

Less than 25 sec

ADAM

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ADAM MC2

Automated Cell Counter
for R&D

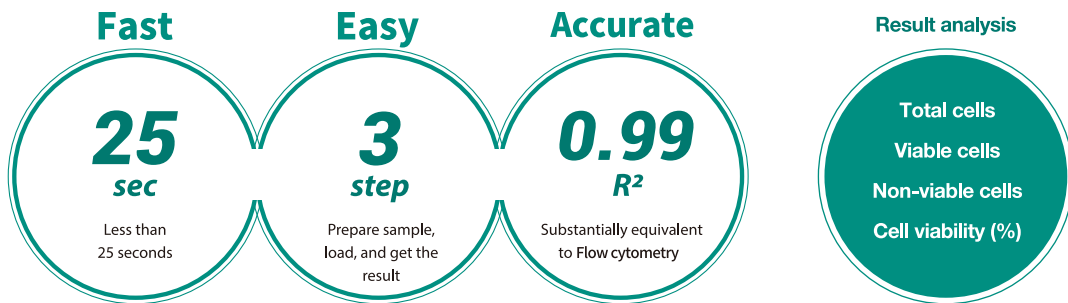
ADAM CellT

Automated Cell Counter
for cGMP

ADAM MC2 & CellT

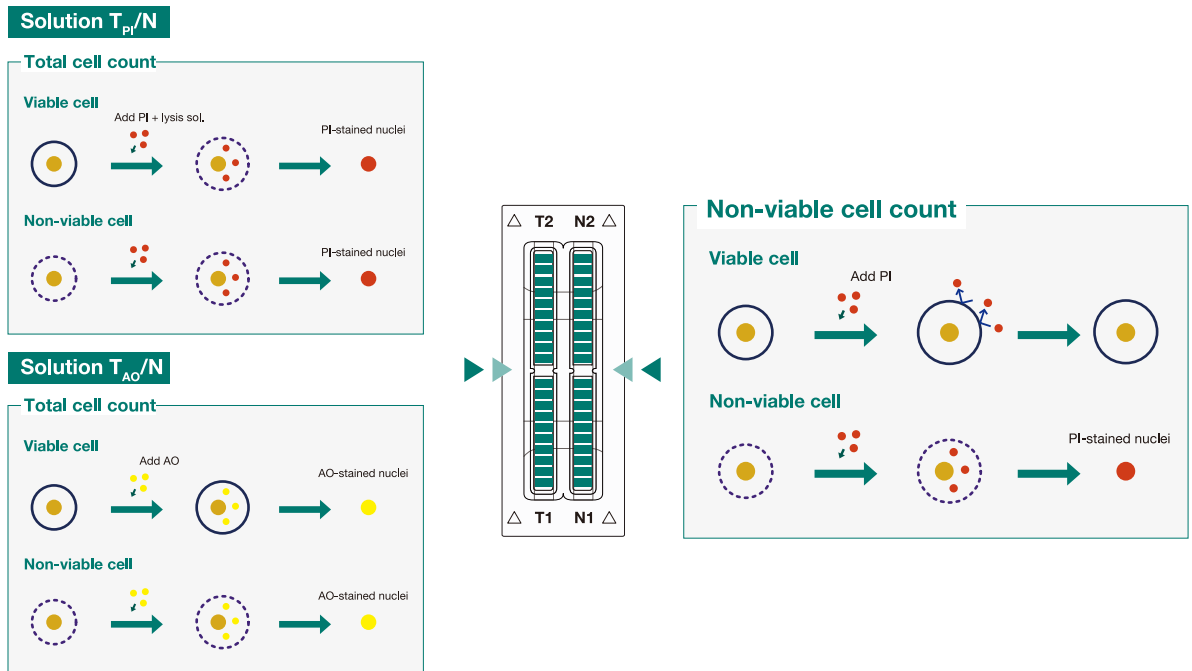
The Most Accurate Cell Counter

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.



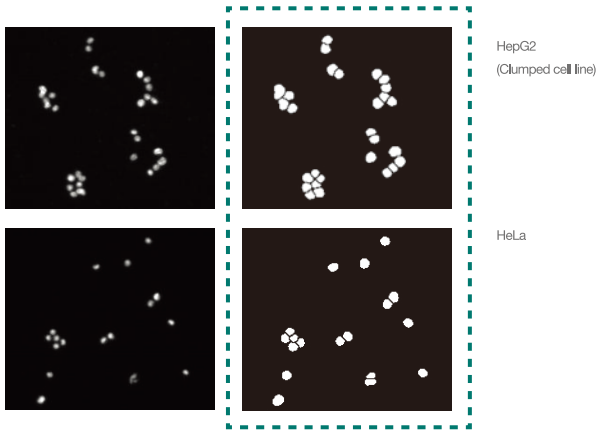
Principle of Viability Measurement (PI, AO-Staining Method)

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 & CellT

Counting Aggregated and Irregular-Shaped Cells



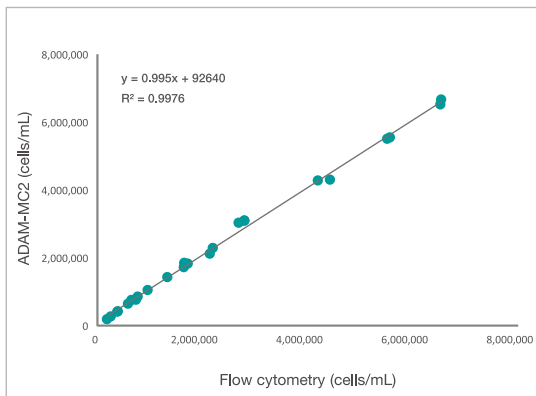
ADAM provides accurate and reliable results by counting aggregated and irregular-shaped cells.

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

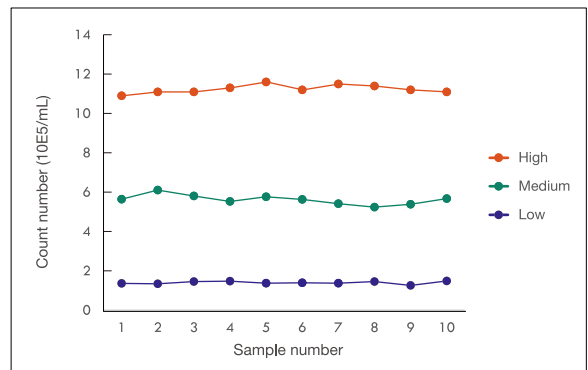
Among the images on the left, the images on the right side indicate cells that have been counted by ADAM.

Accuracy & Repeatability

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



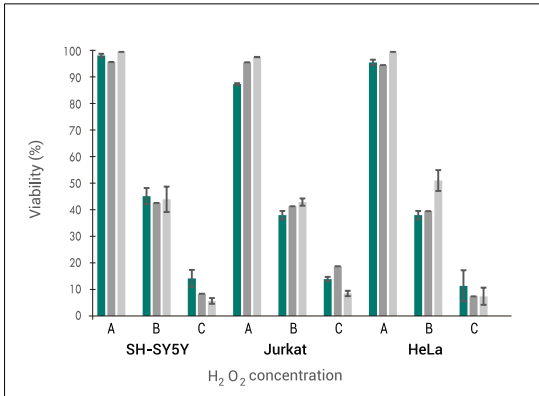
Samples of low, medium and high concentration of cells were counted with ADAM. The repeatability at each level of cell concentration is high.



| | 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 & CellT

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 H₂O₂ for 3 hours, then analyzed by

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

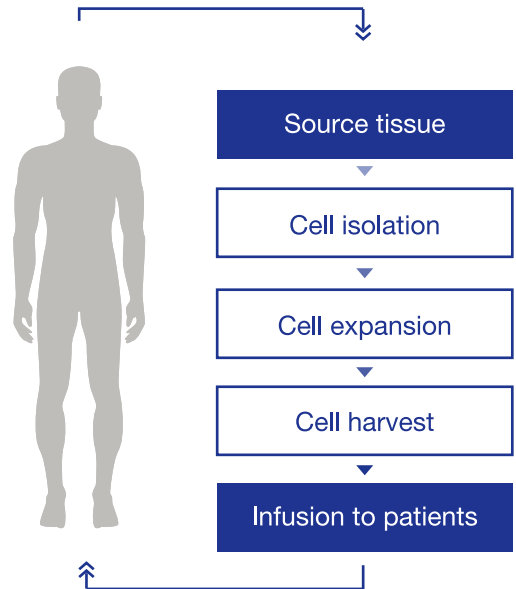


ADAM MC2 & CellIT | Cell Therapy

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.

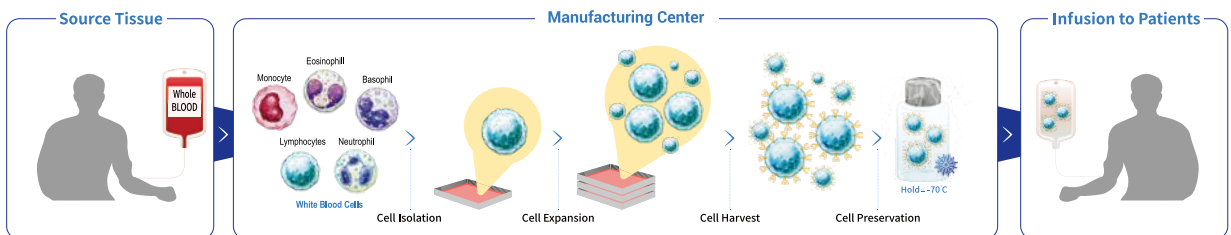


Application

- | | |
|------------------------------|---------------------|
| 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



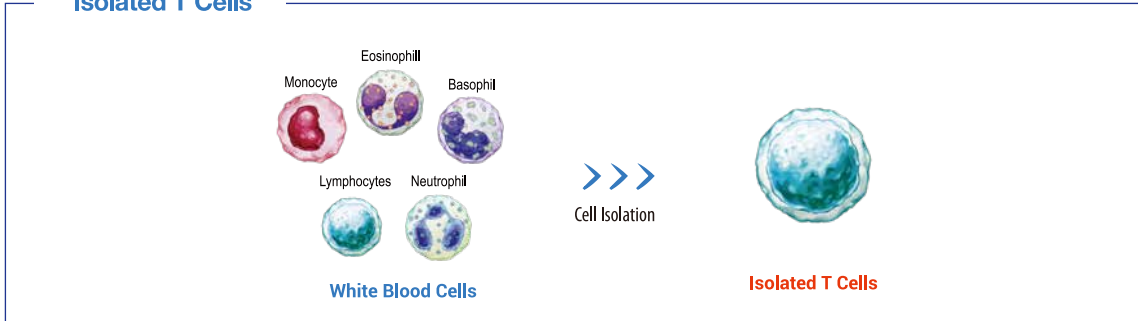
For R&D, Process Control, Quality Control of CAR-T cell

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

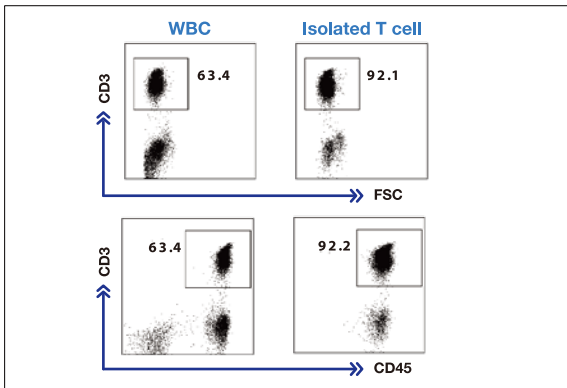
ADAM MC2 & CellT | Cell Therapy

Performance Test from Isolated T Cells

Isolated T Cells



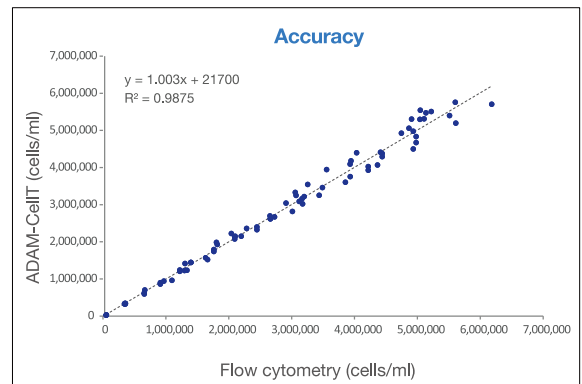
The profiles of T cells which was used for performance evaluation - Flow cytometric analysis of CD3 expression on unsorted (WBC; left panel) or sorted (Isolated T cell; right panel) human peripheral blood lymphocytes.



Accuracy

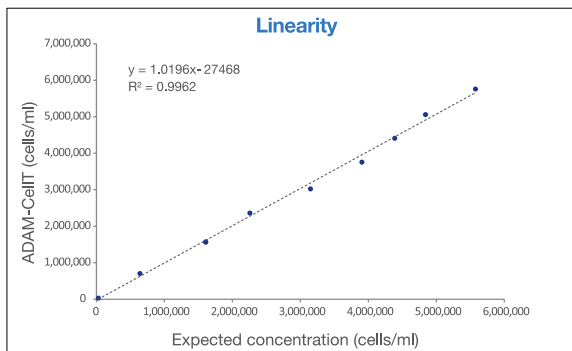
Correlation of T cell counting between flow cytometry and ADAM in Isolated T cells.

Method comparison between ADAM and flow cytometry.



Linearity

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



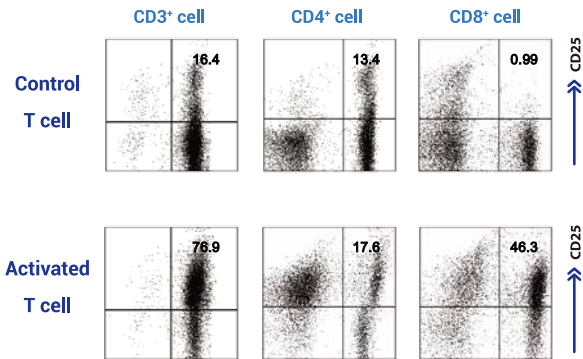
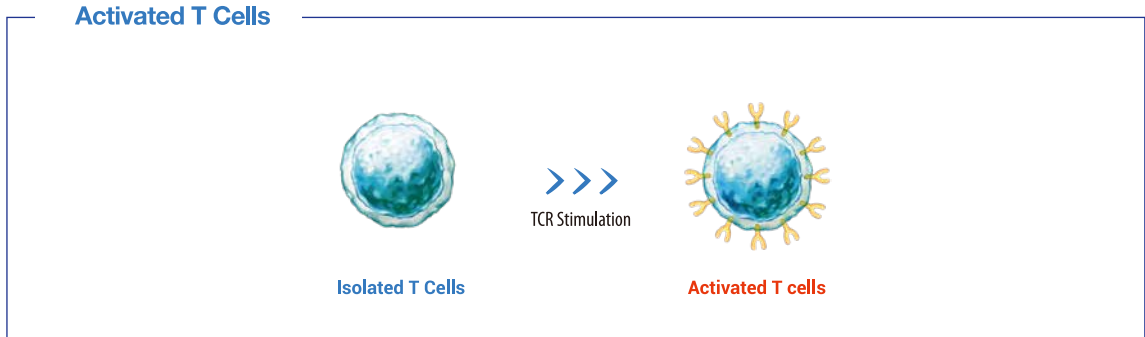
Repeatability

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

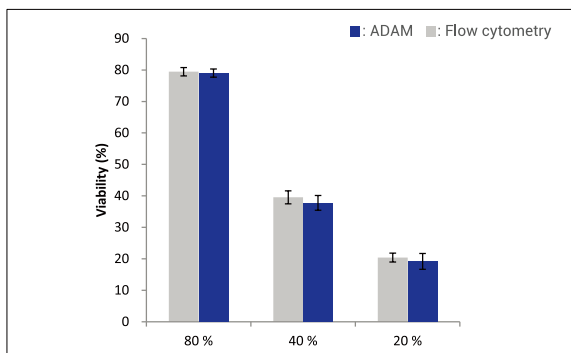
Performance Test from Activated T Cells



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 |

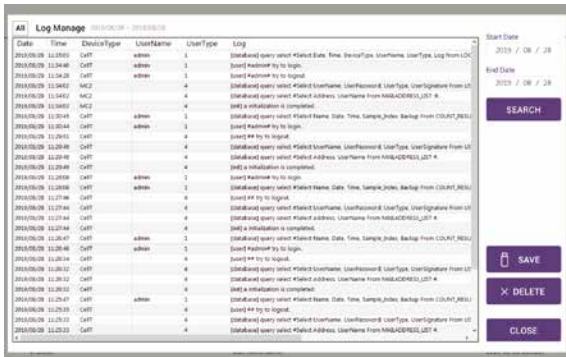
ADAM CellIT

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

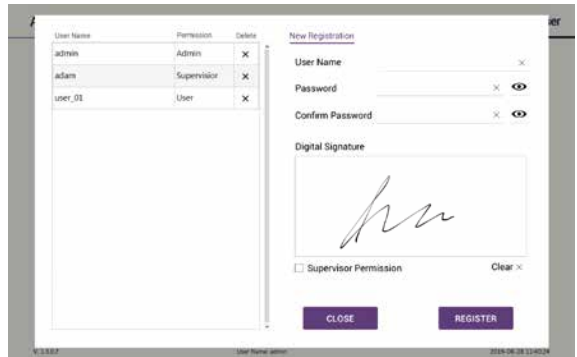
Audit trail, Data management to prevent data modification



<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) | △ (only data of user) | X |
| Create Account | 0 | △ (only for supervisor & user) | 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. AD4K-200 (4 channel)

| Performance | 4channel |
|-------------------|---|
| Analysis time | < 25 sec/test |
| Loading volume | 13 μ L |
| Measuring volume | 3.4 μ L |
| Measurement range | $5 \times 10^4 \sim 4 \times 10^6$ cells/mL (PI) |
| | $5 \times 10^4 \sim 2 \times 10^7$ 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.

MEMO



Scan for more information.



[website](http://www.nanoentek.com) www.nanoentek.com
[e-mail](mailto:sales@nanoentek.com) sales@nanoentek.com

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Not for use in diagnostic procedures.

NanoEntek, Inc.

Head Office

12F, 5, Digital-ro 26-gil, Guro-gu, Seoul, 08389, Korea
Tel +82-2-6220-7940 / Fax +82-2-6220-7999

NanoEntek America, Inc.

220 Bear Hill Road, Suite 102, Waltham, MA 02451, USA
Tel +1-781-472-2558 / Fax + 1-781-790-5649

NanoEntek Europe | mts med-tech supplies GmbH

Lochhamerstr. 4a, 82152 Martinsried, Germany
Tel +49-89-21-55-38-43 / Fax +49-89-99-95-46-60