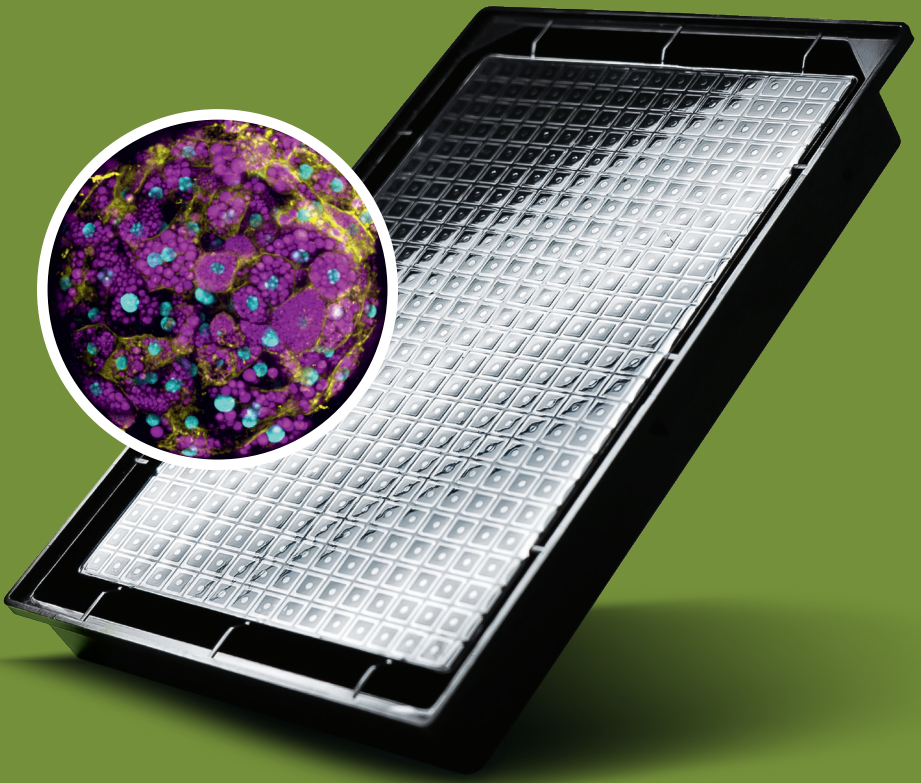




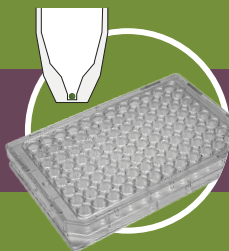
The Most Complete Portfolio of 3D Cell Culture Tools



SCALABLE

REPRODUCIBLE

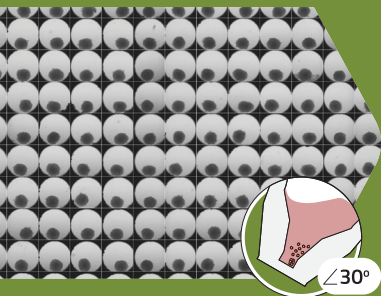
RELIABLE



Akura™ 96 Spheroid Microplate

Unique Well Design

- Simplifies spheroid and medium handling
- Prevents unintended spheroid aspiration & ensures accurate compound dosing

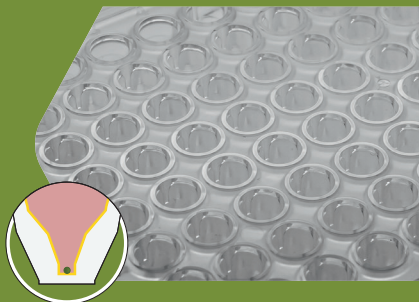


Spheroid Reproducibility & Uniformity

- 96 uniform spheroids
- Low batch-to-batch variation

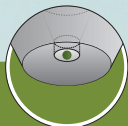
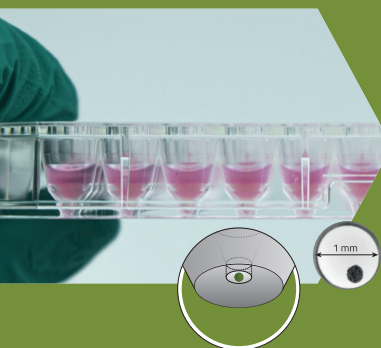
Long-term Culturing

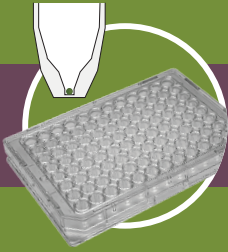
- Highly stable, cell-repellent, ULA surface coating preserves spheroid morphology in long-term culture



Wide Range of Endpoint Compatibility

- Automation friendly & ANSI/SLAS standard
- Cyclo-Olefin Polymer (COP) plate material for high imaging quality





Akura™ 96 Spheroid Microplate

What is special about the Akura™ 96 Spheroid Microplate?

1. Convenient scaffold-free formation of spheroids via cellular self-assembly in ultra-low attachment (ULA-treated) plates.
2. SureXchange™ tapered ledge and culture chamber facilitates easy medium exchange and prevents spheroid loss during long-term spheroid growth and analysis.
3. Excellent optical properties: The plate material is COP (Cyclo-Olefin Polymer, 92% transparency 400–800 nm); thin well bottom of 0.8 mm and low skirt height of 0.4 mm.
4. Automation friendly: Excellent planarity across plate (below 80 µm) for reliable spheroid transfer and precise medium exchange.
5. 1 mm diameter flat bottom window enables simple spheroid observation, and greater distance between observation windows of adjacent wells reduces well-to-well imaging crosstalk compared to standard 96-well plates.

How do I exchange the medium in the Akura™ 96 Plate without disturbing or losing the spheroids?

To prevent spheroid/organoid loss during the exchange of media, the SureXchange™ ledge at the inside wall of each well serves as an anchoring point for the pipette tip. Just place the tip at the ledge of the well, and remove the medium at low pipetting speed (<30 µl/sec). A minimal volume of ~ 5–7 µl will remain in the well. Then, add 70 µl of fresh medium by placing the pipette tip at the ledge, use dispensing rate <50 µl/sec.

Important - when using automated liquid handling devices, an off-center alignment of the vertical pipette tip will achieve the same effect.

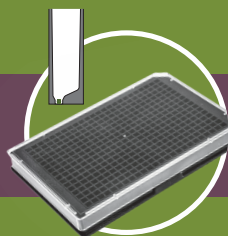
What is the best way to prevent evaporation in the outer wells of my plates?

Evaporation in the outer (perimeter) 2 rows, 2 columns wells is a phenomenon common to most low-volume culture platforms, and thus requires attention to maintaining proper humidity control. To provide sufficient humidity control when using the Akura™ Plates, we recommend the following:

Use an incubator with good humidity control (>95% of rel. humidity), and exercise best practice in maintaining and minimizing loss of humidity (e.g. minimize incubator door opening and closing).

For cultures in the Akura™ 96 Plate, at least 50–70 µl of medium in each well is recommended and can be increased to a maximum of 80 µl if incubator humidity control is a persistent issue. Medium exchange frequency can also be increased to every other day or even daily if conditions dictate.

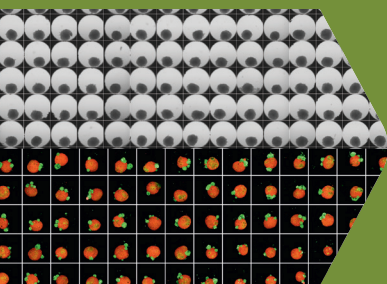
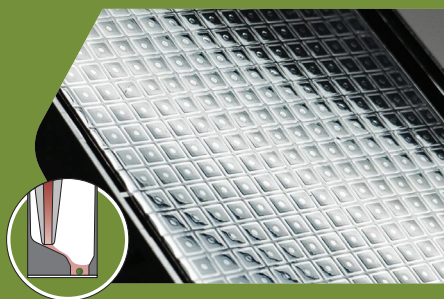
We recommend the use of the InSphero Incubox™ (InSphero CS-AH11) to further reduce edge effects when performing long-term culture with low-frequency medium exchange.



Akura™ 384 Spheroid Microplate

Unique Well Design

- Simplifies spheroid and medium handling
- Prevents unintended spheroid aspiration & ensures accurate compound dosing
- Fully automation compatible & ANSI/SLAS standard



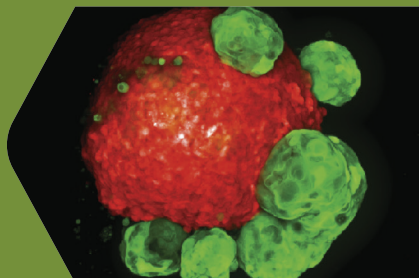
The Ultimate Spheroid Screening Plate

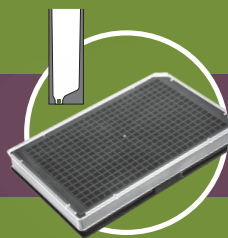
- All-in-one plate for production of 384 uniform spheroids, long-term culturing, compound dosing and wide range of readouts

Akura™ 384 ImagePro

Superior High-Content Imaging Quality

- Continuous, flat, ultrathin FEP plate bottom for aberration free high-resolution imaging





Akura™ 384 Plates

What are the advantages of the Akura™ 384 Spheroid Microplate?

1. Convenient scaffold-free formation of spheroids via cellular self-assembly in ultra-low attachment (ULA-treated) plates.
2. SureXchange™ tapered ledge and culture chamber facilitates easy medium exchange and prevents spheroid loss during long-term spheroid growth and analysis.
3. The continuous, transparent, bottom results in enhanced imaging quality and depth, and the black-walled body eliminates fluorescent crosstalk between wells.
4. Akura™ 384 Plate is compatible with state-of-the-art imaging and automated liquid handling systems enabling HTS applications.

Can I use the plate for spheroid aggregation or do I need to transfer the spheroids from another plate?

The Akura™ 96 and 384 Spheroid Microplates are 'all-in-one' solutions and can be used for the aggregation of spheroids, long-term culturing experiments due to the stable coating and the unique well design, and for screening and imaging endpoints. As the lower cavity has an optical window of only 1 mm diameter, we recommend to not grow spheroids or organoids, which are larger in diameter than 800 µm.

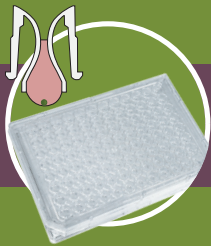
What is the difference between Akura™ 384 Spheroid Microplate and the Akura™ 384 ImagePro Plate?

Both Akura™ 384 Plates have black walls to minimize cross-talk and an unique well design for near-complete medium exchange without spheroid loss.

The Akura™ 384 ImagePro has a flat, ultrathin, 25 µm gas-permeable membrane made of FEP (fluorinated ethylene propylene) to minimize RI mismatch and it is compatible with high NA objectives.

The Akura™ 384 Spheroid Microplate has a 125-µm thin polystyrene membrane. The plate is especially suited for high throughput applications, lytic and biochemical assays, and basic confocal imaging endpoints.

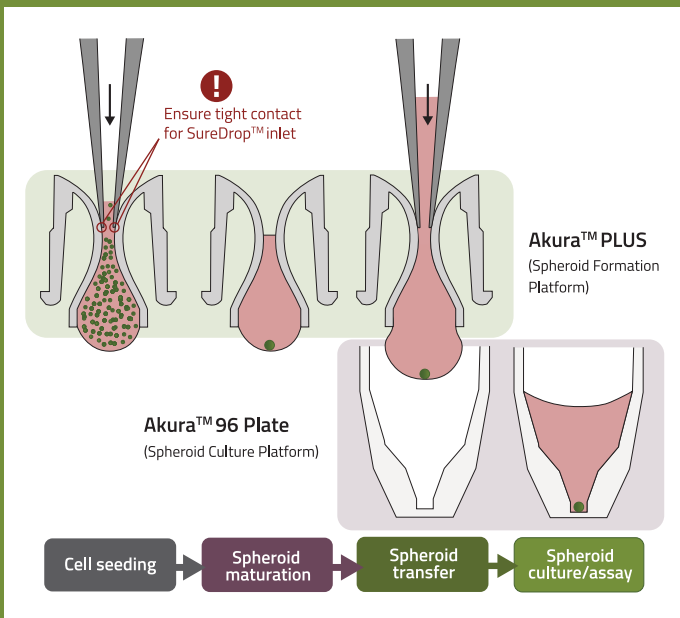
If you require a high-resolution, high-content imaging endpoint, we recommend the Akura™ 384 ImagePro Plate.



Akura™ PLUS Hanging Drop System

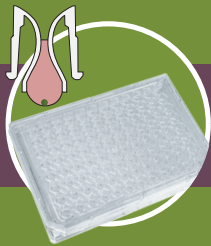
The World-famous and Unique Hanging Drop 96-well Plate

- SureDrop™ top loading
- Automation compatible
- One spheroid per well
- Suitable for many cell types



1. Production of difficult-to-aggregate spheroids in Akura™ PLUS Plate

2. Transfer to Akura™ 96 Plate for long-term culture, dosing & endpoints



Akura™ PLUS Hanging Drop System

What is the SureDrop™ inlet?

InSphero's Akura™ PLUS Hanging Drop Plate features the SureDrop™ microtechnology, which allows for precise dispensing into and aspirating from hanging drops. As the drop volume corresponds to the seeding cell number, spheroids produced in Akura™ PLUS Hanging Drop Plates display outstanding size consistency, with variation in diameter of 5% or less across an entire 96-well plate. To assure the SureDrop™ seal, it is important that the pipette tips make sufficient contact with the spring-loaded well surface to assure complete liquid transfer and uniform drop formation.

Could you recommend a cell concentration for my cell suspension for the generating of spheroids?

For long-term growth profiling, we recommend starting with low cell numbers (250 – 500 cells per drop of 40 μ l). If the use of non-proliferating cells or rapid production of larger spheroids are required, start with higher numbers (from 2500+ cells per 40 μ l). Generally, we recommend trying different concentrations for defining your optimal range when using new cell types.

How do you transfer spheroids into the receiver (Akura™ 96) Plate?

Place the Akura™ PLUS Plate (without bottom protection) onto the Akura™ 96 Plate by positioning the three pins into the corresponding holes on the top surface of the Akura™ 96 Plate. The drops under the Akura™ PLUS Plate will then be perfectly aligned with the wells of the Akura™ 96 Plate underneath. Using a slow pipetting speed (<10 μ l /sec), add 70 μ l of medium or buffer through the SureDrop™ inlet of the Akura™ PLUS Hanging Drop Plate wells. Make sure that the pipette tip forms a tight contact with the well inlets. The spheroids will drop into the Akura™ 96 Plate for further culturing and analysis.

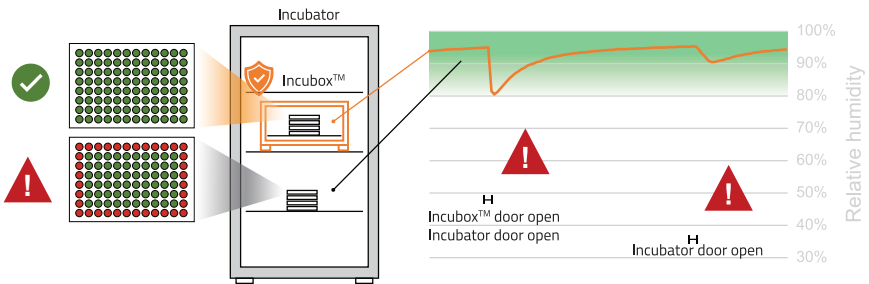
When shall I use the Hanging Drop Plate for aggregation, when the Akura™ 96 Spheroid Plate?

We recommend to use the Akura™ PLUS Hanging Drop Plate for more complex 3D cell-culture models, such as primary cells, cell lines or co-cultures that are sensitive for tissue re-aggregation. After aggregation, transfer the spheroids to the accompanying Akura™ 96 Plate for long-term culture and endpoint analysis.

InSphero Incubox™

Protect Your Plates from Evaporation Effects

Edge effects due to media evaporation are a common problem in long-term cell culture, especially in busy labs with many projects in which incubator doors are frequently opened and closed. The Incubox™ creates a **high-humidity microclimate** inside conventional cell culture incubators and protects your sensitive plates from large humidity drops and fluctuations – the major cause for evaporation effects.



- **Maintain a stable medium volume and accurate compound concentration** due to minimal evaporation in the wells over time.
- **Reduce well-to-well variation** by minimizing evaporation-induced reagent gradients across the plate.
- **Use all wells of your plate** by eliminating edge effects in your culture plate.
- **Save on plasticware** by using up to 38% more wells of your plate.

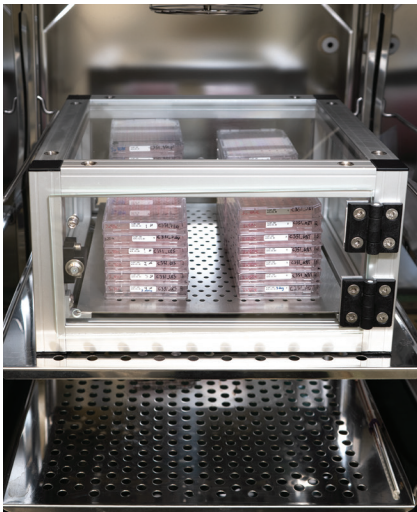
InSphero Incubox™

Key Features

- Fits a wide range of cell culture incubators
- Holds up to 20 microplates
- Temperature-stable and compatible with decontamination procedures
- Inert materials are compatible with a wide range of solvents
- Separate water bath to quickly re-establish high humidity
- Gas-equilibration holes ensure stable O₂ and CO₂ conditions
- Easy one-handed door opening and closing
- Depth: 350 mm (375 mm incl. doorknob) | Height: 210 mm | Width: 350 mm

How to Use Incubox™?

Follow the steps below to ensure optimal culture conditions and maximize efficiency and reliability of your experiments:



- **Clean:** Carefully wipe all components with Ethanol to remove dust.
- **Install:** Place the Incubox™ directly on one of the shelves inside your incubator.
- **Sterilize:** Use the high-temperature sterilization cycle of your incubator to ensure complete elimination of microbial contaminants.
- **Equilibrate:** Wait one hour to establish a stable temperature, O₂ and CO₂ conditions.
- **Culture:** Place your plates on the shelf inside the Incubox™ and start your experiment.
- **Cat.-No.:** CS-AH11

Choose the Right Plate for Your Research Needs

Aggregation

Akura™ PLUS
Hanging Drop
System

Cat.-No.: CS-PF24



Akura™ 96
Spheroid
Microplate

Cat.-No.: CS-PB15



Akura™ 384
Spheroid
Microplate

Cat.-No.: CS-PC24



Cell lines & primary cells

Difficult-to-aggregate
cell types

Culturing

Long-term culturing

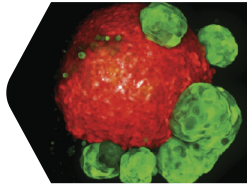
Treatment, dosing & full medium exchange

High-throughput
screening compatible

Basic Imaging

Lytic & Biochemical assays

Fluorescent & confocal imaging



High-content, high-
resolution confocal
imaging

Akura™ 384
ImagePro

Cat.-No.: CS-PC14

Read out

3D Cell Culture Solutions Trusted by Researchers

Senior Scientist at Swiss Federal Institute of Technology Basel using the Akura™ 96 Spheroid Plate:

"I would highly recommend using Akura™ Plates due to the simplicity of use in many aspects of 3D cell culture. Their unique well geometry and the SureXchange™ ledge facilitate many procedures that must be performed on an almost daily basis, among which are spheroid seeding, medium exchange, imaging, spheroid picking, or biochemical assays. Through the straightforward use of the Akura™ Plates, handling steps can more easily be standardized among different lab members, which ultimately leads to more consistent and reliable experimentation."

Postdoctoral Researcher from IUF – Leibniz Research Institute for Environmental Medicine testing the Incubox™:

"We have been using the Incubox™ for a few weeks and the results are very good. We no longer have any edge effects in our culture plates."

Postdoctoral Researcher from Erasmus MC testing the Akura™ 96 Spheroid Plate:

"We are using the Akura 96 well plates to aggregate liver (HEPG2) and bone (SaOS-2, MG63) spheroids. We really enjoy working with the Akura™ 96 Plates because they facilitate handling and reduce errors. Especially the several medium changes during long-term experiments can be quite challenging with spheroids because other plates do not allow you to remove all of the medium without risking to touch, break or accidently remove the spheroid as well. This is also a big plus for drug intervention studies."

Principal scientist from a major pharma company using the Akura™ 96 Plate:

"Overall, the Akura™ 96 Plate appears to be a tightly manufactured plate. The biggest advantages are the efficient reagent exchange and the thin, clear bottom for crisp, bright imaging on HCS platforms. The Akura™ Plate presents a significant advantage over round bottomed plates for these reasons. An added advantage is ready spheroid formation with two cell types tested: HepaRG and primary cyno hepatocytes."

Principal Investigator, Screening Facility working with the Akura™ 384 Plate:

"We have integrated the Akura™ 384 Spheroid Microplate into our 3D cell culture workflows. It initially caused some effort to adapt the special dimensions of the well design, but it was worth it. We are now able to accelerate medium exchanging steps with minimal spheroid loss and reduce variation between replicates. More important, however, is the excellent image quality we obtain in those plates, which is improving feature segmentation and analysis."

Scan the QR Code to Unlock the Full Potential of Your Research



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insphero.com