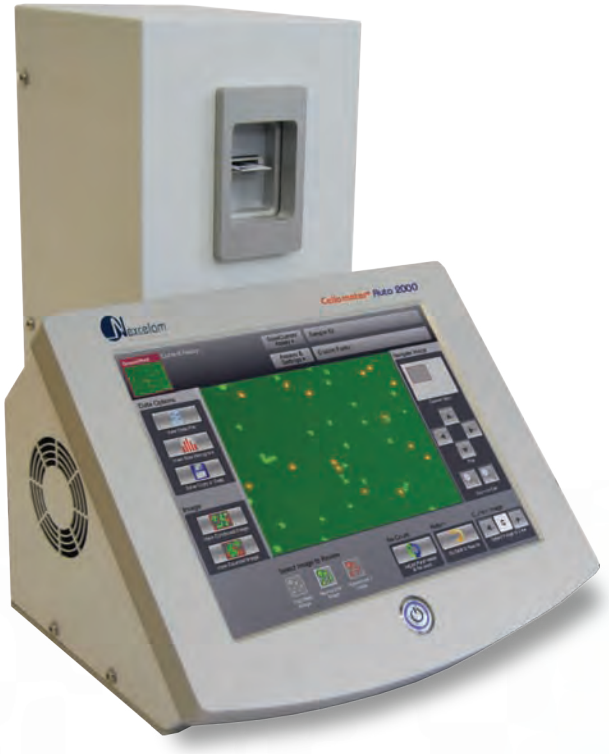
Cellometer® Auto 2000 Cell Viability Counter

for Primary Cell Analysis



PBMCs

Stem Cells

Splenocytes

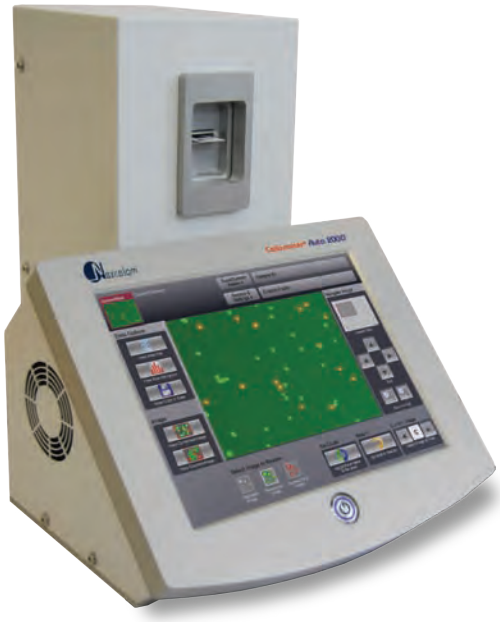
Monocytes

and Other Primary Cells

Nexcelom Bioscience

Cellometer Auto 2000 Cell Viability Counter

Optimized Analysis of Primary Cells



Features of the Cellometer Auto 2000

Dual Fluorescence and Bright Field Imaging: staining of both live and dead cells in heterogeneous samples

All-in-One Design: Simple, space-saving design; robust instrument manufactured in the U.S.; no maintenance

User-Friendly Touch Screen and Assay Selection: Enhanced inter-operator reproducibility, minimal training, auto-save option

Fast Results: Obtain cell images, counts, size measurements, and viability calculations in 30 seconds

Small Sample Size: Only 20 µl of sample

Broad Dynamic Range: Measurable concentration range of 1×10^5 to 1×10^7 cells/mL using Nexcelom's patent-pending de-clustering function

Many Compatible Dyes: Trypan blue, AO, PI, EB, 7AAD, AO/PI, AO/EB, Calcein AM, CFDA, Calcein AM/PI, CFDA/PI

Advantages of Cellometer Image Cytometry

Cell Imaging

- Verify cell morphology and counted live/dead cells
- Export cell images for presentations and publications

Pattern Recognition Software

- Accurately count cells in clumps
- Count irregular-shaped cells
- Eliminate debris from cell counts
- Differentiate cells based on size

Automated Data Management

- Pre-set assays and automated reports
- Archive sample images and auto-save results

Maintenance-free System

- Disposable counting chambers – no wash steps
- No required instrument maintenance

Learn why thousands of users, including the top ten pharmaceutical companies, trust Cellometer.

On-Line Demonstrations are completed in just 20 to 30 minutes and provide an overview of how Cellometer works using existing images of cells that interest you.

On-Site Demonstrations are a convenient way to test a Cellometer system for a specific application. An experienced Applications Specialist will arrive at your lab for a hands-on session to test your cells and show how Cellometer can enhance your workflow.

Technical Seminars are an excellent way to introduce Cellometer systems to a lab group or collaborators in different laboratories within an organization. A trained biologist will discuss and demonstrate the capabilities and advantages of Cellometer image cytometry.

Call 978-327-5340 or E-mail info@nexcelom.com today to schedule a free demonstration or technical seminar.

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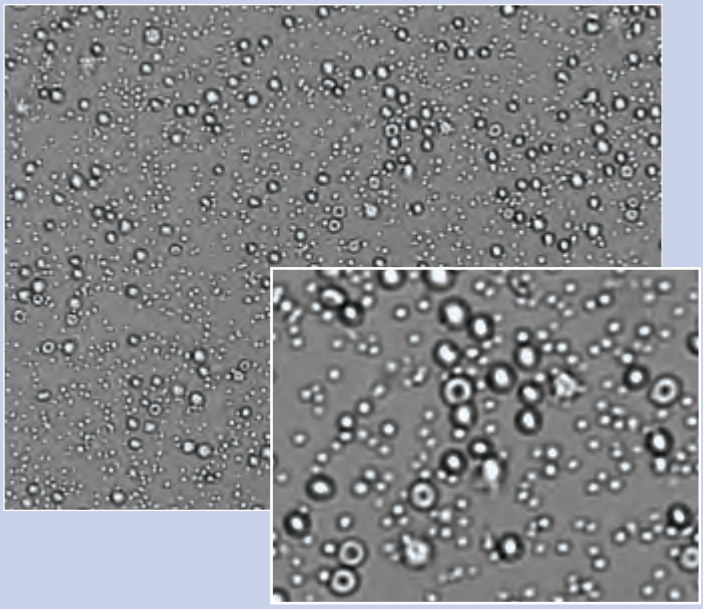


PBMC Analysis in the Presence of Red Blood Cells
Measure PBMCs from whole blood without lysing. Obtain baseline PBMC concentration and viability prior to biomarker studies.

Nucleated Cell Concentration & Viability
Evaluate cord blood and bone marrow samples

GFP Transfection Efficiency & Viability
Quickly and easily monitor DNA, RNA, and siRNA transfection

Analysis of Clumpy & Irregular-Shaped Cells
Nexcelom's exclusive pattern-recognition software enables accurate analysis of >98% of mammalian cell types

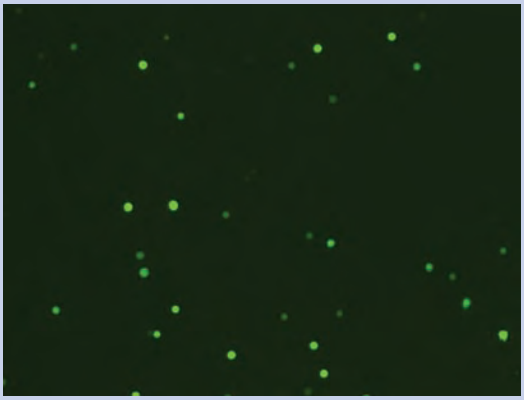
Cell Line Analysis
Automatically capture fluorescent cell images, concentration, Trypan blue or PI viability, and mean diameter in 30 seconds!

Primary Cell Analysis

Accurate concentration and % viability for primary cells (PBMCs, stem cells, splenocytes, neural cells, and more)

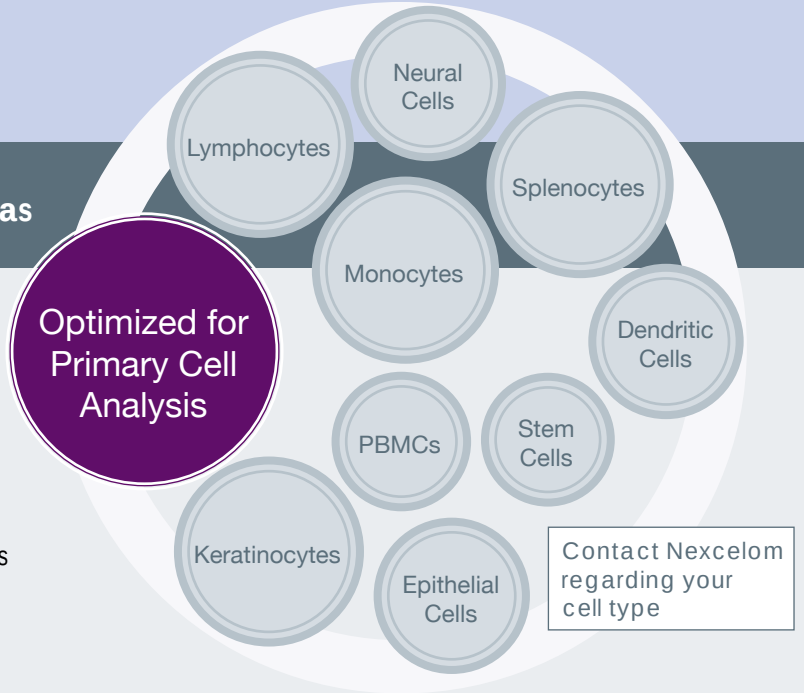
Analysis of Cells from Heterogeneous Samples

- Whole Blood
- Peripheral Blood
- Cord Blood
- Bone Marrow



Proven Performance in Many Research Areas

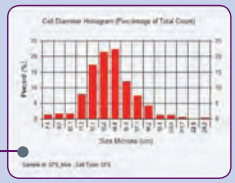
- **Clinical Immunology:** PBMCs
- **Regenerative Medicine:** Stem Cells
- **Transplantation:** Nucleated Cells
- **Vaccine Development:** Splenocytes
- **Oncology:** Cell Lines
- **Basic Research:** Primary Cells / Cell Lines

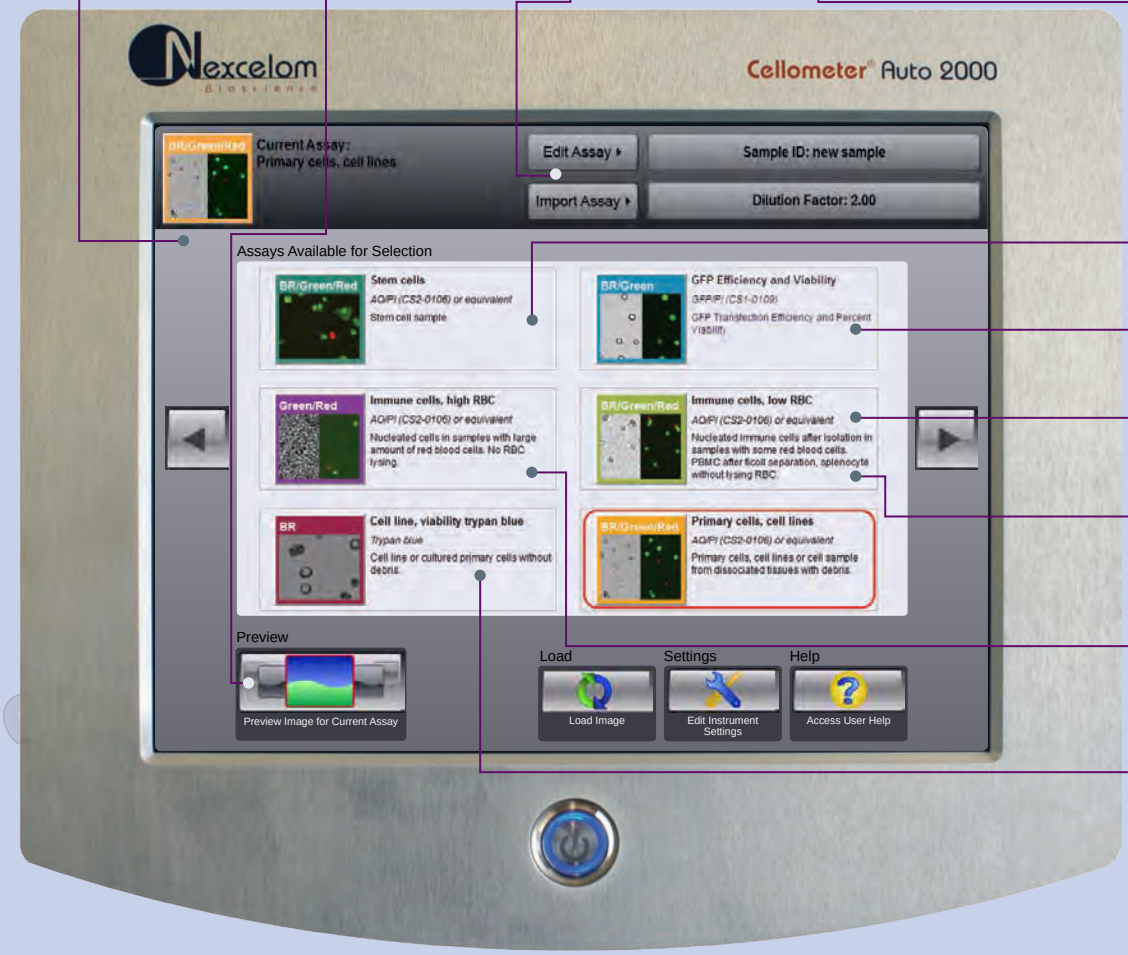


Cellometer Auto 2000 Cell Viability Counter for Primary Cells
from Nexcelom Bioscience

FEATURES

- User-friendly Touch Screen
- Images for Data Verification
- Easily Edit and Import Assays
- Cell Size Histograms





- Analysis of Multiple Species of Stem Cells
- GFP Transfection Efficiency and % Viability
- Primary Splenocyte Concentration & Viability
- Accurate PBMC Counts in the Presence of Red Blood Cells
- Total Nucleated Cell Count & Viability
- One-Step Cell Concentration & Viability

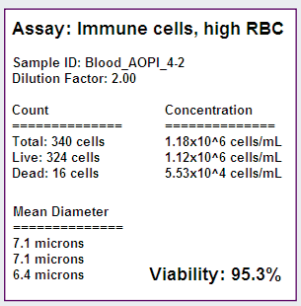
ASSAYS

How It Works

Pipette 20µl

Insert Counting Chamber

Select Assay & Click Count



Get Results

Dual-Fluorescence for Primary Cell Viability in Heterogeneous Samples

Live / Dead Cell Concentration using AO / PI

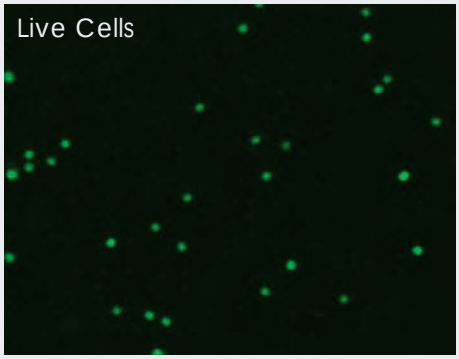
Why isn't trypan blue recommended for viability analysis of primary cells?

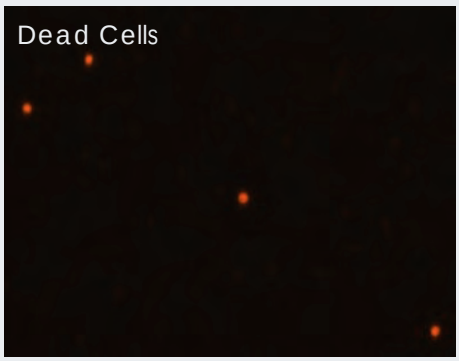
Trypan blue dye enters and stains all cells with a compromised membrane, including both nucleated and non-nucleated cells, such as red blood cells. For the most accurate calculation of nucleated cell viability, fluorescent nuclear staining dyes are required.

Dual-Fluorescence Viability, using acridine orange (AO) and propidium iodide (PI), is the recommended method for accurate viability analysis of primary cells, such as PBMCs, splenocytes, and stem cells, in samples containing debris and unwanted non-nucleated cell types including red blood cells.

Acridine orange (AO) and propidium iodide (PI) are nuclear staining (nucleic acid binding) dyes. AO is permeable to both live and dead cells and stains all nucleated cells to generate green fluorescence. PI enters dead cells with compromised membranes and stains all dead nucleated cells to generate red fluorescence.

Because mature mammalian red blood cells do not contain nuclei, only live and dead mononuclear cells produce a fluorescent signal. There is no need to lyse red blood cells, saving time and eliminating an extra sample preparation step.





Performance of the Cellometer Auto 2000 Cell Viability Counter

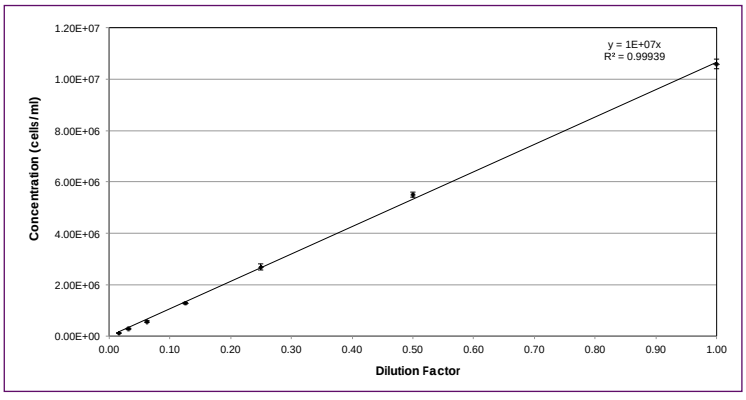


Figure 1: Table of results for cell concentration.

Data shown depicts the dynamic range for cell concentration measurements on Cellometer Auto 2000. The concentration can be measured from 1 x 10^5 - 1 x 10^7 cells / mL without further dilution.

The %CV at each concentration was below 10%. This data set was taken on a concentration series of primary mouse splenocytes.

Sample	N Value	Average Live Cell Concentration	% Viability	CV of Concentration	CV of Viability
A	4	4.20E+06	91.1	10%	2%
B	4	1.06E+06	22.7	7%	1%
C	4	3.27E+06	57.5	7%	7%

Figure 2: Table of results for cell viability using PI only.

The results indicate the accuracy of the Cellometer Auto 2000 instrument in assessing the viability of Jurkat cells using PI for cell viability. Four measurements were performed for each sample. The viability average was calculated and plotted. The results show the reliability and accuracy of the Cellometer Auto 2000 in measuring cell concentration and viability of mammalian cells.

For more information, visit
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Cellometer Cell Counters, Cell Analysis Systems & Image Cytometry
Nexcelom offers a wide range of Cellometer systems developed and optimized for specific applications and cell types.

Cellometer® Simply Counted | Celigo® S Image Cytometer

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