

ADAM

NanoEnTek

Less than 25 sec

ADAM

ADAM

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ADAM MC2

Automated Cell Counter
for R&D

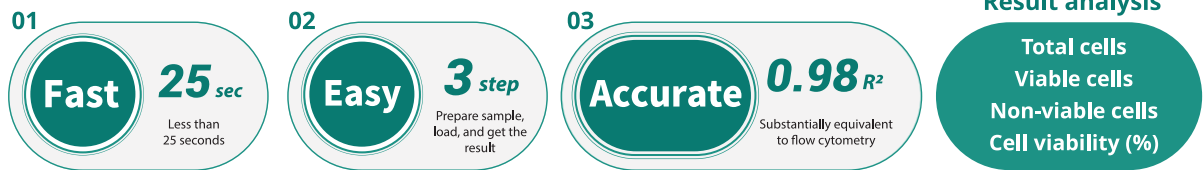
ADAM CellT

Automated Cell Counter
for cGMP

ADAM MC2 & CellIT

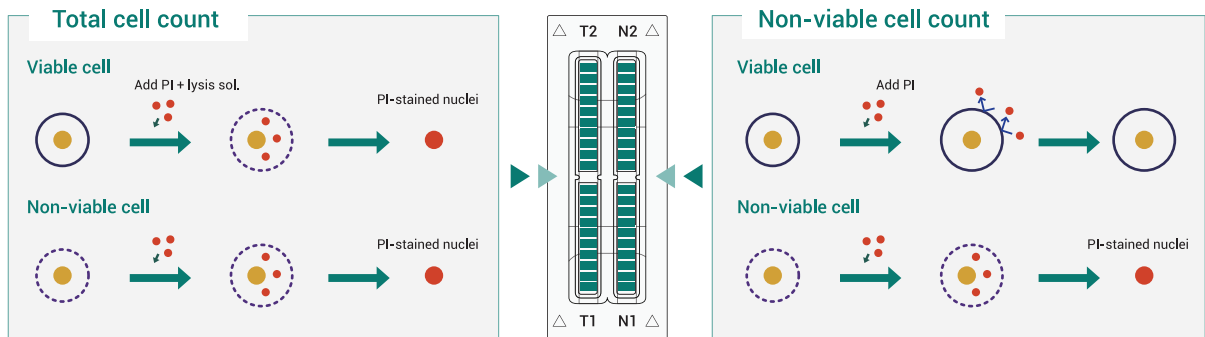
The Most Accurate Cell Counter

ADAM-MC2 and ADAM-CellIT are a new standard of automated fluorescence cell counter. 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-Staining Method)

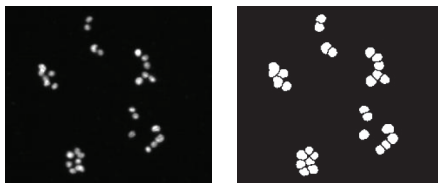
After the samples are stained with fluorescent dye, propidium iodide, which intercalates DNA to stain the nucleus of target cells, ADAM takes fluorescent images automatically. The obtained images are processed by image analysis software integrated inside the system.



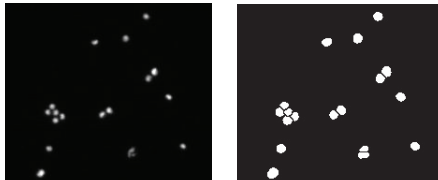
* There are two types of disposable chips: 2 channel and 4 channel

Counting Aggregated and Irregular-Shaped Cells

HepG2
(Clumped cell line)



HeLa



ADAM provides accurate and reliable results because it counts aggregated and irregular-shaped cells.

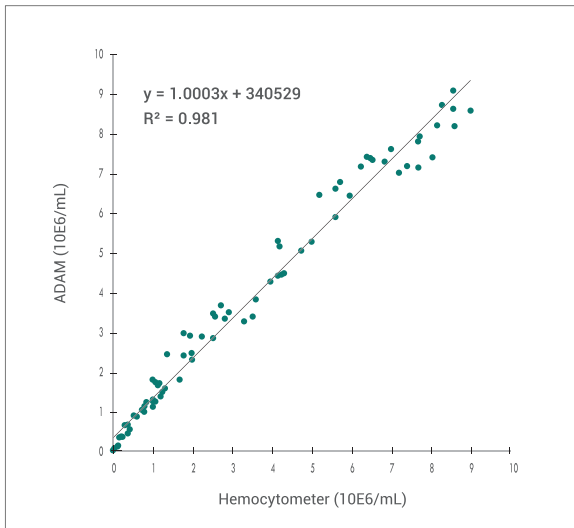
- Accurate count based on cell size and shape
- Count aggregated cells individually
- Debris is excluded from results

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

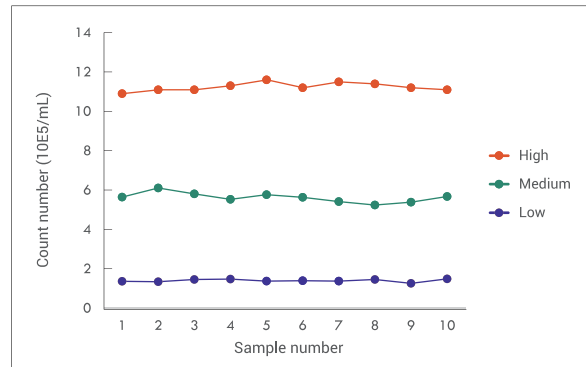
ADAM MC2 & CellIT

Accuracy & Repeatability

Correlation of total cell counting between hemocytometer and ADAM using SH-SY5Y cells.

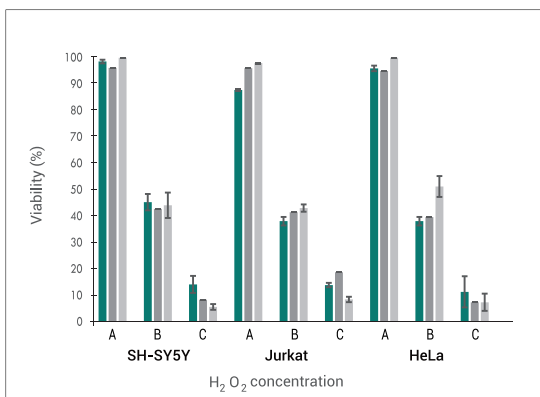


Sample with low, medium and high concentration of cells were counted with ADAM. The repeatability at each level of cell concentration is high.



	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

Comparison of Cell Viability



Comparison of cell viability between ADAM, flow cytometry, and manual counting.

SH-SY5Y, Jurkat, HeLa cells were treated with 100, 300 μM H_2O_2 for 3 hours, then analyzed by ADAM, flow cytometry, and manual counting.

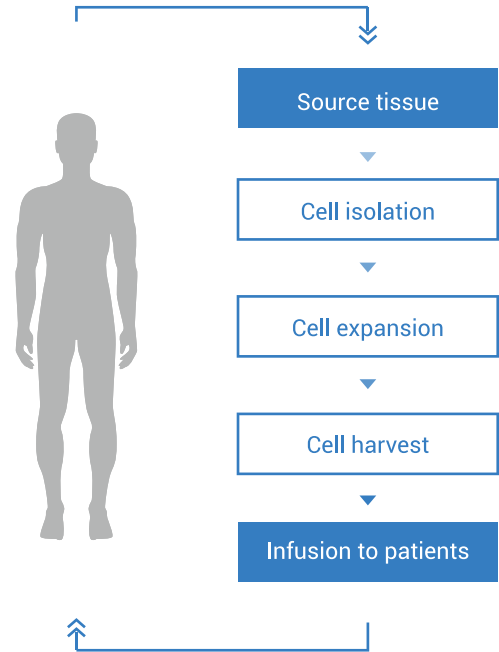
■: ADAM ■: FACS ■: Manual count
A: Untreated / B: 100 μM / C: 300 μM

ADAM MC2 & CellT | 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 needs to be monitored during the manufacturing of cell therapy products.

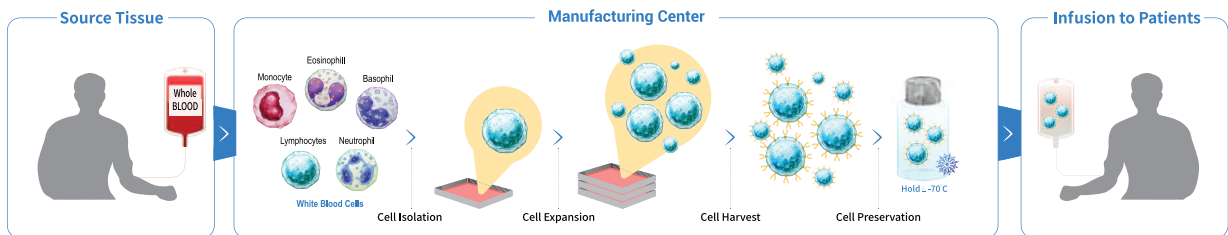


Application

- | | |
|------------------------------|---------------------|
| 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 CellT

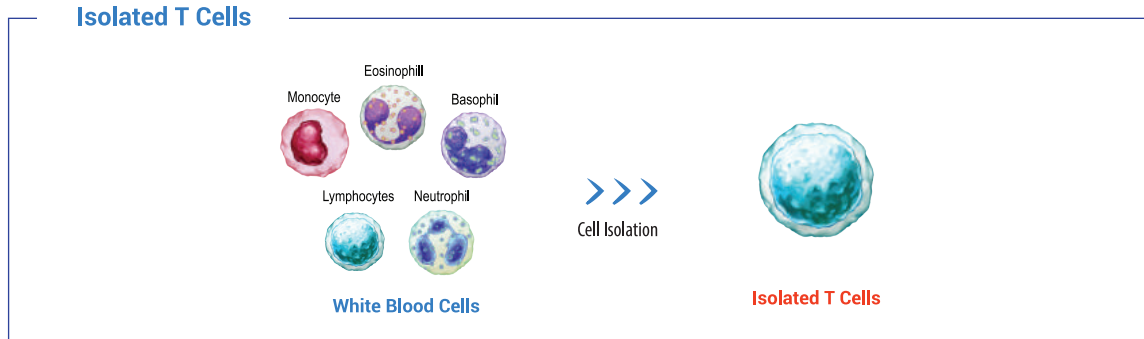


For R&D, Process Control, Quality Control of CAR-T cell

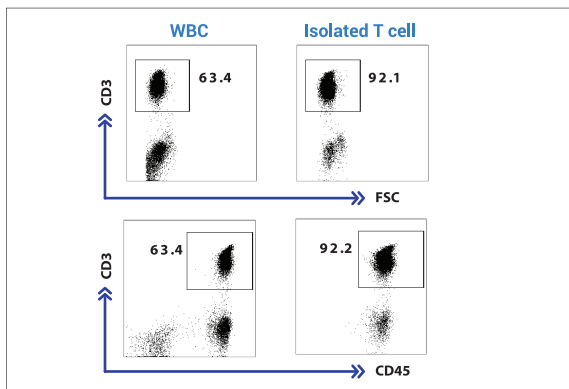
Monitoring the whole process from leukapheresis to the formulated product using the ADAM

ADAM MC2 & CellT | Cell Therapy

Performance Test from Isolated T Cells



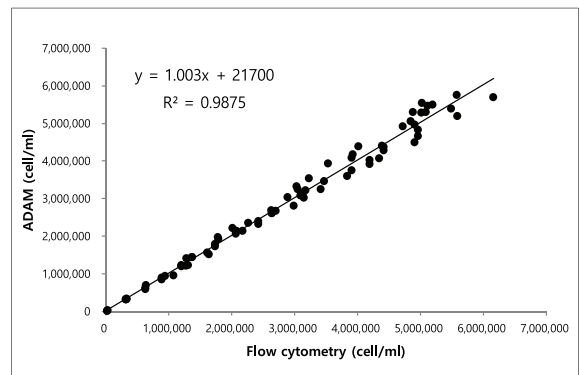
The profiles of T cells which was used for performance evaluation - Flow cytometric analysis of CD3 expression on unsorted (WBC; left panel) or sorted (Isolated T cell; right panel) human peripheral blood lymphocytes.



Accuracy

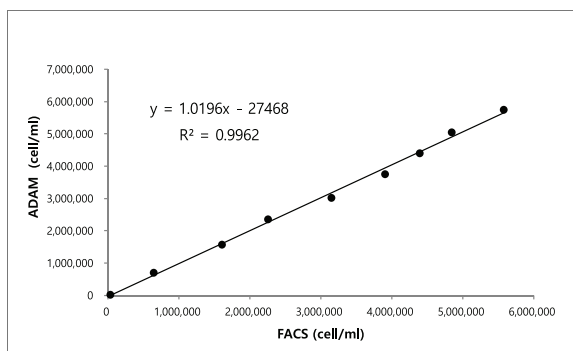
Correlation of T cell counting counting between flow cytometry and ADAM in Isolated T cells.

Method comparison between ADAM and flow cytometry



Linearity

Comparison between flow cytometry and ADAM in Isolated T cells.



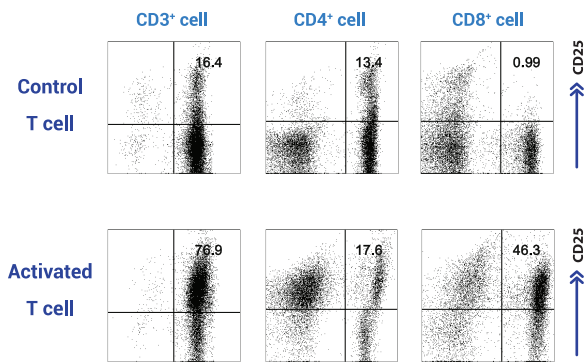
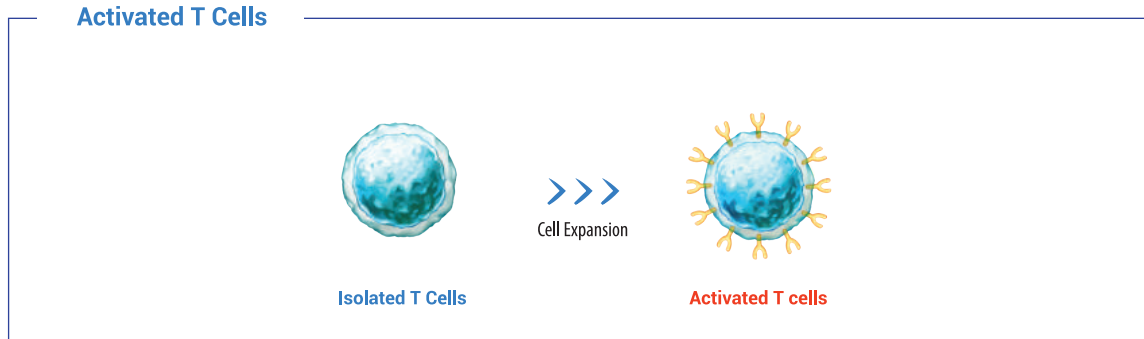
Repeatability

The sample that 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

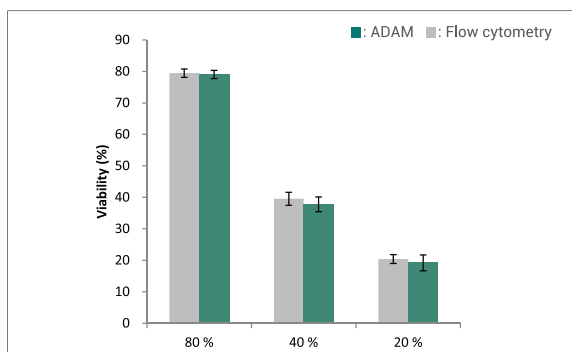
Performance Test from Activated T Cells



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-CellIT in Activated T cells.



Repeatability

The sample that 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

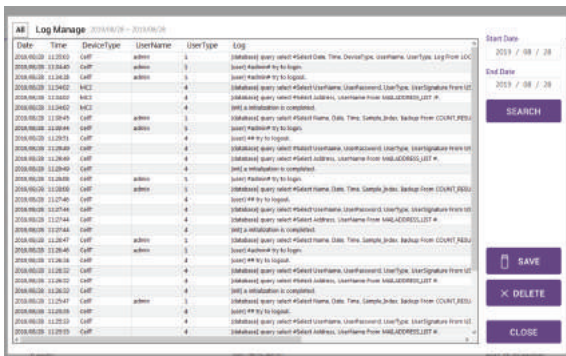
ADAM CellIT

21 CFR part 11 compliance

ADAM-CellIT is an automated cell counter that is available in cGMP production environment. ADAM-CellIT complies 21 CFR part 11 which is a regulation about 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

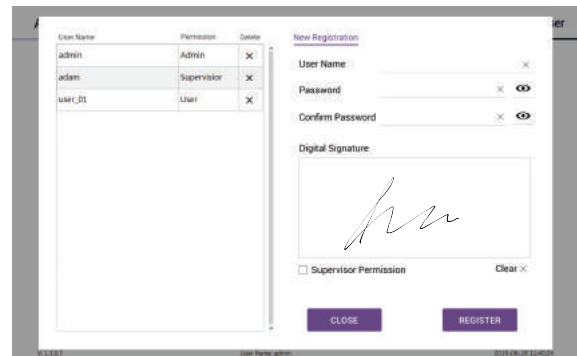
Audit trail, Data management to prevent data modification



<Log management>

Electronic signatures

Equivalent to handwritten signatures on paper



<User management>

User management

Access level and rights of users



	Admin	Supervisor	User	Other
Access to ADAM-CellIT	0	0	0	X
Access Data (Export)	0	△ (only data of supervisor, user)	△ (only data of user)	X
Create Account	0	△ (not create administrator account)	X	X
Access to Electronic Records	0	X	X	X
Access to Saved Document Records	0	X	X	X
Access to Deleted Document Records	0	X	X	X
F/W, S/W Update	0	0	X	X
Date/Time Setting	0	0	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. AD2K-200 (2 channel) | AD4K-200 (4 channel)

Performance	2channel	4channel
Analysis time	< 50 sec/test	< 25 sec/test
Loading volume	23 uL	13 uL
Measuring volume	8.6 uL	3.4 uL
Measurement range	5 X 10 ⁴ ~ 4 X 10 ⁶ cells/mL	



Ordering Information

Catalog Number	Product Name
ADAM-MC2	ADAM-MC2
ADAM-CellIT	ADAM-CellIT
AD2K-200	AccuChip 2x Kit (2 channel, 200 slides)
AD4K-200	AccuChip 4x Kit (4 channel, 200 slides)

Catalog Number	Product Name
ADR-1000	Accustain Solution
ADB-500	ADAM Calibration Bead

*AD2K-200 : please consult your distributor or manufacture for availability.