xcellbio

The AVATAR™ Cell Control System

You control your cells. Not the other way around.

The **AVATAR™ Cell Control System** lets you generate your cells of interest in a microenvironment customized just for them. You'll also be able to transfect cells with better efficiency, expand them faster and derive just the cells you need, exactly when you need them.

- **TRANSFECT**
- **EXPAND**
- **CONTROL**

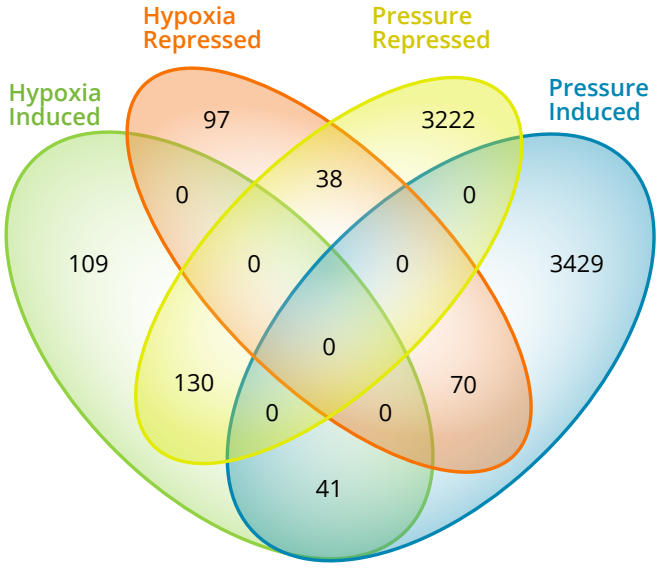
Why AVATAR is different than anything else out there

The human body is made up of diverse microenvironments that influence the behavior and molecular profiles of cells. The AVATAR cultures cell samples in the most suitable environment specific to cell type by regulating pressure, O2, CO2, and temperature to recreate the native in vivo conditions in which the sample was derived. These revolutionary capabilities enable the culturing of difficult to grow patient samples, from stem cells to tumor cells.

- Increase transfection efficiency up to 5X with high cell viability — even with difficult to transfect cells
- Expand cells faster — get up to 8X the cells in the same time it would take with standard system and cut reagent costs in the process
- Target the cell population you want — tune your cell's microenvironment to control differentiation or maintain current state reliably and precisely
- Work with immune cells, stem cells, tumor cells, organoids and even rare, precious cells you've never been able to expand before.

Only AVATAR lets you regulate and alter both pressure and oxygen concentrations to what is optimal for your cell type

	Tumor	Lung	Brain
Pressure	**3.0 PSI**	**1.0 PSI**	**2.0 PSI**
O_2	**0.1 %**	**5.0 %**	**3.0 %**
CO_2	5 %	5 %	5 %
Temp	37 °C	37 °C	37 °C



Venn diagram showing the number of induced and repressed transcripts in each RNA-seq transcriptome produced in response to iPSCs exposed to hypoxia, pressure, or both.

Oxygen and pressure have distinct physiological effects and both play important but independent roles in the cellular microenvironment. Under hypoxic and pressurized culturing conditions, changes are seen in cell morphology, gene and protein expression.

Modulation of atmospheric pressure affects the mechanobiology of cell function during culture, and has profound effects on cell homeostasis and metabolism.

Unlike traditional incubators and hypoxia chambers, the AVATAR controls both hypoxia and pressure, while providing chemically-defined, xeno-free culture media to maintain a variety of primary cell types. Samples maintained under these customized conditions exhibit target morphology and gene expression profiles, making the results from cultured samples meaningful.

Specifications

WEIGHT: 63 lbs (28.6 kg)

SIZE (W x D x H): 13.5” x 13.1” x 12.0” (34.3 x 33.3 x 30.5 cm)

CHAMBER CAPACITY: 224 cu in. / 3.7 L

POWER: 100-240 V AC, 50/60Hz, 2 Amps

GAS REQUIREMENTS: In-line 25 psi N_2, 25 psi CO_2

Fine-tune culture settings to meet your cells’ needs

Customize

Fine-tune key physiological conditions - pressure, O_2, CO_2, and temp - to tailor phenotype

Target

Validate specific gene, protein, and metabolic profiles for more accurate assay development

Replicate

Grow cells consistently every time, and get it done in a shorter window

Nurture

Recover cell viability after thawing frozen samples and post-transfection with optimal culture conditions

Accessible

Use your cells with our optimized protocols and xeno-free media for a ready to go solution

Scale Up

Stack and use multiple AVATARs at the same time for higher throughput

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