

**BAKER**

*RUSKINN*

CULTURE

AS NATURE

INTENDED

STEM CELL & CELL THERAPY RESEARCH

**PHYSIOLOGICAL OXYGEN  
ISO CLASS 3 WORKSTATIONS**

BIOPHARMA PACKAGE

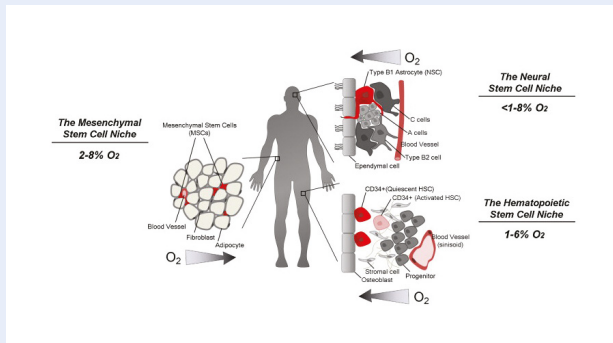


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## Physoxic and Hypoxic Cell Culture: A Growing Trend for Stem Cell Expansion

Oxygen plays a crucial role in regulating cellular processes including tumorigenesis, angiogenesis, diabetes, aging, and stem cell development. Stem cell niches in vivo exist in physiological oxygen (“physoxic”) levels <2%-10% O<sub>2</sub> – significantly lower than ambient or

atmospheric conditions (21% oxygen). Reproducing these vital conditions has led to a widespread adoption of efficient and practical workstations that offer the user continuous physoxic, hypoxic or anoxic environments.



*View full version: Mohyeldin et al, Cell Stem Cell, 2010.*

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## SCI-tive – Physoxia/Hypoxia/Anoxia Workstations

The SCI-tive range of advanced O<sub>2</sub> controlled workstations is designed to mimic in vivo conditions providing a continuous cell culture environment which eliminates cellular stress linked to variations in temperature, pH and oxidation.

With the SCI-tive, you can study even the most complex cell interactions under physoxic conditions. With more than a decade of customer feedback and experience, our SCI-tive workstations have been refined to meet your specific needs.

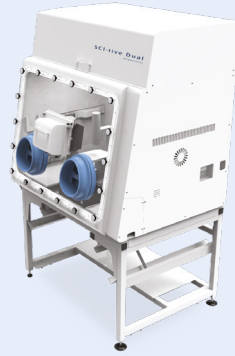
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## Use SCI-tive-as your “O<sub>2</sub>/CO<sub>2</sub> Controlled Clean Room” or your Physoxia “Lab-in-a- Box”



### SCI-tive Standard

External Dimensions:  
1.66m (w) x 0.83m (d) x 1.08m (h)

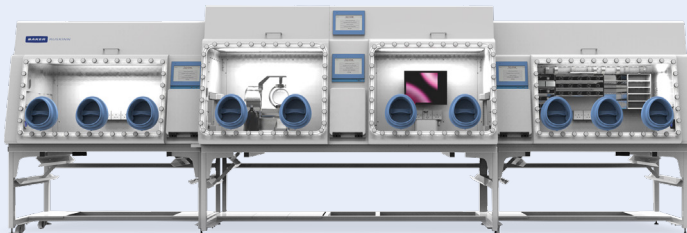


### SCI-tive Plus

External Dimensions:  
1.19m (w) x 1.53m (d) x 0.99m (h)

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## Build your own SCI-tive Solution using 1, 2, 3 or 4 Modules



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## Physiological Oxygen, ISO Class 3 Workstations

### 1. 'Standard' Physoxia Package, for Stem Cell Biology. SCI-tive modules offer the following standard specifications:

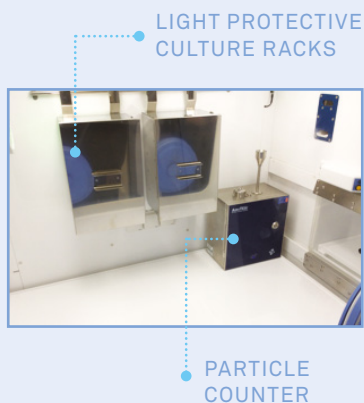
- Operates in physoxic or hypoxic or anoxic (<10ppm O<sub>2</sub>) mode mode
- Heated, humidified, and precise O<sub>2</sub> (0.0%-23.0%) and CO<sub>2</sub> (0.1% to 30.0%) control
- Enjoy large working space, each SCI-tive module offers 420L accessible volume, and a large working surface area of 0.67m<sup>2</sup> (1.2m (w) x 0.6m (d) x 0.62m (h))
- Up to 180 T75 Flasks working capacity
- Large heated and gas controlled interlock (pass-through) easily holds a variety of flasks, dishes and plate
- Internal HEPA filtration system installed in a SCI-tive workstation providing a ISO Class 3 HEPA filtered atmosphere within the workstation
- Each module offers temperature control from 5°C above ambient to 45°C (in 0.1°C increments) and humidity control from ambient to 85% RH (in 1% increments)

### 2. 'Enhanced' Physoxia Package, for GLP/BioPharma, Standard Package + :

- Hypalon gloves, maintains dexterity but offers user protection and maintenance of ISO Class 3 inside
- External HEPA package for additional user protection
- Particle counter
- VOC counter

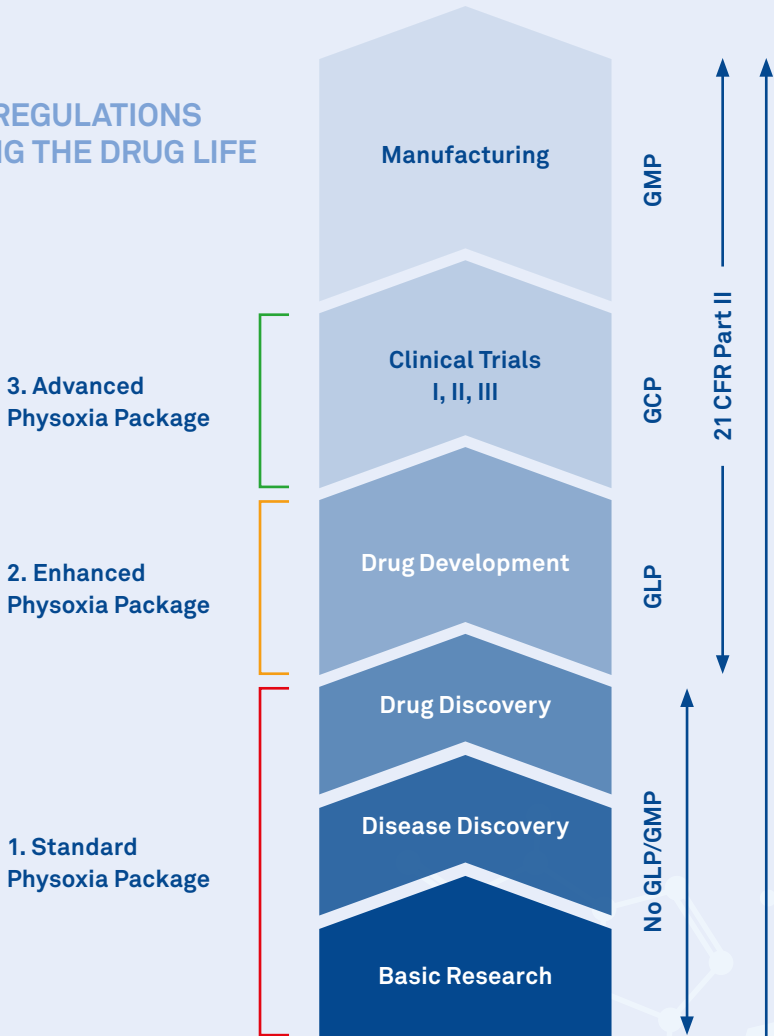
### 3. 'Advanced' Physoxia Package, for GMP/BioPharma, Enhanced Package + :

- Lucullus Process Information Management System (LPIMS)
  - User ID and password protected
  - Vary, monitor and recall all standard parameters date, time, temperature, CO<sub>2</sub>, O<sub>2</sub> Humidity
  - Communicates with other analytical instruments (e.g. *particle counters, VOC meters*) inside SCI-tive can be operated remotely
  - Standalone installation or Server-Client installation
- Airborne Disinfection Unit



# Out of the box thinking, inside the box - from research to GMP:

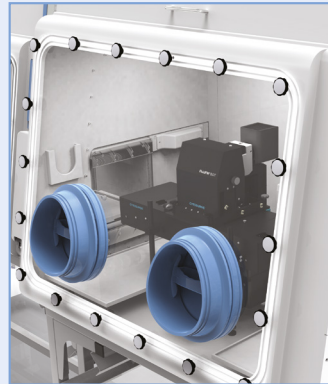
## GXP REGULATIONS ALONG THE DRUG LIFE



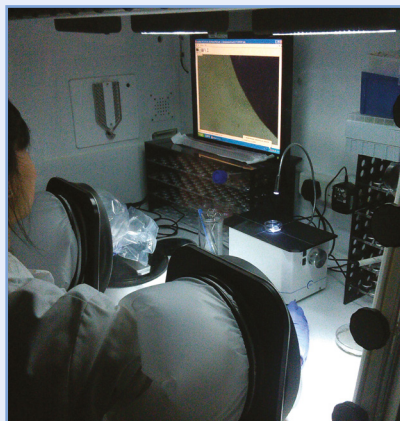
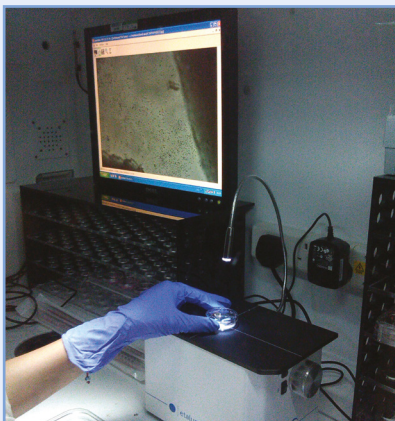
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**We have partnered with suppliers of innovative technologies so that you may keep your work under continuous, physiologically relevant conditions, for example:**

- For iPSC work: Single cell nano-injection systems for more accurate, efficient and gentle transfection (e.g. FluidFM BOT from Cytosurge AG)



- For Live Cell Imaging: Non-ocular inverted fluorescent microscopes (e.g. Lumascope from Etaluma Inc)



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- For Bioenergetics Work: Oxygen consumption rate and extracellular acidification rate in live cells (e.g. Seahorse XF from Agilent)



- In vitro exercise model by Dr. Dave Clarke, SFU, Canada incorporating both IonOptix C-Pace stimulator & Lucid Scientific's DO meter



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**Our new range of GROW products that are designed to deliver stable and physiologically relevant conditions for cell culture:**



## CONDOCELL™\*

### Luxury Accommodation for cells

CondoCell™ captures the environment of any incubator or workstation making continuous, uninterrupted culture accessible to all.

## OXYGENIE™\*

### Accessible Mobile Oxygen Control

OxyGenie™ is ideal for conducting high resolution microscopy or irradiation under physiological oxygen conditions.



## INVIVO<sub>2</sub>

### Physiological Cell Culture Workstation

Invivo<sub>2</sub> workstation provides perfect continuous physiological oxygen conditions for long term experiments.

\*Patent Pending

To learn how Baker Ruskin products can benefit your research, visit our website [www.bakerco.com/grow](http://www.bakerco.com/grow)

\*Baker Ruskin are a component provider and are not responsible for GMP compliance.



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