eppendorf

With Smart (Stem) Cell Culture Consumables

Improve Now

Eppendorf Cell Culture Consumables for more reproducible results

High Quality Cultureware - Made in Germany

Flasks

Flasks are the preferred vessels for long-term cultivation or large-scale expansion of cells, providing the best protection against contamination.

> Page 4

Plates

Plates are tailored for the expansion of smaller cell numbers as well as for cell-based assays.

> Page 6

Dishes

Dishes are the format of choice whenever direct access to cells is needed.

> Page 8

»How much impact does seemingly harmless plastic have on your cell culture results?«

The new CellXpert® CO_2 incubator provides future flexibility and supports highly reliable results: www.eppendorf.com/cellxpert

Learn more about the characteristics of your cell culture vessels and how you can improve your experiments.

> Evaporation effects: How do you effectively reduce them?
> Temperature shifts: How can you keep your cells warm outside the incubator?
> Mycoplasma protection: How do you effectively protect your cells from this hard-to-detect enemy?
> Plastic additives and sterility: How can you minimize the interference caused by substances in the material?
> Stem cell culture: How can you improve the reproducibility of your iPSC or MSC culture?

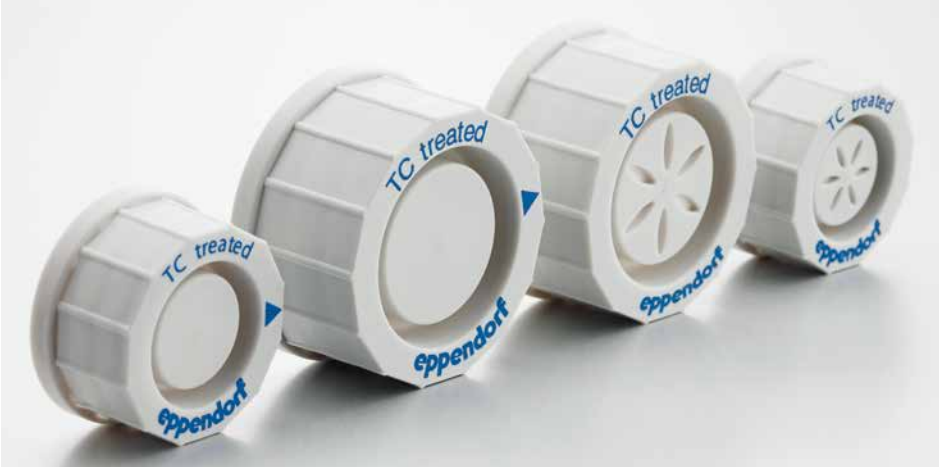
Read more in this brochure, request a free sample and convince yourself - for more reproducible cell culture results. www.eppendorf.com/ccc

Eppendorf Cell Culture Flasks

Just place your caps on their sides

How do you place your caps inside the biosafety cabinet?

Right side up or upside down? Which way offers the best contamination protection, which the easiest handling? With the anti-rolling cap of Eppendorf cell culture flasks, you can just place your caps on their sides - for optimal contamination prevention and easy handling.



Protect your monolayer cell culture

The opening of a cell culture flask is indeed the bottleneck when working with serological pipettes or cell scrapers.

Often, the mobility of tools inside the flask is limited and difficult. This can result in unintended contact with the cell monolayer or uneven harvesting, leading to decreased reproducibility. The angled ConvexAccess™ neck simplifies access, increases safety and thus reproducibility.

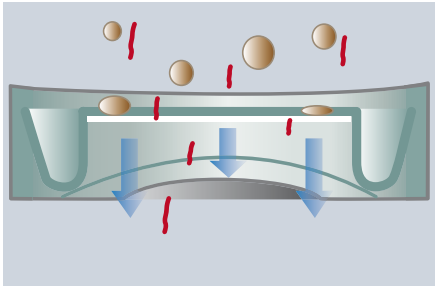
Learn how to improve cell accessibility and contamination prevention: Scan QR code to watch YouTube Video and download White Paper #024
www.eppendorf.com/whitepaper024

Enhanced mycoplasma protection

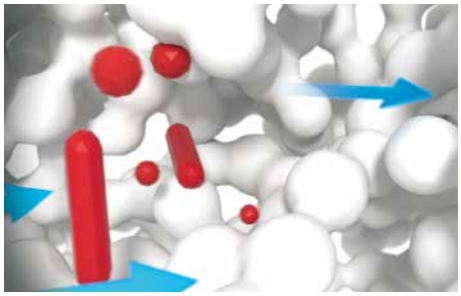
Did you ever take a closer look at the filters in the caps of your flasks?

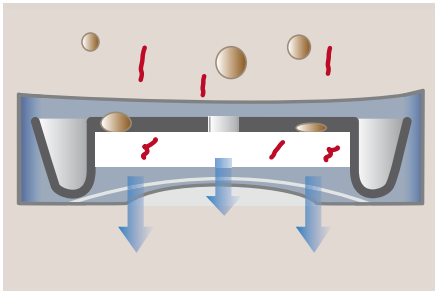
Standard membrane filters are thin and come with a defined pore size of 0.2 µm. Think about it: does this stop mycoplasma from passing through?

Eppendorf Cell Culture Flasks come with an advanced filter technology that uses a labyrinthine arrangement and increased thickness. This ensures higher filter efficiency and contamination protection – while maintaining optimal gas exchange.



Standard membrane filter
Membrane filter with defined and constant pore size of 0.2 µm. Particles smaller than this size (e.g. mycoplasma) can pass through.





Eppendorf volume filter technology
The labyrinthine arrangement of filter pores in various sizes, combined with increased filter thickness, ensures higher efficiency in holding back contaminants, while providing proper gas exchange.

YouTube Video:
Learn more about the advanced filter technology and how it can improve sample safety - Scan QR code to watch

Download overview for mycoplasma detection (pdf):
www.eppendorf.com/MycoplasmaDetection

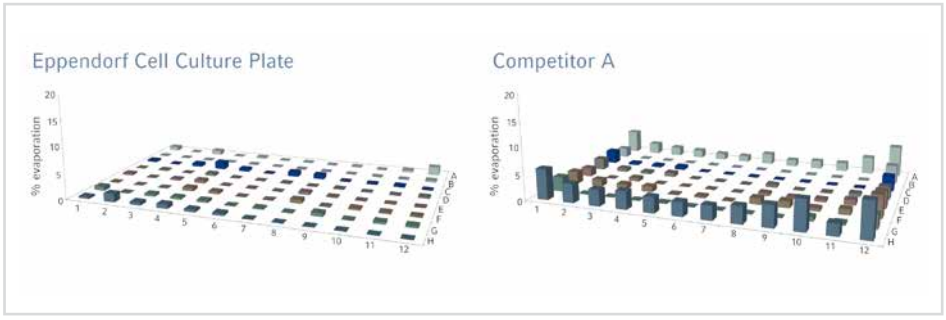
Eppendorf Cell Culture Plates

Reduce evaporation, use 38% more wells and reduce waste

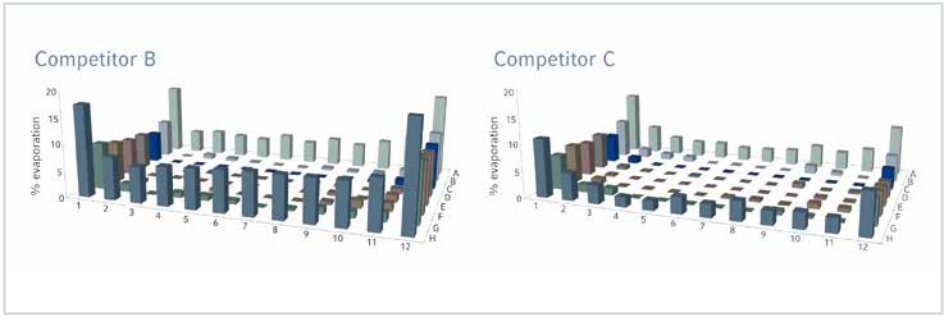
Do you use all the wells of your 96-well plate including the outer ones?

Usually, these wells are not used for a good reason: increased evaporation in the outer wells reduces reproducibility and comparability between all wells (edge effect).

Therefore, more than a third of a plate is not used. More experiments are necessary, which mean higher costs and increased plastic waste. With Eppendorf Cell Culture Plates, the surrounding moat can be filled. This significantly reduces the edge effect and all wells become comparable.



Want to learn more about what consequences the edge effect has on your cell-based assays and how you can prevent it?
Download Application Notes:
www.eppendorf.com/appnote326
www.eppendorf.com/appnote384



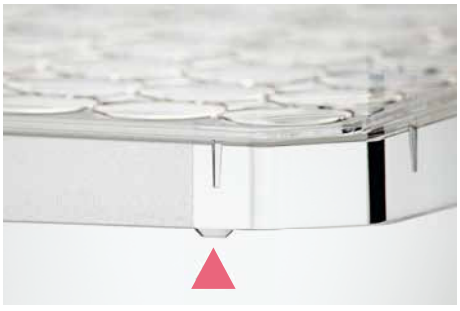
YouTube Video: What is the edge effect? Scan QR code to watch

Put your lids down safely

What do you do with your lids if you need to open the plate completely for full access?

How do you put them on the bench surface without risking contamination?

Eppendorf Cell Culture Plates come with lid taps that minimize surface contact and therefore significantly reduce the risk of contamination.

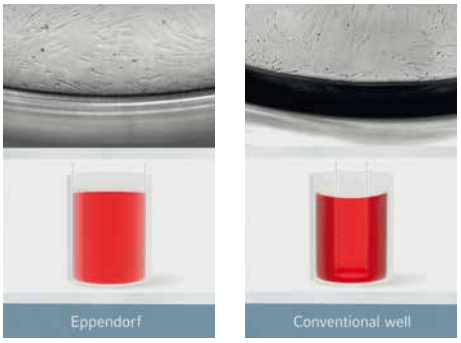


See more cells, harvest more clones

The surfaces of cell culture vessels need to be modified physically during production to ensure cell attachment (TC treatment).

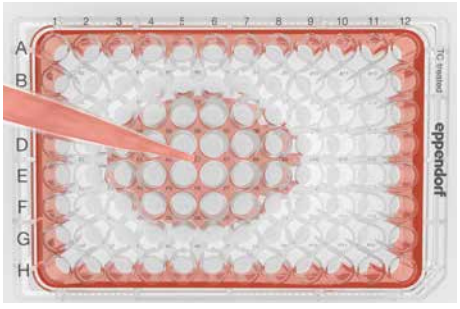
Undirected TC treatment causes the medium to form a meniscus and leads to optical interference. This results in shadow formation at the edge of the well.

Here, observation of the growth area is impeded and valuable clones will be lost to analysis. A specialized, targeted surface treatment for Eppendorf Cell Culture Plates prevents this effect. Together with enhanced planarity this makes
microscopic analysis of cells more reliable and faster.



Learn more about the influence of optical properties on your results:
www.eppendorf.com/appnote330

Keep your cells warm outside



When you take your cells out of the incubator, how do you prevent rapid temperature shifts from affecting your cell performance and experimental reproducibility?

The inter-well spaces of Eppendorf Cell Culture Plates can be filled with prior to incubation because of the chimney-well design. This keeps your cells warm and cozy outside the incubator.

YouTube Video:
How do you keep your cells warm outside? Scan QR code to watch

Reproducibility in stacks

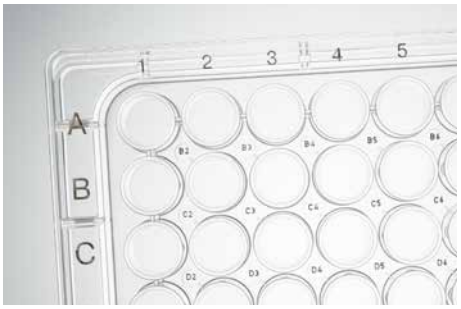
Have you ever seen variations in cell growth on different plates of the same stack?

The reason is often a temperature heterogeneity caused by impaired airflow between the plates. Ventilation gaps ensure proper airflow and avoid vacuum formation for enhanced handling safety.

Identify your wells quickly, easily and securely

Have you ever wondered why the labeling of individual wells or alphanumerics on some cell culture plates is transparent on a transparent background?

This seemingly small detail can result in pipetting errors, cross contamination and time-consuming sample loss. The lasered high contrast OptiTrack® matrix and individual well ID labeling ensures easy, fast and secure identification - without using potentially interfering ink.



Eppendorf Cell Culture Dishes

SplashProtect™ ring

Have you ever noticed minor splashes or droplets on the inside of the lid or liquid in the gap between dish and lid?

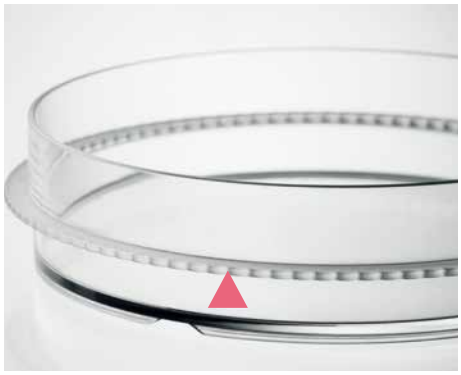
These seemingly small liquid volumes usually arise from transportation or condensation and can result in a significant contamination risk. The SplashProtect™ ring inside the lid traps liquid and prevents spills and condensation.

YouTube Video:
Cell Culture Consumables -
Scan QR code to watch

Eppendorf Cell Culture Consumables

Grip safe, stack safe - stay in control

Gripping a lid-covered vessel with gloved hands can be a challenge. Sometimes, you lift the lid instead of the vessel, risking contamination. Maybe you even drop the vessel because it is not properly gripped. Avoid this with the gripping aids on Eppendorf Cell Culture Dishes and Plates.



Pack smart and safe

Do you usually re-close your packages using tape or paper clips? Is this reliable and tight so the vessels are protected?

Resealable, shrinkable packaging with bend-seals or zip-locks make re-sealing convenient and safe.

Highest sterility standards

Non-sterile consumables themselves can become an underestimated source of contamination. If you compare different products, you will find differences in the sterility assurance level (SAL) - an indicator of the potential contamination risk. Generally, the lower the SAL, the lower the contamination risk.

Standard Eppendorf Cell Culture Consumables ensure highest product safety and sterility of SAL 10^{-6} by

> ISO class 8/GMP class C clean room production standard
> Lot specific 3rd party product testing including in-vitro test with cells

More information about »Minimizing interferences« on page 15.

Working with Stem Cells?

Tired of spending precious lab time coating vessels for your iPSC- or MSC-culture, which still often result in unpredictable culturing results? How about a xeno-free, or even better, a synthetic surface that is ready-to-use for fully defined conditions and reproducible results of your stem cell culture?

CCCadvanced® FN1 motifs cultureware

Main advantages vs. self-coating

> No tedious preparation with possible vessel/coating media dissipation: ready-to-use with a shelf life of 3 years at room temperature
> Fully defined surface supports predictable expansion and differentiation: Coated with synthetic RGD-containing motifs
> No expensive lot-specific performance verification of coating media: lot-to-lot production consistency
> Reduced contamination risk: no preparation needed and individually packed
> Increased reproducibility

Main applications

Expansion and differentiation of:

> Stem cells (e.g., hiPSCs, hMSCs)
> Primary cells
> Other ECM-sensitive eukaryotic cells

> Feeder-free cell culture
> Restrictive culture conditions (serum-and xeno-free)

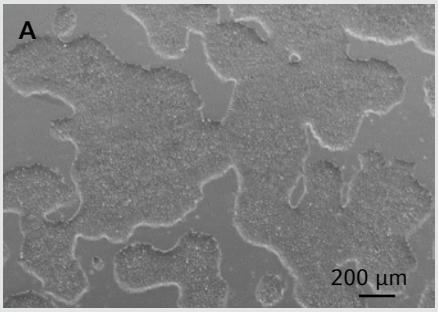
Convince yourself and request a free sample! www.eppendorf.com/ccc-advanced

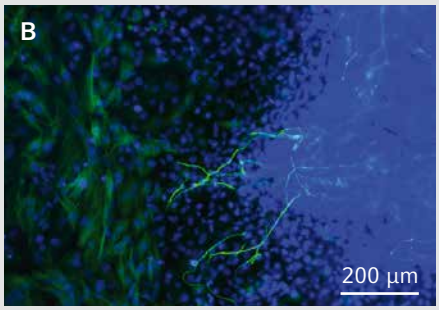
> Please see detailed specifications and ordering information on page 20 of this brochure.

Reliable Long-term Expansion/Differentiation of iPSCs and MSCs

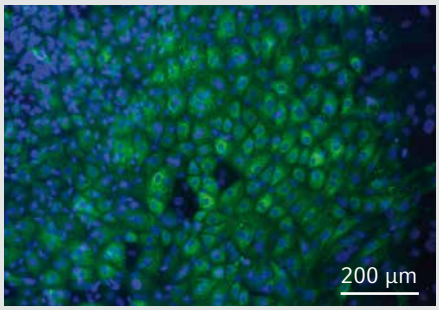
hiPSCs: Efficient long-term expansion of hiPSCs in a completely synthetic culture system

> Supports efficient long-term hiPSC expansion in a completely defined, animal- and human-component-free culture system
> Consistent and robust growth rate
> Typical morphology remains stable (Fig. 1A)
> hiPSCs remain undifferentiated and maintain functional pluripotency
> Maintenance of trilineage differentiation potential after long-term expansion (Fig. 1B) while exhibiting normal genomic integrity

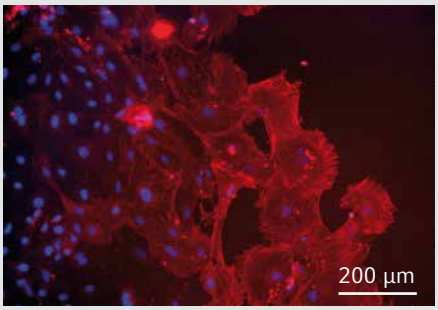




Ectoderm
TUJ1 / DAPI



Endoderm
AFP / DAPI

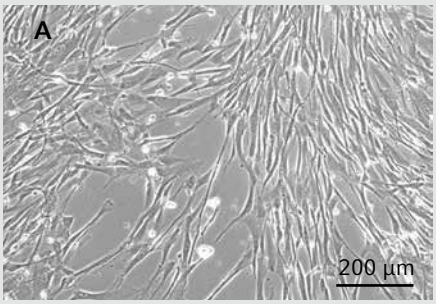


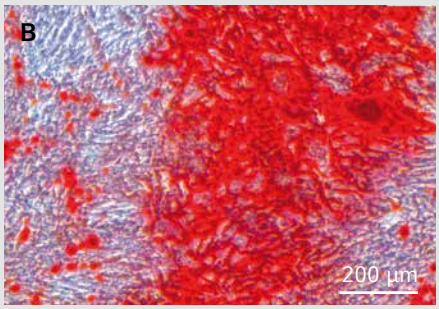
Mesoderm
SMA / DAPI

Fig. 1: Cell morphology (Fig. A) and trilineage differentiation potential (Fig. B) after long term expansion of hiPSCs on the CCCadvanced® FN1 motifs surface

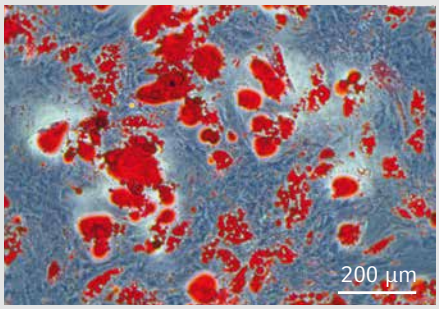
hMSCs: Animal-component-free expansion of human mesenchymal stem cells

> Supports efficient hMSC proliferation in a completely animal-component-free environment even during long-term culture
> Characteristic morphology (Fig. 2A) remains stable without signs of replicative senescence
> Stable and robust proliferation rate
> Validated with hMSC from different tissue origins
> Undifferentiated hMSCs retain their multi-lineage differentiation potential after expansion (Fig. 2B)

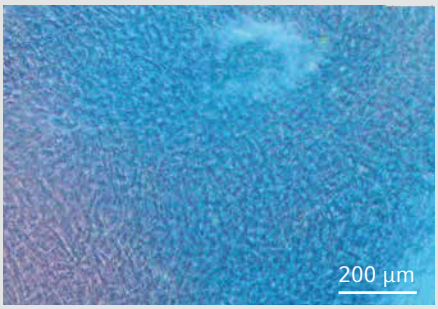




Osteogenic differentiation



Adipogenic differentiation



Chondrogenic differentiation

Fig. 2: Cell morphology (A) and multi-lineage differentiation potential (B) of hMSC-BM after long-term expansion on the CCCadvanced® FN1 motifs surface in an animal-component-free environment

Eppendorf Cell Culture Consumables – What Do You Get and What's Your Benefit?

Eppendorf Cell Culture Flasks

> **Contamination protection** via advanced filter technology

> **Contamination protection** and **facilitated handling** due to anti-rolling cap

> **Better access to growth surface** and **protection of cells** through unique neck geometry

> **Leakage-free flasks** by 100% in-line control

Eppendorf Cell Culture Plates

> **Enhanced performance during microscopy** by innovative surface treatment (reduced meniscus)

> **Improved reproducibility** by minimized edge effect and usage of all 96 wells

> **Improved temperature stability** outside the incubator due to chimney-well design

> **Faster and exact well identification** due to OptiTrack® matrix

> **Contamination protection** by (a) lid taps, (b) ventilation gaps, and (c) facilitated handling performance

Eppendorf Cell Culture Dishes

> **Contamination protection** through splash-protection

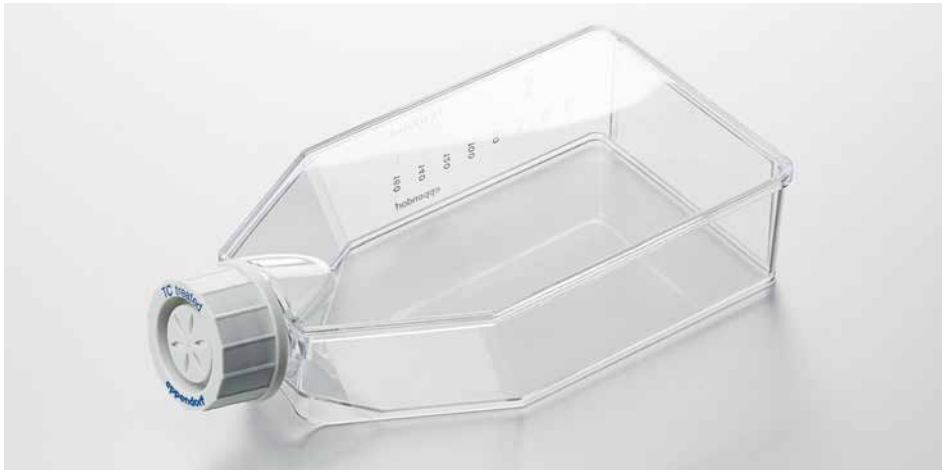
> **Contamination protection** and **safe handling** due to secure grip of ridged handling ring

> **Contamination protection** and **safe stacking** by pronounced rim of lid

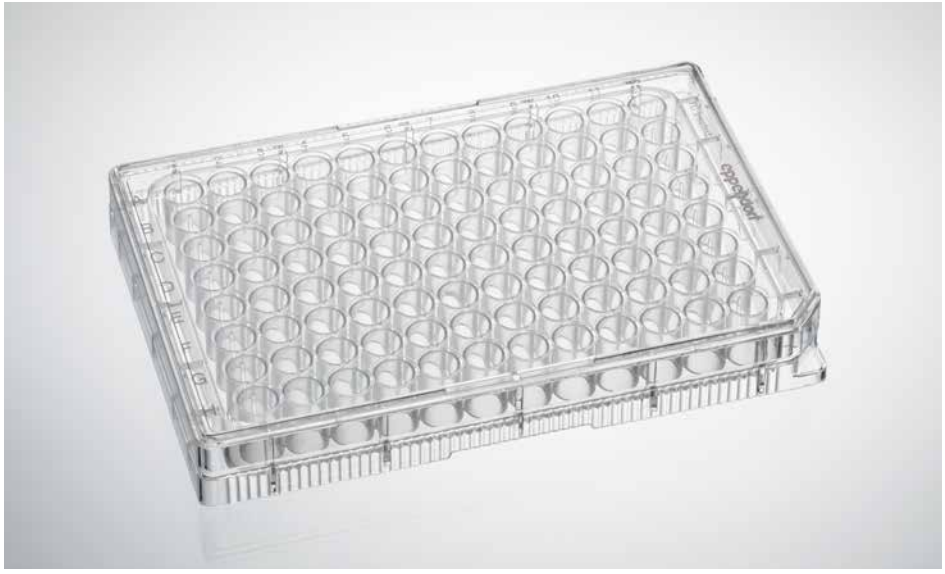
> **Contamination protection** through smart packaging

High Quality Cultureware - For More Reproducible Results

Optimized contamination protection and access to cells



The choice for reproducible results



Optimized contamination protection and safe handling

CCCadvanced® FN1 Motifs Consumables – What Do You Get and What's Your Benefit?

CCCadvanced® FN1 Motifs Cultureware

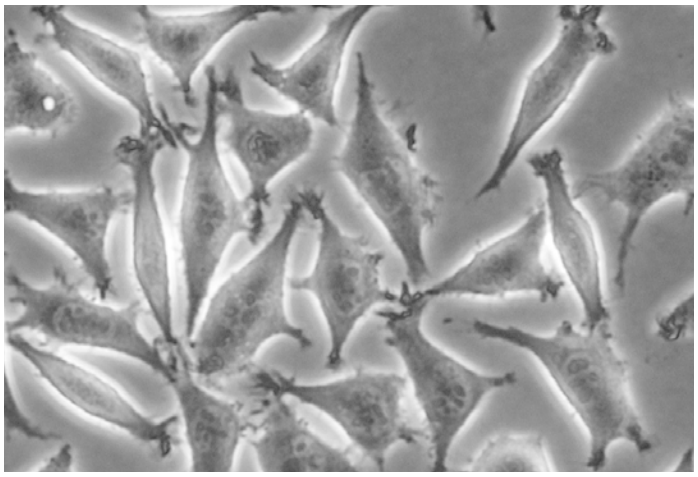
> Efficiently expand and differentiate iPSCs and MSCs under **animal-** and **human-component-free conditions**

> **Save time** and **improve logistics** with a coating being ready-to-use having a shelf life of 3 years at room temperature

> **Work under completely defined conditions** with a synthetic coating made up of fibronectin-derived motifs designed to mimic the cell attachment site of native ECM

Xeno-free FN1 motifs cultureware for stem cells, available as plates and flasks

Minimize Interference



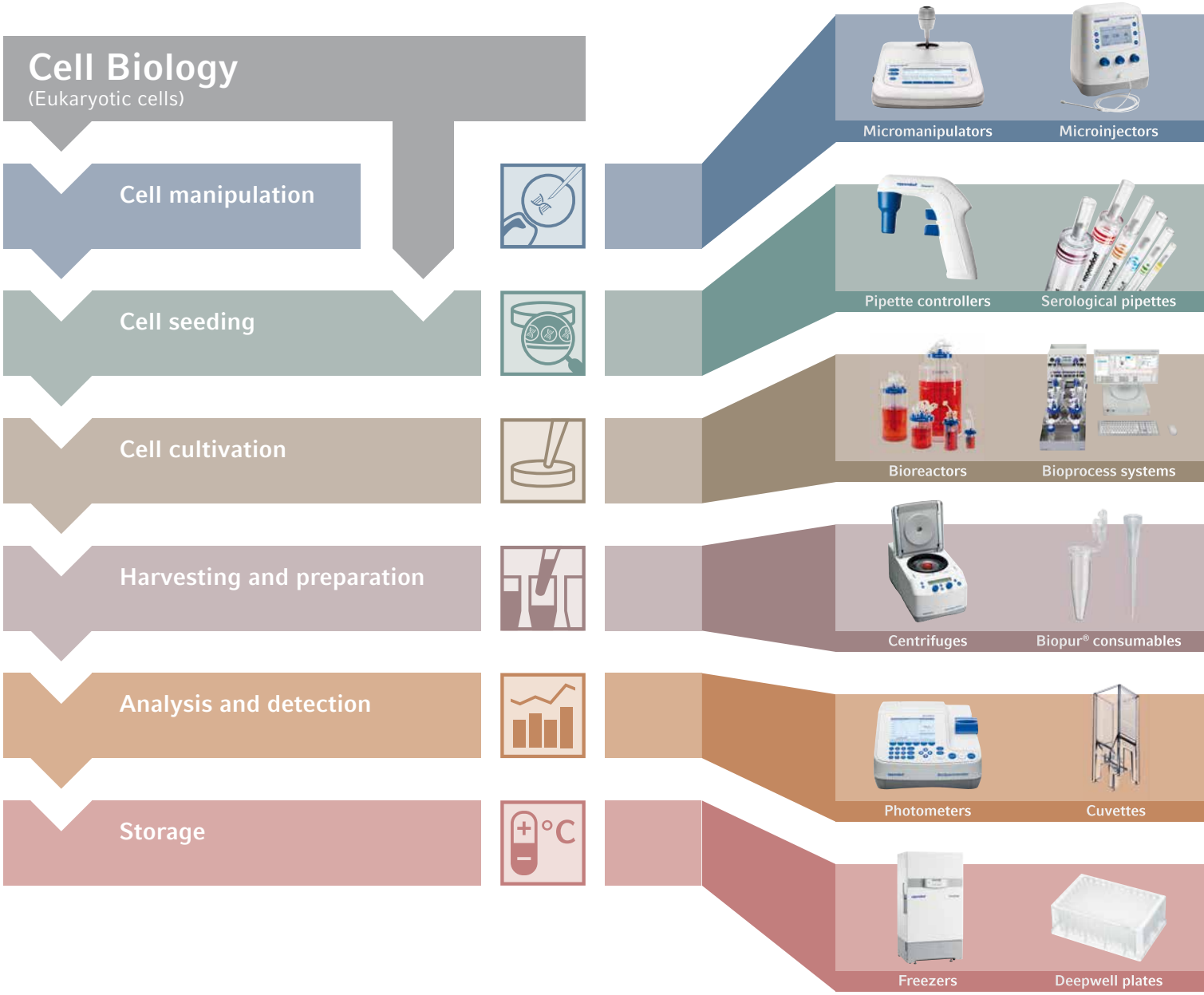
Did you ever realize that the seemingly simple plastic surface of your cultureware can have a significant impact on the growth and metabolism of your cells?
Therefore, the chemical composition including all additives and the absence of potentially interfering factors is crucial. Eppendorf Cell Culture Consumables offer a transparent and certified insight into material quality.

All Cell Culture Consumables	
Surface	Tissue culture treated or non-treated
Sterility/Purity	All products are sterile. Sterility is assured by irradiation according to DIN EN ISO 11137-2015 with sterility assurance level (SAL) of 10^{-6}. Sterility is tested according to USP, Ph. Eur. 2.6.12.
Material	Polystyrene. The raw material used complies with USP Class VI standards
Certificates	
Trace metal release	Al, Pb, Cd, Ca, Cr, Cu, Mg, Mn, Ni, Hg, Zn (measured with inductively coupled plasma - mass spectrometry after 72 h at 40°C incubation)
Leachables	Material suppliers of Eppendorf do not use or intentionally incorporate the following agents into the materials for the production: > Slip agents (including oleamide, erucamide, stearamides) > Biocides (including di(2-hydroxyethyl) methyldodecylammonium salts (DiHEMDA)) > Plasticizers (including phthalates) > Bisphenol A > Latex > Antistatic agents > Metallic dyes > Mineral oil
Cytotoxicity testing	Tested in a cell-based assay for in-vitro cytotoxicity according to ISO 10993-5 by an external partner
Download certificates	www.eppendorf.com > Cell Culture Consumables > Certificates
Lot-specific certificates	
Sterility	SAL 10^{-6}
Absence of	> Pyrogens > RNase and DNase > DNA
Performance of TC treatment	Cell attachment and cell growth tested
Production conditions	Quality management system is certified according to ISO 9001, 13485 and 14001 All Eppendorf Cell Culture Consumables are produced in a controlled class 8 clean room environment based on ISO 14644-1
Download certificates	www.eppendorf.com > Cell Culture Consumables > Certificates
Operating temperature	-86 °C to 60 °C
Storage before use	Store dry and at room temperature. Protect from sunlight and UV rays

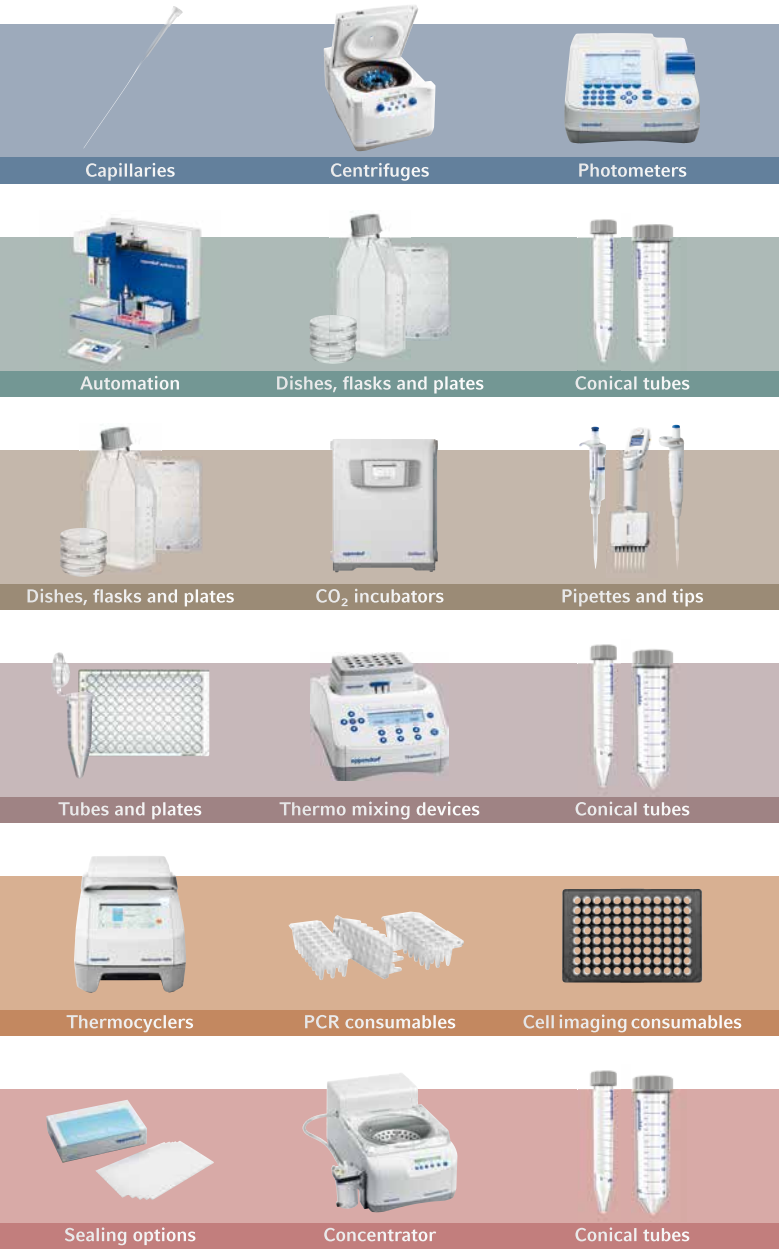
Eppendorf – Your Workflow Oriented System Supplier

As a workflow oriented provider of lab equipment, Eppendorf offers instruments, consumables and accessories that perfectly fit your processes in the lab and thus your daily lab work. Our comprehensive solutions provide smart innovations to simplify or even eliminate cumbersome lab work.

You will find flexible solutions to prepare, handle, and analyze your samples and cells. Solutions that allow you to verify and calibrate your instruments according to your individual needs. Maintenance and service contracts are also available.



> Further workflow information can be found at www.eppendorf.com/workflows



CellXpert® CO_2 Incubator

NEW: CellXpert® CO_2 incubator family
Are you looking for a 170 L class CO_2 incubator that provides flexibility for the future, makes monitoring and documentation easy, and delivers optimized growth conditions, even for your sensitive cells? A CO_2 incubator that also saves money and is manufactured to the highest quality standards? Let us introduce CellXpert – a new family of Eppendorf CO_2 incubators.

Full control and easy documentation with the intuitive, easy-to-use VisioNize® touch interface. Export performance charts or HTD-protocols within seconds via the integrated USB ports on the front panel. Benefit from additional smart features like recurring tasks that help you to relieve the burdens of daily routines.

More information:
www.eppendorf.com/cellxpert

Keep on Learning and Teaching Cell Culture Expertise Knowledge

You are always looking for ways to improve or for resources that support your teaching? Have a look on our Cell Handling Solutions website and find helpful tricks, videos and more - for beginners and professionals.
Content includes:

> Tips and tricks for your daily routine
> Teaching support
> Info posters and videos
> Workspace guidelines
> Webinars and trainings

Learn more on
www.eppendorf.com/cellexperts

Contamination

Do you really know
what's in your cell culture?

Selected topics:
> How to detect different kinds of contamination
> How to improve your lab setup and workflow to effectively prevent contamination
> What is the role of antibiotics and why you should use quarantine

Identity

Do you really know
what cells you work with?

Selected topics:
> Causes and impact of misidentified cell lines
> How to ensure working with the right cells
> How to incorporate cell authentication testing into your routine and how to choose the right method

Reproducibility

Do you really treat your cells
the same way every time?

Selected topics:
> Why it is important to establish standardized techniques in your lab
> Good Cell Culture Practice
> How a »Cell profile« can help you to record the important culturing details for each cell line

Eppendorf Cell Culture Consumables

Ordering information, Eppendorf Cell Culture Plates

Description	Order no.
Eppendorf Cell Culture Plate, 6-Well, with lid, flat bottom, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, 60 plates, individually wrapped	0030 720 113
non-treated, 60 plates, individually wrapped	0030 720 016
TC treated, 100 plates (10 bags × 10 plates)	0030 720 130
Eppendorf Cell Culture Plate, 12-Well, with lid, flat bottom, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, 60 plates, individually wrapped	0030 721 110
non-treated, 60 plates, individually wrapped	0030 721 012
Eppendorf Cell Culture Plate, 24-Well, with lid, flat bottom, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, 60 plates, individually wrapped	0030 722 116
non-treated, 60 plates, individually wrapped	0030 722 019
Eppendorf Cell Culture Plate, 48-Well, with lid, flat bottom, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, 60 plates, individually wrapped	0030 723 112
non-treated, 60 plates, individually wrapped	0030 723 015
Eppendorf Cell Culture Plate, 96-Well, with lid, flat bottom, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, 80 plates, individually wrapped	0030 730 119
non-treated, 80 plates, individually wrapped	0030 730 011
TC treated, 100 plates (10 bags × 10 plates)	0030 730 135

Ordering information, Eppendorf Cell Culture Dishes

Description	Order no.
Eppendorf Cell Culture Dish, 35 mm, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, 300 dishes (30 bags × 10 dishes)	0030 700 112
non-treated, 300 dishes (30 bags × 10 dishes)	0030 700 015
Eppendorf Cell Culture Dish, 60 mm, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, 300 dishes (30 bags × 10 dishes)	0030 701 119
non-treated, 300 dishes (30 bags × 10 dishes)	0030 701 011
Eppendorf Cell Culture Dish, 100 mm, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, 300 dishes (30 bags × 10 dishes)	0030 702 115
non-treated, 300 dishes (30 bags × 10 dishes)	0030 702 018

Ordering information, Eppendorf Standard Cell Culture Flasks

Description	Order no.
Eppendorf Cell Culture Flask T-25, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, with filter cap, 192 flasks (24 bags × 8 flasks)	0030 710 126
TC treated, with plug-seal cap, 192 flasks (24 bags × 8 flasks)	0030 710 118
non-treated, with filter cap, 192 flasks (24 bags × 8 flasks)	0030 710 029
non-treated, with plug-seal cap, 192 flasks (24 bags × 8 flasks)	0030 710 010
Eppendorf Cell Culture Flask T-75, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, with filter cap, 80 flasks (16 bags × 5 flasks)	0030 711 122
TC treated, with plug-seal cap, 80 flasks (16 bags × 5 flasks)	0030 711 114
non-treated, with filter cap, 80 flasks (16 bags × 5 flasks)	0030 711 025
non-treated, with plug-seal cap, 80 flasks (16 bags × 5 flasks)	0030 711 017
Eppendorf Cell Culture Flask T-175, sterile, free of detectable pyrogens, RNase & DNase, DNA. Non-cytotoxic.	
TC treated, with filter cap, 48 flasks (12 bags × 4 flasks)	0030 712 129
TC treated, with plug-seal cap, 48 flasks (12 bags × 4 flasks)	0030 712 110
non-treated, with filter cap, 48 flasks (12 bags × 4 flasks)	0030 712 021
non-treated, with plug-seal cap, 48 flasks (12 bags × 4 flasks)	0030 712 013

Ordering information, CCCadvanced® Cell Culture Consumables

Description	Order no.
CCCadvanced® FN1 motifs Cell Culture Plates, 6-well sterile, free of detectable pyrogens, RNase, DNase, DNA Non-cytotoxic, 5 plates, individually wrapped	0038 110 010
CCCadvanced® FN1 motifs Cell Culture Plates, 24-well, sterile, free of detectable pyrogens, RNase, DNase, DNA Non-cytotoxic, 5 plates, individually wrapped	0038 110 030
CCCadvanced® FN1 motifs Cell Culture Flasks, T-75, sterile, free of detectable pyrogens, RNase, DNase, DNA Non-cytotoxic, 5 flasks, individually wrapped	0030 120 020
CCCadvanced® FN1 motifs Cell Culture Flasks, T-175, sterile, free of detectable pyrogens, RNase, DNase, DNA Non-cytotoxic, 5 flasks, individually wrapped	0030 120 030

Technical Specifications

	Standard Cell Culture Consumables	CCCadvanced® FN1 motifs Consumables
Material	Polystyrene, meets requirements of USP Class VI.	
Surface	Tissue culture treated or non-treated.	Coated with synthetic RGD-containing motifs.
Xeno-free	—	Manufactured by using animal- and human-component-free materials.
Operating temperature	–86 °C to 60 °C	15 °C to 37 °C
Storage before use	Store dry and at room temperature. Protect from sunlight and UV rays.	
Purity	All products are free of detectable pyrogens, RNase, DNase and human and bacterial DNA. All products are non-cytotoxic.	
	All products are sterile: Production in controlled class 8 clean room environment based on ISO 14644-1. The sterilization process is performed according to ISO 11137.	All products are sterile: Production in controlled class 5 clean room environment according to ISO 14644-1 and EU-GMP Grade A. FN1 motifs Consumables are manufactured using aseptic processing per ISO 13408-1.
Certificates	Leachables, heavy metals, production conditions, purity and cytotoxicity. An in-line leakage testing ensures the integrity of Eppendorf Flasks. The certificates are available under www.eppendorf.com	
Lot-specific certificates	Sterility assurance level (SAL) of 10^{-6} TC treated surface: Testing for cell attachment and cell growth with an anchorage-dependent cell line.	Sterility assurance level (SAL) of 10^{-3} Cell growth test on CCCadvanced® FN1 motifs consumables.
	Free from RNase/DNase, human DNA, bacterial DNA, endotoxins and pyrogens. Lot-specific certificates can be downloaded at www.eppendorf.com	
Produced in	Germany	

> Request a free sample or further support:
www.eppendorf.com/ccc-advanced

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