



HT4150L

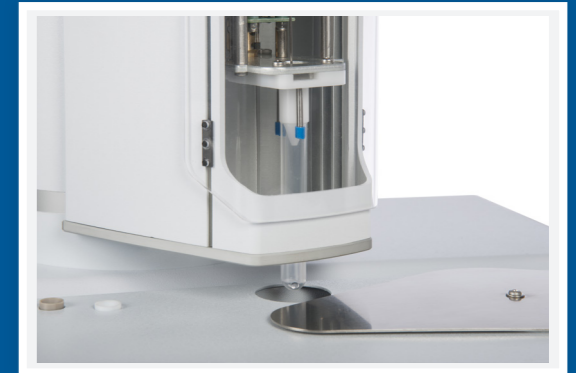
CELL WASHER (RUO)

Automate Your Flow Cytometer Sample Preparation

LYSE • WASH • ISOLATE CELLS • CHANGE BUFFER

KEY FEATURES:

- Automate your lysis-wash workflow
- User friendly
- Flexible and straight forward
- More than a lab centrifuge



AUTOMATE YOUR LYSIS-WASH WORKFLOW

The HT4150L cell washer is an automated device for **preparing cells** for subsequent **cytofluorimetric analysis**. The HT4150L is designed to provide thorough and reproducible **cell lysis, separation, and fractioning through a built-in centrifuge** specifically designed for this purpose.

When performed manually, this kind of cell preparation is laborious, tedious, and prone to variability. On the other hand, the automation of this workflow **allows for protocol standardisation**, consistent operations, and minimal labour.

The HT4150L can hold up to **32 standard sample tubes**, which are processed in two batches of 16 samples each. **Up to 10 methods** can be stored, including two factory-pre-set reference methods: there are plenty of options to customize a range of lysing and fixative dispense volumes.

USER FRIENDLY

The specimens to be processed are collected in test tubes and put in the **removable 32-position rack**. With the integrated **touch screen**, you can start sample processing in a few taps: you will experience simple and user-friendly control.

Large reagent reservoirs and a waste tank are included for extended operations. **Sensors that detect a lack of reagents and fullness of waste tank** are included for a better user experience.

FLEXIBLE AND STRAIGHT FORWARD OPERATIONS

The automated syringe draws a pre-set quantity of **lysing solution** from a specific tank, and the solution is then dispensed into the tube. Over a pre-set time interval, this substance induces the specimen

lysis, making the subsequent operation of mechanical separation easier.

Afterwards, the tube is automatically picked up and put in the **centrifuge**, which realizes the mechanical separation process. Then the device automatically uses the syringe to **remove the supernatant** from the tube aspirating a defined quantity of liquid at a defined depth. The drawn liquid is discarded into the waste tank, completing the specimen washing (separation) operation.

The syringe is accurately cleaned with the buffer solution after each sample before switching to the next sample to reduce cross-contamination and enhance the overall process quality. Then the syringe **buffer solution is added to the pellet** (precipitated solid phase on the bottom of the tube) to resuspend cells; you will be ready for cytometric determination.

The washing process may be repeated if

programmed to do so.

The cycle is completed by the tube repositioning into its original position in the rack.

The HT4150L can also perform the above-mentioned phases only partially. The phase definition can be set during the method setting process. For each method, users can set the "mode" to define if it must include: **lysis** phase only, **washing** phase only, both **lysis and wash** phases (as in the procedure described above) and **double lysis** (required for particular specimens for which a further lysis step is recommended after the first lysis and centrifuge cycle).

It is also possible to combine multiple methods in sequence to enable support for complex protocols that include several lysis/wash cycles.

MORE THAN A STANDARD LAB CENTRIFUGE

The built-in centrifuge features **rotor position control so that no tubes mismatches happen**. An **automated centrifuge cover** is integrated to make the centrifuge robot friendly.

This special mechanism allows the automated gripper to load tubes vertically, while during the centrifugation the tubes are moved to tilted position and, finally, returned to the original position after the deceleration for unloading.

The algorithm that regulates centrifuge acceleration and deceleration during spinning has been fine-tuned to allow for efficient **separation/fractioning while preserving the integrity of the precipitated cells**.

Up to 16 tubes can be processed simultaneously. In the case of a full sample rack, the tubes will be processed in two batches. **In the case of an odd number of samples, the centrifuge loading is automatically balanced** so that if there are priority samples, small batches can be run.

HAEMATOLOGY STUDIES

Typical use involves the **manipulation of peripheral blood** to isolate **leucocytes marked with fluorochrome-conjugated antibodies for research purposes**.

In this application, the markers are added to the whole blood specimen. Then the HT4150L automates the adding of the lysing solution for a defined time to allow erythrolysis to occur with a minimal effect on the leukocytes).

A centrifugation step allows for the precipitation of white blood cells. Red cell debris, platelets, unbound antibodies, and residual proteins remain in the supernatant and are automatically removed by the workstation. WBC can, indeed, be washed and then resuspended in a proper buffer to be further analyzed by a flow cytometer.



TECHNICAL SPECIFICATIONS

Sample capacity

Tube compatibility:	12x75mm open tubes
Total sample capacity:	32
Samples per batch/centrifuge:	16

Fluid capacity

Lysing solution:	250ml
Washing solution:	500ml

Performance¹

Accuracy:	deviation of the Subset Percentages compared to manual preparation: ≤5% (typically observed: less than 3%)
Precision:	RSD on subsets: ≤5% (typically observed: less than 3%) medium deviation between two instruments: ≤2.5% (typically observed: less than 2%)
WBC Recovery:	After one wash: 91-101% (mean: 97%) After two washes: 80-96% (mean: 88%)
Typical throughput:	for 16 tubes (1 wash cycle) ¹ : 38 min for 32 tubes (1 wash cycle) ¹ : 76 min for 16 tubes (2 wash cycle) ² : 52 min for 32 tubes (2 wash cycle) ² : 104 min

Method properties

Modes:	lysis only washing only lysis&washing double lysis
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Lysis parameters

Lysis source:	buffer, lysing solution
Lysis volume:	1-2.5 ml with 0.1 ml steps
Lysis time:	0-99 minutes with 1 minute steps

Washing parameters

Centrifuge cycles:	1-9 washing cycles
Centrifuge speed:	50-300g in 50g steps
Centrifuge time:	1-10 min with 1 min steps
Final volume:	0.0-1.9 ml with 0.1 ml steps

Physical features

Dimensions (WxHxD):	530x700x780mm
Weight	27 kg
Power supply:	100-240±10%Vac; 50-60Hz; 120W

For Research Use Only (RUO). The workstation is intended to be used for sampling and preparing liquid samples for different applications and is not designed for or intended to be used as an IVD device.

¹Obtained with reference method 1 (mode: lysis & washing; lysis source: lysing solution; lysis volume: 2ml; lysis time: 15min; centrifuge repetition: 1; centrifuge speed: 250g; centrifuge time: 3min; final volume: 1ml)

²Obtained with reference method 2 (the parameters are the same as the method 1, but centrifuge repetition: 2)



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