



THE POWER OF

GUAVA CELLTOXICITY™ ASSAY:

For easy, sensitive, single-cell based cytotoxicity measurements

Guava CellToxicity Assay

- Sensitive, single-cell analysis
- Requires no radioactivity
- Highly reproducible
- Minimizes assay development time
- Ideal for effector cell assays: CMC, ADCC, and NK

Now you can improve the performance and sensitivity of your cytotoxicity assays with a simple, non-radioactive assay that is superior to population-based methods such as ⁵¹-Chromium release, alamarBlue, MTT and LDH. The **Guava CellToxicity Assay**, when used in conjunction with the Guava PCA systems, offers single-cell analysis capabilities that are as easy to use as population-based methods, but have superior sensitivity, specificity, and reproducibility. The assays use a well-characterized cell tracking dye that is optimized for use on the Guava PCA systems. This dye diffuses freely into cells and is retained within the cell without affecting cellular function. Because the assay is more sensitive and reproducible, assay development time is reduced when compared to traditional methods.

The Guava CellToxicity Assay offers a safer alternative to traditional cytotoxicity assays, which require radioactivity (⁵¹-Chromium release) and a more sensitive alternative to the highly variable population-based, colorimetric methods (alamarBlue, MTT, and LDH).

All of the commonly performed methods used to study cytotoxicity can be performed using the Guava CellToxicity Assay and include cell-mediated or cell-dependent cytotoxicity (CMC or CDC), antibody-dependent cell mediated cytotoxicity (ADCC) and natural killer cytotoxicity (NK). As such, the assay can be used with multiple effector and target

cell types (see Tables 1 and 2). Effector cells include T-cells that recognize foreign antigens or alloantigens expressed on the surface of target cells, phagocytes such as monocytes that recognize an antibody bound to antigen on the surface of target cells, and natural killer cells (for NK assays). The Guava CellToxicity Assay provides all relevant statistics, including percentage of target cells killed, effector and target cell percentages, and whether the cells are alive or dead. Sensitive, yet specific and reproducible, the Guava CellToxicity Assay will save you hours of assay development time, improving your cytotoxicity assay performance, without increasing difficulty of use. Cytotoxicity was never better, and easier, than with the Guava CellToxicity Assay and Guava PCA systems.

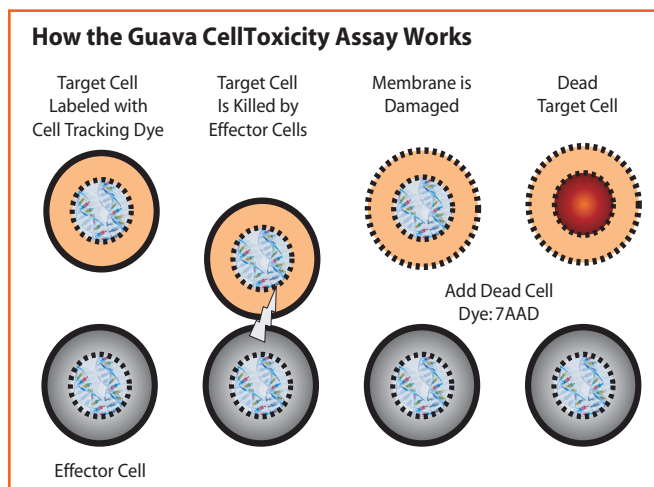
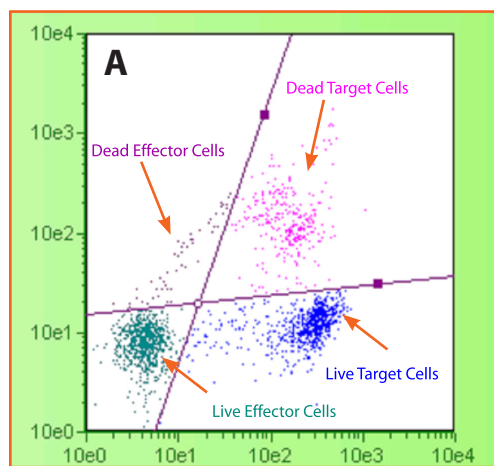


Figure 1. Target cells are marked with the cell tracking dye and are easily differentiated from effector cells. The 7-AAD dye delineates those target cells that are killed, all within minutes of dead cell dye addition.

Guava CellToxicity Assay

Monitors mixed cultures for cytotoxicity:

- Easily discerns target cells from effector cells (see Fig. 2A)
- Provides all relevant statistics in a convenient Analysis Table, including % Target Cells Killed (see Fig. 2B)
- Applicable to many effector assays (see Tables 1 and 2)
 - Cell-mediated cytotoxicity (CMC)
 - Antibody-dependent cell-mediated cytotoxicity (ADCC)
 - Natural Killer (NK)
- No radioactivity



Analysis Results					
% of Target Cells Killed: 47.97 %					
	Count	Cells/mL	% Total	PM1 MFI	PM2 MFI
Live Effector Cells	2641	1.75e05	52.82	7.62	7.13
Live Target Cells	973	6.45e04	19.46	424.33	8.50
Dead Target Cells	897	5.94e04	17.94	325.60	191.56
Dead Effector Cells	489	3.24e04	9.78	63.29	119.80
All Target Cells	1870	1.24e05	37.40	376.97	96.31
Gated Events	Total Count	% Inside Gate	% Outside Gate		
-	5000	-	-		

Figure 2A. Data show labeled K562 target cells after a 4 hour incubation with effector NK cells.

Figure 2B. The Analysis Results table displays data in an easy to read format and includes % of Target Cells Killed and effector vs. target cell percentages.

TABLE 1. EFFECTOR CELL TYPES

Assay Type	Effector Cell Types	Function
ADCC	Granulocytes: Neutrophils Monocytes: Macrophages	Mediate ADCC
CDC (CMC)	Lymphocytes: Cytotoxic T cells	Kill virus-infected cells
NK	Lymphocytes: Natural Killer (NK) cells	Kill virus-infected cells and some tumor cells

TABLE 2. TARGET CELL TYPES

Assay Type	Target Cell Types	Comments
ADCC	Antigen-expressing cells	Need Ab specific for antigen
CDC	Virally infected cells Allogeneic cells	Need to prime or activate cytotoxic T-cells
NK	K562 Cells	Chronic myelogenous cell line; killed by NK cells without priming
NK	Daudi cells	Human B-lymphoblast cell line; requires IL-2 priming of NK cells prior to killing

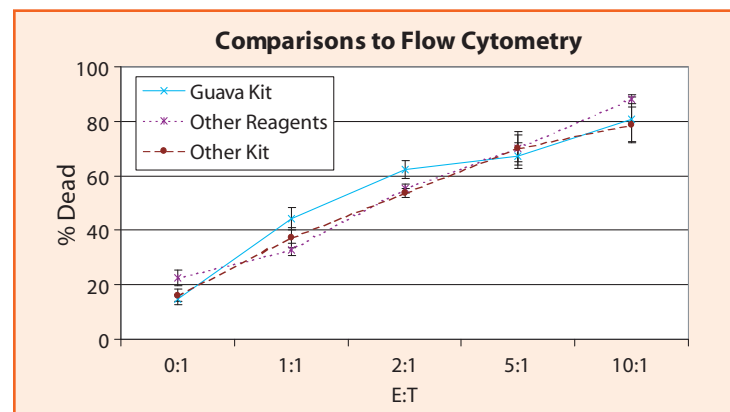


Figure 3. The Guava CellToxicity Kit is comparable in performance to flow cytometry using other manufacturers' individual reagents or kit.

ORDERING INFORMATION

Guava PCA CellToxicity Software Module	Cat. No. 0500-0850
Guava PCA-96 CellToxicity Software Module	Cat. No. 0500-0880
Guava PCA/PCA-96 CellToxicity Kit	Cat. No. 4500-0200
Guava EasyCyte™ CellToxicity Software Module	Cat. No. 0500-0170
Guava EasyCyte CellToxicity Kit	Cat. No. 4500-0240

For pricing, please request a quotation.



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