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**BPES** BIOPROCESS  
ENGINEERING  
SERVICES LTD



EQUIPMENT SPECIALISTS FOR THE BIOTECHNOLOGY INDUSTRY  
**PRODUCT PORTFOLIO**

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**PAIA<sup>®</sup>**

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## ABOUT US

Founded in 1996, we have been providing specialist equipment and support to the Biotechnology industry for over 20 years. We are an approved partner for some of the most respected names in the Biotechnology sector including large pharmaceutical organisations and R&D universities through to small start-ups and science research charities.

Our customers consistently receive a first class service. We regularly advise customers in choosing the products that best meet their individual needs, and our team of experienced engineers provide a comprehensive application support, maintenance and calibration service.

We recognise that quality, high performance products are of paramount importance to all involved in the Biotechnology industry. We have Quality Systems and Management in place and are a BS EN ISO 9001 accredited organisation. cGMP standard service is available when required.

## OUR PARTNERS

We recognise that suppliers are a key part of our success, and as such strive to form long term relationships, working together to provide the best solutions for our customers.

We have established relationships with some of our suppliers dating back to the inception of our company.



## SERVICE

Through our team of experienced service engineers we are able to offer full support on all the equipment that we supply.

Our engineers are trained and certified by the original equipment manufacturers.

We provide preventative maintenance service contracts tailored to specific requirements up to cGMP level, along with emergency call out cover. Our calibration equipment conforms to national standards and is certified. We can also tailor a calibration plan to suit individual requirements.

We offer a full spare parts service for our entire range of products.



# CELL LINE DEVELOPMENT

*From early cell isolation and cultivation, to  
cell banking and culture expansion*



# SYNENTEC



## CELL IMAGING

SYNENTEC provide the most versatile high throughput cell imagers on the market all with optional full fluorescence capability. Applications include single cell cloning, apoptosis studies, through to transfection efficiency, toxicity studies and ultra-high throughput cell counting with viability. The SY software includes powerful image processing tools with fully customisable data export options.

The instruments are compatible with a wide range of SBS format plate types from single well to 384 wells and above. A built in automation interface enables simple integration into cell line development platforms.



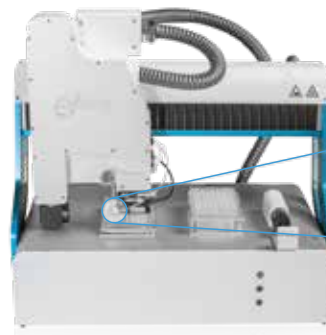
	CELLVISTA 4	NYONE
ILLUMINATION/ FLUORESCENCE	White Light	White Light
	Up to 6 fluorescence excitation/emission channels	Up to 4 fluorescence excitation and up to 6 emission channels
AUTOFOCUS SYSTEM	2000 fps	500 fps
FEATURES	<ul style="list-style-type: none"> <li>• Laser autofocus system</li> <li>• On the fly image analysis</li> <li>• Combination of brightfield &amp; fluorescence analysis</li> <li>• Automation friendly design</li> <li>• Harmonic motion for imaging without agitation during plate scan</li> <li>• Ultrafast multiplex imaging</li> <li>• HSC-grade lenses</li> <li>• 3 times more sensitive: shorter exposure times, faster measurements, less bleaching</li> </ul>	<ul style="list-style-type: none"> <li>• Laser autofocus system</li> <li>• On the fly image analysis</li> <li>• Combination of brightfield and fluorescence analysis</li> <li>• Automation friendly design</li> </ul>
HIGH CONTENT	<ul style="list-style-type: none"> <li>• Scientific version: 16bit sCMOS Camera</li> </ul>	<ul style="list-style-type: none"> <li>• Scientific version: 16bit sCMOS Camera</li> </ul>



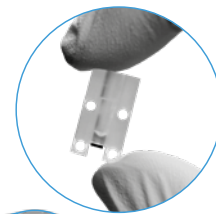
## SINGLE CELL DEPOSITION

cytena's patented, single cell printing technology enables fully automated isolation of single cells, with user friendly software with multiple applications including cell line development, single cell genomics and R&D.

Using a unique, extremely gentle technology to print the cells gives excellent recovery rates. Compatible with a wide range of plate types - both 96 & 384 wells (SBS Format). See our website to view a video demonstrating how the single cell printer works.



SINGLE CELL PRINTER



disposable cartridge



cell



nozzle

FEATURES	scp	c.sight	b.sight	f.sight
Assurance of clonality	✓	✓	✓	✓
All-new software	✓	✓	✓	✓
Automation / API	✓	—	—	—
2nd plate holder	✓	—	—	—
PCR-Plate compatibility	—	✓	✓	✓
Improved resolution	—	—	✓	✓
Fluorescence sorting	—	—	—	✓
Bacteria isolation	—	—	✓	—



CYTENA F.SIGHT



CYTENA C.SIGHT



CYTENA B.SIGHT





## CONTROLLED RATE FREEZERS

SY-LAB Cryobiology have over 30 years experience in the manufacturing of computer controlled rate freezers, liquid nitrogen cooling, and distribution of high quality sample storage and handling containers (Liquid Nitrogen Dewars). SY-LAB's extensive experience in developing high quality instruments has led to sophisticated and robust freezing machines for routine and scientific work.



ICECUBE 14S



ICECUBE 14M

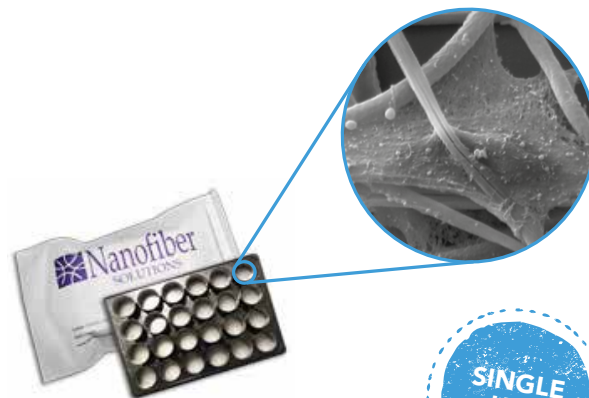


ICECUBE 11XS



## 3D SCAFFOLD PLATES

Nanofiber solutions provide complex structures to create true 3D cell culture surfaces. Their range of electrospun fibre multi-well plates are perfect for high-throughput cell culture, cancer research, stem cell, and regenerative medicine.



WELL CULTURE PLATES

SINGLE  
USE

PAIA<sup>®</sup>SINGLE  
USE

## ANTIBODY QUANTIFICATION & GLYCAN PROFILING ASSAYS

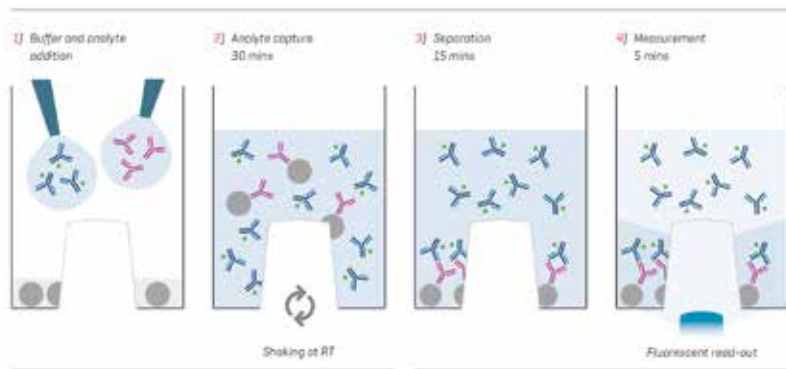
PAIA Biotech have developed a high throughput platform technology for IgG quantification and glycan profiling assays.

The technology features bead-based immuno with fluorescence detection in specially designed 384-well microplates (SBS format) and require no washing, blocking or regeneration. PAIA also offer custom assay development.



ASSAY KITS

The PAIAplate with pre-dispensed dried capture beads is subjected to the following procedure:



The analyte capture step is carried out on an orbital shaker, bead separation happens by sedimentation.





# UPSTREAM PROCESSING

*From flask to production, facilitating  
successful scale-up*

SINGLE  
USE  
OPTIONS

## BIOREACTORS

Solaris provides high quality, ergonomic and innovative fermenters, bioreactors and accessories. Their broad range of products are flexible and easy to use, ensuring there is always a solution specific to your needs and requirements, from research scale of a few hundred ml up to cGMP production of > 2000L.

### THE SOLARIS RANGE

- Single and parallel autoclavable bioreactors/ fermenters
  - IO – 200 or 1000 mL
  - Jupiter – From 2.0 to 10.0 L
  - Venus – Pressure controlled up to 2 bar, 2.0 L, 4.0 L
  - Elara – Photobioreactor, flat or stirred
  - BlackBox - unique PCS for single use vessels
- Single and parallel benchtop SIP bioreactors/ fermenters
  - Genesis – 7.5 to 20.0 L
- Pilot and industrial scale bioreactors/fermenters
  - M Series – Standard SIP solutions from 30 to 200 L
  - S-I Series – Fully customised, highly automated systems from 250 L up to 30m<sup>3</sup>



IO - SINGLE & PARALLEL MINI AUTOCLAVABLE  
FERMENTERS & BIOREACTORS



JUPITER - SINGLE & PARALLEL AUTOCLAVABLE  
FERMENTERS & BIOREACTORS



S SERIES - FERMENTERS & BIOREACTORS



GENESIS - SINGLE & PARALLEL AUTOCLAVABLE  
FERMENTERS & BIOREACTORS



**ABER**  
TRUSTED TECHNOLOGY



## LIVE CELL MEASUREMENT

The Futura range of live cell and biomass measurement and monitoring sensors offers compact, lightweight instrumentation for use on conventional and disposable bioreactors alike. The capacitance based measurement principle will only measure cells with an intact membrane (viable cells) and are immune to debris in the media. Extremely powerful frequency scanning software is available which can be used to obtain a wealth of additional process information such as titre.



STANDARD  
FUTURA BIOMASS  
MONITOR

STANDARD REMOTE  
FUTURA BIOMASS  
MONITOR

FUTURA PICO

**EXNER**  
Process Equipment



## TOTAL CELL MEASUREMENT

Exner's single channel OD sensors are perfect for measuring the total cell density of your cultures via OD 880. It's sapphire window, LED technology and integrated digital amplifier makes it a reliable, robust and unique measuring device, giving accurate OD readings even at low levels of biomass. EXcell sensors deliver high precision measurement up to 7 AU, with user configurable measuring units.



EXCELL 230 OD SENSOR

EXCELL 240 NIR BIOMASS SENSOR DN25



## SINGLE-USE BIOREACTORS & FERMENTERS

CerCell offer a range of creative and innovative single-use bioreactors and fermenters. All CerCell products are designed to easily replace traditional glass/steel vessels (STR) and are compatible with most process control systems.

The vessels are highly configurable with thousands of component choices available with a fast turnaround time. Standard options are available for both microbial and cell culture applications.

SINGLE  
USE



CELLVESSEL SMALL  
SINGLE USE  
BIOREACTOR



BACTOVESSEL  
SINGLE USE  
FERMENTER

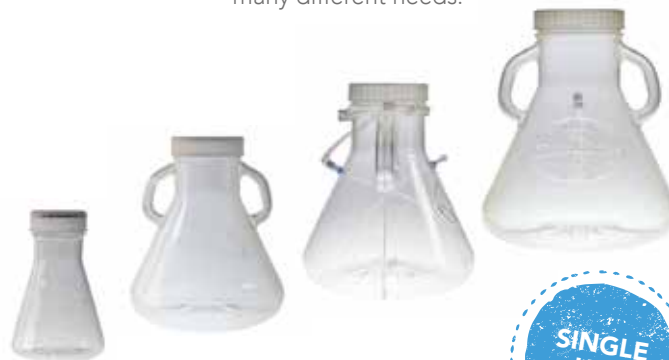


CELLVESSEL  
CONFIGURABLE  
SINGLE USE  
BIOREACTOR



## CULTURE FLASKS, TRANSFER CAPS, MULTI WELL PLATES & FILTER VIALS

Thomson's range of innovative consumables help make your laboratory more efficient. Their filter vials speed up prep and analysis, while their patented optimum growth and ultra high yield flasks with AirOTop seals provide the perfect environment to enhance culture growth. The range of well plates represent a cross section of plates for many different needs.



OPTIMUM GROWTH FLASK  
– 125ML TO 5L

SINGLE  
USE



# DOWNSTREAM PROCESSING

*The recovery and purification  
of biological products*



## BIOTECH PUMPS

Quattroflow are the leading manufacturer of unique 4-piston diaphragm pumps, offering extremely low shear pulsation and particulate generation, making them perfect for applications such as chromatography and tangential flow filtration (TFF). Single and multiple use options are available.

Flow rates range from <100ml per hour up to 16,000L per hour allowing you to go from discovery to production with one pump technology. See our website for a video which demonstrates how the Quattroflow pump works.

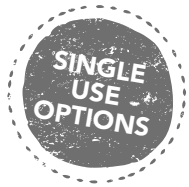


PUMP	QF150	QF1200	QF440
MULTI-USE	✓	✓	✓
SINGLE USE	✓	✓	✓
FLOW RANGE (lph)	1 - 180	10 - 1200	50 - 5000
PRESSURE <40°C	Multi Use: 0 – 6 bar   Single Use: 0 – 4 bar		



PUMP	QF5050	QF10k	QF20k
MULTI-USE	✓	✓	✓
SINGLE USE	✓	Coming soon	✓
FLOW RANGE (lph)	50 - 5000	500 - 10000	1000 - 20000
PRESSURE <40°C	Multi Use: 0 – 6 bar   Single Use: 0 – 4 bar		





**Pneumatic Scale  
Angelus**



## CONTINUOUS CENTRIFUGATION

PSA's CARR Centritech division is a global leader in the design and manufacture of liquid/solid centrifugal separation systems. Their range of continuous flow aseptic centrifuges offers the ability for true scale up of contained processes, from development to production for microbial, yeast, animal cell and fine chemical applications.

Available as both single and multiple use.

### SINGLE USE SYSTEMS FOR MAMMALIAN CELLS

UniFuge	<ul style="list-style-type: none"> <li>- Low shear, aseptic, viable cell recovery to 4,000 x g</li> <li>- Batch and fed batch harvesting</li> <li>- Scalable: → 500 L/hr</li> </ul>
Centritech	<ul style="list-style-type: none"> <li>- Low shear cell harvest, perfusion, media exchange</li> <li>- Scalable: → 150 L/hr</li> </ul>

### CLEANABLE SYSTEMS

Powerfuge	<ul style="list-style-type: none"> <li>- Up to 20,000 x g</li> <li>- Bacteria, fungi, proteins, sub-micron particles</li> <li>- Scalable: → 1700 L/hr</li> </ul>
ViaFuge	<ul style="list-style-type: none"> <li>- Low shear cell harvest</li> <li>- Mammalian, insect, plant cells (&gt;99% viability)</li> <li>- Scalable: → 2,400 L/hr</li> </ul>



UNIFUGE – SINGLE USE  
DISPOSABLE CENTRIFUGE



UNIFUGE – SINGLE USE  
U2K CENTRIFUGE



CENTRITECH – LAB III & CELL 8



VIAFUGE – PILOT & V12





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**KENT  
SCIENCE  
PARK**  
Sittingbourne