

InvivoSciences[®], Inc.

Discovery with a Human Touch

Let Auto Cell & Tissue culture
ROBot, ACTRO™, free up
your time!



- Automated stem cell culture
- Screen culture conditions to optimize growth
- Passage without centrifugation
- Peer reviewed step-by-step protocols (JoVE)



Included in ACTRO package:

1. **Cell Density Screening:** User can screen various cell seeding densities for finding optimal culture conditions of different iPSC lines.
2. **Feeding Cells:** An easy protocol for everyday cell feeding with minimal effort.
3. **Cell Passaging:** Without centrifugation, iPSCs are enzymatically dissociated, suspended, and redistributed evenly to the wells in 96-well plates.
4. **Culture-surface Coating:** For feeder-free iPSC culture, a step-by-step instruction and protocol to prepare coating multiple 96-well plates with a protein mixture secreted by Engelbreth-Holm-Swarm mouse sarcoma (e.g., Matrigel) or other substrates (e.g., vitronectin).
5. **Instruction Manual:** This includes 1) how to visually inspect healthy pluripotent cells, 2) various trouble shooting procedures, and 3) video article entitled "Scalable 96-well Plate Based iPSC Culture and Production Using a Robotic Liquid Handling System" published in Journal of Visualized Experiments, JoVE (<http://www.jove.com/video/52755>).
6. **Angle™:** Heated Tilt Plate Holder (one) * additional holders can be purchased
7. **Microplate Lids Holder:** To eliminate contamination, the holder keeps up to 4 lids of 96-well plates.

Optional starter package:

1. **Consumables:** a) 4-well trough, b) Cell culture plates, c) Cell dissociation enzyme, d) Tips, and e) Stem cell culture media (iVS media, recommended to achieve 12 X human iPSC expansion every 2-3 days)
2. **Portable Biosafety Cabinet:** An economical option to convert almost any lab benches into an automated stem cell culture station

Additional packages:

1. Screening and Optimization of iPSC differentiation
2. Handling many stem cell lines simultaneously (e.g., coping, passaging, storing multi-cell line plates)
3. PCR prep from cells cultured in 96-well plates (coming soon)
4. Single iPSC culture (coming soon)

For further information, visit:

www.invivosciences.com

For Research Use Only. Not for use in diagnostic or clinical procedures.

©2017 InvivoScience, Inc. All rights reserved. All trademarks are property of InvivoSciences, Inc. and its partners unless otherwise specified.

InvivoSciences[®], Inc.

510 Charmany Drive, Suite 265
Madison, WI 53719

Phone: +1-608-713-0149

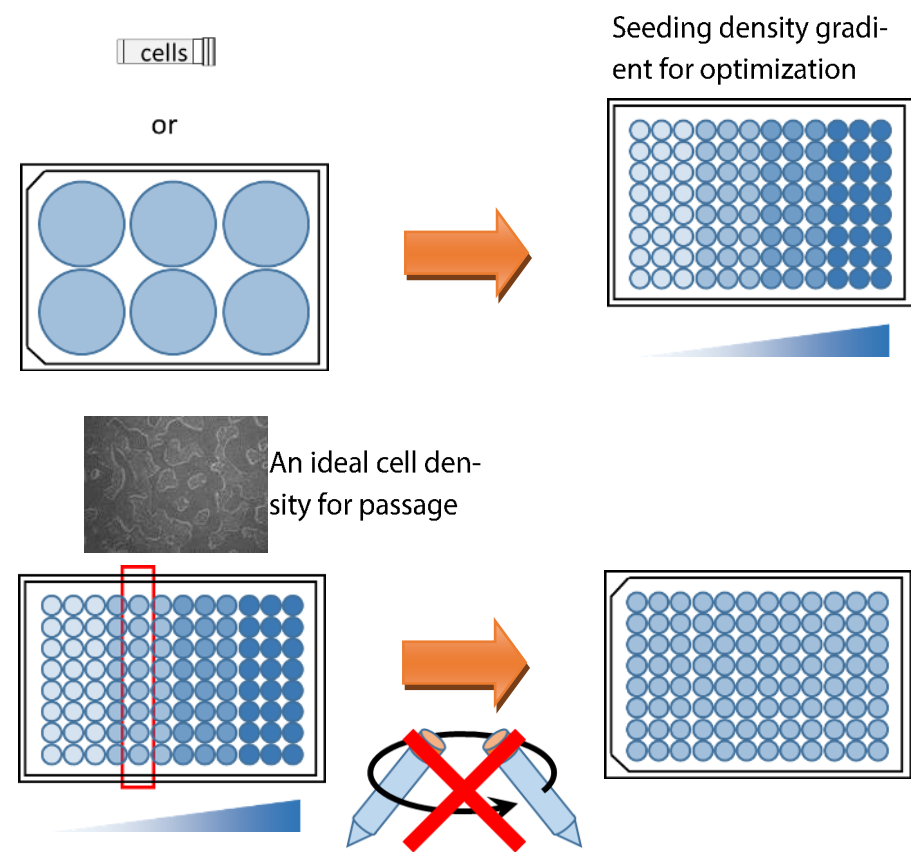
Toll free: +1-800-930-9838

E-mail: info@invivosciences.com

www.invivosciences.com

Screening Cell Culture Conditions:

An optimal culture condition for a pluripotent cell line, including cell seeding densities, can vary. In **Screening Mode**, various cell culture conditions can be screened using cells growing in 96-well plates. After optimizing the culture condition, exactly the same condition will be used to expand cell population. Using iVS media, the cell culture condition can be optimized to expand human iPSCs 12X every 2 to 3 days.

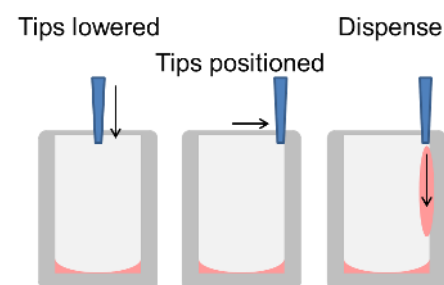


No Centrifugation:

With a validated protocol, users do not need to centrifuge and re-suspend cells for passaging cells. After placing 96-well plates to predetermined positions, ACTRO™ automatically performs passaging cells at a right density for their healthy growth.

Gently Dispensing Media:

The software positions tip to the edge of wells to dispense media that flows down the edge slowly to minimize droplets or a stream from disrupting cells.



Scale-up Cell Production:

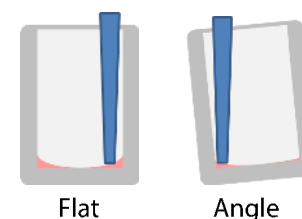
A culture condition selected using **Screening Mode** is replicated over many wells and plates. There is no need to translate and test the condition again for a large-scale culture, such as bioreactors. The **Production Mode** enables mass-production of iPSCs to support projects that require many cells such as compound screening and 3D culture.



Heated Tilt Plate Holder :

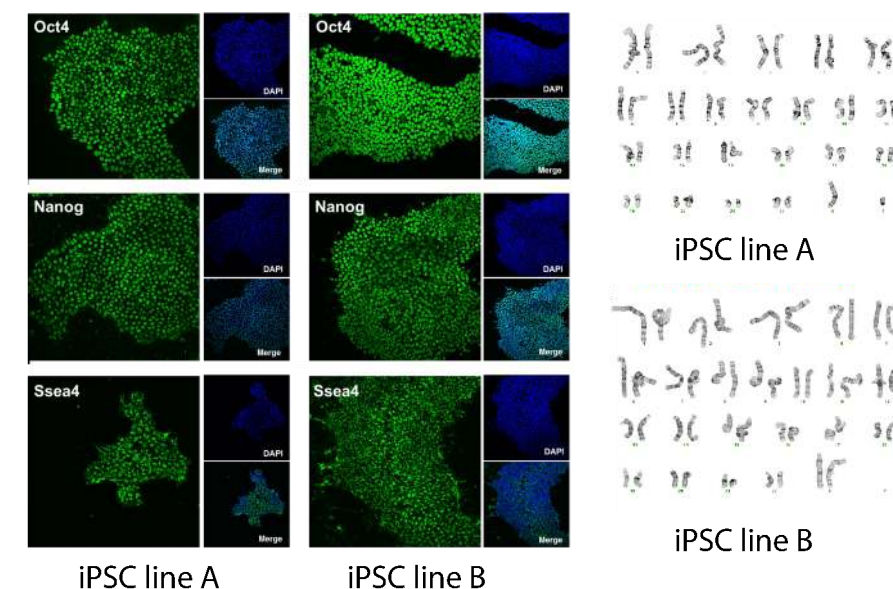
A skilled scientist and experienced technologist **tilt** cell culture plates to remove and add cell culture media for protecting cells from tip and media flow. iVS tilt plate holder, **Angle™**, and our software enable removing almost all the media and cell containing solution from wells compared to that without **Angle™**.

Angle™'s temperature controller maintains the plate temperature at a preset degree (e.g., 37 °C). This improves activities of some enzymes to lift adherent cells efficiently while keeping the plate on **Angle™**. Users can leave the plates on **Angle™** during passaging iPSCs.



Maintaining the Pluripotency :

Many iPSC lines maintain their pluripotency at least 25 passages.



Cell Solution Mixing for Reproducibility:

Tip and bed motions mix cell containing media in a trough.

