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You Believe in Your Skills. So do We

A Guide to Eppendorf Bioprocess Cell & Gene Therapy Solutions

Tailored Solutions for Cell & Gene Therapy Applciations

The progress in the CGT field holds great potential to revolutionize our life in the future, but this progress will only be possible with the help of the bioprocessing industry. Stirred-tank bioreactors will be the game-changing devices to fulfill the increasing demand for the reproducible production of cell cultures with high density and viability.

For more than a decade, our Eppendorf bioprocess solutions have been successfully employed in the development of cell and gene therapies with our single-use stirred-tank bioreactor technology. Our purpose is to help bring life-saving treatments to the world, and we are doing this by pioneering the gold standard in this booming industry.

Join us on this journey to setting new standards for the future of bioprocessing and advancing the frontier of life-changing therapies.



Higher Yields in Closed Systems -BioBLU® Single-Use Bioreactors

The new industry standard for cell cultivations!

Since we developed the first rigid-wall single-use bioreactor in 2010, we are convinced that they will be the gold standard in the pharmaceutical industry to fulfill the growing demand for high-density cell cultures for cell and gene therapy applications. For more than a decade now, we have been serving the market with our well-known BioBLU rigid-wall single-use bioreactors. Let our extensive experience benefit your process and reach out to our team today! Send a mail to **bioprocess-info@eppendorf.com** for more information on our bioprocessing solutions.

Single-Use Bioreactor Benefits

- > Closed systems and none invasive sensor technology reduce contamination risks
- > Easy, user-friendly set-up for rapid turnaround, shorter development times and lower operating costs
- > Proven performance and scalability of stirred-tank design
- > Simplify installation with our rigid-wall design, and no risk of damages due to collapsing bioreactor bags
- > Special variants for adherent or aggregate cell cultures



BioBLU c Single-Use Bioreactors for cell culture applications

Single-use solutions for small, bench and pilotscale cell culture applications. A full portfolio of vessels covers a working volume range of 100 mL – 40 L, offering unmatched scalability. The singlelayer polymer design mitigates issues related to leachables and extractables.



Our Gentle »Stem Cell« Impeller Available for 0.3L Single-Use and 1L Glass Bioreactors

Especially developed for aggregate stem cell cultures. Our special 8-blade impeller ensures reduced cell settling and homogeneous mixing at low agitation speeds to reduce the stress for your stem cells.



Are you in the need of sufficient plasmid or vector production? Try our BioBLU f Single-Use Bioreactors for microbial applications!

Single-use solutions for fermentation applications, covering a working volume range of 65 mL – 3.75 L. High yield plasmid production in small volumes. Powerful overhead drives featuring Rushton-type impellers, and effective cooling make it possible to achieve the demands of fermentation processes on mass transfer and heat removal.

Looking for solutions that are suitable for commercial manufacturing?

Ask for our BioBLU HNQ variants that come with harmonized validation and qualification documents.



Visit our BioBLU eShop pages for more information or get in contact with us: <u>www.eppendorf.link/biobluc</u>

Versatile Bioreactor Solutions

	DASbox [®] Mini Bioreactor System	SciVario [®] twin	BioFlo [®] 320
	DoE Multiple parameter	Scalability Easy tech transfer from	Large Scale Processing with qualified
	testing	small to bench	systems
Working volume range	60 - 250 mL	0.2 - 40 L ¹	0.25 - 40 L
Single-use bioreactors available	•	•	•
Glass vessels, autoclavable	•	•	•
Interchangeable vessels	•	•	•
Plasmid/Vector Production	•	•	•
Mammalian/animal cell culture	•	•	•
Stem cells	•		•
Number of parallel units	Up to 24	Up to 16 (with PC V7)	Up to 8
Controller	DASware control	Touchscreen	Touchscreen
Touchscreen controller		•	•
SCADA Software Connectivity (DASware [®] Control or BioCommand [®])	•	•	•
DeltaV [™] Connectivity			•
Gas mixing options	4 gas (air, N ₂ , O ₂ , CO ₂)	4 gas (air, N ₂ , O ₂ , CO ₂)	4 gas (air, N ₂ , O ₂ , CO ₂)
Gas flow control ²	TMFC	TMFC	TMFC
Exhaust analysis	•	•	•
Optical density measurement	•		•
System Qualification	•		•
Software Validation			• 4

Realized using multiple vessels
Gas Flow Controllers: TMFC=Thermal Mass Flow Controller
³ optional
⁴ BioCommand Batch Control Plus

For Cell & Gene Therapy Development

Discover the perfect bioreactor solutions for every step of your bioprocessing journey. From small-scale to benchscale research, our versatile and cutting-edge offerings are designed to meet your unique needs. Unleash the power of advanced control, seamless scalability, and user-friendly interfaces for unparalleled precision and efficiency.



The Modular Tech-Transfer Genius:

- > Extendable to up to 16 bioreactors operated with glass or single-use bioreactors
- > Run different vessel sizes at the same time
- > Customizable and flexible bay-drawer concept support today's as well as future need
- > Automated detection and recognition of plugged-in accessories
- > Wide-range precise pumps for liquid addition from 0.005 – 600 mL/h and 4.5 – 5200 mL/h.
- > Advanced process monitoring, control, and data logging with DASware[®] control 6



The Multitasking Expert

for process development and optimization

- > 4-fold parallel system extendable to up to 24 parallel operated glass or single-use bioreactors
- > Compact mini bioreactor system: requires only 7 cm(3 inches) bench space per bioreactor
- > Optimal tool for DoE and scale down approaches
- > Innovative liquid-free temperature control system needs no coolant agent supply accurate monitoring and control of pH, DO and level
- > Variable speed pumps for accurate liquid addition
- > 4 mass flow controllers per bioreactor allow for individual mixing of air, N₂, O₂ and CO₂ to headspace and/or submerged



The Bench-Scale Workhorse

- > Scale up modeling software for the calculation of important process parameters
- > Control eight units from a single user interface
- > Trend display with up to twelve process values within a single view
- > Automated calibration for all attached DO sensors at once
- > Automatic gas mixing algorithms for simplified control (4-gas, 3-gas, 0, enrichment, N, enrichment)
- > DeltaV[®] compatibility available through DeltaV Discovery and DeltaV ProPlus PAS

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Eppendorf Bioprocess Software — Much More Than Just Bioprocess Control

Our upstream bioprocess portfolio is designed to seamlessly integrate bioprocess systems, control software, data analysis tools, and automation solutions. The products work in harmony to provide a complete upstream bioprocessing solution, enabling controlled cell cultivation, process automation for increased efficiency, and reduced manual labor. Additionally, our solutions help generating and best using valuable bioprocess data, empowering you to develop better processes faster.



DASware control plus

SCADA Software with 21 CFR Part 11 and EU GMP Annex 11 compatibility –

- User Authentication and Access Control
- > Electronic records
- > Electronic Signatures with Confidence:
- > Efficient Data Management

BioNsight®

BioNsight[®] cloud

- > Enables for remote monitoring and analytics
- > Seamless data transfer from DASware control 6 to the cloud in real time
- > Contextualize data across devices, runs, and sites
- > Data preparation for AI-based analysis
- > 256-bit AES encryption and Microsoft[®] SOC2/ISO 27001 certification

Interested in DASware control plus?

For optimal integration and compatibility of our soft- and hardware, we recommend consulting with our expert sales team to tailor solutions that best fit your unique needs with our system configuration. Inquire more information at www.eppendorf.group/ dasware-control

Unlock the value of data and go the transformative path to data-driven, digital process development.

Native integration of BioNsight[®] cloud and DataHowLab

Use data efficiently: Easily send all your data from DASware control to DataHowLab via BioNsight cloud	\checkmark
Save time: Data from BioNsight cloud is pre-formatted. No need for manual processing for use with DataHowLab	\checkmark
Gain convenience: Single sign-on (SSO) to log in to DataHowLab with your BioNsight cloud user data	\checkmark

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www.eppendorf.com/bioprocess

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