#) range.
- [Biowelder® TC](#): Automated aseptic connection of TPE tubing.
- [Sartopore® 2](#) 0.45 | 0.2 µm filter and [Virosart®](#) viral retention for cell culture media.
- [Sartocheck® 5 Plus](#): Filter integrity testing that meets industry requirements and GMP environment.
- [Confidence® Validation Services](#)

1

Media and Buffer Prep



Solutions for Your Stem Cell Therapy Workflow



Cell Isolation, Reprogramming, and Banking

Challenge: Cells have loss of functionality, low viability, low recovery, loss differentiation potential, and increased apoptosis rate.

Solution: Confidently isolate, reprogram, and preserve your stem cells with high-performing reagents.

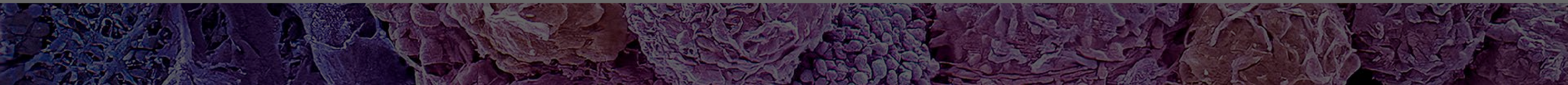
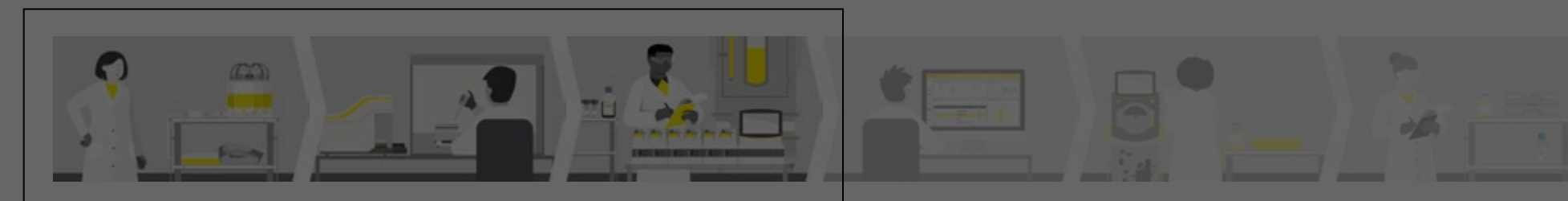
Highlighted products:

- [Recombunin® rHA](#) recombinant human albumin, a multifunctional excipient, ancillary, and raw material.
- [NutriFreez® D5](#) & [NutriFreez® D10](#) cryopreservation media.

1

Media and Buffer Prep

Expansion & Differentiation



Solutions for Your Stem Cell Therapy Workflow



Expansion and Differentiation

Challenge: Differentiation may often be inefficient, and expansion may entail scaling challenges.

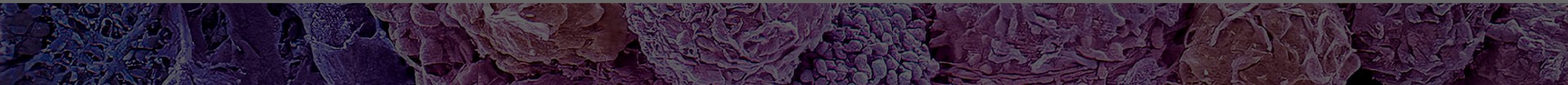
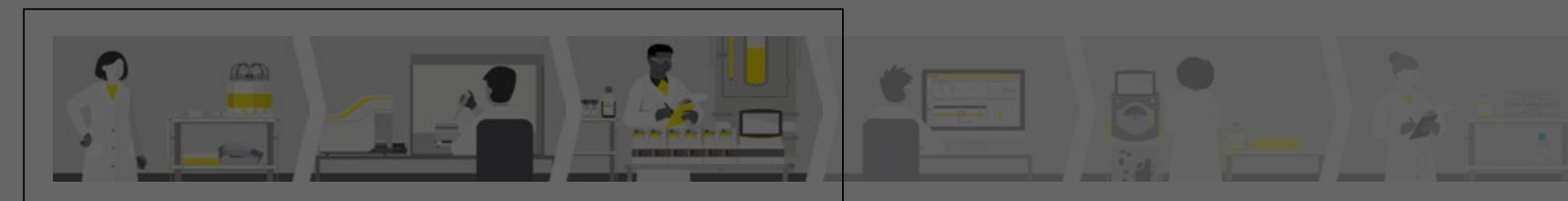
Solution: Achieve robust and scalable expansion of differentiated cell lineages with a diverse selection of equipment, critical raw materials, and reagents.

Highlighted products:

- [Ambr®](#) and [Biostat STR®](#) single-use bioreactors.
- [Recombunin® rHA](#) recombinant human albumin, a multifunctional excipient, ancillary, and raw material.
- [Stem cell media](#) range.
- [Preclinical- and GMP-grade cytokines](#).

1

Media and Buffer Prep



Solutions for Your Stem Cell Therapy Workflow



Analytics

Challenge: Lengthy and manual identification and optimization of CPPs and CQAs during development and scale-up.

Solution: Optimized analytics, including design of experiments (DOE) & multi-variate data analysis (MVDA), enable fast, accurate, and robust process control.

Highlighted products:

- [MODDE® DOE](#) software.
- [SIMCA® MVDA](#) software.

4

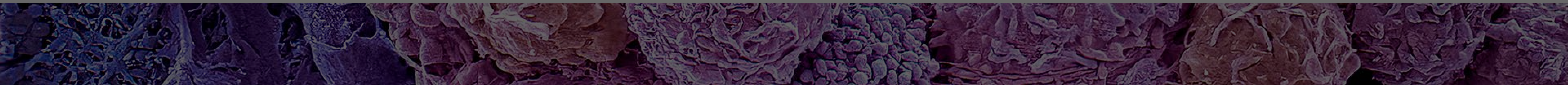
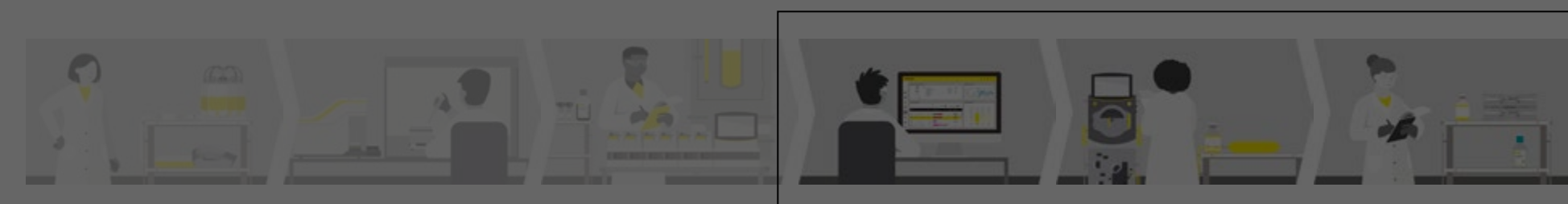
Analytics

5

Harvest

6

Formulation, Fill and Finish



Solutions for Your Stem Cell Therapy Workflow



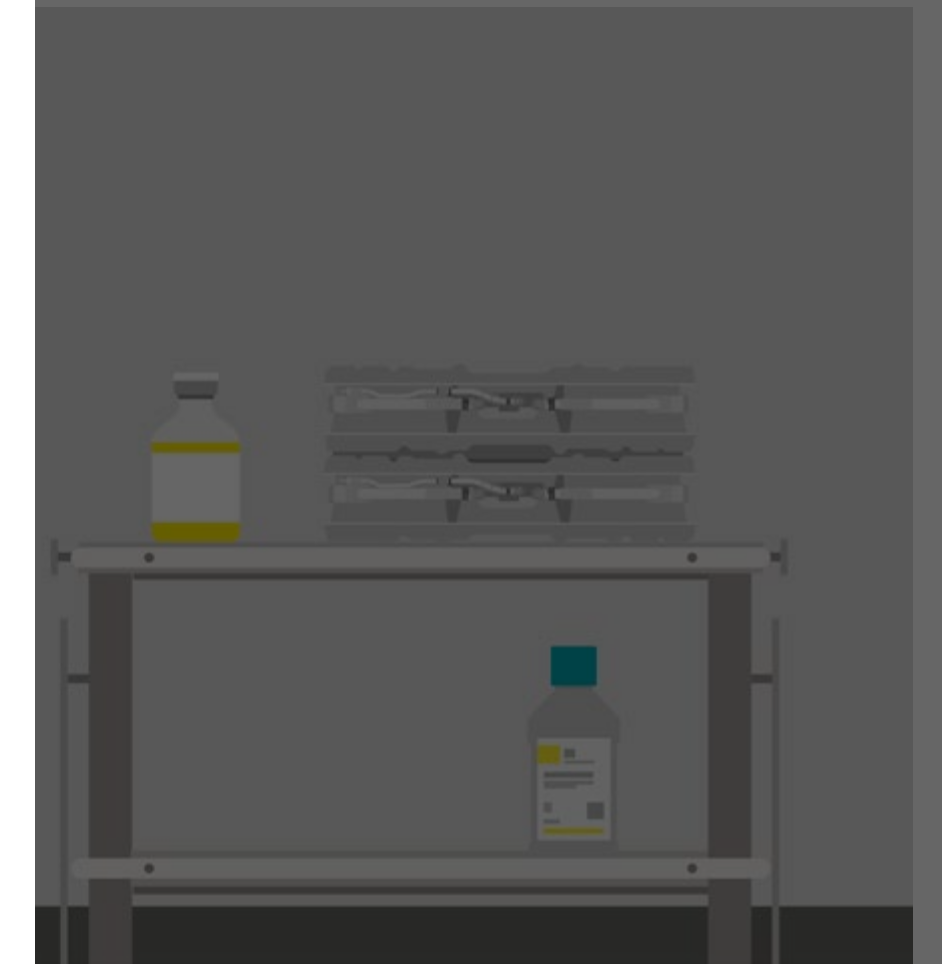
Harvest

Challenge: Loss of cell yield and viability, while maintaining sterility & cell quality.

Solution: Reliably harvest and wash stem cells using fast, high-performing, scalable solutions.

Highlighted products:

- Ksep[®]: a closed (single use) and low shear counterflow centrifugation system to achieve high recovery of viable cells.
- Stem cell media range.
- Recombunin[®] rHA recombinant human albumin, a multifunctional excipient, ancillary, and raw material.

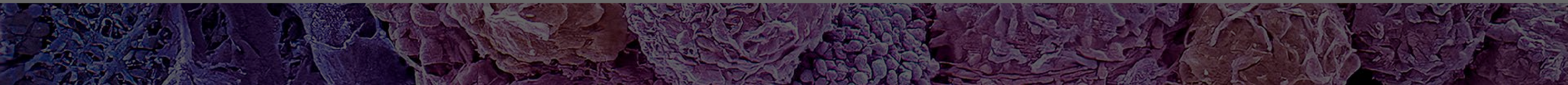
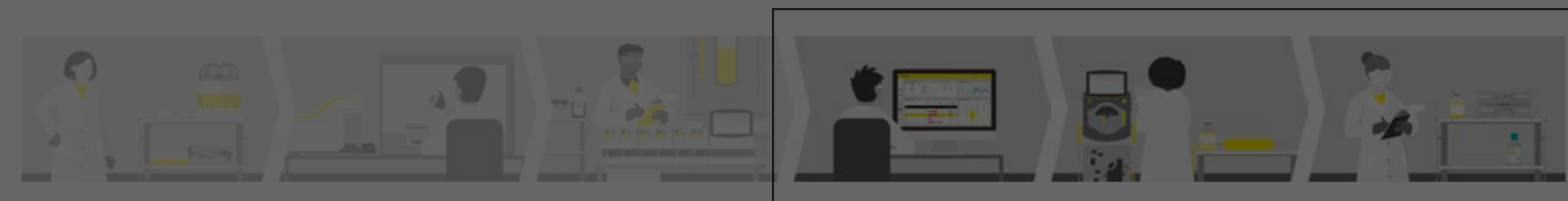


4

Analytics

Harvest

Formulation, Fill and Finish



Solutions for Your Stem Cell Therapy Workflow



Formulation, Fill and Finish

Controlled freeze-thaw and validated shipping solutions for confident storage and transportation of sensitive drug substances | products.

Highlighted products:

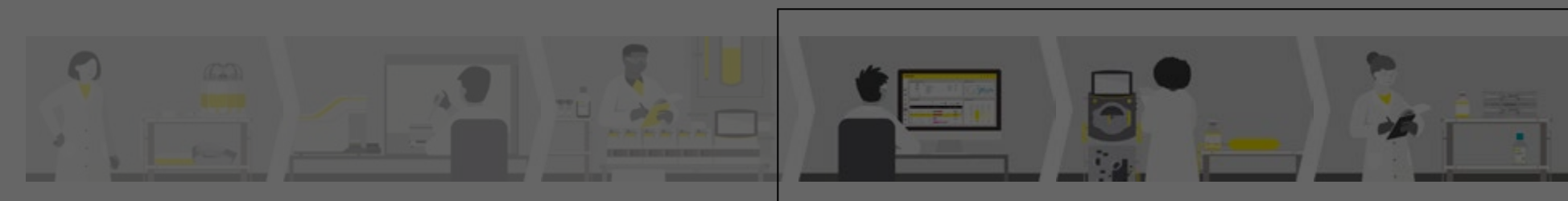
- Celsius® freezing platform incl. containers, shippers, and accessories for short-term storage down to -80 °C.
- Recombunin® rHA recombinant human albumin, a multifunctional excipient, ancillary, and raw material.
- NutriStor® cold storage solution.
- NutriFreez® D5 & NutriFreez® D10 cryopreservation media.

4

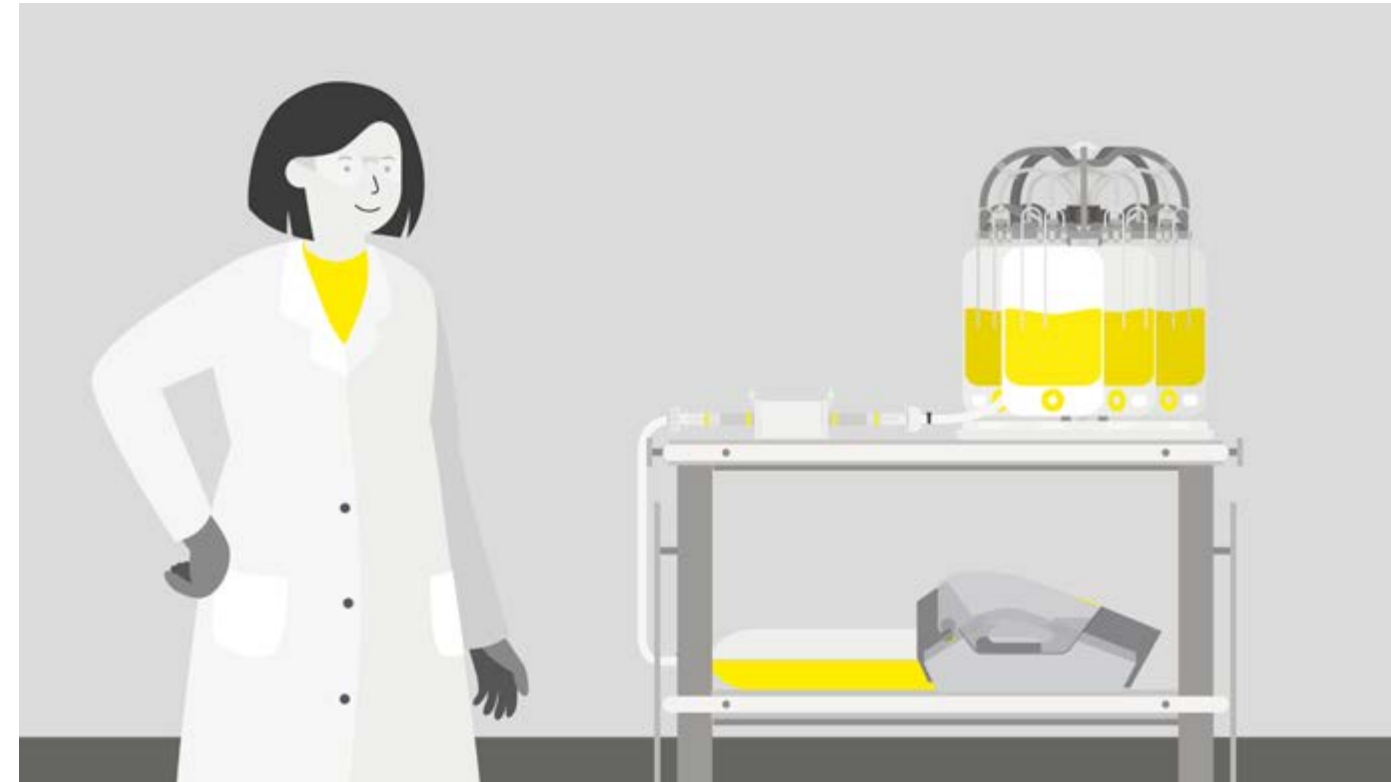
Analytics

Harvest

Formulation, Fill and Finish



Solutions for Your Immune Cell Therapy Workflow



Media and Buffer Prep

Challenge: Media handling is complex, and unwanted impurities risk contaminating your media or buffer.

Solution: Simplify, automate, and de-risk your media and buffer preparation processes.

Highlighted products | services:

- [Linkit® AX](#): Make your aseptic filling 10x faster with our plug-and-play aliquoting solution.
- [Biowelder® S](#): automated and GMP-compliant welding of PVC and TPE tubing with small diameter commonly used in CGT processes.
- [Sartopore® 2 filters](#): Ensure sterile filtration using sterilizing-grade heterogeneous double-layer filters available in 0.8 and 0.45 µm pre-filter and a 0.2 µm final filter membrane.
- [Virosart® Media](#): Mitigate viral contamination using a viral retention filter designed for cell culture media.
- [Confidence® Validation Services](#): Comply with regulatory requirements using services backed by more than 25 years of industry experience.
- [Flexsafe® 2D and 3D bags](#): Support all fluid handling and transportation steps for drug manufacturing from 20 mL to 3,000 L.

1

Media and Buffer Prep

[Learn More](#)

Solutions for Your Immune Cell Therapy Workflow



Donor Material Sample | Cell Isolation | Cell Activation

Challenge: Cells exhibit low viability, low recovery, and reduced functionality during isolation and activation processes.

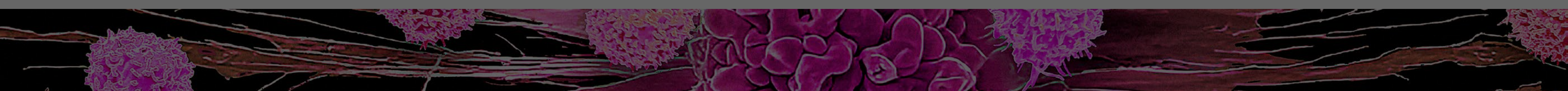
Solution: Confidently isolate, preserve, and activate your immune cells using high-performing reagents.

Highlighted products:

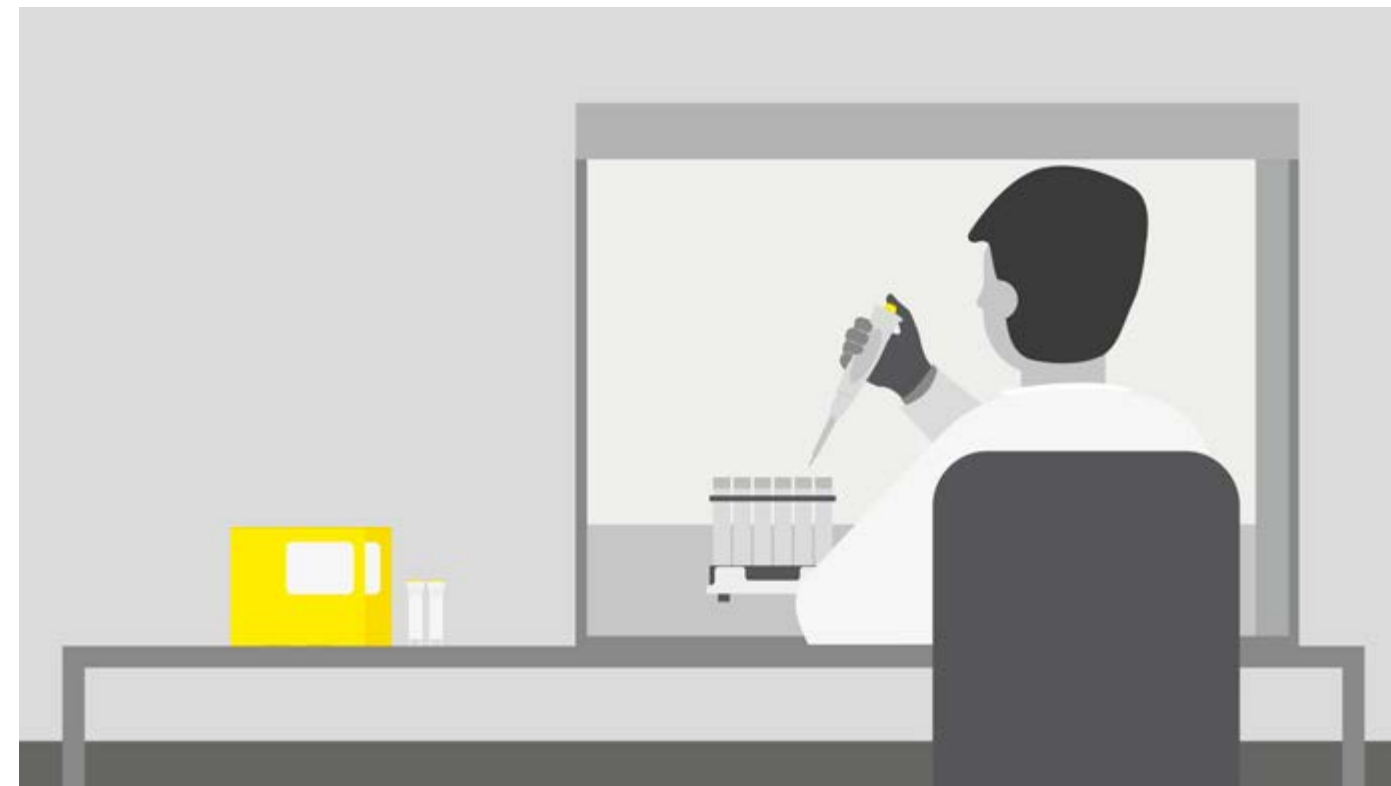
- Immune cell media: Simplify your process, reduce serum-associated risks, and ease regulatory procedures using media designed and optimized for culturing immune cells.
- Preclinical- and GMP-grade cytokines: Choose from a variety of high-quality cytokines trusted by scientists in immune cell therapy.
- NutriFreez® D5 & NutriFreez® D10 cryopreservation media: Enable short- and long-term cryopreservation that provides high performance and recovery after freezing.
- Recombunin® rHA: Support your therapy development with commercially available, high-quality, and animal and human origin-free recombinant human albumins..

1

Media and Buffer Prep

[Learn More](#)

Solutions for Your Immune Cell Therapy Workflow



Gene Editing

Challenge: Today's gene editing technologies and delivery tools have limited precision and efficiency.

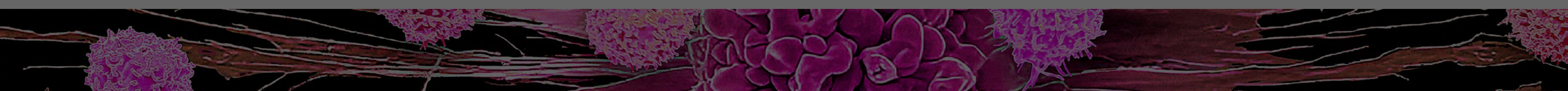
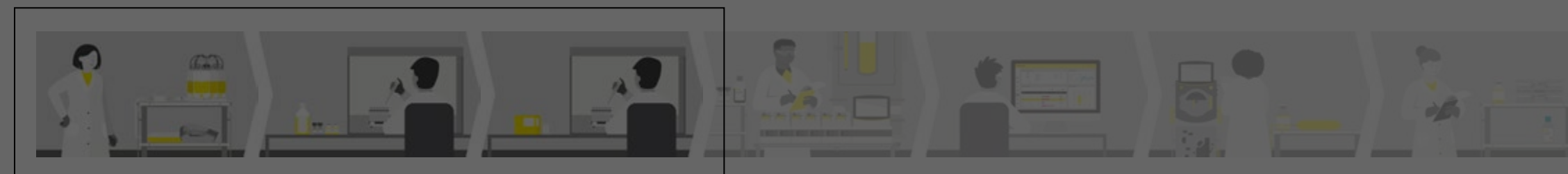
Solution: Simplify and tailor your process for non-viral gene delivery and transduce your cells with high-quality vector using our lentivirus solutions.

Highlighted products:

- Lentiviral vector production.
- LipidBrick® cationic lipid: Formulate lipid-based nanoparticles using a new range of proprietary cationic lipids.
- jetMESSENGER® mRNA transfection reagent: Leverage high transfection efficiency even for hard-to-transfect cells.

1

Media and Buffer Prep

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Solutions for Your Immune Cell Therapy Workflow



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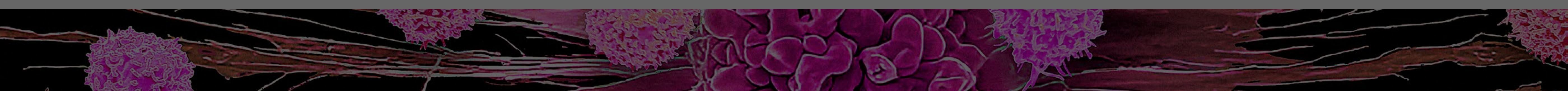
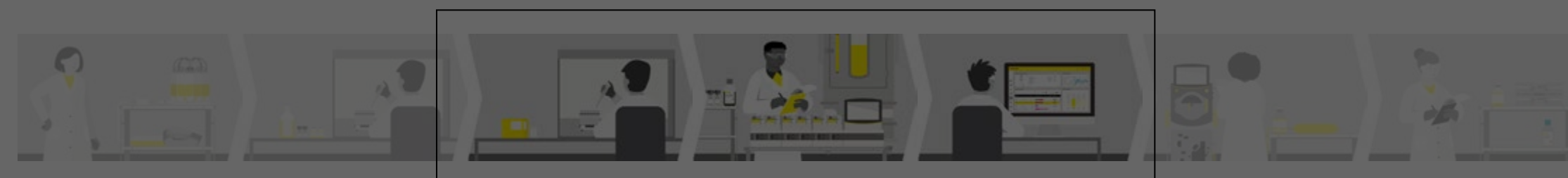
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Highlighted products:

- [Lentiviral vector](#) production.
- [LipidBrick®](#) cationic lipid: Formulate lipid-based nanoparticles using a new range of proprietary cationic lipids.
- [jetMESSENGER® mRNA](#) transfection reagent: Leverage high transfection efficiency even for hard-to-transfect cells.

3

Gene Editing

[Learn More](#)[Learn More](#)[Learn More](#)

Solutions for Your Immune Cell Therapy Workflow



Cell Expansion

Challenge: Scientists need to achieve efficient, consistent, and scalable expansion of target cell types while maintaining cell viability and functionality.

Solution: Achieve robust and scalable expansion of a variety of target cell types – including T cells, Tregs, TILs, dendritic cells, and natural killer cells – with a wide selection of advanced equipment and high-quality raw materials and reagents.

Highlighted products:

- Ambr®, Biostat STR® and Univessel® single-use bioreactors: Achieve automation and high throughput with single-use commercial-scale bioreactors. For processes requiring GMP compliance, we recommend the Biostat STR® bioreactor.
- Immune cell media: Simplify your process, reduce serum-associated risks, and ease regulatory procedures using media designed and optimized for culturing immune cells.
- Preclinical- and GMP-grade cytokines: Choose from a variety of high-quality cytokines trusted by scientists in immune cell therapy.
- Recombinin® rHA: Support your therapy development with commercially available, high-quality, and animal and human origin-free recombinant human albumins.

Solutions for Your Immune Cell Therapy Workflow



Analytics

Challenge: Manually identifying and optimizing critical process parameters and quality attributes during development and scale-up is inefficient and time-consuming.

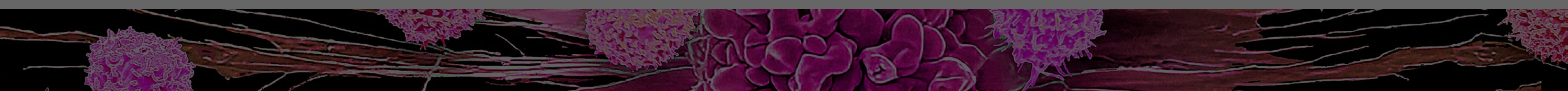
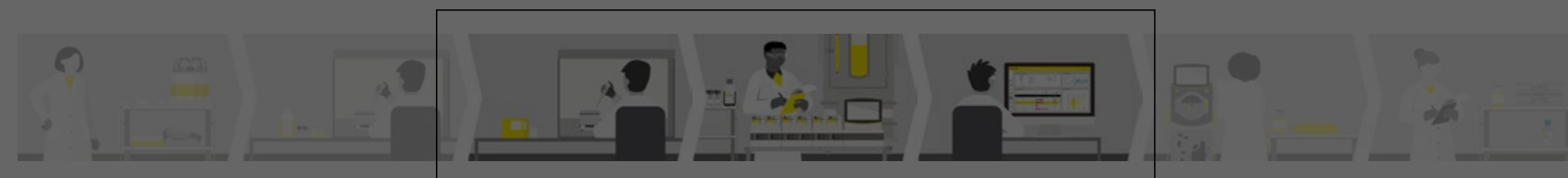
Solution: Enable fast, accurate, and robust process control using optimized analytics, including design of experiments (DOE) and multivariate data analysis (MVDA) software.

Highlighted products | services:

- MODDE® DOE software: Accelerate progress by quickly tapping into the power of DOE.
- SIMCA® MVDA software: Improve process understanding, model complex systems, and gain the deep process understanding needed to drive growth.
- Fresh and spent media analysis: Monitor the effects of feed strategy and media components on cell culture performance.

3

Gene Editing

[Learn More](#)

Solutions for Your Immune Cell Therapy Workflow



Analytics

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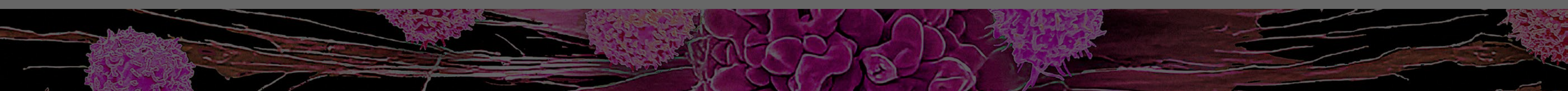
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5

Analytics

[Learn More](#)

Solutions for Your Immune Cell Therapy Workflow



Harvest

Challenge: Scientists need to maintain sterility and cell quality during harvest while maximizing cell yield and viability.

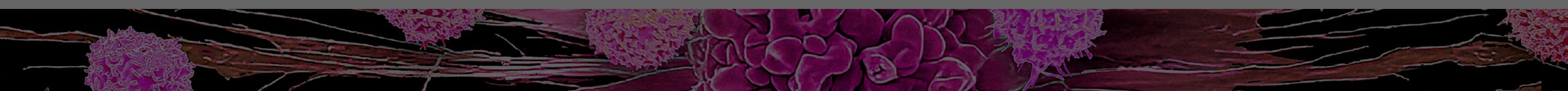
Solution: Reliably harvest and wash immune cells using fast, high-performing, and scalable solutions that ensure high yield, viability, and quality.

Highlighted products:

- Ksep[®] systems: Deliver high cell viability and recovery using single-use and low shear counterflow centrifugation systems.
- Recombunin[®] rHA: Support your therapy development with commercially available, high-quality, and animal- and human-origin-free recombinant human albumins.
- Flexsafe[®] 2D bags: Protect critical fluids throughout production with extensively qualified bags for cell and gene therapy.

5

Analytics

[Learn More](#)[Learn More](#)[Learn More](#)

Solutions for Your Immune Cell Therapy Workflow



Formulation, Fill and Finish

Challenge: Thawing and storage risk reducing cell recovery and viability.

Solution: Ensure high recovery and viability with controlled freeze-thaw processes, optimized cold storage, and validated shipping solutions for long- and short-term storage and transportation of sensitive cells.

Highlighted products:

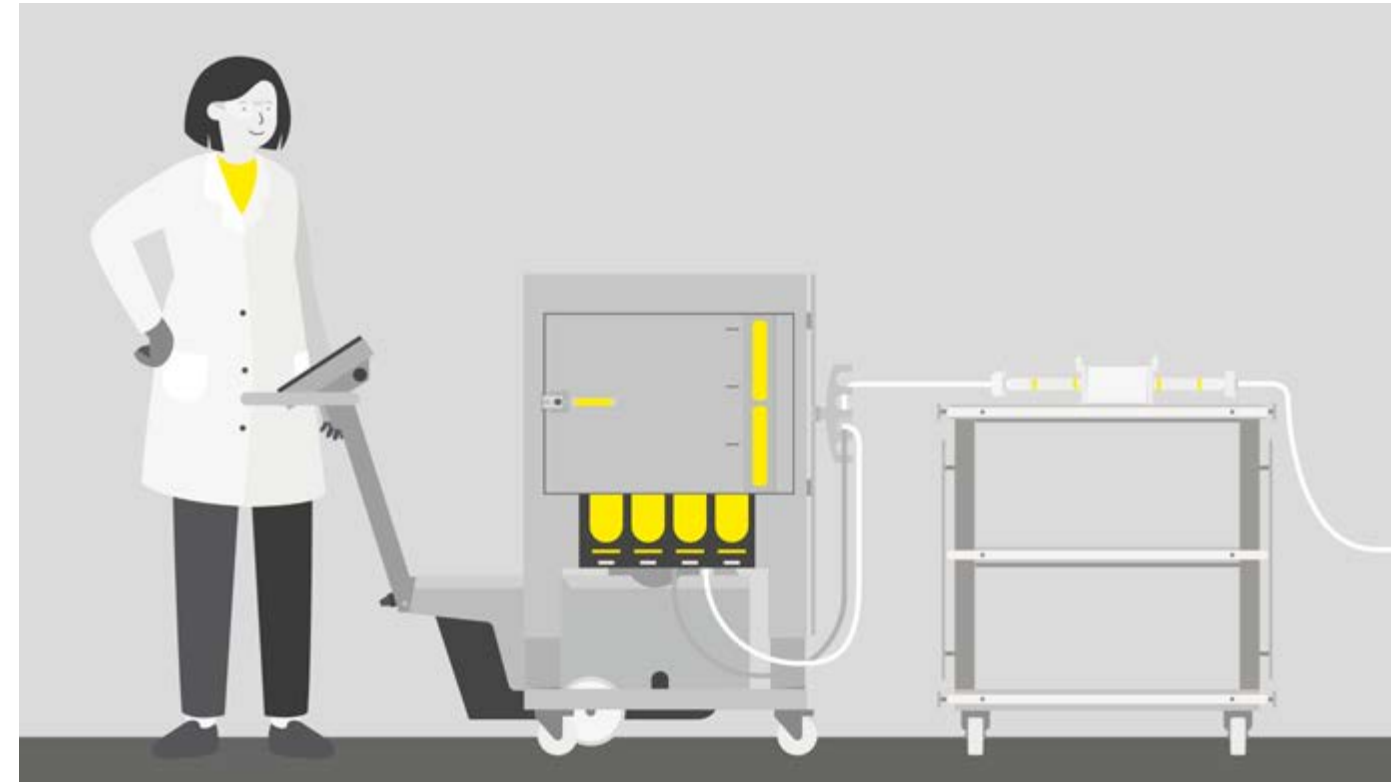
- Celsius® freezing platform: Ensure reliable cold-chain operations with a single-use freeze-and-thaw system that works with your existing infrastructure.
- Recombunin® rHA: Support your therapy development with commercially available, high-quality, and animal- and human-origin-free recombinant human albumin.
- NutriStor® cold storage solution: Store and ship cells without compromising their stability.
- NutriFreez® D5 & NutriFreez® D10 cryopreservation media: Enable short- and long-term cryopreservation that provides high performance and recovery after freezing.
- Flexsafe® 2D for fill & finish: Protect critical fluids with bags extensively qualified for final filling of cell and gene therapeutics.

5

Analytics

[Learn More](#)

Solutions for Your Lentiviral Vector Gene Therapy Workflow ✕



Fluid Management, Media and Buffer Prep

Challenge: Media handling is complex, and adventitious agents risk contaminating your media or buffer.

Solution: Simplify and accelerate your media preparation and sterile connections.

Highlighted products | services:

- [Flexsafe® Pro Mixer](#): Bring high performance to all mixing steps in cGMP bioprocessing.
- [Flexsafe® 2D and 3D bags](#): Support all fluid handling and transportation steps for drug manufacturing.
- [Biowelder® TC Sterile Welding Device](#): Enable automated aseptic connection for TPE tubing.
- [Extractables and leachables testing](#): Meet regulatory requirements with reliable impurity testing for your single-use systems.
- [Sartopore® 2 filters](#): Ensure sterile filtration using sterilizing-grade heterogeneous double-layer filters available in 0.8 and 0.45 µm pre-filter and a 0.2 µm final filter membrane.
- [Virosart® Media](#): Mitigate viral contamination using a viral retention filter designed for cell culture media.

1

Fluid Management, Media and Buffer Prep

[Learn More](#)

Solutions for Your Lentiviral Vector Gene Therapy Workflow ✕



Vector Engineering and Production

Challenge: Suboptimal transfection conditions can lead to low titer, reduced viral vector quality, and scaling challenges.

Solution: Design your own plasmids and optimize your viral vector production with our equipment, raw materials, and services.

Highlighted products | services:

- [Recombunin® rHA](#): Support your therapy development with commercially available, high-quality, and animal- and human-origin-free recombinant human albumins.
- [FectoVIR® LV](#): Support large-scale manufacturing with high-performing transfection reagents.
- [HEK293 media and feed](#): Use media optimized for transfection and production.
- [Ambr®](#), [Biostat STR®](#) and [Univessel®](#) single-use bioreactors: Achieve automation and high throughput with single-use commercial-scale bioreactors. For processes requiring GMP compliance, we recommend the Biostat STR® bioreactor.
- [Plasmid engineering and manufacturing services](#): Ensure the highest plasmid purity possible with robust and scalable plasmid design and manufacturing.

1

Fluid Management, Media and B...

Learn More

Solutions for Your Lentiviral Vector Gene Therapy Workflow ✕



Analytics

Challenge: Process optimization during development and scale-up is manual and time-consuming.

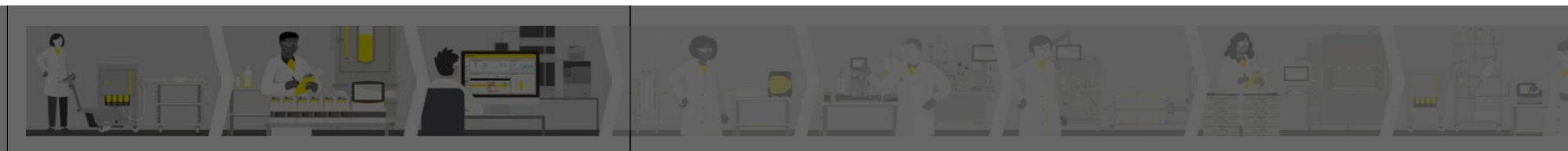
Solution: Enable fast and accurate process optimization using optimized analytics – including design of experiments (DOE) and quantification of total virus particles - and ensure robust process control with multivariate data analysis (MVDA) software.

Highlighted products | services:

- MODDE® DOE: Accelerate progress by quickly tapping into the power of DOE.
- SIMCA® MVDA: Improve process understanding, model complex systems, and gain the deep process understanding needed to drive growth.
- Virus Counter® Plus Platform: Quantify total virus particles quickly and easily using a flow virometer combined with Virotag® DY ENV or Virotag® VSVG reagent.
- Fresh and Spent Media Analysis: Monitor the effects of feed strategy and media components on cell culture performance.

1

Fluid Management, Media and B

[Learn More](#)

Solutions for Your Lentiviral Vector Gene Therapy Workflow ✕



Harvest and Clarification

Challenge: Lentivirus is a large, enveloped virus that can get trapped in filters and damaged.

Solution: Achieve high lentivirus recovery with a fast and scalable filter train.

Highlighted products:

- Sartopure® PP3 prefilters: Enhance particle reduction with high-performance and low-adsorptive polypropylene fleece prefilters. We recommend using a two-stage filter train starting with a retention rate of 20 μm followed by 0.65 μm .
- Sartopore® 2 0.45 μm : Enhance total throughput and flow rate performance by combining 0.8 μm and 0.45 μm filter pore sizes with bioburden and particle-retentive elements.
- Recombunin® rHA: Support every stage of therapy development with commercially available, high-quality, and animal and human origin-free recombinant human albumins.

4

Harvest and Clarification

[Learn More](#)

Solutions for Your Lentiviral Vector Gene Therapy Workflow ✕



Ultrafiltration and Diafiltration (UF | DF)

Challenge: Lentivirus is fragile with a short half-life.

Solution: Concentrate lentiviral vector gently and efficiently using Hydrosart® high-performance membrane cassettes.

Highlighted products:

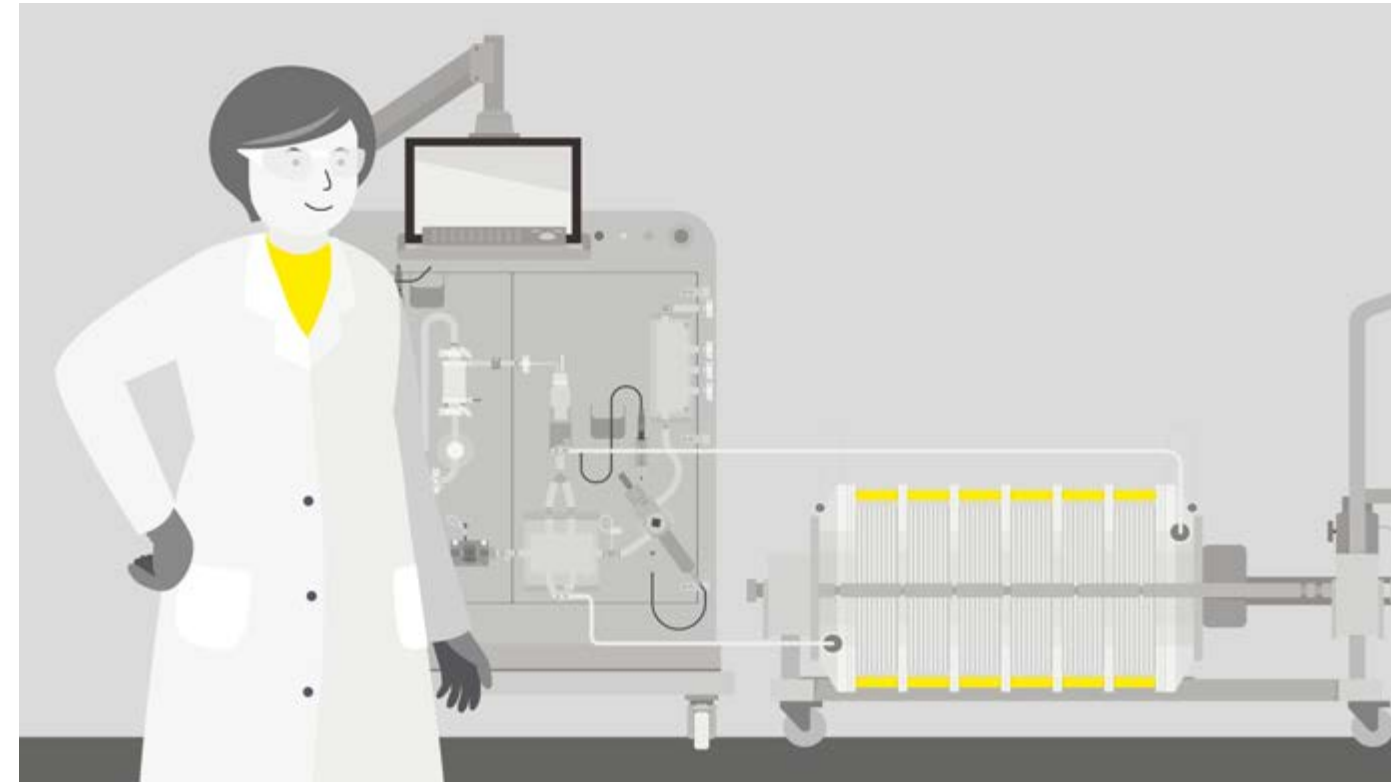
- TFF cassettes: Use of Hydrosart® cellulose based membrane for low LV adsorption and good recovery using 100 or 300KDa MWCO.
- Ambr® Crossflow : Screen conditions and optimize candidate selection with a high-throughput TFF solution for parallel screening.
- Sartoflow® Expert, Sartoflow® 1000, and Sartoflow® 4500: Optimize ultrafiltration and diafiltration applications downstream from process development to manufacturing clinical trials.

4

Harvest and Clarification

[Learn More](#)[Learn More](#)[Learn More](#)

Solutions for Your Lentiviral Vector Gene Therapy Workflow ✕



Capture

Challenge: Lentivirus has a short half-life, and infective particles can have low recovery rates.

Solution: Support fast flow rate using membrane and monolith technologies.

Highlighted products | services:

- CIMmultus QA[®]: Achieve better yield and purity with ready-to-use, GMP-compliant, high-capacity, and high-resolution columns for LV purification.
- Cornerstone[®] services: Accelerate downstream process development with scalable, robust processes and analytics development.

4

Harvest and Clarification

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Ultrafiltration and Diafiltration (UF/DF)

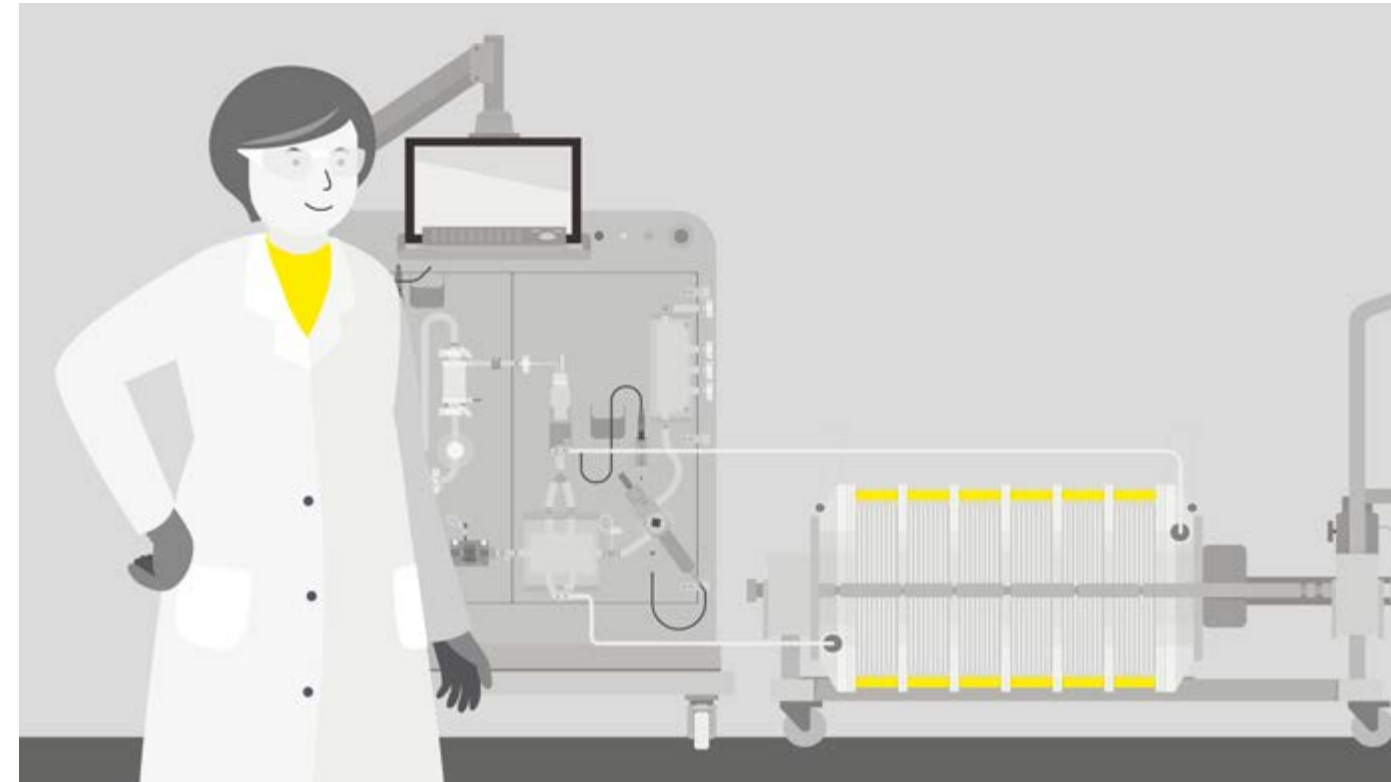
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Capture

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Solutions for Your Lentiviral Vector Gene Therapy Workflow ✕



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6

Capture

[Learn More](#)

Cold Chain Management

[Learn More](#)

Final Filtration, Fill and Finish

[Learn More](#)

Solutions for Your Lentiviral Vector Gene Therapy Workflow ✕



Cold Chain Management

Challenge: Freezing and thawing biological products improperly can undermine your product's quality and effectiveness.

Solution: Confidently store and transport sensitive drug products using controlled freeze-thaw and validated shipping solutions.

Highlighted products:

- Celsius® freezing platform: Ensure reliable cold-chain operations with a single-use freeze-thaw system that works with your existing infrastructure.

6

Capture

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7

Cold Chain Management

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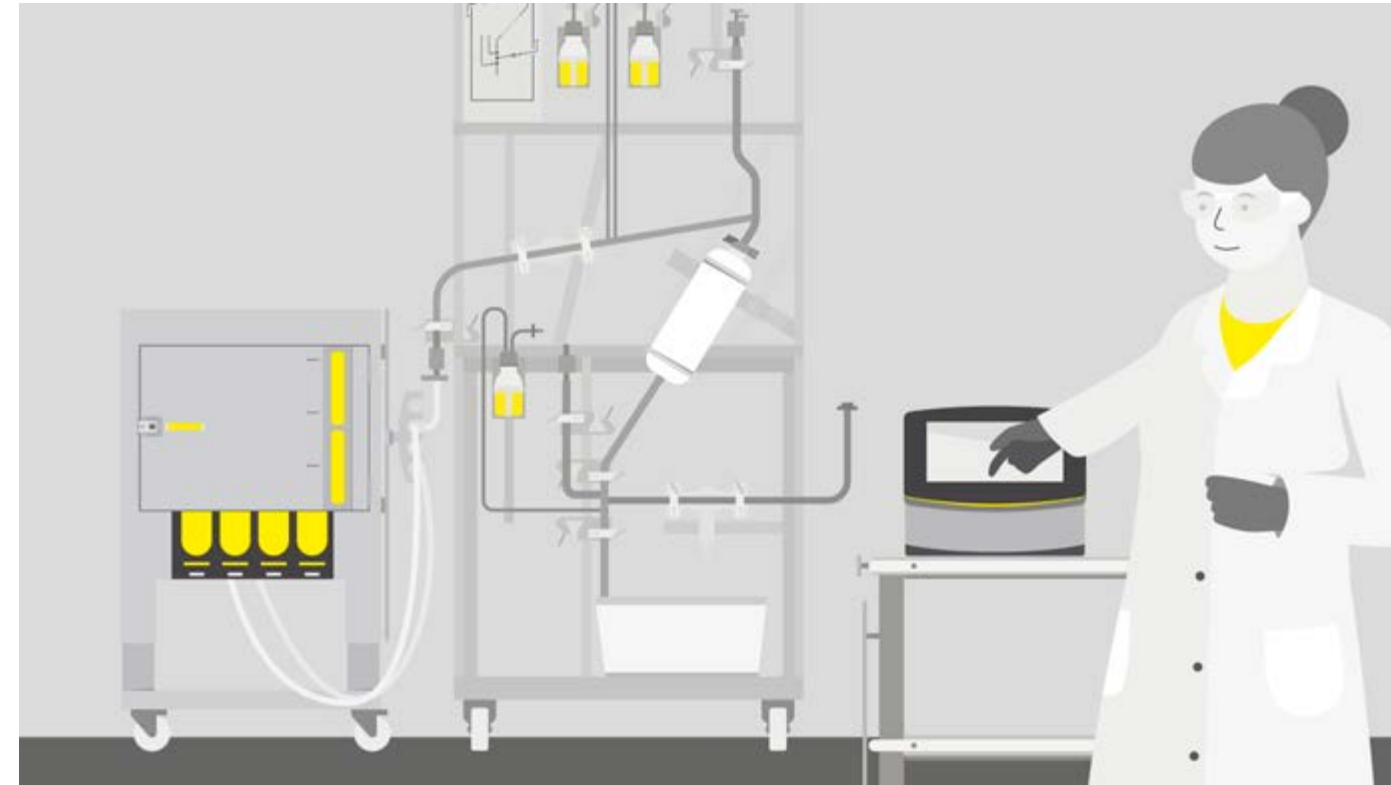
8

Final Filtration, Fill and Finish

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Solutions for Your Lentiviral Vector Gene Therapy Workflow ✕



Final Filtration, Fill and Finish

Challenge: Filtration can involve inconsistent filling accuracy, low product recovery, and contamination risk.

Solution: Maintain product integrity and sterility with cutting-edge filtration technologies.

Highlighted products:

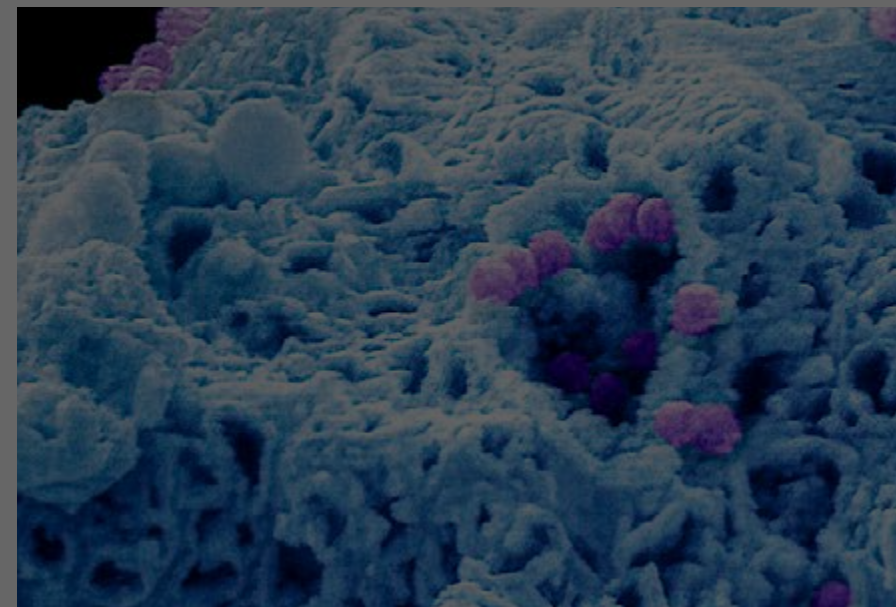
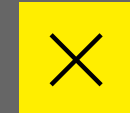
- Sartopore® Platinum filter: Achieve sterility, excellent wettability, and maintain integrity with a pore size combination of 0.45 | 0.2 μm .
- Sartocheck® 5 Plus: Meet industry and GMP requirements with filter integrity testing.
- Biosafe® Port + RAFT bags: Assure sterility in aseptic processing.
- Octopus FF®: Enable accurate and individual filling using a single-use system.
- Recombunin® rHA: Support your therapy development with commercially available, high-quality, and animal- and human-origin-free recombinant human albumins.

6

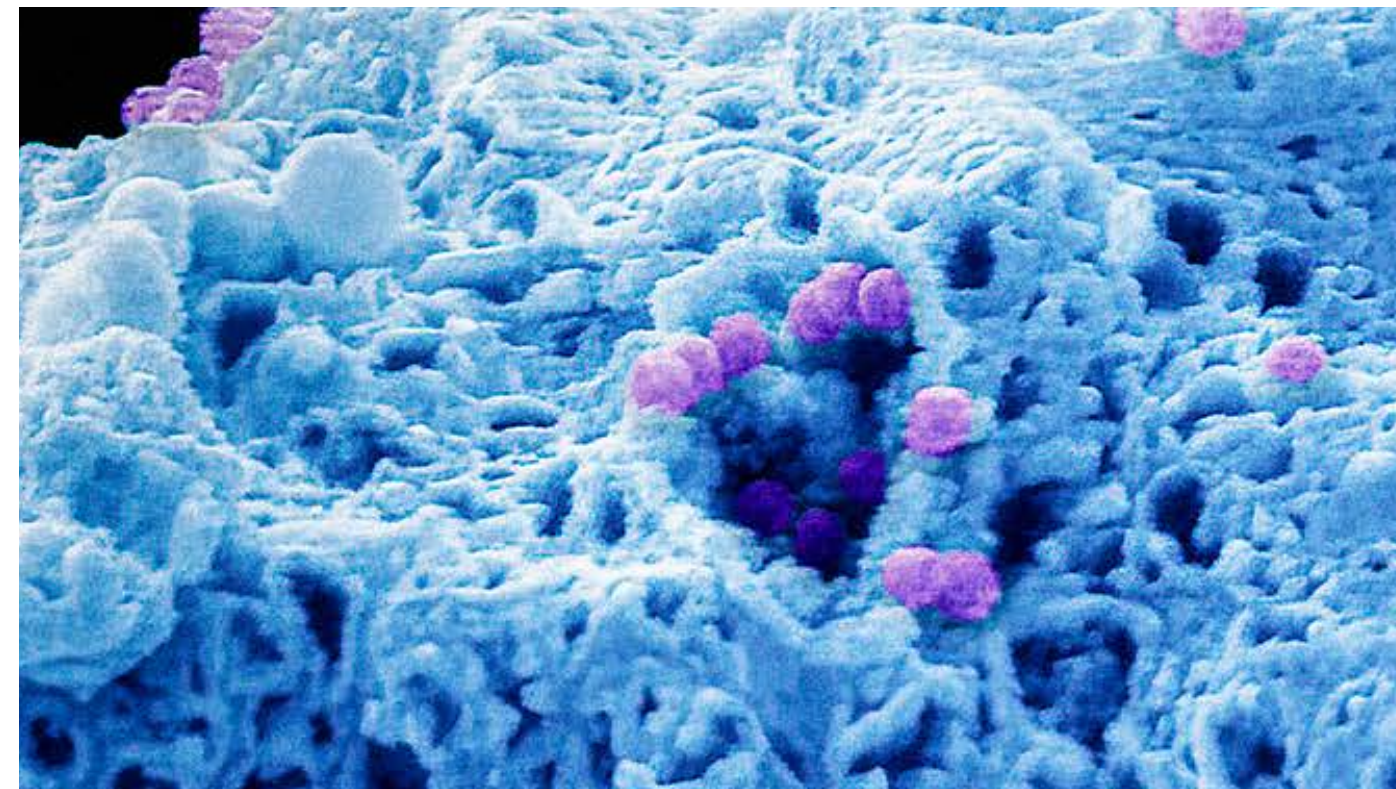
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AAV Gene Therapy



AAV Gene Therapy

Navigating Upstream AAV Production for Gene Therapy Manufacturing

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Switching From Bottles to Bags: Robust by Design

[Read the Article](#)

Screen, Optimize, and Characterize Your Viral Vector Production

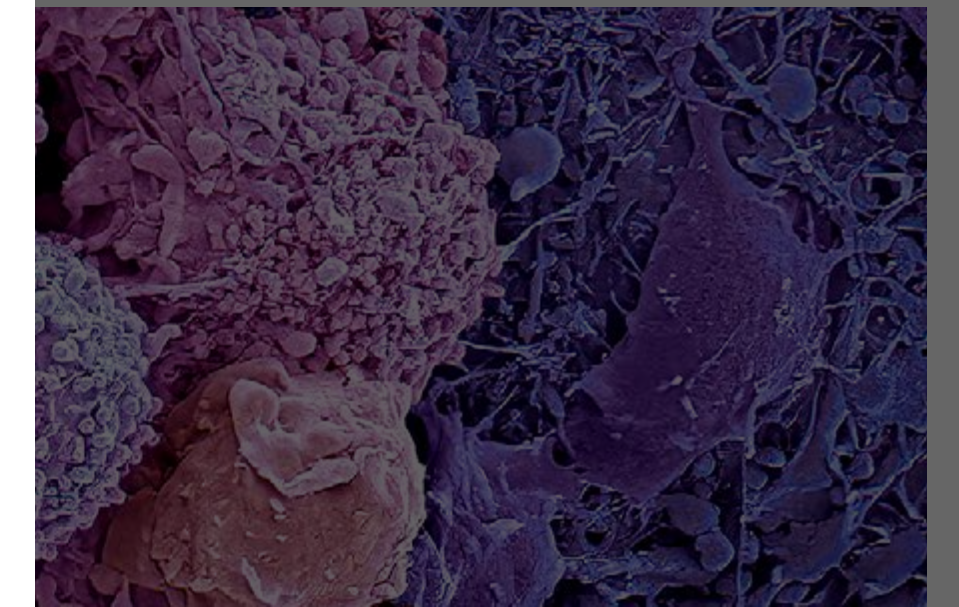
[Watch the Webinar](#)

Rapid and Direct Quantitation of AAV Capsids

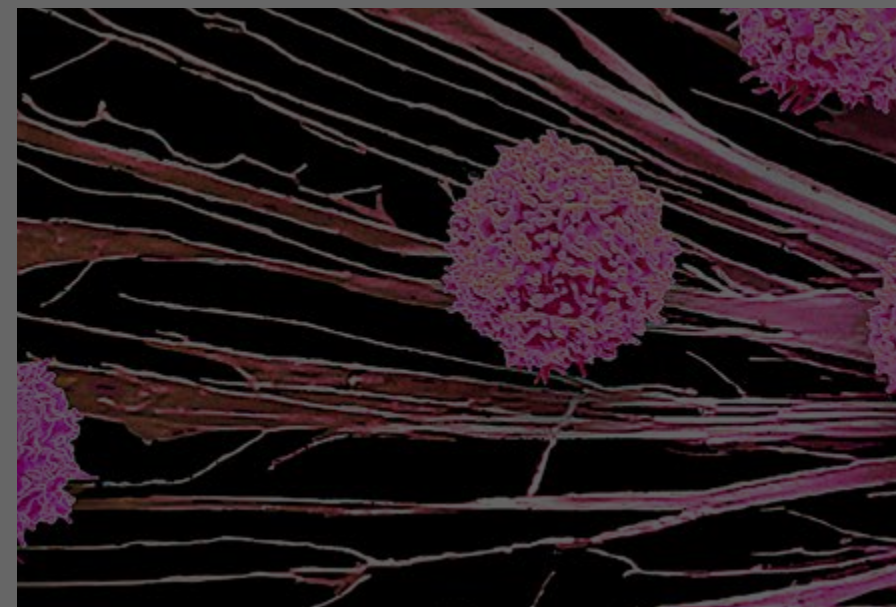
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The Journey to AAV Production in Suspension: Scaling-up Your Process

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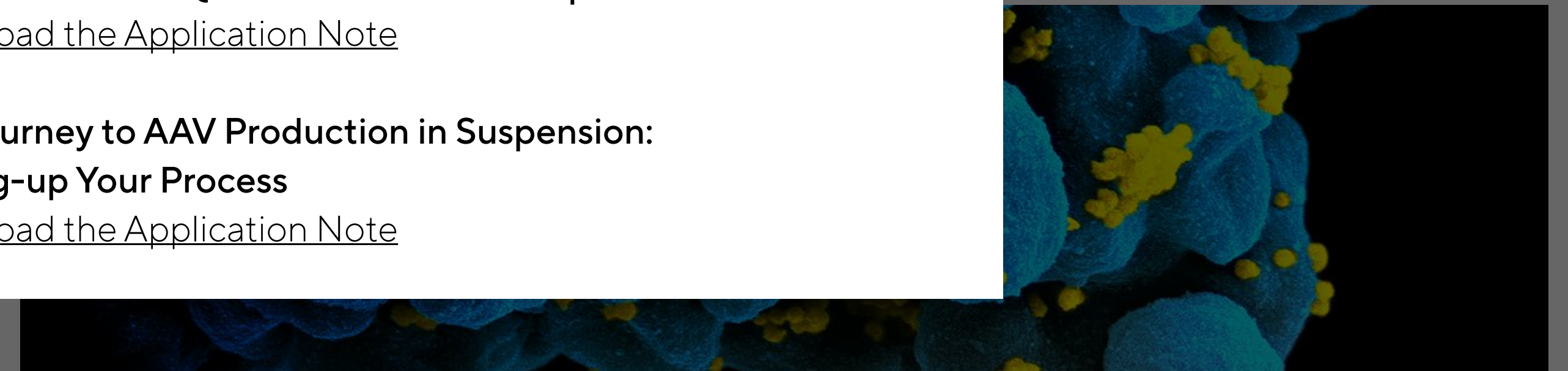


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Immune Cell Therapy

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Lentivirus Gene Therapy

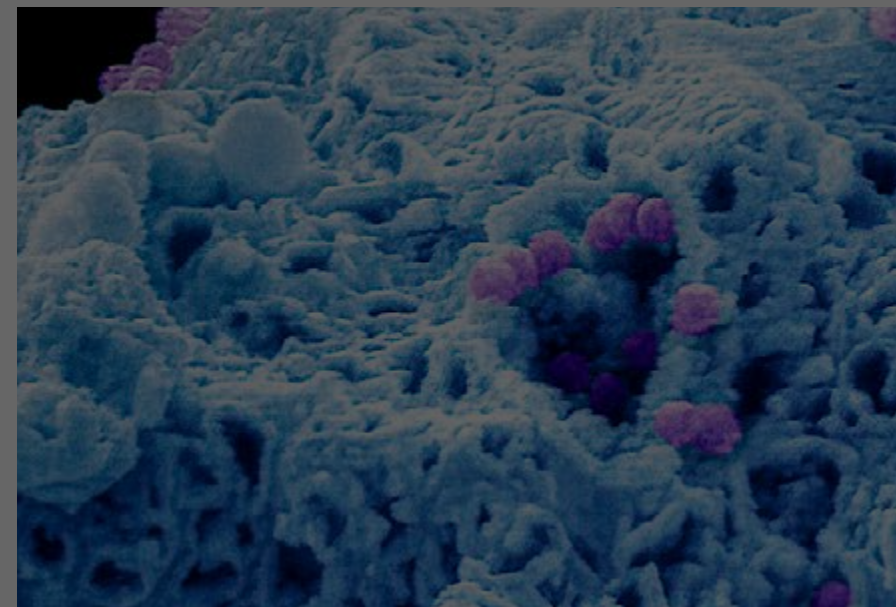
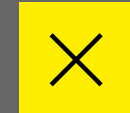
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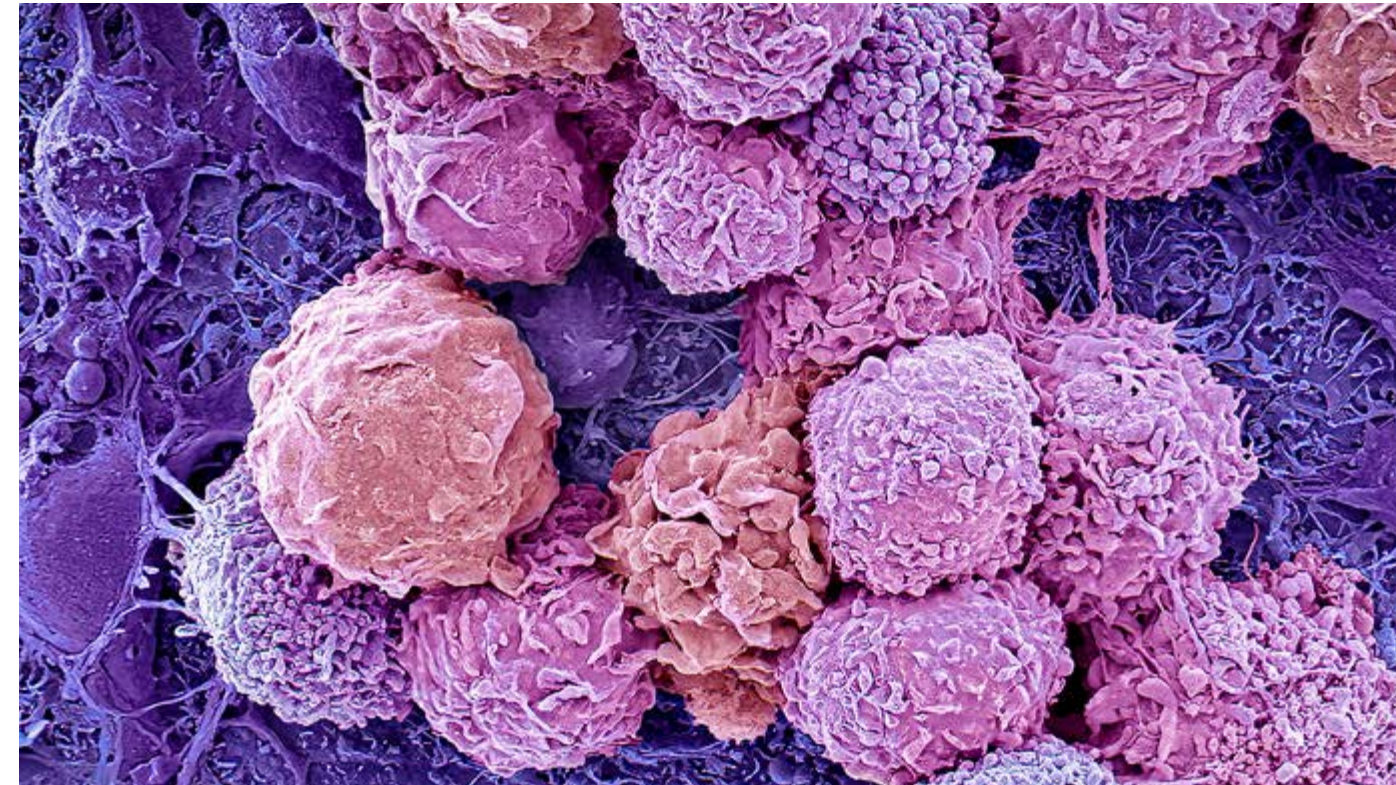
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sartorius.com/en/applications/cell-and-gene-therapy

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AAV Gene Therapy



AAV Gene Therapy

2D to 3D Transition of MSC Expansion Process

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Large-Scale Production of Human iPSCs for Bioprinting Applications

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Solutions for Culturing, Maintaining, and Characterizing iPSCs

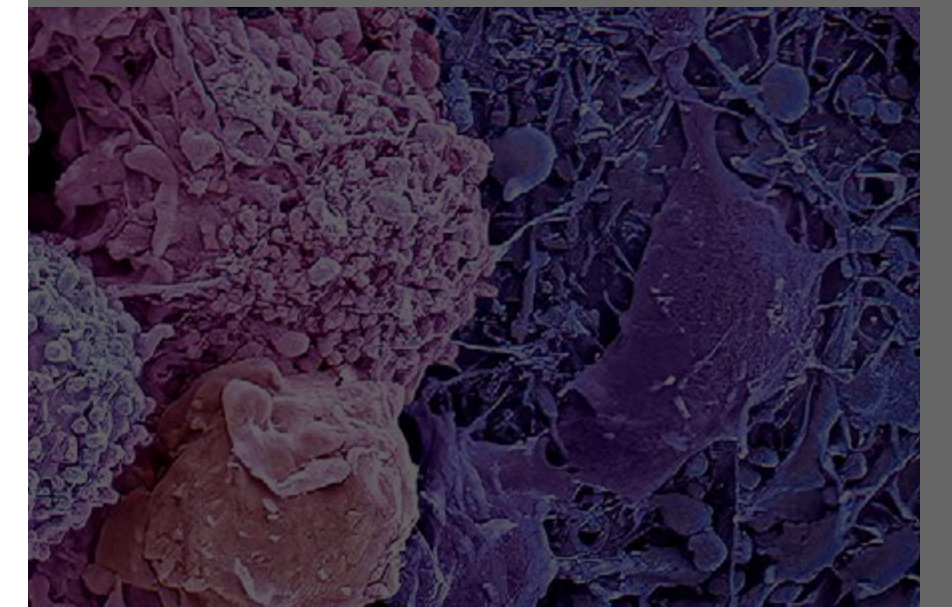
[Download the Application Note](#)

Increasing Aliquot Process Efficiency With Linkit® AX

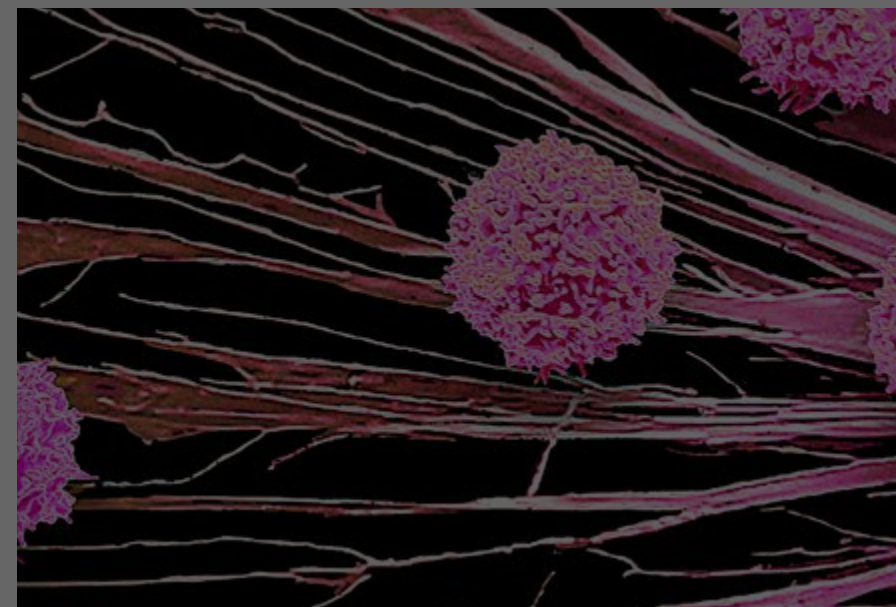
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Regulatory Considerations When Choosing Stem Cell Media

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Immune Cell Therapy

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Lentivirus Gene Therapy

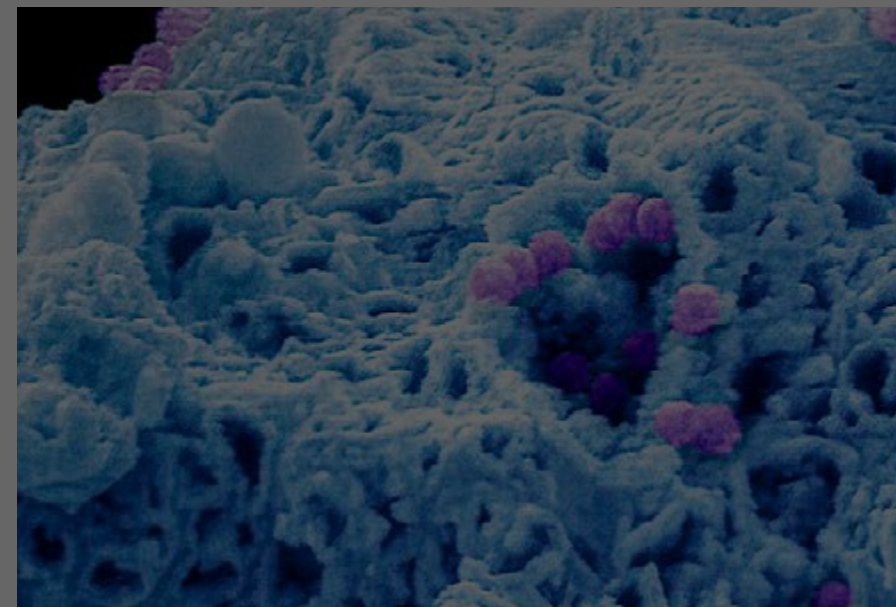
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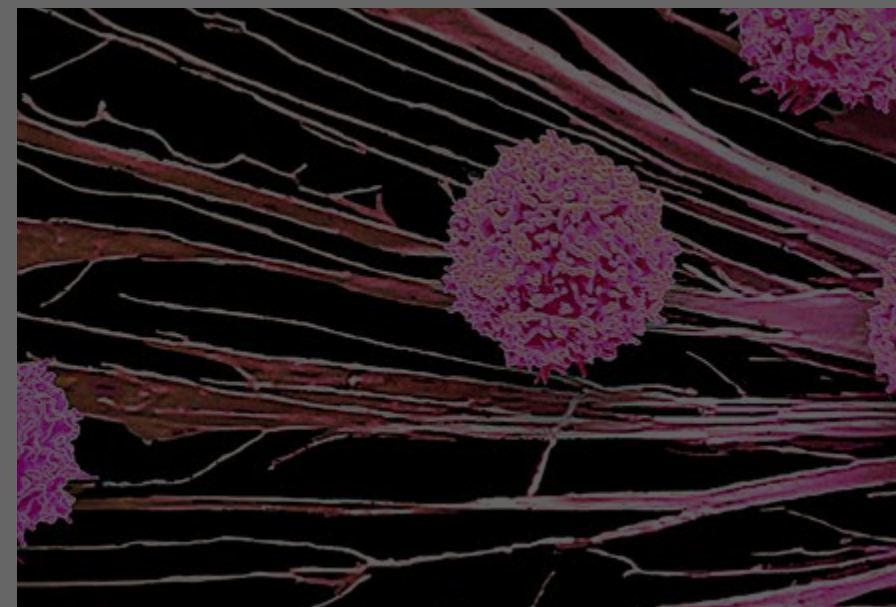
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AAV Gene Therapy



Immune Cell Therapy



Immune Cell Therapy

Maximizing CAR-T Cell Yields

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Cytokine Combinations to Tailor Your Immune Cell Culture

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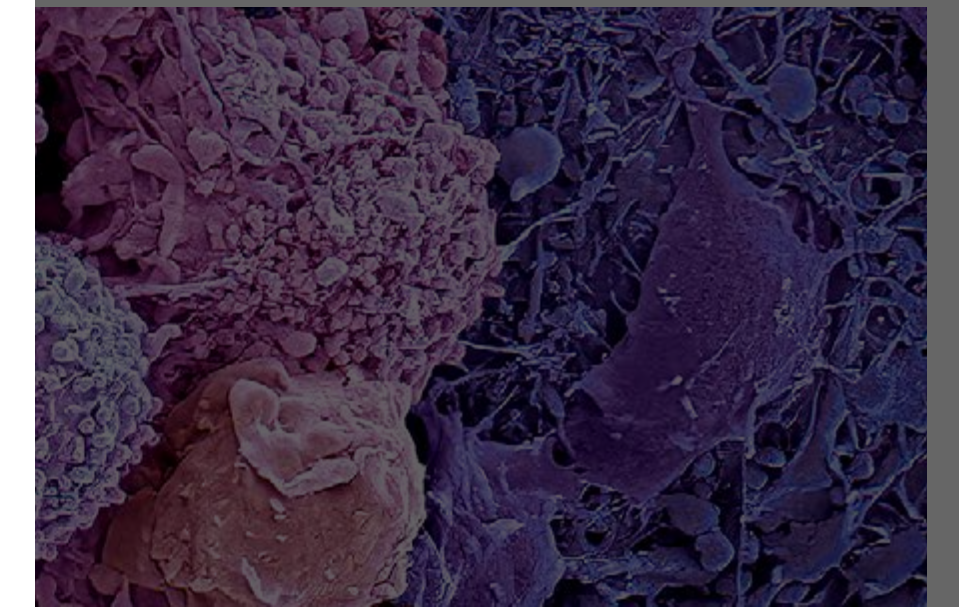
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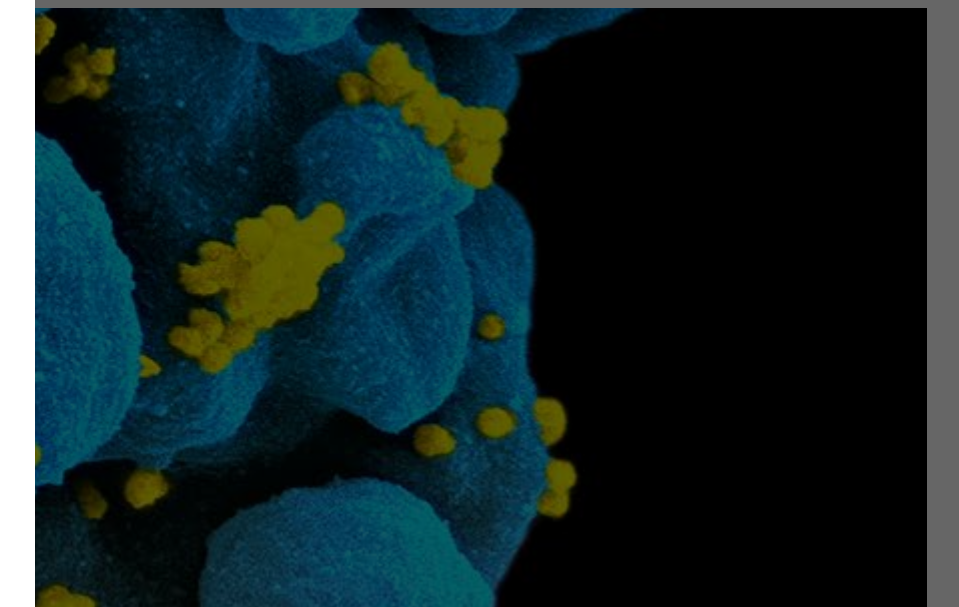
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Cytokine Combinations to Tailor Your Immune Cell Culture

[Download the Infographic](#)



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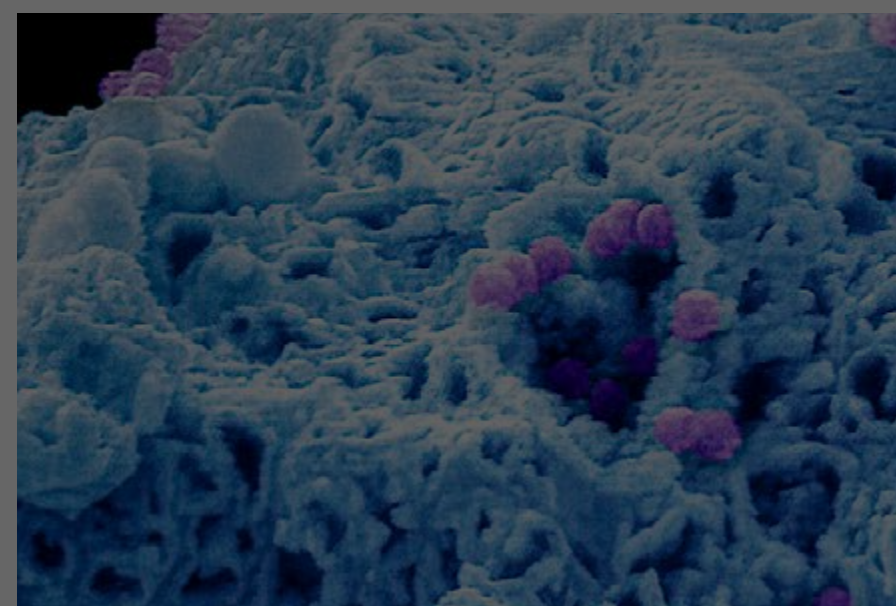
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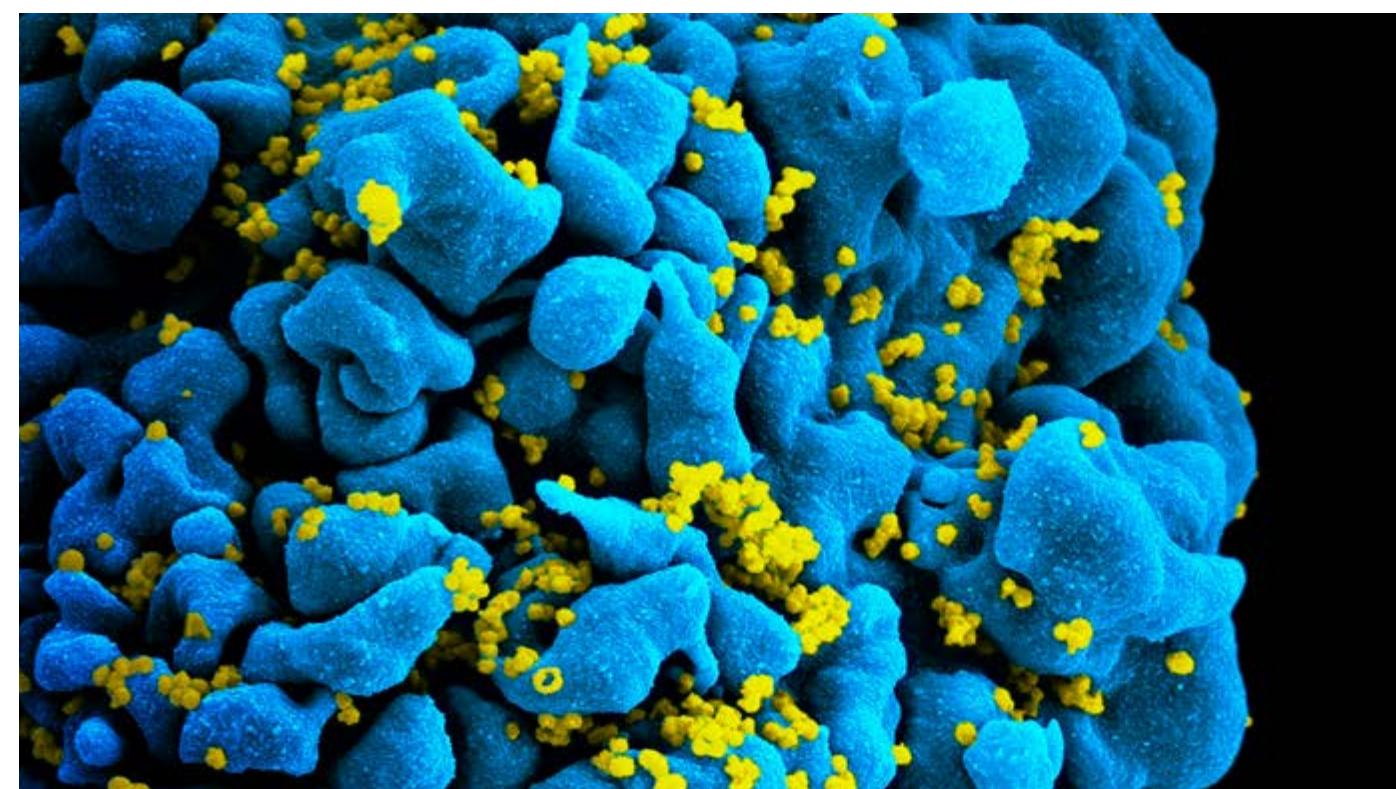
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Related Assets



AAV Gene Therapy



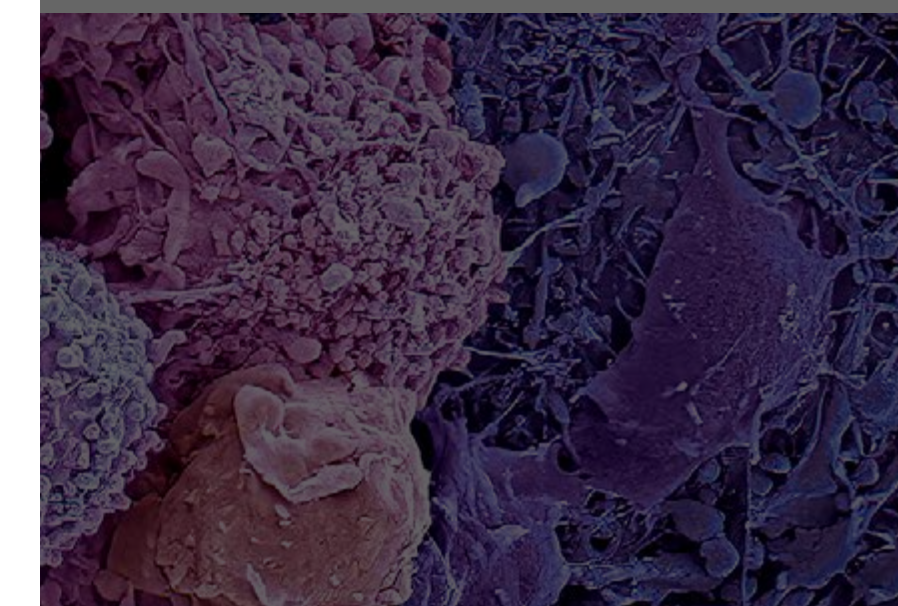
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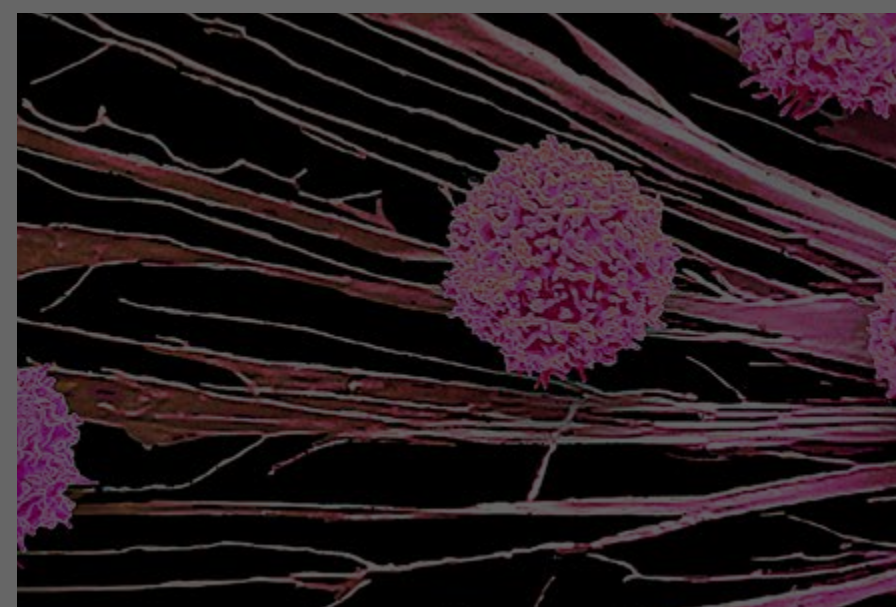
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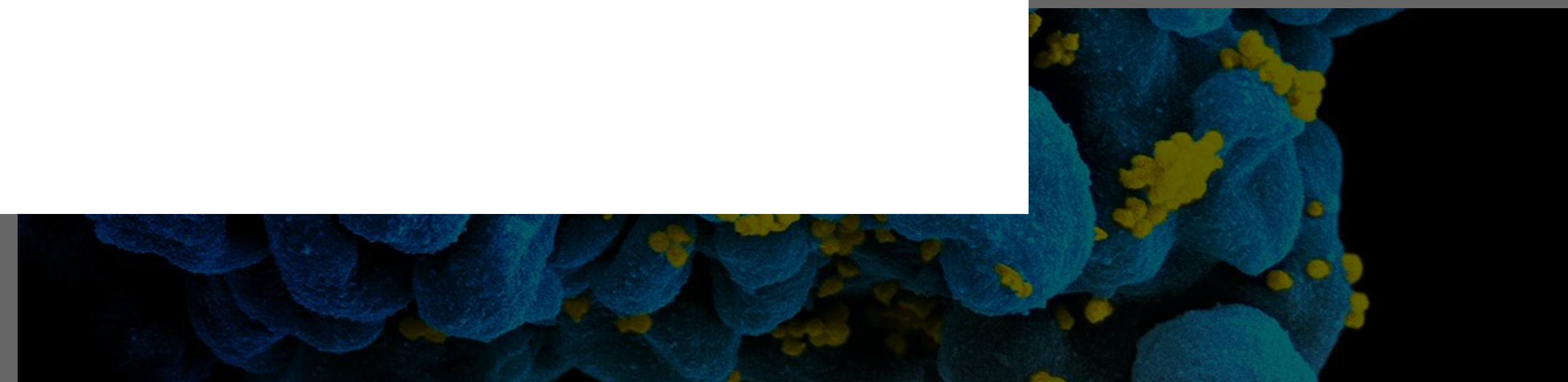


See Available Assets



Immune Cell Therapy

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Lentivirus Gene Therapy

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