

Cell Biology

Improve your laboratory workflow



Cultivation Under Controlled Conditions



Cell cultivation

What about protection against contamination?

How do I prevent inhomogeneous cell growth?

Inhomogeneous cell adhesion!
What now?

How to avoid negative effects caused by leachables or extractables?

Our Cell Culture Consumables are developed to facilitate the lab work while offering safety and convenience in handling. With our comprehensive range of bioprocess solutions cells can be cultivated under controlled conditions, e.g. using single-use vessels.

Cell Biology is a branch of biology that studies cells—the organelles they contain, their function, their physiological properties, their life cycle and the interactions with their environment. Cell Biology basic research can be divided into several subfields; the study of cell metabolism, the study of cellular genetics and the underlying regulatory mechanisms, the study of cell compartment structures, the study of cell cycle, division and death and the study of cell communication and signaling. Research in cell biology overlaps to a great extent other areas of biology and chemistry, particularly genetics, biochemistry and molecular biology.

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Most frequent problems/challenges

Contamination of cells

- > The CO₂ incubator can be a source of contamination
- > Medium and cells in contact with outside air due to splashing and inadvertent removal of the lid

Possible solution

Minimize the risk by:

- > Perform incubator disinfection routine regularly
- > Fill consumables one by one
- > Use flasks with a screw cap instead of dishes with a loose lid e.g. for maintenance of stock cultures or when frequent transportation of the cultures is needed

Eppendorf's solution

Eppendorf's product benefits:

- > Easy to clean incubators with high temperature disinfection mode
- > Corrugated handling ring of Cell Culture Dishes for safe transportation
- > SplashProtect™ ring in dishes to avoid splashes and bridging of medium with outside environment
- > Flasks with optimized geometry

Cell culture dishes; CO₂ incubators



Most frequent problems/challenges

Inhomogeneous cell growth

- > Inhomogeneous distribution of cells in the edge wells of multiwell plates
- > Higher evaporation rate in edge wells
- > Temperature variations during incubation
- > Variations in chamber atmosphere due to door opening of the CO₂ incubator

Possible solution

Minimize the risk by:

- > Omit usage of the edge wells
- > Increase sedimentation time for cells in the 96-well plate at room temperature
- > Use a separate CO₂ incubator for cells seeded for assays
- > Minimize door opening events of the CO₂ incubator

Eppendorf's solution

Eppendorf's product benefits:

- > Peripheral moat in 96-well Cell Culture Plates to minimize edge effect
- > Possibility to fill the inter well space of all Cell Culture Plate formats to reduce temperature variations
- > Usage of split inner doors of Galaxy® CO₂ incubator for stable growth conditions

Cell culture plates; CO₂ incubators



Most frequent problems/challenges

Inhomogeneous cell adhesion

- > Variations in seeding cell numbers
- > Formation of air bubbles during the seeding process
- > Uneven distribution of cells

Possible solution

Minimize the risk by:

- > Regular resuspension of cells during seeding
- > Manual movement of consumable after seeding
- > Cell culture consumables with high quality standard

Eppendorf's solution

Eppendorf's product benefits:

- > Fast seeding operation using Multipipette® (U.S./CAN: Repeater®) and Combitips®
- > Dispersion steps for avoiding air bubble insertion
- > Batch tested and certified consumables for consistent quality

Pipettes and tips; Dishes, flasks and plates



Most frequent problems/challenges

Issues related to leachables & extractables

- > Cytotoxic effects
- > Altered product characteristics

Possible solution

Minimize the risk by:

- > Extractables studies to identify and quantify potentially harmful compounds
- > Rigid-wall stirred tank bioreactors

Eppendorf's solution

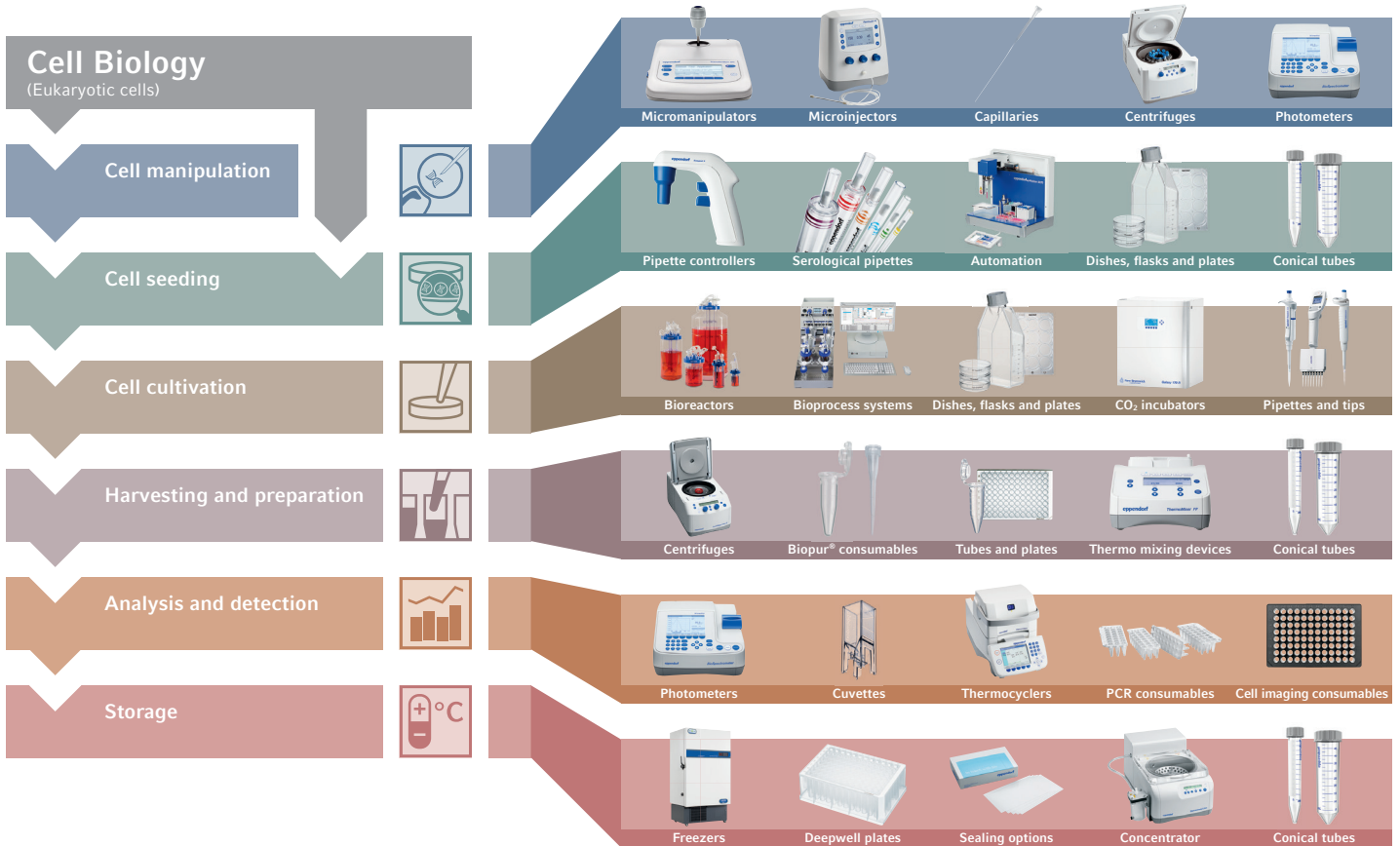
Eppendorf's product benefits:

- > Single-use vessels produced from monolayer injection-molded plastics: materials comply with USP Class VI
- > Virgin raw materials, all sourced by Eppendorf directly

Bioprocess systems; Single-use vessels



Being in Process



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