

ADAM

Less than 25 sec

ADAM

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NanoEntek

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SERVICES



ADAM MC2

Automated Cell Counter
for R&D

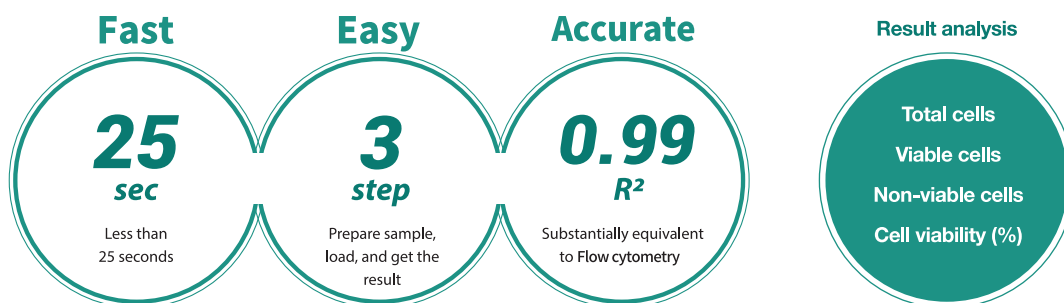
ADAM CellIT

Automated Cell Counter
for cGMP

ADAM MC2 & CellT

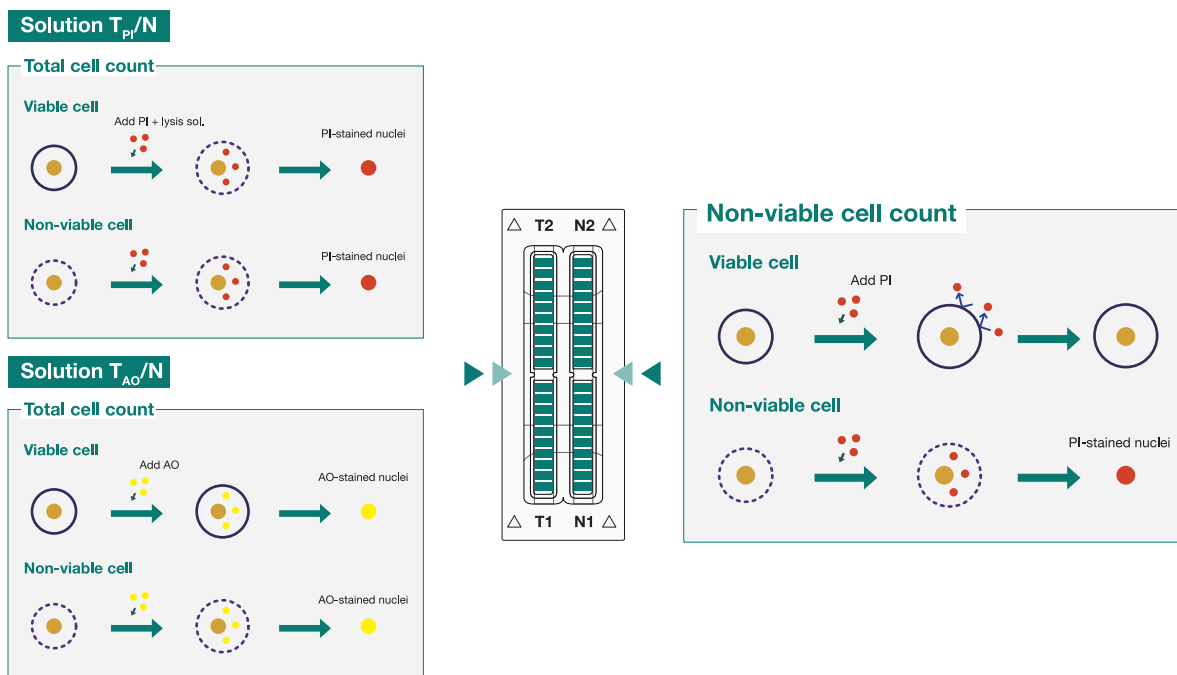
The Most Accurate Cell Counter

ADAM-MC2 and ADAM-CellT are new standard of automated fluorescence cell counters. ADAM stands for Advanced Detection and Accurate Measurement. ADAM utilizes sensitive fluorescence dye staining, LED optics and CMOS detection technologies to make the cell analysis more accurate and reliable. It measures the number of total cells, viable cells, non-viable cells and shows viability results. Combined with a disposable microfluidic chip, the operation is now extremely simple, easy, and cost-effective.



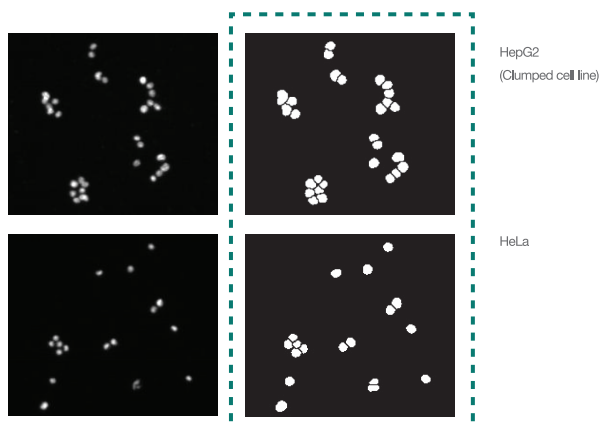
Principle of Viability Measurement (PI, AO-Staining Method)

There are two methods of viability measurement. After the samples are stained with fluorescent dye, propidium iodide (PI) or acridine orange (AO), which intercalates DNA to stain the nucleus of target cells, ADAM takes fluorescent images automatically. The obtained images are processed by image analysis software integrated inside the system.



ADAM MC2 & CellIT

Counting Aggregated and Irregular-Shaped Cells



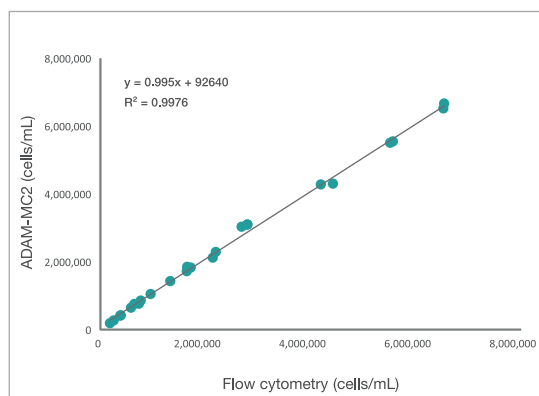
ADAM provides accurate and reliable results by counting aggregated and irregular-shaped cells.

- Accurate count based on cell size and shape
- Individual count of aggregated cells
- Debris is excluded from results

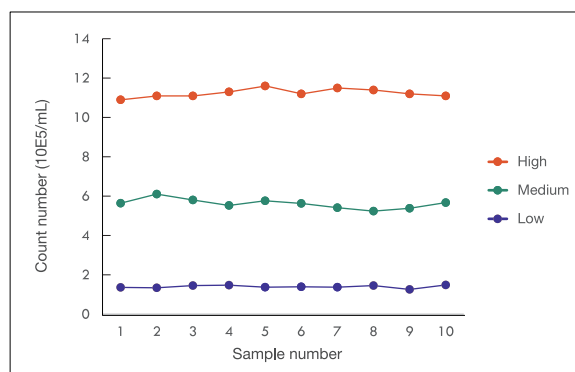
Among the images on the left, the images on the right side indicate cells that have been counted by ADAM.

Accuracy & Repeatability

Correlation of total cell counting between ADAM-MC2 and flow cytometry.



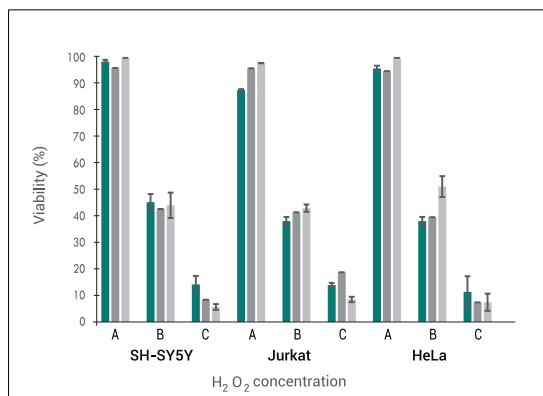
Samples of low, medium and high concentration of cells were counted with ADAM. The repeatability at each level of cell concentration is high.



	High n=10	Medium n=10	Low n=10
MEAN	1.12E+06	5.62E+05	1.40E+05
SD	21187.00	24679.28	7103.21
CV	1.88	4.39	5.06

ADAM MC2 & CellIT

Comparison of Cell Viability



Comparison of cell viability between ADAM, flow cytometry, and manual counting. SH-SY5Y, Jurkat, HeLa cells were treated with 100, 300µM H₂O₂ for 3 hours, then analyzed by ADAM, flow cytometry, and manual counting.

■ : ADAM ■ : FACS ■ : Manual count
A: Untreated / B: 100 µM / C: 300 µM



ADAM MC2 & CellIT | Cell Therapy

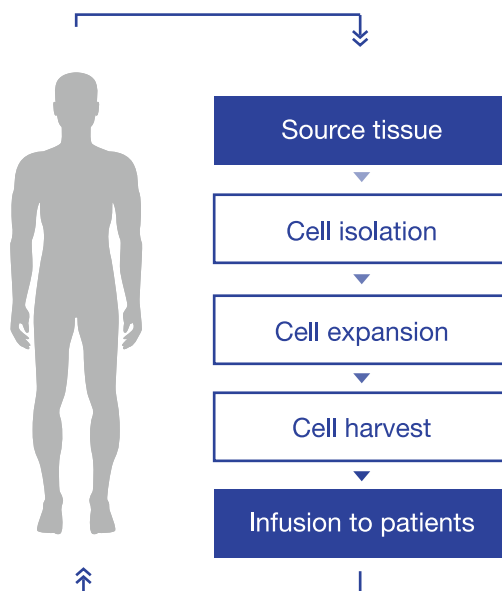
Cell Therapeutic Applications

ADAM can be used as a device for monitoring and QC of the cell numbers and viability in the process of manufacturing cells (CAR-T cells, stem cells, etc.) for Cell Therapy.

In addition, it is possible to use ADAM depending on the cell types (Whole blood cell, PBMCs, etc.) that need to be monitored during the manufacturing of cell therapy products.

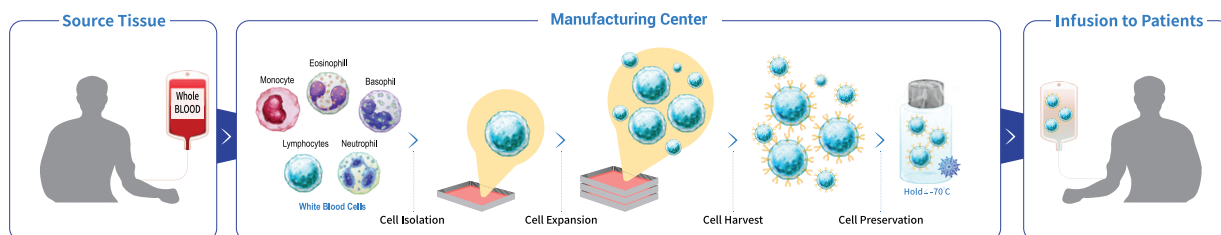
Application

- | | |
|------------------------------|---------------------|
| 01 Stem cell | 05 Whole blood cell |
| 02 CAR-T cell | 06 Aggregated cell |
| 03 CAR-NK cell | 07 PBMCs |
| 04 Adipose-derived stem cell | ⋮ |



QC Platform for Producing CAR-T cell

It is easy to monitor all different steps of the purification, expansion, and formulation of CAR-T cells using the ADAM to ensure precise and reliable results. ADAM can be used for cGMP, process control and quality control of CAR-T cell.



ADAM MC2

ADAM CellIT

For R&D, Process Control, Quality Control of CAR-T cell

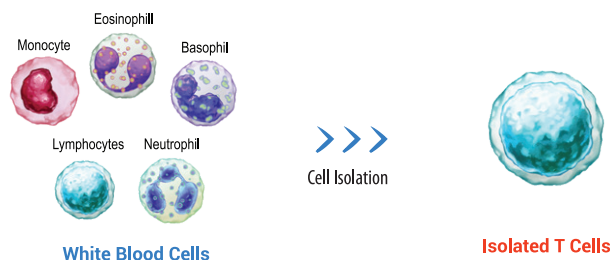


Monitoring the whole process from leukapheresis to the formulated product using the ADAM

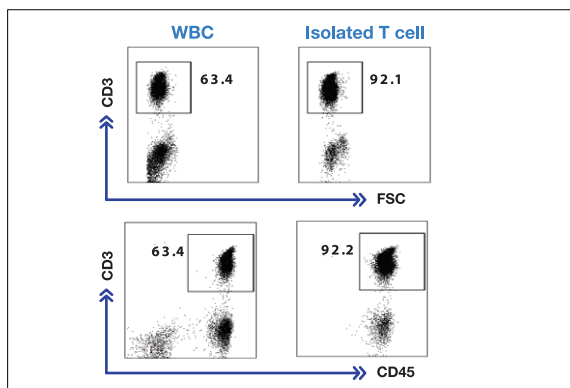
ADAM MC2 & CellT | Cell Therapy

Performance Test from Isolated T Cells

Isolated T Cells



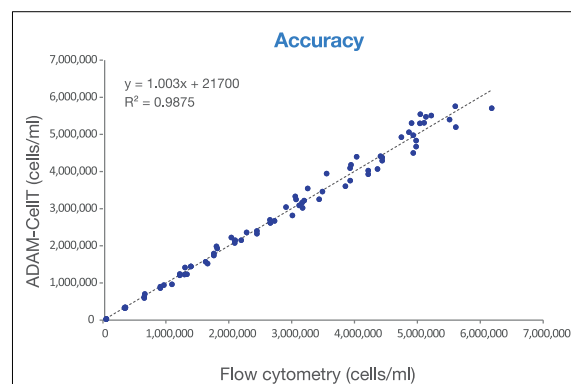
The profiles of T cells which was used for performance evaluation - Flow cytometric analysis of CD3 expression on unsorted (WBC; left panel) or sorted (Isolated T cell; right panel) human peripheral blood lymphocytes.



Accuracy

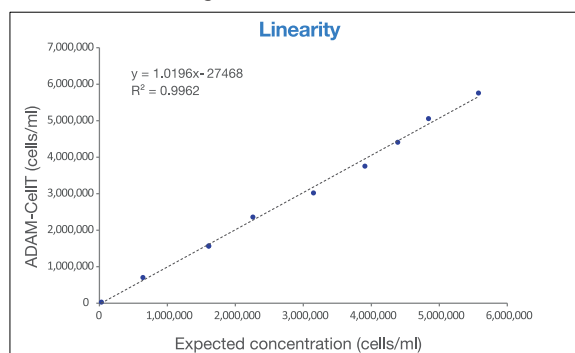
Correlation of T cell counting between flow cytometry and ADAM in Isolated T cells.

Method comparison between ADAM and flow cytometry.



Linearity

Linearity test between ADAM-CellT and expected concentration using isolated T cells.



Repeatability

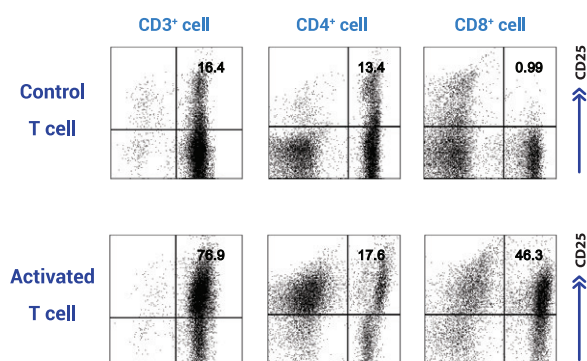
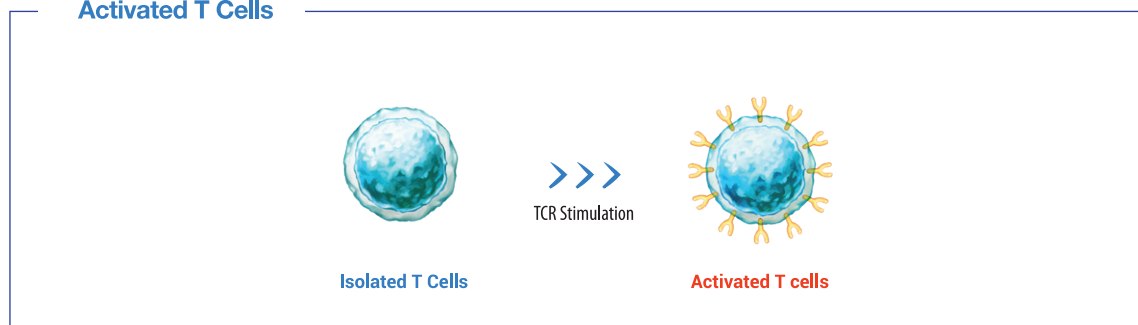
The samples of low, medium, and high concentration of isolated T cells were counted with ADAM.

	Low	Medium	High
MEAN	486,336	1,446,250	2,905,800
CV	4.97	3.05	1.65

ADAM MC2 & CellT | Cell Therapy

Performance Test from Activated T Cells

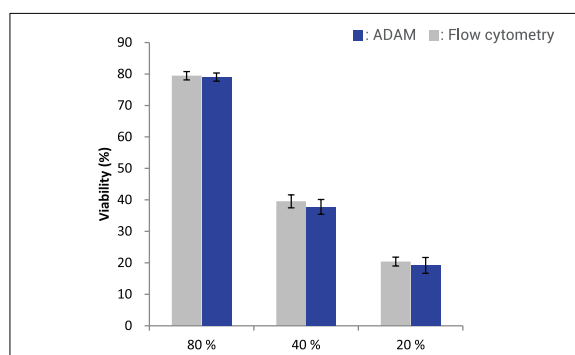
Activated T Cells



The phenotypes of activated T cells which was used for performance evaluation - Flow cytometric analysis of CD25 expression on TCR stimulated (Activated T cell; bottom panel) or unstimulated (control T cell; upper panel) T cells.

Viability

Comparison of viability between flow cytometry and ADAM-CellT in Activated T cells.



Repeatability

The samples of low, medium, and high concentration of activated T cells were counted with ADAM.

	Low	Medium	High
MEAN	514,470	1,436,925	2,887,715
CV	9.46	6.47	5.05

ADAM CellIT

21 CFR Part 11 Compliance

ADAM-CellIT is an automated cell counter that is available in cGMP production environment. ADAM-CellIT complies with 21 CFR Part 11 which is a regulation on electronic records and signatures for use in cGMP facilities. The data cannot be modified by any user. Every action of users is recorded in an audit trail which includes the date, time, and specific details of the action.

Electronic records

Audit trail, Data management to prevent data modification

The screenshot shows the 'Log Manage' window with a table of audit trail entries. The columns are Date, Time, Device/Type, Username, User Type, and Log. The table contains multiple entries for user 'admin' and 'adam'.

<Log management>

Electronic signatures

Equivalent to handwritten signatures on paper

The screenshot shows the 'User Management' window. It includes a table of users with columns for User Name, Permission, and Delete. The table contains entries for 'admin', 'adam', and 'user_01'. To the right is a 'New Registration' form with fields for User Name, Password, Confirm Password, and Digital Signature.

<User management>

User management

Access level and rights of users

	Admin	Supervisor	User	Other
Access to ADAM-CellIT	O	O	O	X
Access Data (Export)	O	Δ (only data of supervisor)	Δ (only data of user)	X
Create Account	O	Δ (only for supervisor & user)	X	X
Access to Electronic Records	O	X	X	X
Access to Saved Document Records	O	X	X	X
Access to Deleted Document Records	O	X	X	X
F/W, S/W Update	O	O	X	X
Date/Time Setting	O	O	X	X

Specifications

ADAM-MC2, ADAM-CellIT

Cat. No. ADAM-MC2 | ADAM-CellIT

Hardware	
Focus	Auto-focusing
LED	4W Green LED
Weight	7.0 kg
Size (LxWxH)	277 x 276 x 270mm



AccuChip Kit

Cat. No. AD4K-200 (4 channel)

Performance	4channel
Analysis time	< 25 sec/test
Loading volume	13 µL
Measuring volume	3.4 µL
Measurement range	5 X 10 ⁴ ~ 4 X 10 ⁶ cells/mL (PI)
	5 X 10 ⁴ ~ 2 X 10 ⁷ cells/mL (AO/PI)



Ordering Information

Catalog Number	Product Name
ADAM-MC2	ADAM-MC2
ADAM-CellIT	ADAM-CellIT
AD4K-200*	AccuChip 4x Kit (PI) (4 channel, 200 slides/kit, PI viability kit)
AD4K-200AO	AccuChip 4x Kit (AO/PI) (4 channel, 200 slides/kit, AO/PI viability kit)

*AD4K-200: Total cell is counted by PI with lysis buffer.

Catalog Number	Product Name
ADR-1000*	Accustain Solution (PI Accustain solution)
ADR-1000AO	Accustain Solution (AO/PI Accustain solution)
ADB-500	ADAM Calibration Bead

*ADR-1000 : Total cell is counted by PI with lysis buffer.



Scan for more information.