

C.WASH™ PLUS

Where High-Efficiency Centrifugal Plate Washing
Meets Precision Dispensing.



Centrifugal Plate Washing and Dedicated Dispensing in One Standalone Device

Quality and speed are paramount in biomedical research from academia to industry, including start-ups and CROs. However, researchers are often forced to sacrifice one for the other or overspend on dedicated washing and dispensing machinery. The C.WASH PLUS from CYTENA makes these concerns a thing of the past.



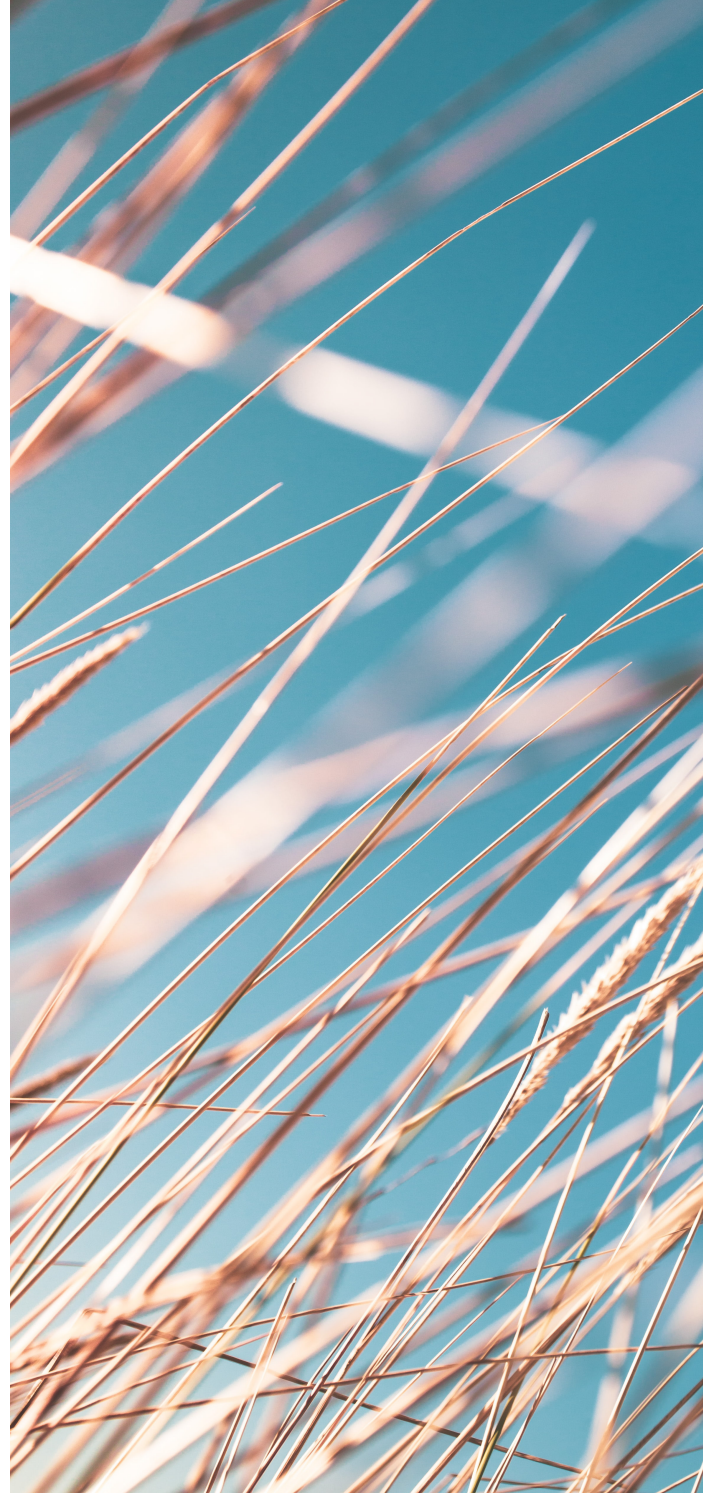
- >99.99% plate washing efficiency after only 2 wash cycles means faster, higher-quality workflows
- Gentle dispensing, with three dispensing pressure levels to choose from, supports reproducibility in cell-based applications
- 96, 384, and 1536 well plate capability massively increases throughput
- Sleek user-focused design makes operation and maintenance simple
- 2-in-1 device brings competitive pricing and a smaller footprint

The C.WASH PLUS offers transformative throughput, with up to 1536 well capacity, and quality across a huge range of applications by combining the latest centrifugal washing and dispensing technology into a single automation-ready instrument.

Pioneering Centrifugal Washing Technology

High-efficiency washing

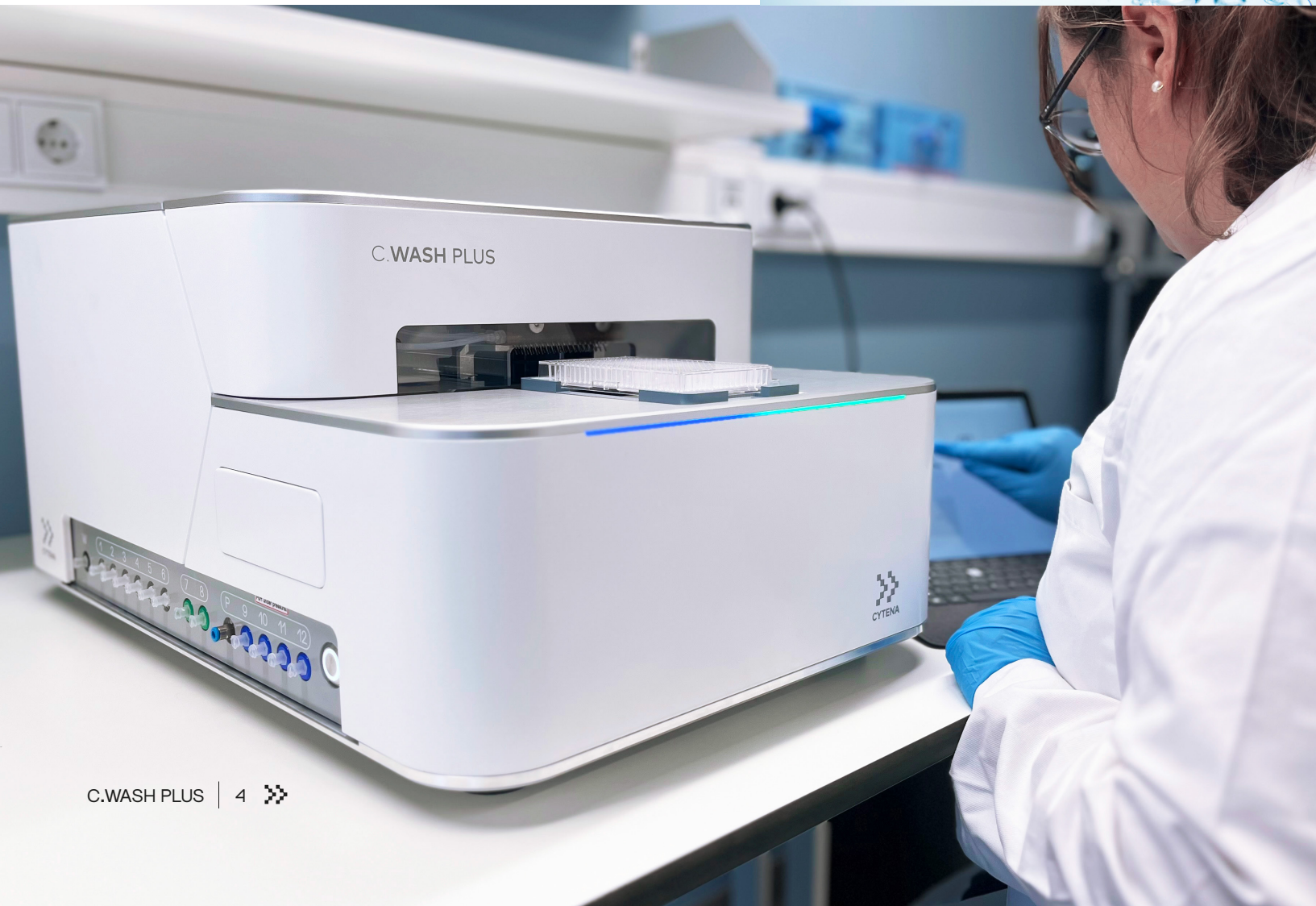
The C.WASH PLUS uses state-of-the-art centrifugal plate washing technology to bring users fast, non-contact cell washing with an efficiency of 99.99% after just two washes. This means faster wash times, lower reagent requirements, and less waste. The design supports gentle washing of adherent cells, making it an absolute powerhouse for diverse cell-based applications. Manual methods are messy and prone to contamination, while the C.WASH PLUS provides consistency and excellence in automated plate washing, fitting seamlessly into wide-ranging workflows.



Ensuring high quality, reproducible results

The C.WASH PLUS ensures $<0.1 \mu\text{l}$ residual volume in wells after washing, ensuring reproducible results from sensitive assays like ELISA and high-throughput compound screening. The C.WASH PLUS's automation capabilities ensure reliable results that manual washing simply can't match.

The C.WASH PLUS makes menial, time-consuming pipetting tasks a thing of the past. It is a true "walk away" instrument that ensures high-quality results while letting you get on with the science.



Precision Dispensing

The C.WASH PLUS is a revolution in dispensing technology that makes the future of high-throughput technologies a reality for researchers.



High accuracy movement for 1536-well compatibility



Low-volume, tipless dispensing for scalability and resource efficiency



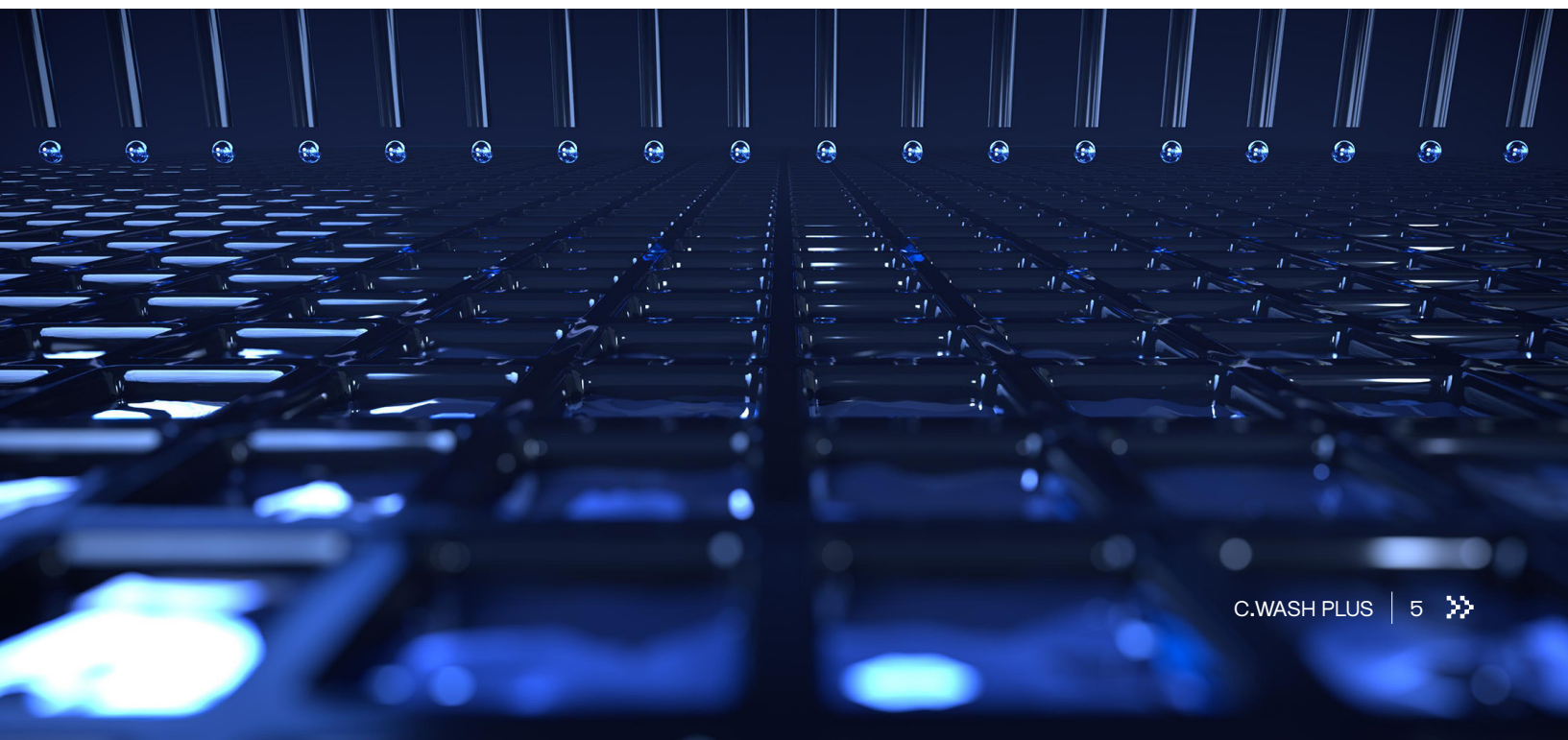
Controlled pressure dispensing for minimal shear stress and monolayer loss



Automation ready for accelerated product launches and project timelines



Low dead volume for efficiency and reduced waste





Make the leap to 1536 wells

The C.WASH PLUS was designed with the future in mind, and its advanced movement capabilities give researchers the required plate positioning accuracy to leverage the 1536 well format for high-throughput assays.



Matching complexity with capability

The C.WASH PLUS supports up to 12 liquid inputs, allowing researchers to program and automate complex tasks that require multiple reagent inputs. This streamlines tasks like ELISA and cell staining, making them both more efficient and consistently reliable.

High-Throughput Cell-Based Assays

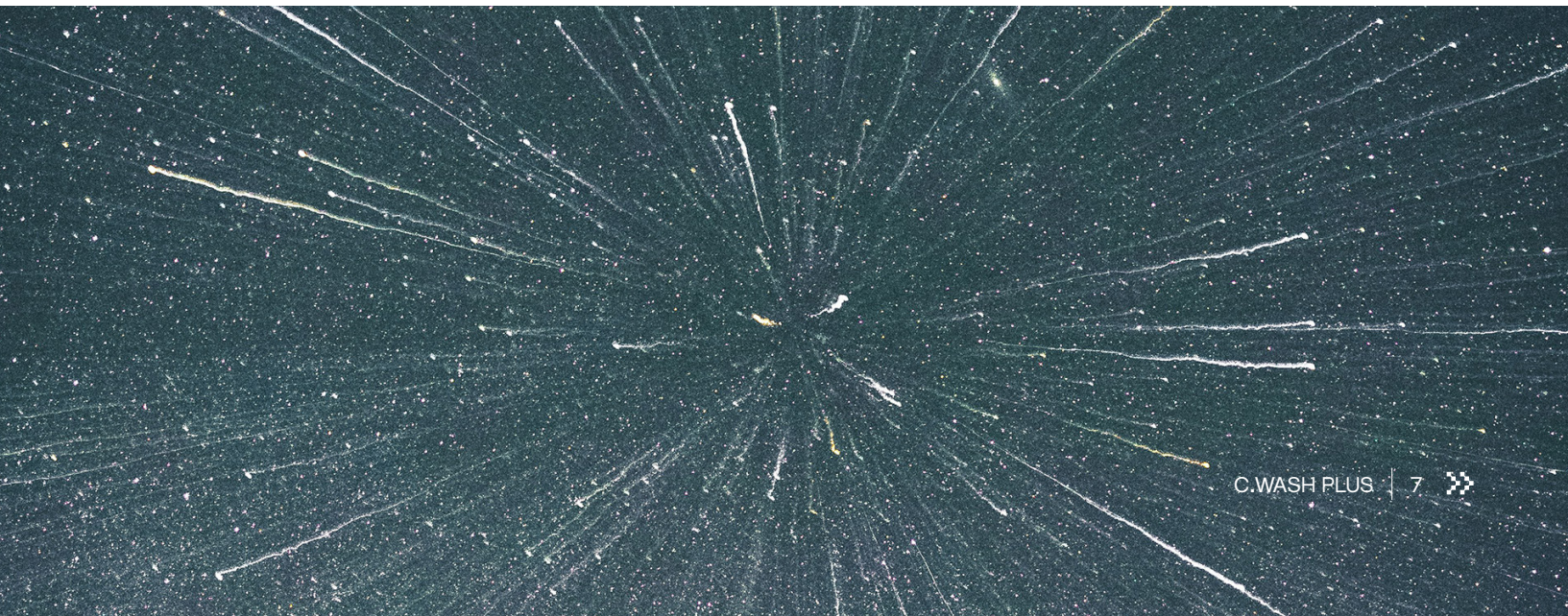
Cell-based assays are essential for modern biomedical research and drug discovery efforts, such as high-throughput screening. However, if performed manually, they can be time-consuming and prone to contamination and variability. Furthermore, the competitive drug discovery market requires researchers to produce a large quantity of data within shortening timelines.

The C.WASH PLUS has the answers.



Beyond high-throughput

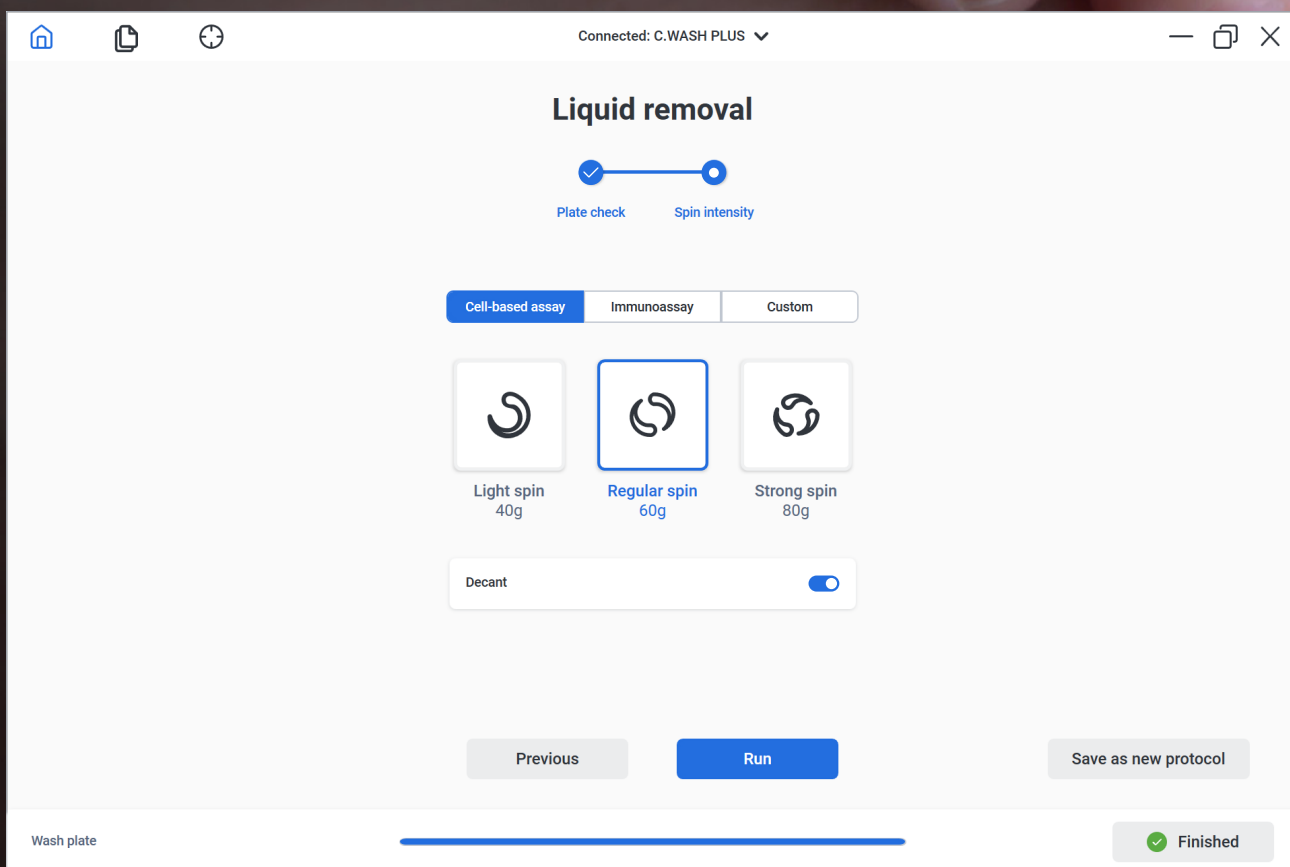
The 1536 well plate capabilities of the C.WASH PLUS make it a game changer in high-throughput cell-based assays. It lets researchers streamline their workflows and gives them a competitive edge in a market where precise automated 1536 well dispensers are lacking.



Cell-friendly

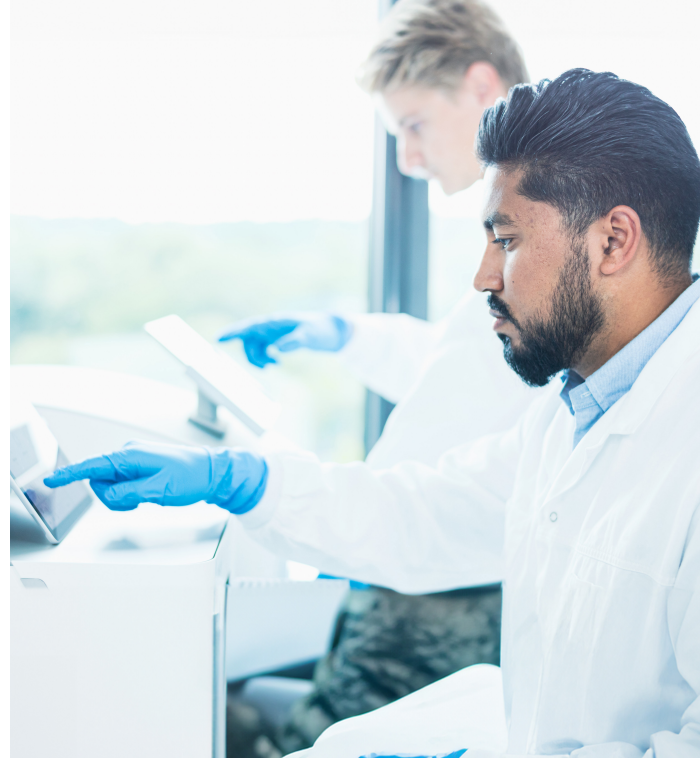
The pressure-controlled dispensing of the C.WASH PLUS maintains the viability of fragile cells like induced pluripotent stem cells (iPSCs) and ensures that adherent monolayers are undisturbed.

The C.WASH PLUS's small footprint means it fits inside biological safety cabinets, which, in combination with its short tubing and easily accessible filters, significantly reduces the risk of contamination.



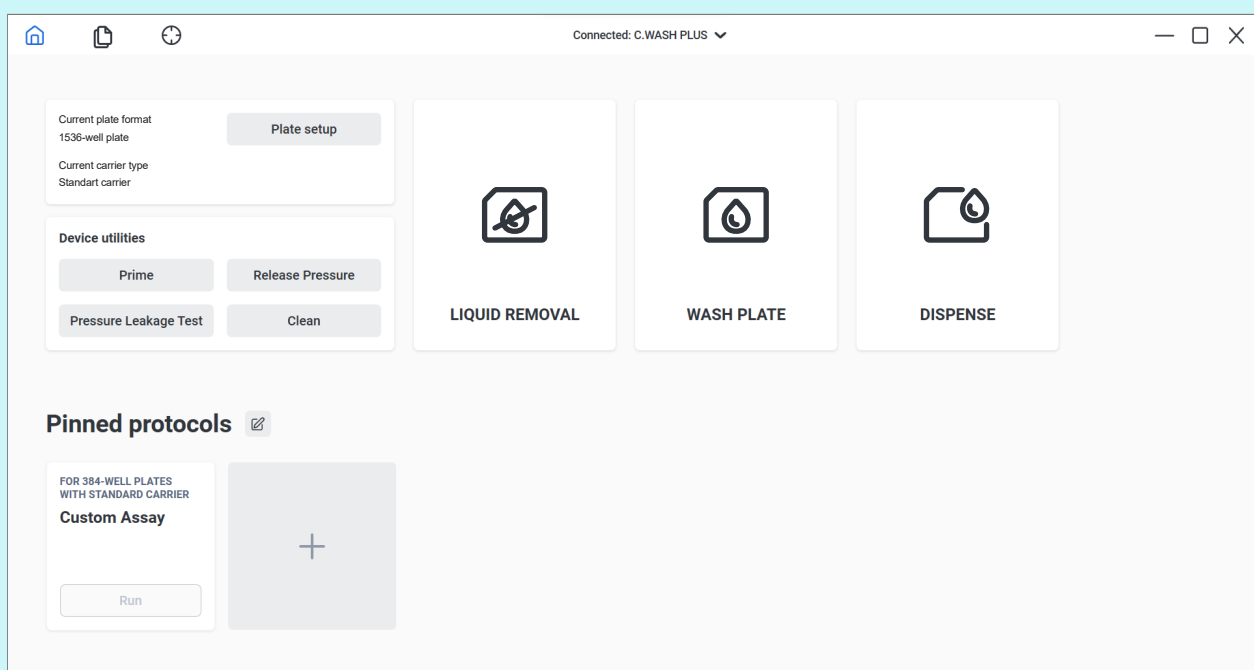
Advanced Tech, Effortless to Use

What's the point of having the latest technology if it's too complicated to use and a nightmare to clean? With the C.WASH PLUS, we match exceptional performance with industry-leading user-friendliness.



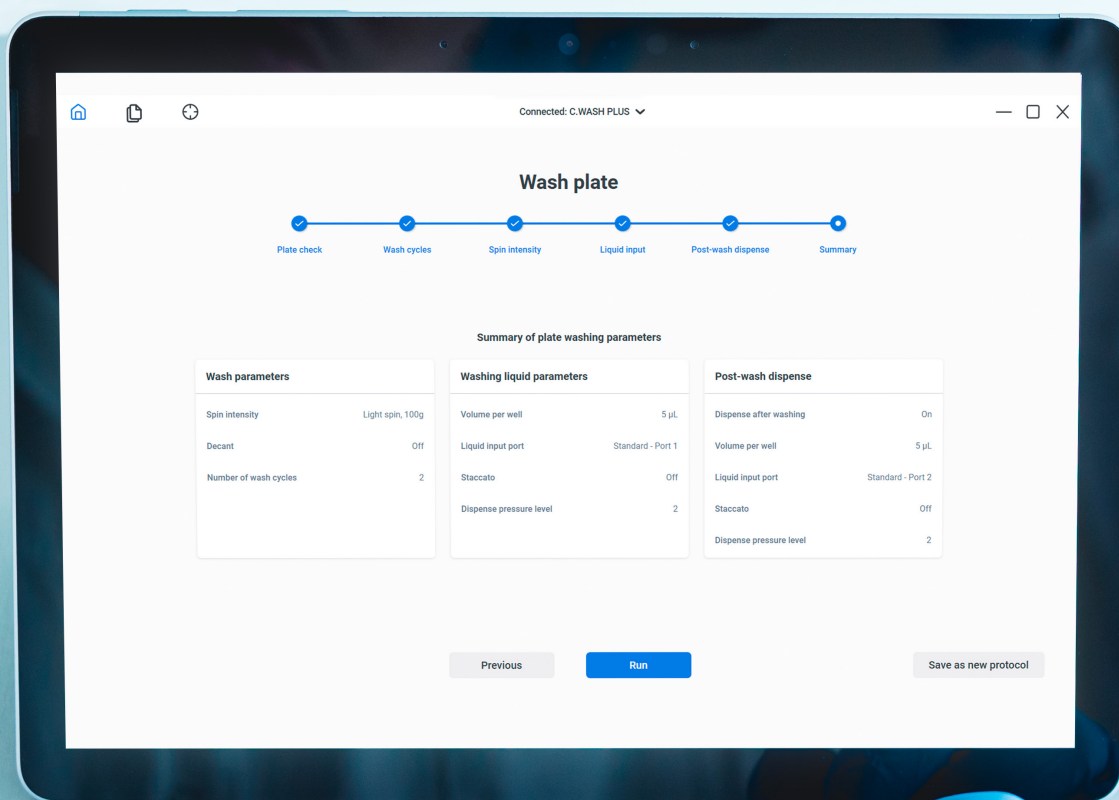
User-friendly

The sleek design of the C.WASH PLUS makes it easy to clean, and the external filters make routine maintenance effortless. The system lets you prime all channels simultaneously, and the clog-free waste removal pump helps your project stay on schedule. The C.WASH PLUS comes with a dedicated cleaning solution that ensures effortless self-cleaning you can rely on. We provide on-site training for the C.WASH PLUS, and because it's a 2-in-1 device, you save on maintenance costs from a single point of contact.



Simple software

The C.WASH PLUS software is self-explanatory and straightforward to use. This means setting up even the most complex experiments is quick and easy. The device supports various SDS plate types from different vendors, but the format can be customized to your specific needs. The C.WASH PLUS offers prebuilt protocols and an "Expert Mode" that gives users complete control of protocol customization. The software is updated regularly and is SiLA2 compliant, making it easy to integrate with third-party applications.



Future-Proof Design

The future of biomedical research is green, automated, and high-throughput. At CYTENA, we embrace this future, and the foresight we put into the C.WASH PLUS perfectly illustrates that.



Waste reduction

The C.WASH PLUS is a tipless washer and dispenser, which means it uses far less plastic than other devices or manual methods. Its 99.99% washing efficiency, scalability, and precise dispensing mean experiments require fewer reagents and generate less waste.

Automation-ready

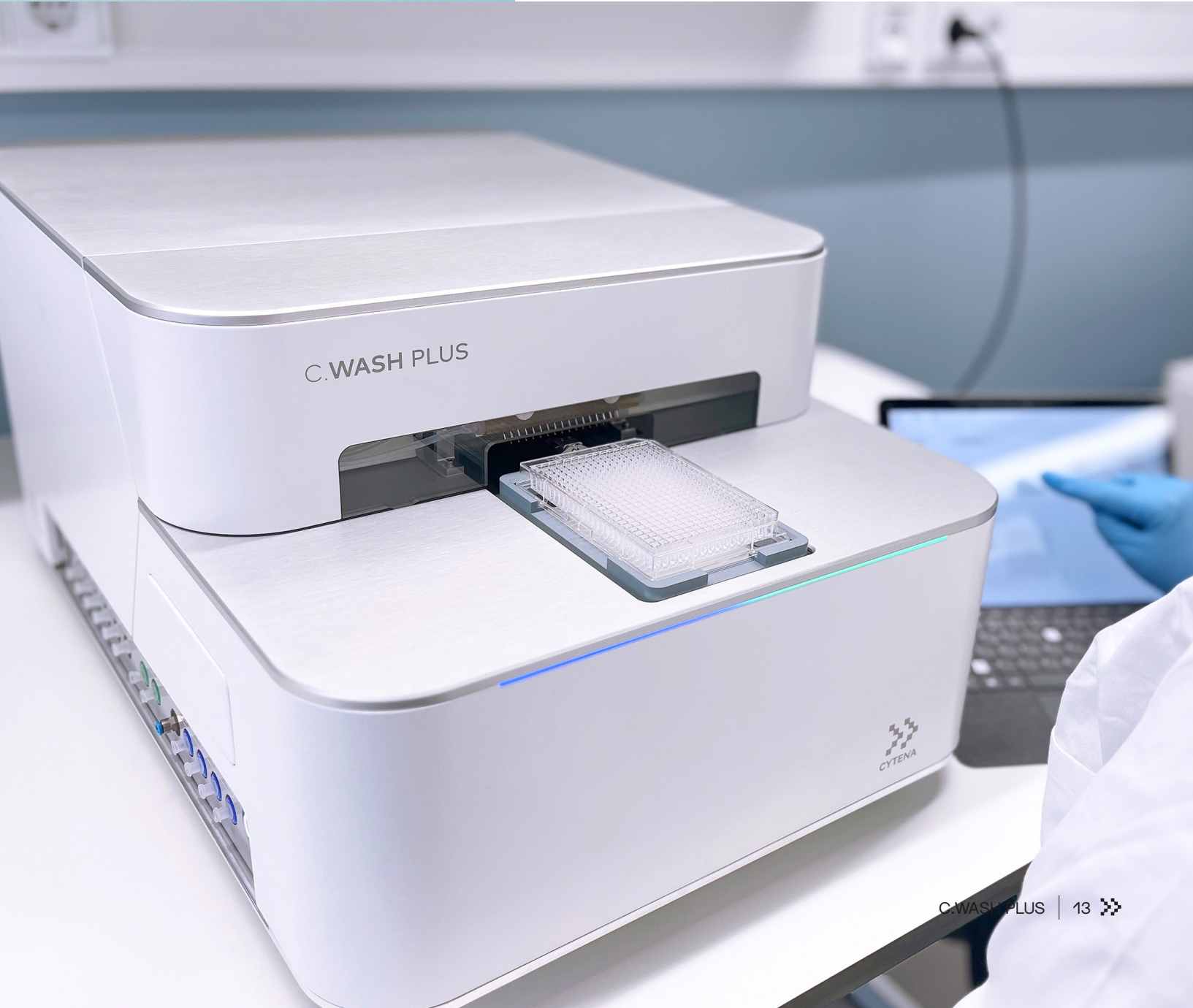
The C.WASH PLUS is automation-ready and ideal for integrating into automated workflows. It seamlessly interfaces with robotic arms in integrated workcell setups, supporting accurate dispensing and consistent plate washing across all plate formats, including 1536 well plates, without requiring operator intervention. This allows integration into fully automated workflows with other tools, ensuring reliability and reproducibility while enhancing efficiency and scalability, making it ideal for high-throughput screening applications.





Quality in high-throughput

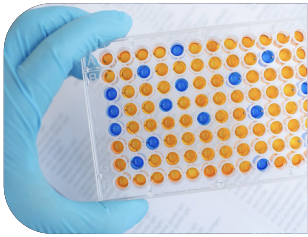
The 1536 well plate capabilities of the C.WASH PLUS deliver the future of high-throughput screening. This makes our device a game-changer for applications like compound profiling. The 1536 well plate format streamlines screening experiments, and with the precision capabilities of the C.WASH PLUS, you'll generate data you can trust, with smaller CVs and improved Z-scores.



Impact Areas

Washing and dispensing for broad research applications

The dual washing and dispensing functions of the C.WASH PLUS make it widely applicable across many domains of research and drug development. But it doesn't simply "carry out" these functions; it excels at each one, bringing researchers unique benefits and advantages.

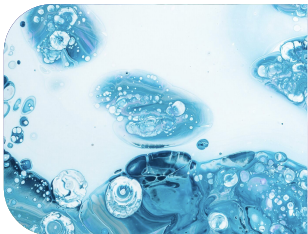
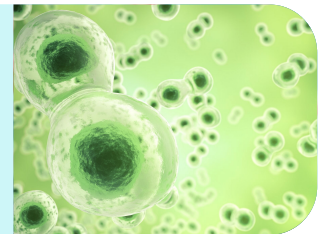


Protein and immunoassays

The C.WASH PLUS provides outstanding coefficients of variation (CVs) in dispensing and limits residual volume to $<0.1 \mu\text{l}$ per well across all plate sizes. This makes it ideal for sensitive assays like ELISA and Meso Scale Discovery (MSD).

Cell staining

Cell staining is a long process requiring many toxic reagents and incurring significant timeloss for any missteps. The C.WASH PLUS frees the researcher from manual pipetting of harmful reagents and provides consistent staining, which is essential for reproducible results.

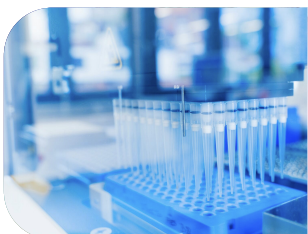


Cell washing and media exchange

The C.WASH PLUS provides reliable and gentle washing and media exchange for adherent cells, bringing researchers peace of mind for their cell-based assays.

Well coating

Coating wells with proteins and other bioactive agents is essential for many assays, but it is laborious and can cause variability if performed inconsistently. The C.WASH PLUS overcomes these hurdles with precise dispensing and automation.



Assay Automation

The C.WASH PLUS lets you automate and customize multi-reagent workflows via a user-friendly interface. This saves time and reagents and produces more reliable results.

Technical Specifications

Liquid Removal

Plate compatibility (format)	96, 384, 1536
Plate compatibility (height)	standard 14.4 up to 20.1 mm with customized carrier
Residual volume	< 0.1 µl per well for all plate formats
Centrifugal forces	5 to 3500 rpm (450g) max acceleration/deceleration 2000 rpm

Standard Dispenser (Membrane Pump & Electromechanical Valve)

Dispense head	8-needle, 16-needle
Liquid inputs	2 dedicated, 6 shared (Auto switching (internal) for up to 6 liquid input channels)
Dispensing accuracy & precision (standard dispenser)	<10% CV @ 30 µl standard
Adjustable dispense pressure	yes (3 levels)
Deadvolume internal (tube volume)	8 ml multiplex
Deadvolume (liquid switch/priming)	down to 0 µl (dedicated dispense heads)
Volume range standard dispenser	8-needle dispense head: > 10 µl 16-needle dispense head: > 5 µl
Dispense speed - 96-well (50 µl)	11 seconds
Dispense speed - 384-well (25 µl)	15 seconds

Precision Dispenser (Pressure-Over-Liquid)

Dispense head	8-needle mounted on y-axis
Liquid inputs	4
Adjustable dispense pressure	yes
Deadvolume	3 ml
Dispensing accuracy & precision (precision dispenser)	<5% CV @ 2 µl
Volume range precision dispenser	down to 2 µl
Dispense speed - 96-well (100 µl)	24 seconds
Dispense speed - 384-well (50 µl)	63 seconds
Dispense speed - 1536-well (5 µl)	180 seconds

Washing Speed

Processing speed 96-well 1 wash cycle	≤ 43 seconds
Processing speed 96-well 2 wash cycles	≤ 60 seconds
Processing speed 384-well 1 wash cycle	≤ 54 seconds
Processing speed 384-well 2 wash cycles	≤ 70 seconds
Processing speed 1536-well 1 wash cycle (precision)	≤ 3 minutes

Liquid Waste System

Active Pump for rapid liquid removal from wash drum	
---	--

Miscellaneous

Plate positioning	band drive + linear magnetic sensor; accuracy: +/- 100 µm
User interface	Touchpad (included)
Automation	SiLA2 interface is compatible with third-party integration
Washing efficiency	> 99.5% after 1 wash cycle, > 99.99% after 2 wash cycles
Dimensions (W x D x H)	410 x 615 x 300 mm
Weight	35.2 kg

*C.WASH PLUS centrifugal washer products are manufactured under an exclusive license from Yantai Ausbio Laboratories.

We create the future of health.



CYTENA, A BICO COMPANY

CYTENA is a leading provider of high-precision instruments for isolating, dispensing, imaging, analyzing and handling biological cells. The company continues to build on the success of the single-cell dispensing technology it patented as a spin-off from the University of Freiburg, Germany, in 2014. Today, as part of BICO, the world's leading bio convergence company, CYTENA's award-winning devices are still manufactured in Germany and used at prestigious academic and pharmaceutical labs around the world to automate workflows in numerous application areas, including stable cell line development, single-cell omics, high-throughput screening and drug discovery. CYTENA's breakthrough innovations for the lab combine advanced automation, state-of-the-art software engineering and the latest insights in cell biology to maximize efficiencies in the life sciences and create the future of health. Learn more at www.cytena.com

info@cytena.com

+49 761 21632000

www.cytena.com