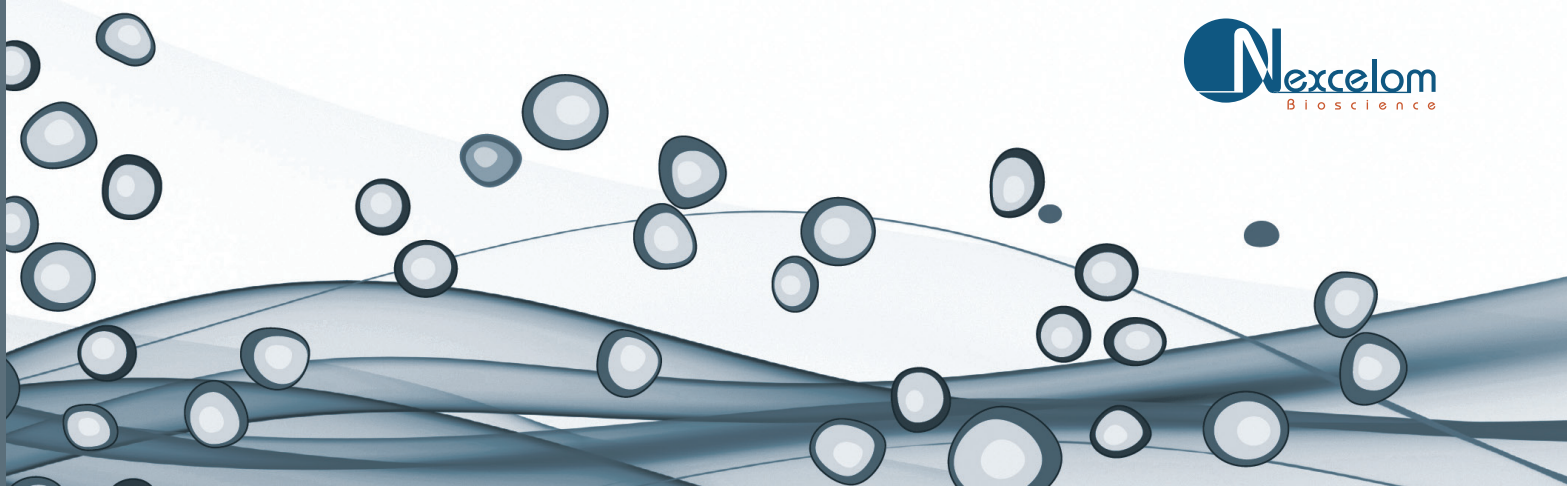


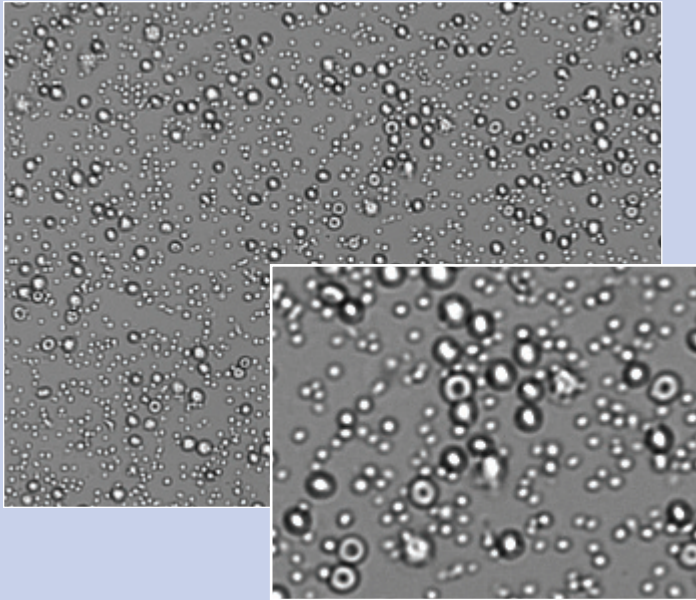


# Cellometer<sup>®</sup> Auto 2000

## Cell Viability Counter *for Primary Cell Analysis*

PBMCs  
Stem Cells  
Splenocytes  
Monocytes  
and Other Primary Cells





#### 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

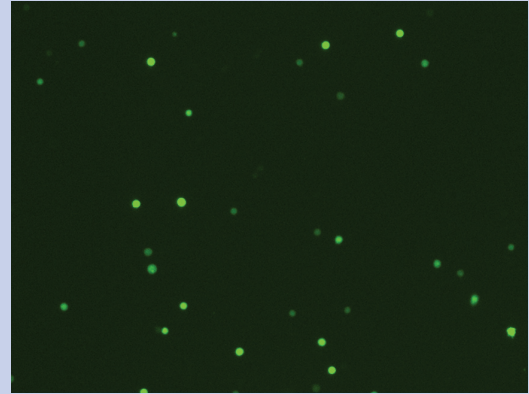
Automatically capture fluorescent cell images, concentration, Trypan blue or PI viability, and mean diameter in 30 seconds!

## 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

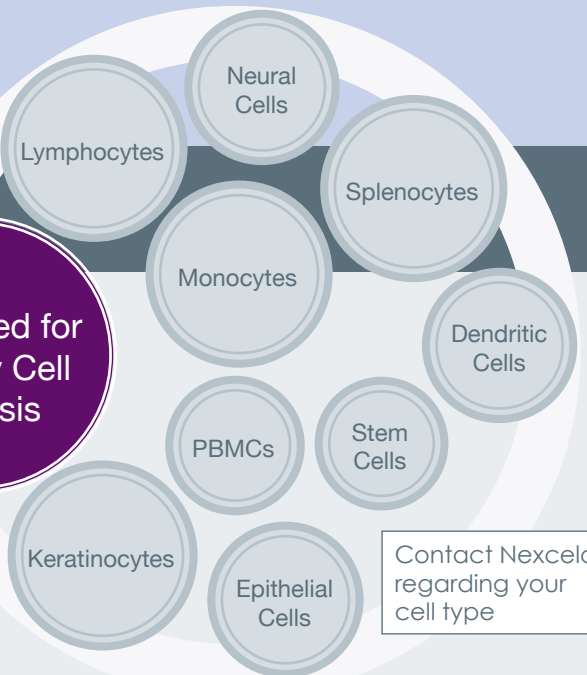


## Proven Performance in Many Research Areas



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

Optimized for  
Primary Cell  
Analysis

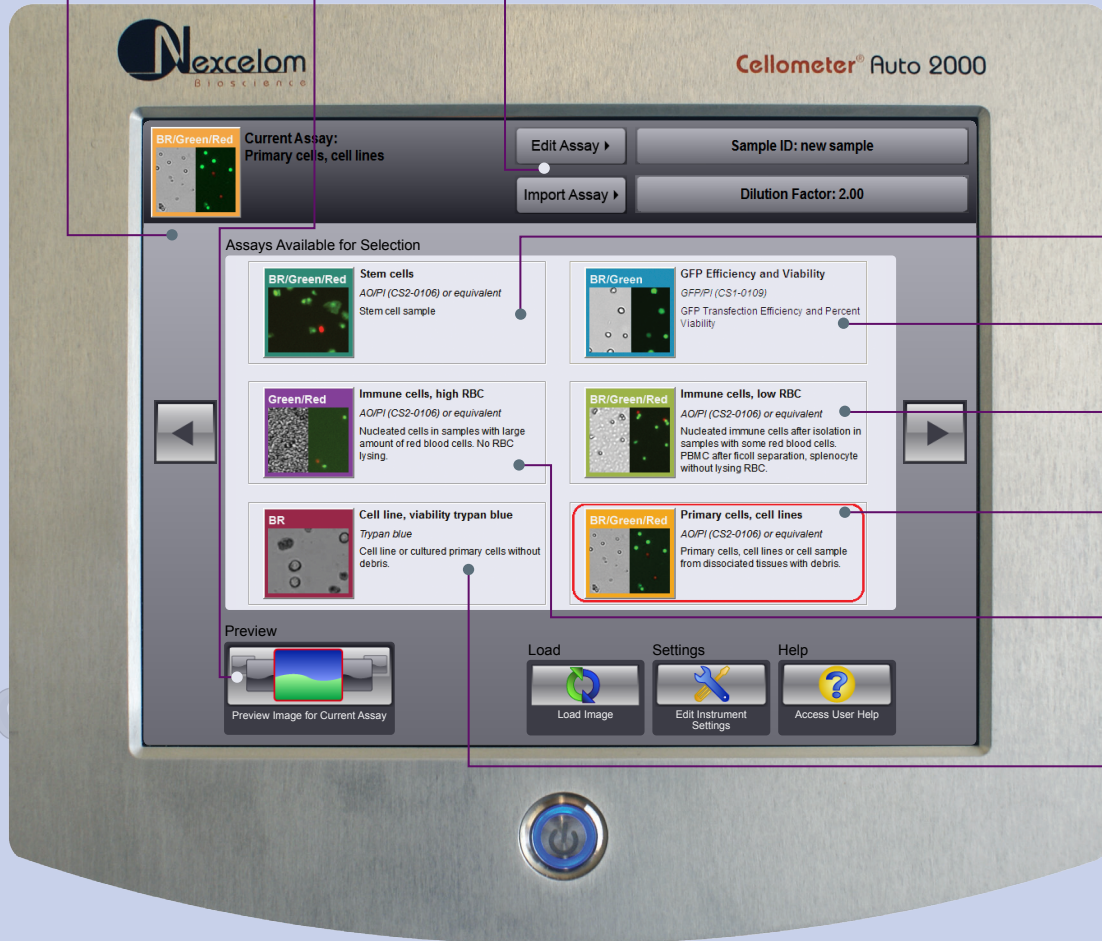
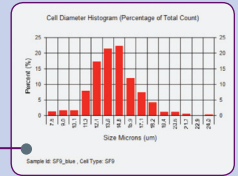


Contact Nexcelom  
regarding your  
cell type

# 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
- Total Nucleated Cell Count & Viability
- Accurate PBMC Counts in the Presence of Red Blood Cells
- One-Step Cell Concentration & Viability

## ASSAYS

## How It Works



Pipette 20µl



Insert Counting Chamber



Select Assay & Click Count

Assay: Immune cells, high RBC	
Sample ID: Blood_AOPI_4.2	
Dilution Factor: 2.00	
Count	Concentration
=====	
Total: 340 cells	1.18x10 <sup>6</sup> cells/mL
Live: 324 cells	1.12x10 <sup>6</sup> cells/mL
Dead: 16 cells	5.53x10 <sup>4</sup> cells/mL
Mean Diameter	
=====	
7.1 microns	
7.1 microns	
6.4 microns	
<b>Viability: 95.3%</b>	

Get Results

## Dual-Fluorescence for Primary Cell Viability in Heterogeneous Samples

Live / Dead Cell Concentration using AO / PI

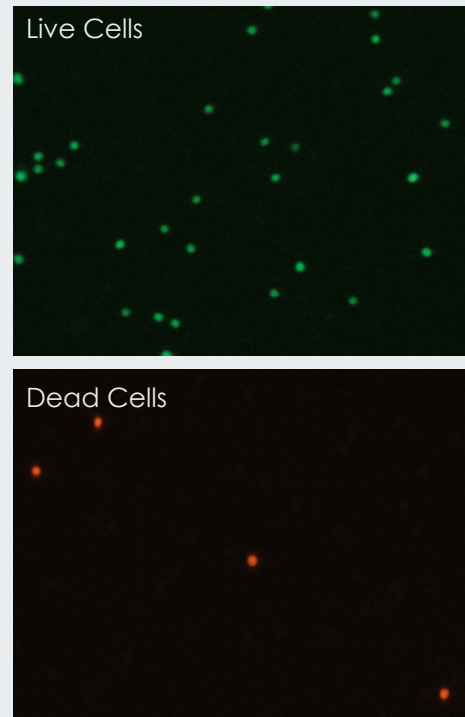
### Why isn't trypan blue recommended for viability analysis of primary cells?

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

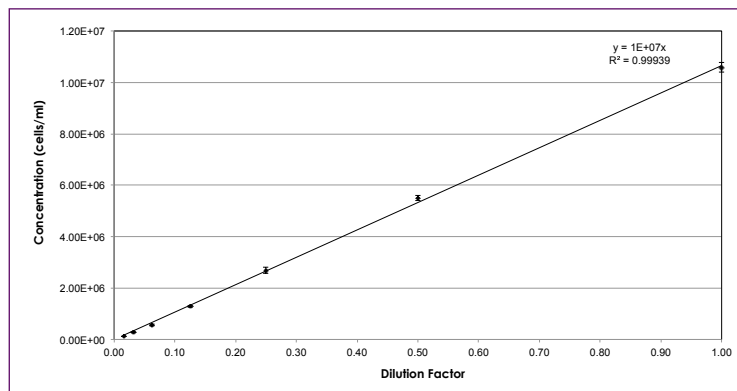


Figure 1: Table of results for cell concentration.

Data shown depicts the dynamic range for cell concentration measurements on Cellometer Auto 2000. The concentration can be measured from  $1 \times 10^5$  -  $1 \times 10^7$  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.

# 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  $\mu$ l of sample

**Broad Dynamic Range:** Measurable concentration range of  $1 \times 10^5$  to  $1 \times 10^7$  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 1-978-327-5340 or E-mail [info@nexcelom.com](mailto:info@nexcelom.com) today to schedule a free demonstration or technical seminar.**