CYTOMOS.
SEE THE UNSEEN

Celledonia™

See cell features with no known markers. Predict cell behaviour in your bioprocess.

T Cell Monitoring | Stem Cell Differentiation Insights | CHO Cell Clone Productivity

Smarter, predictive insight in minutes

Seeing both inside and outside of the whole cell, Celledonia™ detects cell features without assay complexity or biomarkers. By measuring intrinsic cell properties directly, Celledonia™ delivers rapid, data rich and predictive insights empowering bioprocessing and cell line development teams to make confident, real-time decisions that drive faster process optimisation.

Near Real-Time

Measure intrinsic single-cell properties in just minutes.

Label-Free

No markers. No reagents. No complexity.

Auto Analysis

Consistent results, independent of operator skill.

Predictive

Turn intrinsic cell measurements into data-driven forecasts.

Multiplex

Analyse multiple cell characteristics at once for richer, actionable insights.

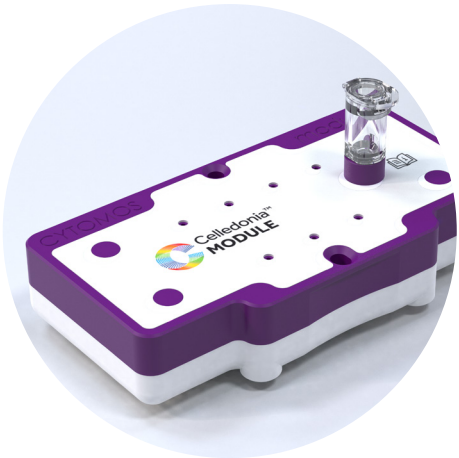
Quantitative

Count cells, measure concentration, and track population dynamics, for single cells and entire populations.

With minimal preparation and fast, automated data analysis of results, you can gain cellular insights in minutes without the need to be an instrumentation expert or data scientist.

How Celledonia™ works: powered by AuraCyt™

Cells are applied to the Celledonia™ module directly from the culture vessel in their native media. A microfluidics device passes the cells across our proprietary sensor, measuring electric field distortions over an ultra-wide range of frequencies, capturing both membrane and intracellular features simultaneously.



Microfluidics + Dielectric Spectroscopy + Semi-conductor + Data Analytics = Cellular Insights

The AuraCyt™ software converts these measurements into a digital fingerprint for each cell, enabling quantification of cell count and concentration, tracking of population dynamics, and prediction of cell behaviour. This generates true digital data that can be integrated with future AI/ML platforms, providing a scalable and versatile foundation for advanced cell analysis.

Book Demo

Applications: monoclonal antibodies

Cell Line Development

Predict high-producing, stable clones for CHO CLD of mAbs

- Celledonia™ signatures reliably speed cell line development.
- Gain early Yes/No certainty on clone quality, picking the best clone the first time.
- Identify clones with optimal cellular physiology that will be stable, high producers at scale.
- Predict the quality of complex biologics quickly, enabling faster, more confident decisions.

Book Demo

Applications: cell therapies

Live T Cell Monitoring

Enable predictive CGT process control for greater efficacy and consistency.

- Predict transfection efficiency early and gain actionable control over CAR-T manufacturing, enabling faster, fail-fast decisions.
- Identify cell types and subtle functional differences, including T cell characteristics.
- Accelerate immunotherapy development with actionable, data-driven insights.

Cell Differentiation Insights

Inform pluripotent expansion and differentiation strategy for stem cells

- Celledonia™ signatures allow you to monitor your stem cell cultures, providing clear and unbiased identification of optimum passage, harvest, and/or differentiation.
- Predict key manufacturing points and identification of cell intermediates that cannot be detected by conventional flow cytometry.

Celledonia™ workflow

Celledonia™ is designed for ease-of-use with minimal training. Users across multiple development labs and manufacturing sites can generate consistent, reliable and informative cell analytics which allow processing decisions to be made based directly on the intrinsic properties of the cells.

1

Prepare Instruments + Reagents

Fill bottles w/ buffer & load the Celledonia™ module into the instrument.

2

Load Sample

Collect a sample from your cell culture vessel, filter & place directly into the module sample inlet.

3

Run Samples

Load sample, close lid, and press 'Acquire'.

4

Analyse Data

AuraCyt™ software performs data analytics, turning your data into actionable insights

Celledonia™ System + Properties

Celledonia™ System	Properties
Measuring technology	Dielectric spectroscopy
Measurable range*	10-17 µm
Sample volume*	50-200 µl
Optimal cell concentration*	$1x10^4$ - $1x10^8$ cells / mL
Operating Temperature	+15° C to +27° C
Operative Relative Humidity	30% to 60%
Software	AuraCyt™
Intended use and users	Research & Process Development by trained technical staff
Intended Use Environment	-Temperature controlled laboratory environment -Indoor use only
Analysis method*	Quantitative measurement: - Cell count/concentration - Intrinsic cell phenotype
User interface	Web application
Data storage	Microsoft SQL database
File types	NetCDF, .cyt
Operating system	Linux
External system compatibility	Exportable to NetCDF

* *Pending verification*

Celledonia™ Instrument	Properties
Model	103
Footprint when closed	35 cm H x 30 cm W x 44 cm D
Footprint when open	57 cm H x 30 cm W x 44 cm D
Weight	12 kg
Electrical rating	Input: 24V, 6.5A, 156W DC
Power supply unit	Input: 100 – 240 V~, 50 / 60 Hz, 2.8 A MAX Output: 24V DC 8.3A, 199.2W - UK socket 3-pin
EMC Compliance	Compliant with the requirements of EN IEC61326- 1:2021 and Compliant with 47CFR Part15
Celledonia™ Module	**Properties**
Model	202
Approx. footprint	2.6 cm H x 8.0 cm W x 5.4 cm D

Cytomos is an advanced therapy tools and technology company applying dielectric spectroscopy to develop novel cell analytics solutions that accelerate CGT + biologics development & manufacturing.

Book Demo

Cytomos Ltd
1st Floor, Charles Darwin House
Milton Bridge
The Edinburgh Technopole
Edinburgh, EH26 0PY
Scotland