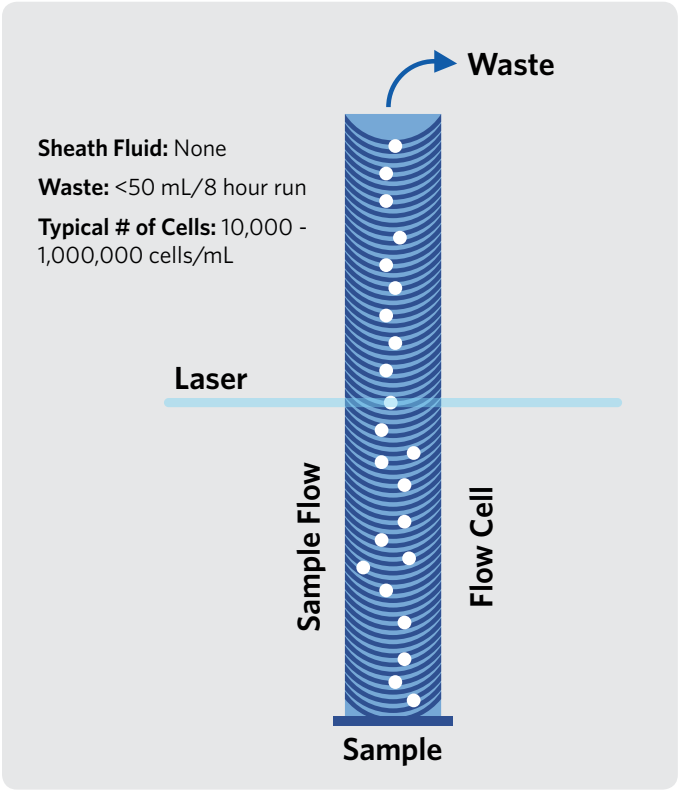
Luminex®

Guava® easyCyte™ Systems

Expanding the potential of flow cytometry.

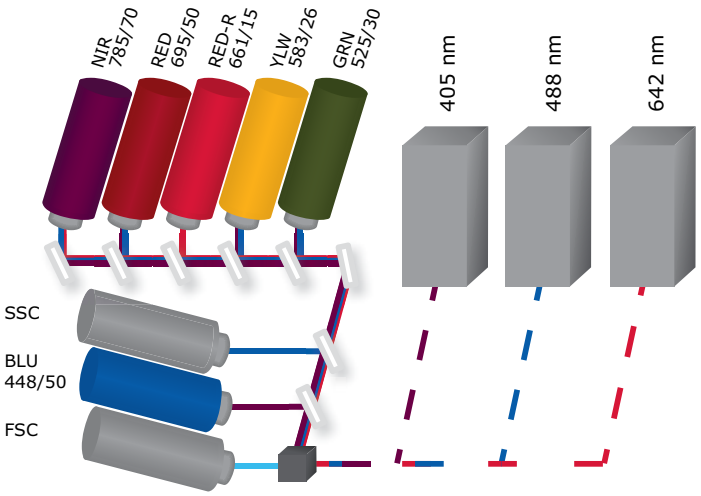
Unleash What's Possible.



More than 20 years ago, Guava Technologies introduced the first compact benchtop flow cytometers. Today, the easyCyte™ line has been updated to offer up to 3 lasers and 14 parameters, with greater sensitivity and optional high throughput capabilities. Powered by intuitive software, easyCyte Flow Cytometers are some of the most dynamic and flexible benchtop systems available:

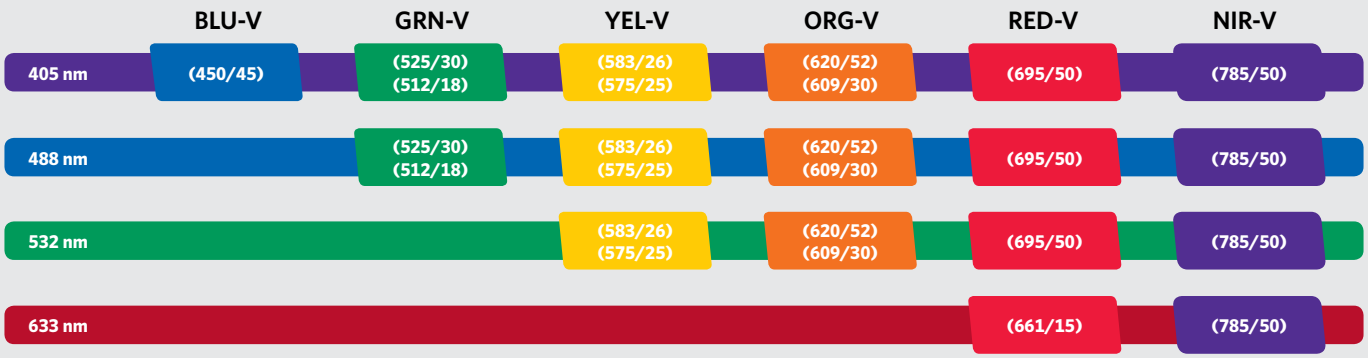
- Up to 3 lasers and 14 parameters on a benchtop instrument, to allow for a high degree of flexibility
- Microcapillary fluidics design eliminates sheath fluid and lowers waste stream
- The combination of microcapillary technology and a positive displacement syringe pump allows for direct absolute counting
- Intuitive software interface enables simplified assessment of results, including cell-health assays
- Detection limits of particles as small as 0.2 µm facilitate the evaluation of a variety of samples
- High-throughput option enables walkaway acquisition of up to 96 samples

Inside the **Guava®** **easyCyte™** **12HT** Systems.



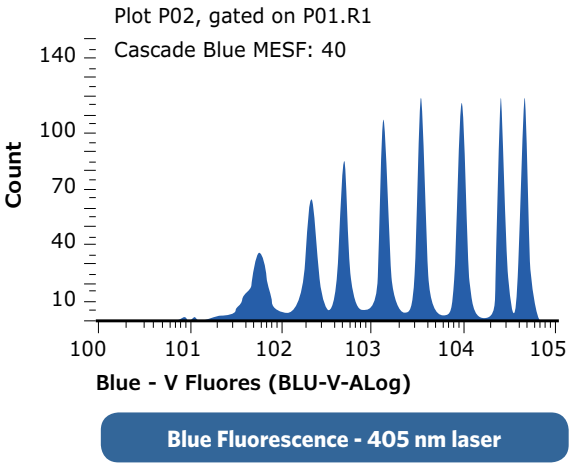
How They Work

The easyCyte Systems use patented, microcapillary, laser-based technology capable of detecting mammalian and microbial cells, particles, and beads. A sample of fluorescently labeled cells is aspirated into the microcapillary flow cell. Forward and side scatter characteristics are detected by photodiodes. Fluorescence emission resulting from the excitation of fluorophores by the lasers is spectrally filtered and detected by several PMTs. The easyCyte Systems can resolve the fluorescence from up to 12 fluorophores simultaneously.

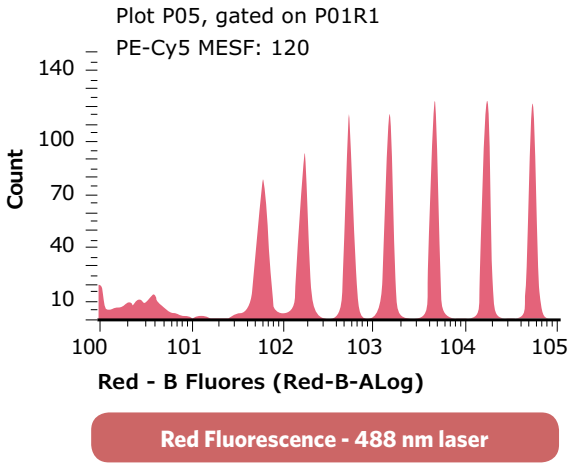


Sensitive and Specific.

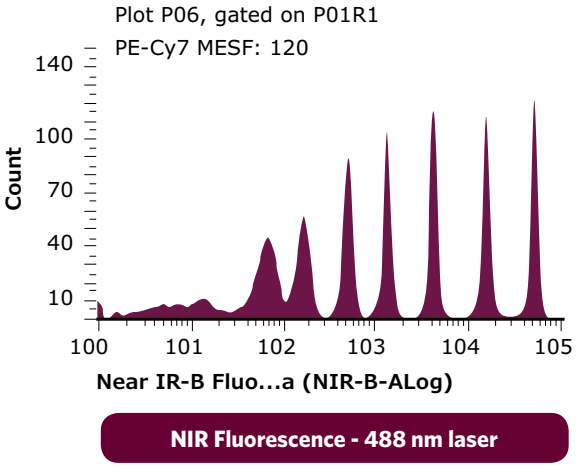
Spherotech 8-color beads analyzed on the Guava easyCyte 12HT System demonstrate the instrument's proficiency for resolving adjacent fluorophores in multiple detection channels.



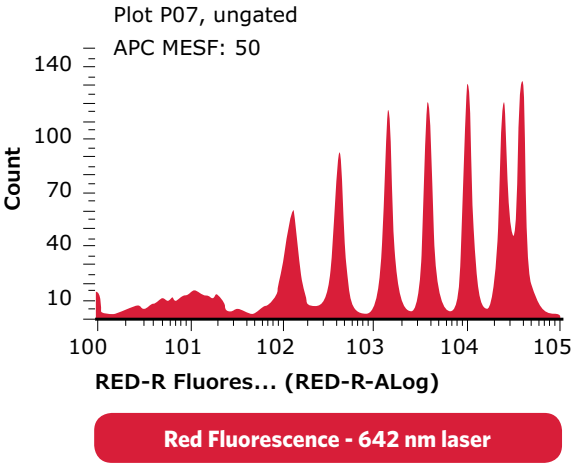
Blue Fluorescence - 405 nm laser



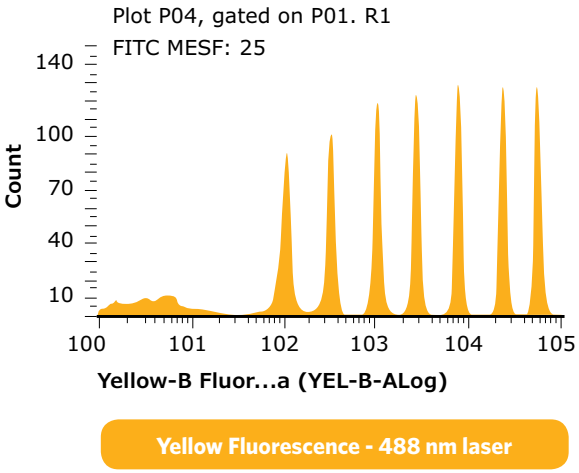
Red Fluorescence - 488 nm laser



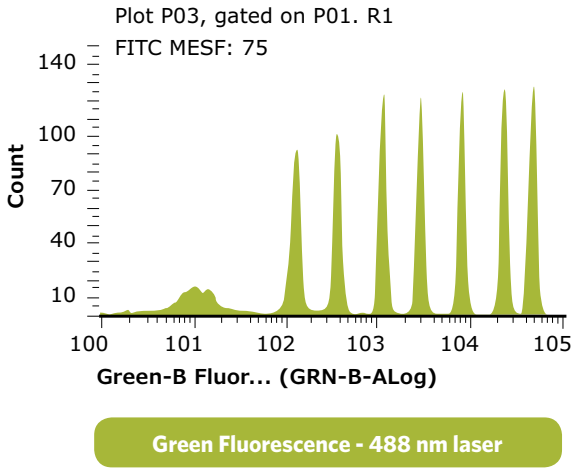
NIR Fluorescence - 488 nm laser



Red Fluorescence - 642 nm laser



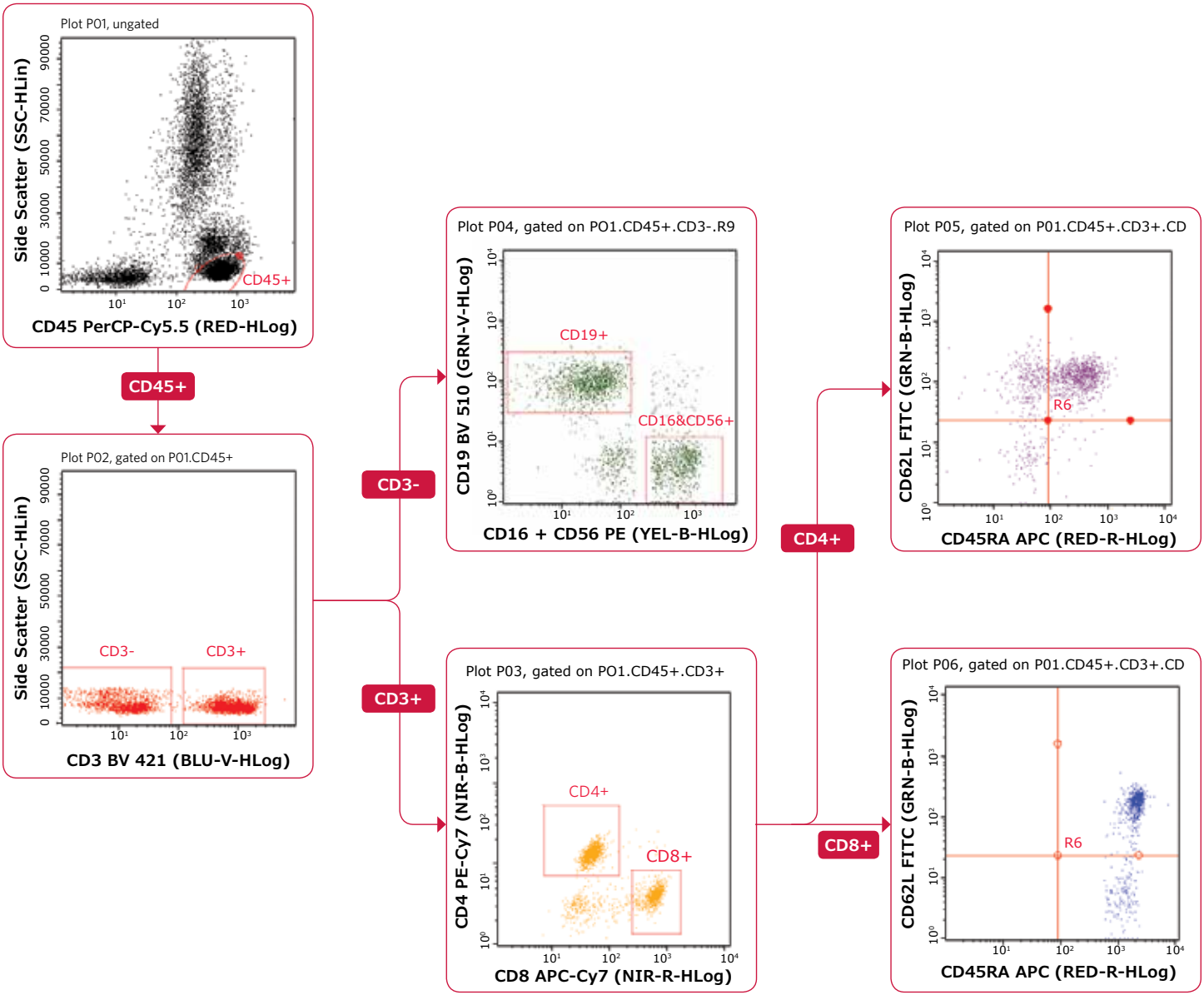
Yellow Fluorescence - 488 nm laser



Green Fluorescence - 488 nm laser

Immunology Phenotyping.

10 µL adult human blood was stained for 20 minutes at room temperature with a cocktail containing anti-CD45 PerCP-Cy5.5, anti-CD3 Brilliant Violet™ 421, anti-CD4 PE-Cy7, anti-CD8 APC-Cy7, anti-CD16+CD56 PE, anti-CD19 Brilliant Violet™ 510, anti-CD45 RA APC, and anti-CD62L FITC. After incubation, cells were lysed and fixed with 180 µL Guava Lysing Solution for 15 minutes at room temperature. Samples were then acquired on the Guava easyCyte 12HT System. Lymphocytes identified as CD45+ were selected and subsequently gated into an SSC vs. CD3 plot. T cells (CD3+ and CD45+) were gated into a CD4 vs. CD8 plot. CD4+ and CD8+ T cells were subtyped by evaluating each population using CD45RA and CD62L to differentiate naive from memory cells. To distinguish natural killer (NK) and B cells, CD3-negative cells were gated into a plot comparing CD19 (B cells) and CD16+/CD56+ (NK cells).

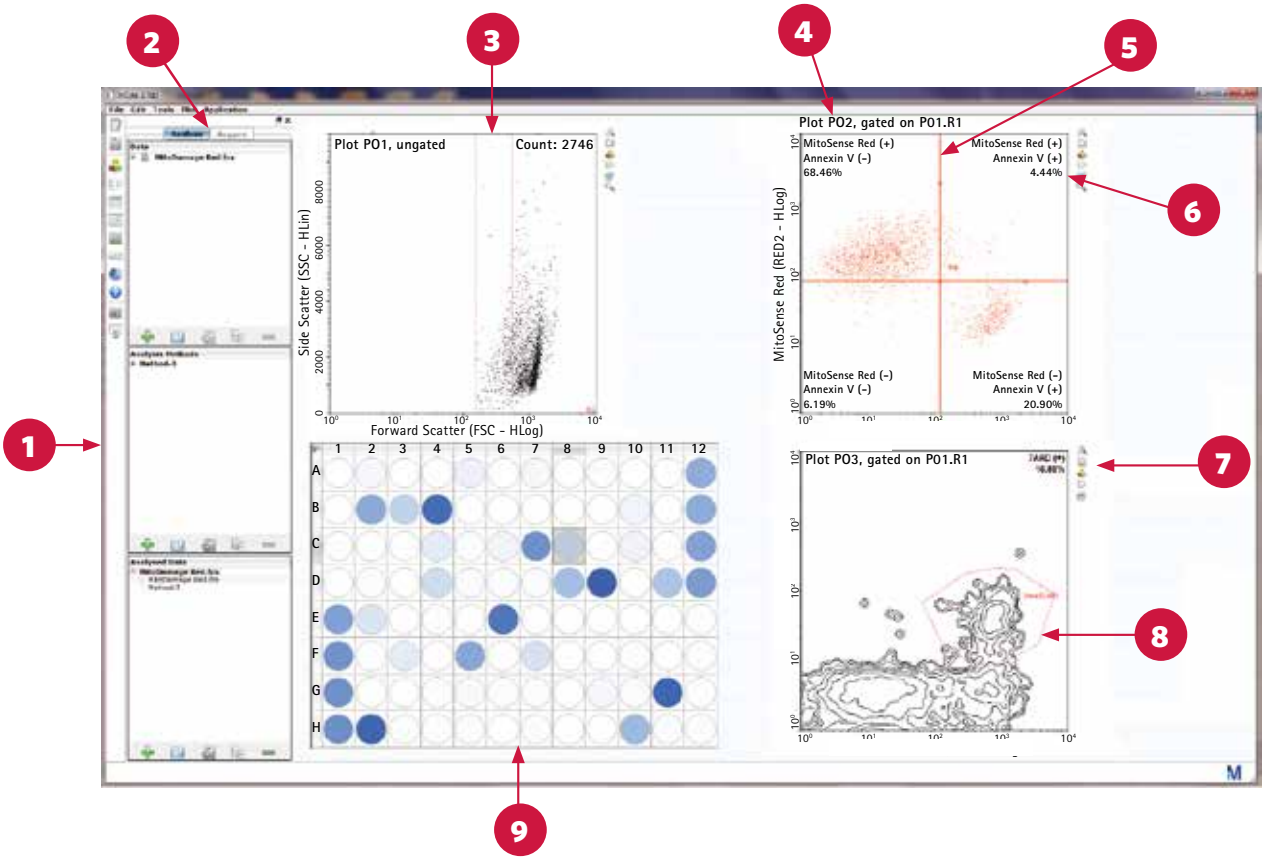


Software.

The GuavaSoft™ operating system software provides access to modules for acquisition and analysis, as well as instrument setup and maintenance. The GuavaSoft operating system includes templates for use with a wide range of Luminex Flow Cytometry kits to simplify your experiments and data collection. Additionally, the GuavaSoft package includes InCyte™, an intuitive open software package for custom analysis. Results can be exported to spreadsheets or as industry-standard FCS 2.0 or 3.0 files for further analysis. GuavaSoft Software includes 21 CFR Part 11-enabling features.

InCyte™ Software: Intuitive

Our InCyte Software has an intuitive, easy to use interface that enables you to focus on data at the sample or experimental level. The software simplifies setup and analysis of plots with drag-and-drop features, while automated compensation makes it easy to perform complex, multi-color assays. The instant update feature responds in real time to change analysis conditions for viewing. The multiparameter heat mapping function allows for analysis of entire plates of data in the time previously required to analyze a single sample. These features provide a simple and rapid means to attain a macroscopic view of experiment "hits" and easily compare different experiments in real time. InCyte Software is especially useful for interpreting the results of high-throughput, cell-based assays.

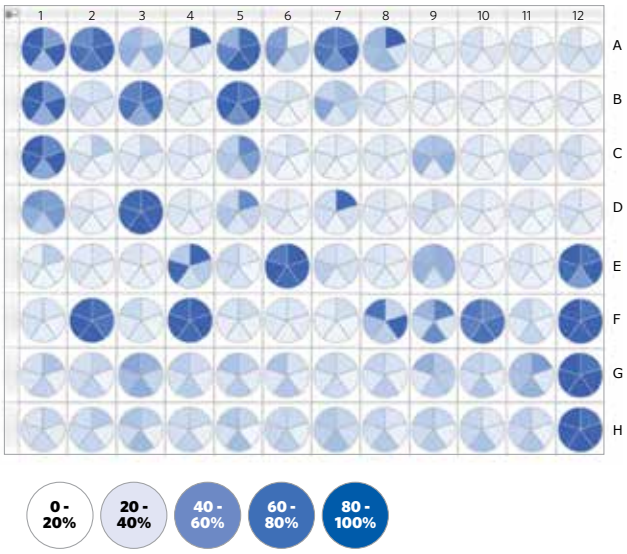


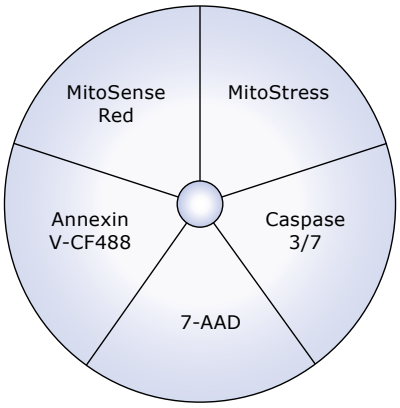
1. Create and apply analysis methods across multiple data sets.
2. Perform compensation during acquisition or analysis or use the automated compensation features.
3. Drag-and-drop gating.
4. View up to 24 plots at once.
5. Refine gates in real time.
6. Default or custom statistics.
7. Multiple plot and gating options.
8. Minimal gain adjustment needed when performing routine assays.
9. Analyze both tubes and plates.

InCyte™ Software Heat Map View.

HeLa 24 Hours

HeLa cells in microtiter plates were treated with various cytotoxic compounds for 24 hours. Cells were stained using Luminex's MitoDamage, Capase 3/7 Kits, as well as a marker to evaluate mitochondrial stress. The InCyte heat map function facilitated the rapid identification of compounds inducing positive results, by simultaneous comparison of all 5 parameters, as shown in the pie charts below. The data show the results for cells treated with 80 different compounds in a single plate.



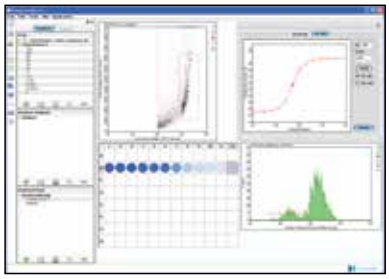


Combine groups of data to construct heat maps, IC_{50}, or EC_{50} curves.

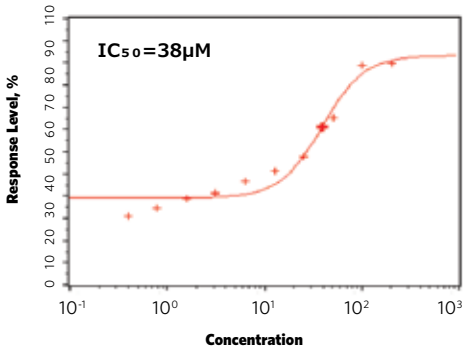
IC_{50} Determination Within InCyte Software

IC_{50} determination using the Cytochrome c Kit was analyzed with the built-in IC_{50}/EC_{50} curve fitting feature of InCyte Software. Cells were acquired on the Guava easyCyte 8HT System. Plot A shows the drag-and-drop gating strategy used for the IC_{50} determination. Plot B shows the IC_{50} curve results for gambogic acid, and Plot C shows the IC_{50} for etoposide. The once-complex task of generating the IC_{50} or EC_{50} curve for a given compound is automated by InCyte, based on quantitation of fluorescent signal.

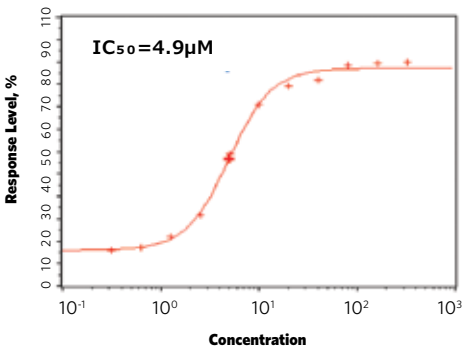
A.



B.

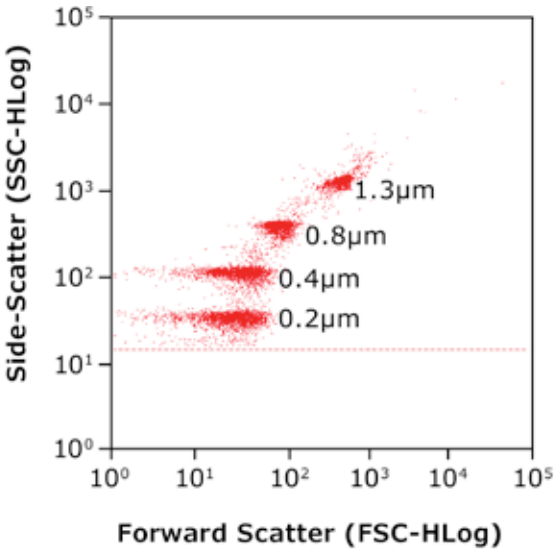


C.



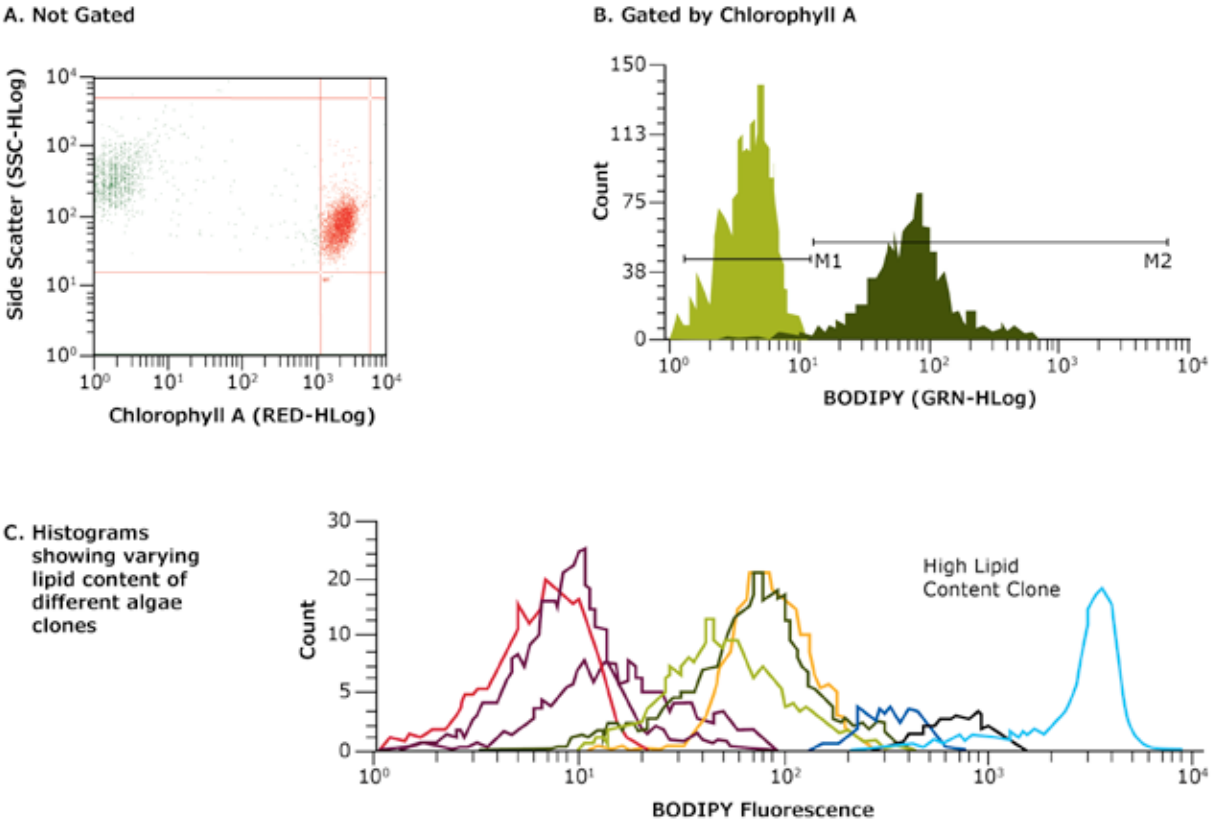
Small Particle Detection.

The easyCyte™ 8HT and 12HT Systems have been shown to detect particles as small as 0.2 µm, a significant improvement over typical flow cytometers. This increased resolution and sensitivity allow for better separation, making gating and identification of dim populations easier. These capabilities may prove particularly useful for researchers analyzing particulates, beads, bacteria, and algae. Acquisition of a mixture of beads of known size demonstrates the ability of easyCyte 12HT Instruments to detect and discriminate particles as small as 0.2 µm.



Turning Algae into Biofuels

The easyCyte Systems are currently participating in algal biomass laboratories worldwide, where flow cytometry facilitates selection of high lipid content strains and efficient monitoring of cultures. Because microcapillary systems require smaller sample volumes, generate significantly less waste, have lower operating costs, enable high sample throughput, and have a small instrument footprint, they are a natural choice for demanding laboratory settings.



Lipid measurement of chlorophyll A-positive algae. Identification of algal cells containing chlorophyll A; chlorophyll A fluoresces in the red channel **(A)**. Gate applied to select for chlorophyll A-positive cells **(B)**. Histograms showing a wide range of lipid content (as evidenced by BODIPY green fluorescence intensity) for a variety of algal strains **(C)**, with one clone showing as much as 500 times the lipid content as others.

Flow Cytometry Reagents.

Our diverse portfolio of reagents and assays facilitates fluorescence-based detection of proteins and nucleic acids and has been validated for use on the easyCyte Instrument platform.

Guava Flow Cytometry Kits

Luminex's optimized, turnkey assay kits reduce sample preparation time, minimize assay development, and simplify data analysis. We offer Guava Kits optimized for key assays in cell health, immunology, and cell signaling.

Guava® Flow Cytometry Kits

Product Name	Part Number
System Maintenance Kits	
Guava® Instrument Cleaning Fluid (ICF)	4200-0140
Guava® Easy Check Kit	4500-0025
Cell Health and Apoptosis Kits	
Guava® ViaCount™ Reagent (40mL)	4000-0040
Guava® ViaCount™ Reagent (240mL)	4000-0041
Guava® ViaCount™ Flex Reagent (100 Tests)	4500-0110
Guava® ViaCount™ Flex Reagent (500 Tests)	4700-0060
Guava® ViaCount™ Cell Dispersal Reagent	4700-0050
Guava Nexin® Kit (100 tests)	4500-0450
Guava Nexin® Kit (500 tests)	4500-0455
Guava® Cell Cycle Kit	4500-0220
Guava® TUNEL Kit	4500-0121
Guava® Express 7-AAD Reagent	4000-0061
Guava® MitoDamage Kit	FCCH100106
Guava® Annexin Red Kit	FCCH100108
Guava® Cytochrome c Kit	FCCH100110
Guava® Autophagy LC3 Antibody-based Detection kit	FCCH100171
Guava® DNA Damage Histone H2A.X Dual Detection Kit	FCCS025153
Guava® Histone H2A.X Dual Detection kit	FCCS100182
Algae Kit	
Guava® Lipid Screen Green Kit	FCIA100101

Guava® easyCyte™ SL Systems

Guava® easyCyte™ Single Sample System	5	5 HPL	6-2L	8
Part Number	0500-5005	0500-5009	0500-5007	0500-5008
Violet (405 nm) Laser				
Blue (488 nm) 50 mW Laser	x		x	
Blue (488 nm) 150 mW Laser		x		x
Green (532 nm) Laser				
Red (642 nm) Laser			x	x
FSC	x	x	x	x
SSC	x	x	x	x
Blue-V (450/45 nm)				
Green-V (512/18 nm)				
Green-V (525/30 nm)				
Yellow-V (575/25 nm)				
Yellow-V (583/26 nm)				
Orange-V (620/52 nm)				
Red-V (695/50 nm)				
NIR-V (785/70 nm)				
Green-B (512/18 nm)				
Green-B (525/30 nm)	x	x	x	x
Yellow-B (575/25 nm)				
Yellow-B (583/26 nm)	x	x	x	x
Red-B (695/50 nm)	x	x	x	x
NIR-B (785/70 nm)				x
Yellow-G (575/25 nm)				
Orange-G (609/30 nm)				
Orange-G (620/52 nm)				
Red-G (695/50 nm)				
NIR-G (785/70 nm)				
Red-R (664/20 nm)			x	x
NIR-R (785/70 nm)				x
Microcapillary Fluidics	x	x	x	x
Direct, Absolute Cell Counts	x	x	x	x
Automation Plate and Tubes				
Mixing				
Dell® Laptop	x	x	x	x
InCyte™ Software	x	x	x	x
Digital Signal Processing	x	x	x	x

Guava® easyCyte™ HT Systems




Guava® easyCyte™ HT System	5HT	5HT HPL	6HT-2L	8HT	11HT	12HT	BG HT	BGR HT	BGV HT
Part Number	0500-4005	0500-4009	0500-4007	0500-4008	0500-4020	0500-4012	0500-4015	0500-4025	0500-4030
Violet (405 nm) Laser					x	x			x
Blue (488 nm) 50 mW Laser	x		x						
Blue (488 nm) 150 mW Laser		x		x	x	x	x	x	x
Green (532 nm) Laser							x	x	x
Red (642 nm) Laser			x	x		x		x	
FSC	x	x	x	x	x	x	x	x	x
SSC	x	x	x	x	x	x	x	x	x
Blue-V (450/45 nm)					x	x			x
Green-V (512/18 nm)									x
Green-V (525/30 nm)					x	x			
Yellow-V (575/25 nm)									x
Yellow-V (583/26 nm)					x	x			
Orange-V (620/52 nm)									x
Red-V (695/50 nm)					x	x			
NIR-V (785/70 nm)					x	x			
Green-B (512/18 nm)							x	x	x
Green-B (525/30 nm)	x	x	x	x	x	x			
Yellow-B (575/25 nm)							x	x	x
Yellow-B (583/26 nm)	x	x	x	x	x	x			
Red-B (695/50 nm)	x	x	x	x	x	x	x	x	x
NIR-B (785/70 nm)				x	x	x	x	x	x
Yellow-G (575/25 nm)							x	x	x
Orange-G (609/30 nm)								x	
Orange-G (620/52 nm)							x		x
Red-G (695/50 nm)							x	x	x
NIR-G (785/70 nm)							x	x	x
Red-R (664/20 nm)			x	x		x		x	
NIR-R (785/70 nm)	x	x	x	x	x	x	x	x	x
Microcapillary Fluidics	x	x	x	x	x	x	x	x	x
Direct, Absolute Cell Counts	x	x	x	x	x	x	x	x	x
Automation Plate and Tubes	x	x	x	x	x	x	x	x	x
Mixing	x	x	x	x	x	x	x	x	x
Dell® Laptop	x	x	x	x	x	x	x	x	x
InCyte™ Software	x	x	x	x	x	x	x	x	x
Digital Signal Processing	x	x	x	x	x	x	x	x	x

Ordering Information

Product Name	Part Number
Single Sampling Instruments	
Guava® easyCyte™ 5 Base System	0500-5005
Guava® easyCyte™ 5HPL Base System	0500-5009
Guava® easyCyte™ 6-2L Base System	0500-5007
Guava® easyCyte™ 8 Base System	0500-5008
High Throughput Sampling Instruments	
Guava® easyCyte™ 5HT Base System	0500-4005
Guava® easyCyte™ 5HT HPL Base System	0500-4009
Guava® easyCyte™ 6HT-2L Base System	0500-4007
Guava® easyCyte™ 8HT Base System	0500-4008
Guava® easyCyte™ HT BG Base System	0500-4015
Guava® easyCyte™ 11HT Base System	0500-4020
Guava® easyCyte™ HT BGR Base System	0500-4025
Guava® easyCyte™ 12HT Base System	0500-4012
Guava® easyCyte™ HT BGV Base System	0500-4030

Luminex®
complexity simplified.

For more information, please visit luminexcorp.com/guava-easycyte-flow-cytometers

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