

Microbioreactor System

**C.BIRD™**

Breaking Boundaries in Cell Culture





## About the C.BIRD

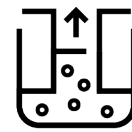
The next generation microfluidic reactor for cell line development (CLD). Reduce the amount of time required to culture cells by identifying suitable clones faster and more reliably.

# Optimize cell culture environments in 96/24-well plates



## Better clone selection

Bring cells into suspension culture (only for suspension cells)



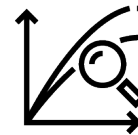
## Optimize cell culture environment

Continuous mixing for homogenous media composition



## Start suspension sooner

Increase oxygen transfer rate (OTR) for both adherent cells and suspension cells



## Cutting-edge technology

Low shear rate mixing to reduce stress on cell lines



## Less time, better results

Higher cell density, protein yield, productivity



## Optimal conditions

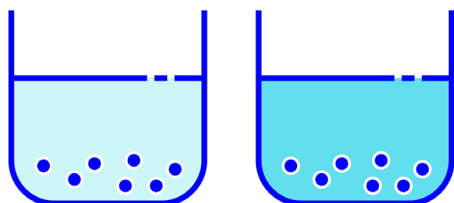
Shortens cell line development process

# Optimal Conditions for Optimal Outcomes

Cell line development (CLD) requires cells to grow in suspension culture, but most early-stage methods use static culture on a 2D surface with limited oxygen. This can affect cell performance and delay the CLD process.

C.BIRD is a microbioreactor that enables suspension culture in standard 24/96-well plates. It mimics the environment of later stages (e.g., shaking flask) and helps predict cell behavior more accurately and faster.

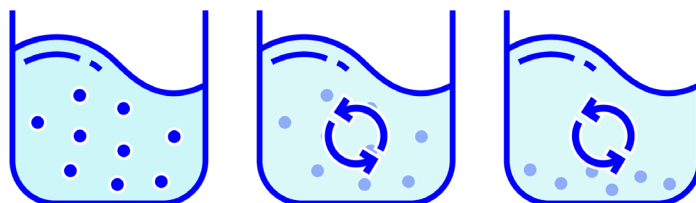
## Static culture



Limited 2D Growing Space

Inhomogeneous Medium

## Mixing culture



3D Growing Space

Equal Distribution  
Suspension cell lines

Medium Refresh  
Adherent cell lines

*Saving Cost,  
Creating High Value  
for Biosimilar Drugs Production*



# C.BIRD System & Control Unit

The C.BIRD device consists of an autonomous control system and a consumable C.BIRD lid for mixing culture media and cells.

The device is compatible with a standard 24/96-well plate. The novel C.BIRD lid with 24/96 fluidic channels is inserted into a well plate.

Pneumatic connection with these channels and actuation by the control system provides continuous reciprocal mixing in each well with working volumes of around 150-1600  $\mu\text{L}$ .

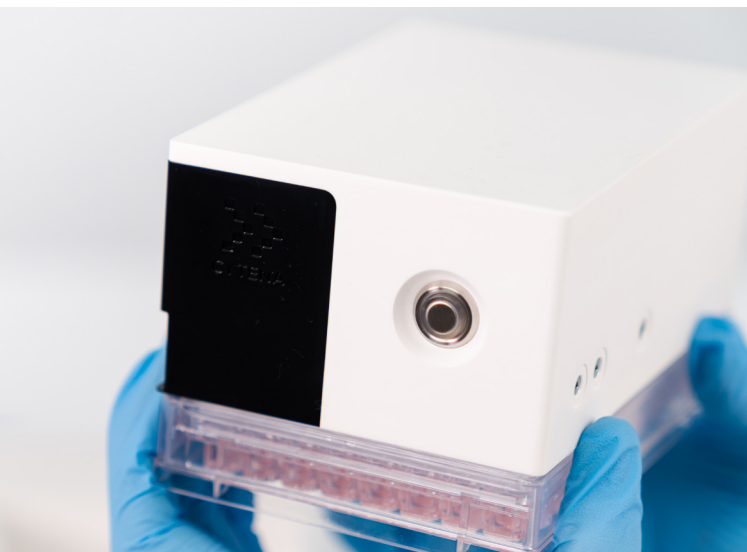


## C.BIRD Device

C.BIRD is a compact size, automated laboratory instrument, and only 332g weight for single control unit.

With user friendly software, it's easy to operate by lab member. The total setup time is less than 5 minutes.

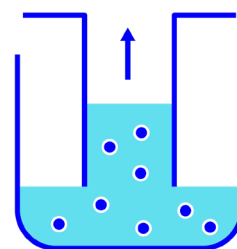
The low shear rate is optimal for cell growth and minimizes damages to cell. C.BIRD brings 3D growth environment into 96-well plate (150-200  $\mu\text{L}$ ) or 24 well-plate (1000-1600  $\mu\text{L}$ ).



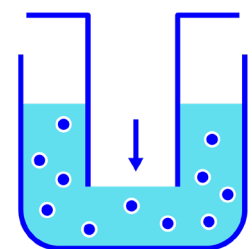
## Running in the Incubator

The compact size of the C.BIRD allows the device to run in a standard cell culture incubator.

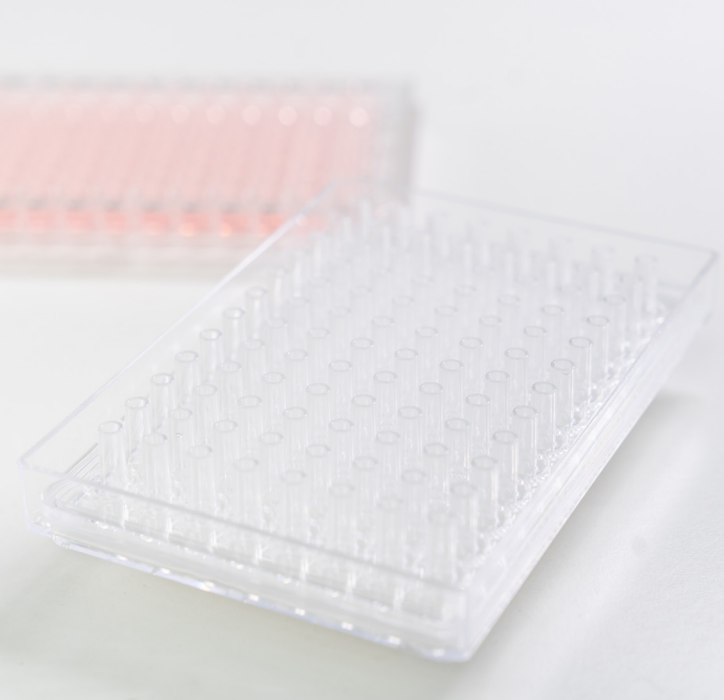
A connecting cable and a standard laptop for power supply and data transfer are all that's required to use the C.BIRD!



Suction pressure



Expulsion pressure



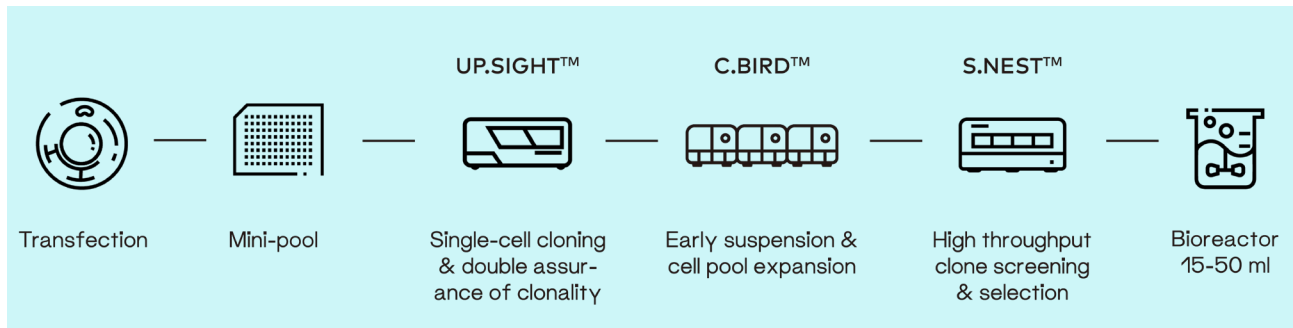
### C.BIRD Lid

The disposable C.BIRD lid with 24/96 fluidic channels is inserted into a 24-/96-well plate with each use.

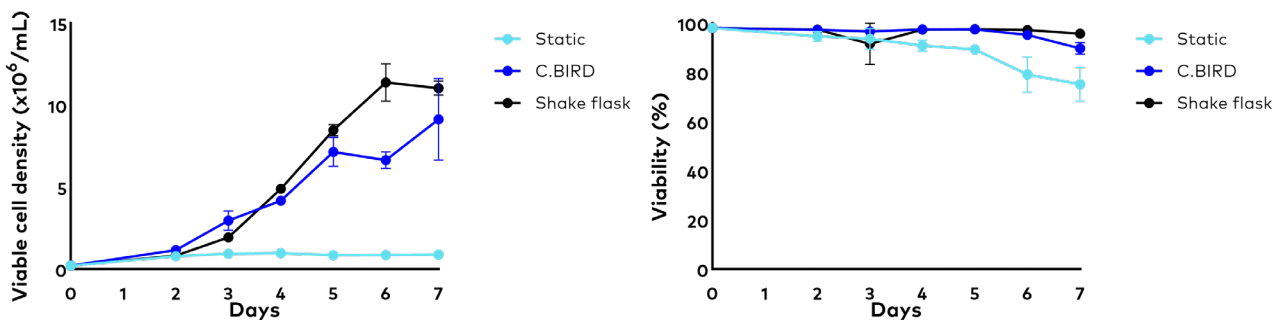
Pneumatic connection with these channels and actuation by the control system provide continuous reciprocal mixing in each well with working volumes of 150-1600  $\mu$ l.

## Featured Workflow

The C.BIRD reduces the amount of time it takes to select the best clones for your experiment. The system introduces suspension culture in the early stages of the workflow, giving cells an environment to grow faster and with greater density.



C.BIRD enable shake flask like culture condition in early stage



# Specifications

<b>General characteristics</b>		
<b>Dimensions of C.BIRD</b>		
Width	183	[mm]
Depth	303	[mm]
Height	82	[mm]
Weight of Docking Station	1,280	[g]
<b>Dimensions of Control Unit (each)</b>		
Width	85	[mm]
Depth	128	[mm]
Height	53	[mm]
Weight	332	[g]
<b>Power cord characteristics</b>		
5V, 900mA, USB 3.0, 180 cm length		
Installation category	CAT II	-
<b>Ambient conditions</b>		
Min. temperature	5	[°C]
Max. temperature	45	[°C]
Humidity (non-condensing)	95 ± 5	[%]
Indoor use	Yes	-
Outdoor use	No	-
Pollution degree	2	-
<b>Transportation/storage conditions</b>		
Min. temperature	20	[°C]
Max. temperature	70	[°C]
Humidity (non-condensing)	95 ± 5	[%]
<b>Culture conditions</b>		
Mixing rate (96-well format)	15 – 50 s ± 2	[seconds]
Mixing rate (24-well format)	25 – 50 s ± 2	[seconds]
Working volume (96-well format)	150 – 200	[µl]
Working volume (24-well format)	1,000 – 1,600	[µl]

Learn more



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