SCI-tive
Hypoxia Workstations

A range of closed, continuous cell culture systems providing very stable 'in vivo' conditions.

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RUSKINN
A DIVISION OF
THE BAKER COMPANY

innovation in incubation

Improve Your Results

Experience the Industry-Leading Ruskinn Hypoxia Workstations

Since 1998, Ruskinn hypoxia workstations have been the trusted choice for laboratories around the world. Our workstations are installed in more than 40 countries - and more than 300 research publications feature experiments performed in the Ruskinn workstations.

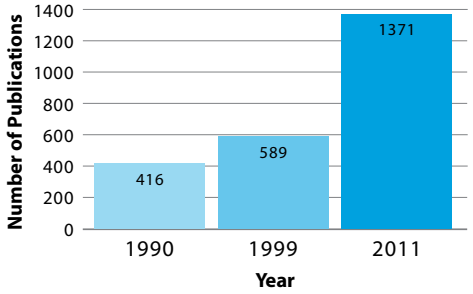
Our hypoxia workstations precisely replicate low-oxygen *'in vivo'* physiology providing the ideal research platform for cell biologists and cancer researchers. The workstations provide accurate, stable, and user-defined oxygen, carbon dioxide, temperature and humidity control, providing the optimal environment for cell culture and translational research.

Hypoxic Cell Culture: A Growing Trend for Growing Cells

Research interest in hypoxia has grown and gained momentum in the last decade because of its key role in controlling tumorogenesis, angiogenesis, diabetes, aging, and stem cell development.

Human cells exist in a physiological environment of 2-8% oxygen – significantly lower than ambient or atmospheric conditions (21% oxygen).

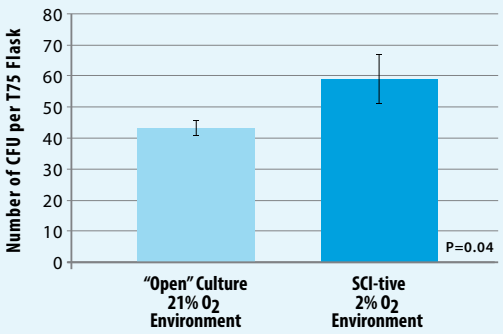
Typical cell culture methods involve isolating cells from a physiological state and then analyzing them in "bench-top conditions". This creates stress for the cell and introduces unknown outcomes in cell expression and morphology.



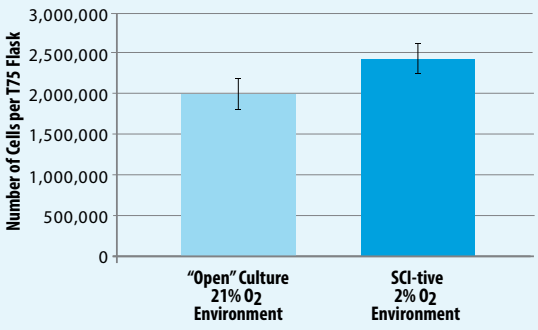
The growing trend in hypoxia research can be seen in the increase of the number of articles published with hypoxia, hypoxic or low oxygen in the article's keywords (Highwire Search Engine, Stanford University).

Get Better Results with a Ruskinn Hypoxic Workstation

Maintaining *'in vivo'*-like conditions using a hypoxia chamber reduces oxidative stress and gives you better results. For example, expanding mesenchymal stem cells within one of our hypoxia workstations resulted in an increased frequency of colony forming units (CFU) isolation, increased number of cells per flask, and reduced variability across cells, when compared to a typical "open" culture environment using a CO_2 incubator and biosafety cabinet. (Dr. Nicholas Forsyth Ph.D, Keele University Medical School, United Kingdom).



*A **50% increase in number of CFUs** was shown when using a SCI-tive hypoxia workstation.*



*A **15% increase in number of cells per flask** was shown when using a SCI-tive hypoxia workstation.*

SCI-tive Hypoxia Workstation

The SCI-tive range of advanced hypoxic workstations are designed to mimic 'in-vivo' conditions providing a continuous cell culture environment which eliminates cellular stress linked to variations in temperature, pH and oxidation yielding better stem cell lines. With the SCI-tive, you can study even the most complex cell interactions under perfect hypoxic or anoxic conditions. With more than a decade of customer feedback and experience, our workstations have been refined to meet your specific needs.

The SCI-tive range of advanced hypoxia workstations are designed to mimic 'in-vivo' conditions

Complete "Lab In a Box"

- Large incubated working area allows incubation, passaging, media transfers and cell culture
  - External Dimensions: 1650 mm (W) x 760 mm (D) x 1024 mm (H)
  - Interior Dimensions: 1170 mm (W) x 555 mm (D) x 620 mm (H)
  - Up to 185 T75 Flasks working capacity
- Large pass-through interlock easily holds a variety of flasks, dishes and tubes
  - Interlock Dimensions: 270 mm (W) x 200 mm (D) x 210 mm (H)
  - Interlock Capacity: 15 T75 Flasks
- Optional built-in HEPA filtration system for both main workstation and interlock
- Results for mesenchymal stem cell expansion reveals:
  - Optimized frequency of CFU isolation
  - Optimized cell numbers (per flask)
  - Reduced variability across cells recovered
  - Reduced transcriptional alteration

Optional HEPA filtration system installed in a SCI-tive workstation - provides HEPA-filtered air within the work area.

Accurate & Stable Environmental Control

- O_2 stability from 0.0% (anoxia) to 20.9% (ambient) in 0.1% increments with one touch sensor calibration
- CO_2 stability from 0.0% to 30.0% in 0.1% increments
- Temperature control from ambient +5˚ C to 45˚ C
- Humidity control from ambient to 85% RH

Economic & Reliable for Long-Term Savings

- Minimal maintenance and downtime
- Annual or biennial preventative maintenance kits available

Direct Access with Minimal Disruption

Maintaining a stable environment can reduce stress in cells and help ensure that your cell or tissue culture is expressing correctly.

In a CO_2 incubator, variability in temperature and CO_2 levels occur every time the door is opened.

With SCI-tive workstations, you can get in and out of the incubated work area with limited disruption to this atmosphere. This means less stress on your cells.

Plus, unlike CO_2 incubators, you can control oxygen levels with the Ruskinn workstation.

See comparison on the back of this brochure!

Convenient & Comfortable to Use

The SCI-tive hypoxia workstation is specifically suited for cell and translational research work with complex incubations and manipulations being performed under the most ideal physiological and hypoxic conditions.

- Quick and easy direct access - Ezee Plug™ / Ezee Sleeve™ gloveless cuffed system allows you get your hands inside the workstation in less than 20 seconds.
- Read plates easily without O_2 exposure - energy-saving fluorescent lighting for perfect illumination.
- Automatic and easy-to-access controls.
- Advanced integrated gas mixing system with touch screen simplifies calibration process, provides rapid equilibration, and facilitates the download of data.
- Cycle programming allows a user-defined timed sequence of up to 4 different O_2 and CO_2 concentrations.
- Removable front cover – allows easy access for cleaning or placing instrumentation into the unit.
- Three electrical power sockets within the work area.
- Optional HEPA filtration system provides HEPA-filtered air within the work area to protect research from contaminants.
- Optional enhanced containment package provides added protection for user.

Video: Working in a SCI-tive Workstation

Ezee Plug™ system provides quick access to the SCI-tive work area.

Convenient storage keeps work area clear.

Removable front cover with triple glove ports makes the SCI-tive easy to use.

See how to work in a SCI-tive worksation!

Scan the code or visit http://hub.am/14XioO7.

Easily Accommodates Your Analytical Tools

The SCI-tive can easily accommodate a variety of analytical equipment.

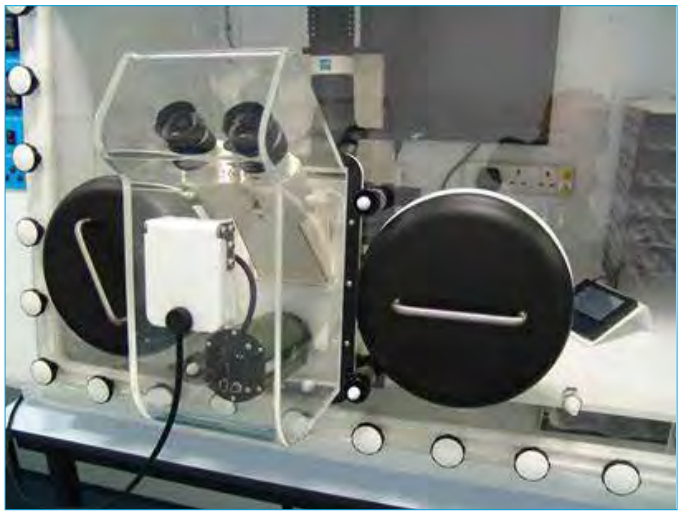
Examples are the Seahorse XF^{e}24/ XF^{e}96 Analyzer from Seahorse Bioscience and the IncuCyte™ Imaging System from Essen Bioscience. Various stereo and inverted microscopes are also easily integrated.

Supported microscopes

- Nikon® AZ100 MZ
- Olympus IX® series
- Olympus SZX® series
- Zeiss Axio Observer series
- Leica® DMB 6000
- Leica® M series
- Digital Bio JuLI™
- EVOS® AMG

Please inquire for specific models or other types of microscopes. All microscope accessories (PCs, digital camera, monitor, imaging software, etc.) to be supplied by customer and specified at time of order.

SCI-tive with JuLi™ Smart Fluorescent Cell Analyzer.



SCI-tive with Zeiss Axiovert 40 CFL inverted microscope with oculars protruding through front cover.

SCI-tive Standard Features

Workstation

- Two "free-flow" incubation racks to optimize homogeneity.
  - 460 mm (W) x 100 mm (D) x 220 mm (H)
  - 290 mm (W) x 150 mm (D) x 320 mm (H)
- Direct-hand access using Ezee Plug™ / Ezee Sleeve™ system.
- Removable front cover with triple glove ports.
- Three electrical power sockets.
- Cable gland port - allows the passage of cables through the workstation wall without altering internal conditions.
- Vacuum line port - allows the attachment of a vacuum line to remove waste media from plates inside the workstation.
- Meets CE and UL standards.
- Gas Supply - up to 4 separate cylinders: H/N_2; CO_2; N_2; O_2 (compressed air medical grade or industrial).

Gas Control Software

- USB communications port.
- 5 days continuous storage of event log data.
- One touch calibration (O_2).
- On-screen fault assistance.

Alarms

- Temperature: Visual and Audible.
- Humidity: Visual.
- Gas Low Pressure: Visual and Audible.

Optional Accessories

- Gas sample port - enables O_2 or CO_2 meters to be connected, so samples of the workstation atmosphere can be checked.
- Stand
- Gas tight waste port accessible from within the workstation (stand is required).
- Vibration isolation platform to minimize vibration entering workstation.
- Adjustable incubation tray - keeps micro-titre plates, flasks or dishes absolutely level.
- Gas level verification meter (Geotech 100) - monitors CO_2 and O_2 inside workstations, works under high humidity.
- Gas tank regulators and filter modules.
- 50 mm universal cable gland.
- Palladium catalyst and anaerobic indicator strips (if running in anoxic mode).
- Built in HEPA filtration system for both main workstation and interlock.
- Enhanced Containment Package
  - Two cylindrical chamber exhaust HEPA air filters: 2-stage filter element, individually tested, stainless steel case; one filter fits over the primary over-pressure exhaust valve and one fits over the interlock purge valve to reduce any workstation and specimen contaminants exhausting into the laboratory.
  - Three Hypalon-gloved sleeves replace the Ezee Plug™ / Ezee Sleeve™ gloveless system.

See the results from microbiological testing of the Ruskinn enhanced containment package. Scan the code to right or go to http://hub.am/Z3WhOY.

SCI-tive Dual

The SCI-tive Dual workstation provides all the same innovative features and benefits as the SCI-tive, except there are two chambers with individually controlled atmospheres.

The left-hand chamber is identical to the single SCI-tive chamber discussed on the previous pages, but the right-hand chamber varies depending on the specific model. Additionally the stand (and gas tight waste port) are standard on all of the SCI-tive Dual models. The right-hand chamber of the Asymmetrical Dual is built to accommodate larger inverted and atomic force microscopes.

SCI-tive Dual Symmetrical

Exterior Dimensions:

- 2610 mm (W) x 980 mm (D) x 1131 mm (H)

Internal Workstation Dimensions

- Left Chamber (L):
  1170 mm (W) x 555 mm (D) x 620 mm (H)
- Right Chamber (R):
  1170 mm (W) x 555 (D) x 620 mm (H)

Interlock Dimensions

- 270 mm (W) x 200 mm (D) x 210 mm (H)

Interlock Capacity

- 15 T75 Flasks

SCI-tive Dual Asymmetrical

Exterior Dimensions:

- 2860 mm (W) x 970 mm (D) x
  [1850 mm - 1900 mm] (H)

Internal Workstation Dimensions

- Left Chamber:
  1170 mm (W) x 555 mm (D) x 590 mm (H)
- Right hand chamber (R)
  1000 mm (W) x 800 mm (D) x 690 mm (H)

Interlock Dimensions

- 270 mm (W) x 200 mm (D) x 210 mm (H)

Interlock Capacity

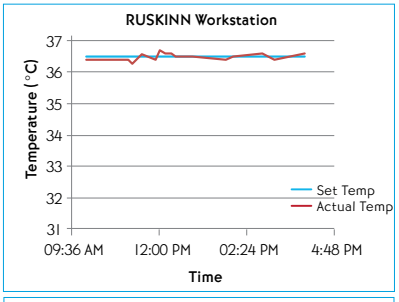
- 15 T75 Flasks

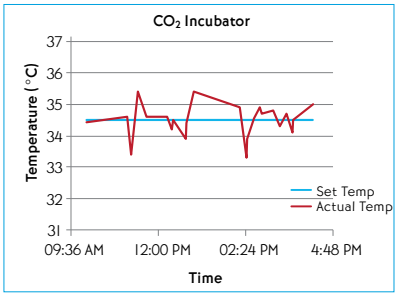
SCI-tive Product Specification Summary

Model		SCI-tive	SCI-tive Dual - Symmetrical	SCI-tive Dual - Asymmetrical L = left chamber / R = right chamber
External Dimensions	Width	1650 mm	2610 mm	2860 mm
	Depth	760 mm	980 mm	970 mm
	Height	1024 mm	1131 mm	1850 mm - 1900 mm
Internal Dimensions	Width	1170 mm	1170 mm	1170 mm (L) / 1000 mm (R)
	Depth	555 mm	555 mm	555 mm (L) / 800 mm (R)
	Height	620 mm	620 mm	590 mm (L) / 690 mm (R)
Maximum Capacity	T75 Flasks	592	varies	varies
Working Capacity	T75 Flasks	180	varies	varies
Interlock Dimensions	Width	270 mm	270 mm	270 mm
	Depth	200 mm	200 mm	200 mm
	Height	210 mm	210 mm	210 mm
Interlock Capacity	T75 Flasks	15	15	15
Interlock Time Cycle		60 sec.	60 sec.	60 sec.
Weight		230 kg	355 kg	355 kg

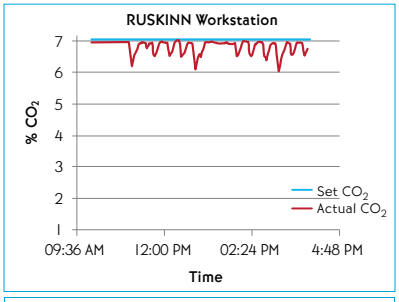
SCI-tive vs. CO_2 Incubator

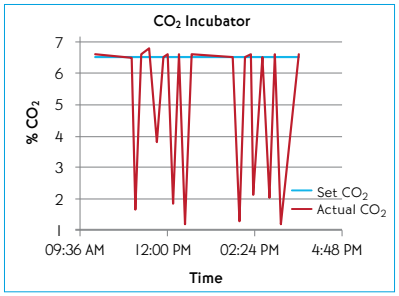
Temperature Stability



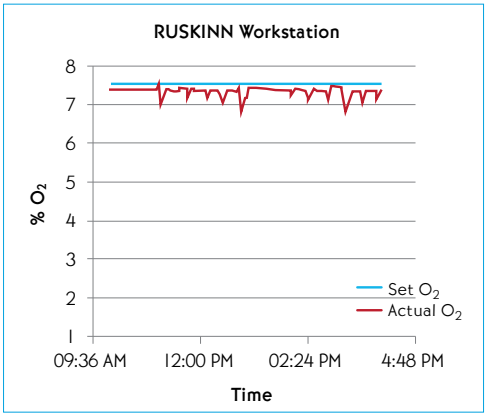


CO_2 Stability





O_2 Stability



Not Available in CO_2 Incubators

The Ruskinn brand was founded in 1993 and rapidly became established as one of the world's leading suppliers and manufacturers of anaerobic and modified atmosphere workstations.

In July 2011, Ruskinn Technology Limited became a wholly-owned subsidiary of The Baker Company, Sanford, Maine, USA. The Ruskinn manufacturing facility is located in Pencoed, South Wales, UK.

Today there are more than 1900 Ruskinn workstation installations in more than 40 countries.

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