

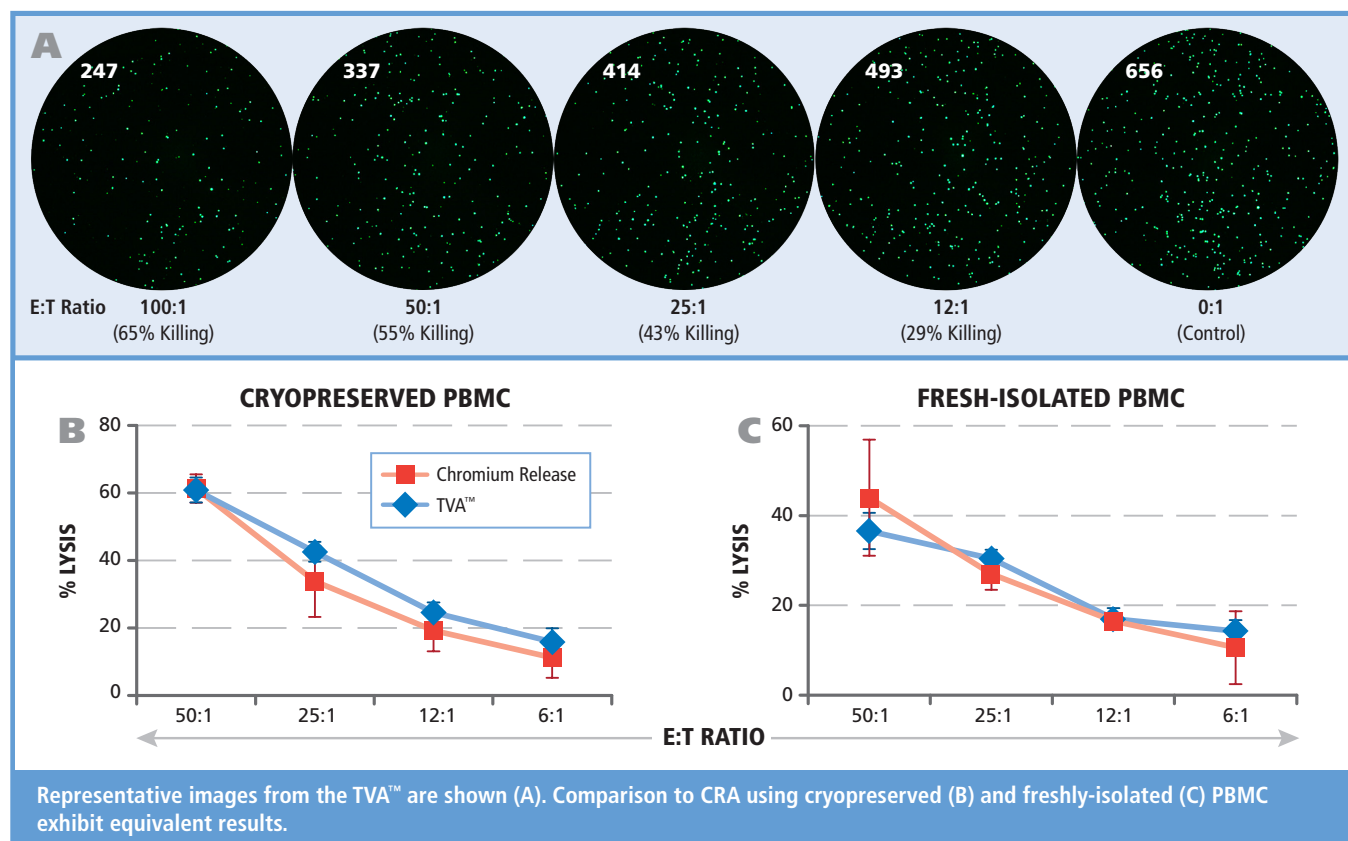
For decades, the Chromium Release Assay (CRA) has been the gold standard for measuring Natural Killer (NK) cell-mediated lysis of tumor cells, or of antibody coated target cells (ADCC). Until now, CRA has been unparalleled in sensitivity. No longer! CTL's non-radioactive Target cell Visualization Assay (TVA™) not only has the same sensitivity as CRA, but can measure the lysis of up to three different target cells simultaneously, and can be performed in Terasaki format, thereby reducing up to 30-fold the number of effector cells needed. The TVA™ assay is based on direct, single-cell imaging, is less laborious than the CRA, with fully-automated analysis and data reporting. Streamlined quality control and tamper-proof audit trails facilitate the work flow in laboratories that work under GLP.

Assay Principle

The TVA™ utilizes direct imaging of fluorescence-labeled target cells. Labeled tumor cells are co-incubated at various ratios with Peripheral Blood Mononuclear Cell (PBMC) populations, or other NK cell-containing isolates. Following NK-mediated lysis, target cells lose their fluorescent signal. The direct visualization of remaining viable target cells at the end of an assay period determines the percentage of cytotoxicity for each effector to target (E:T) ratio. Up to three differently labeled target cells can be tested simultaneously.

Assay Sensitivity

When performed in parallel, the TVA™ and CRA assays exhibited similar killing percentages irrespective of whether cryopreserved PBMC or freshly-isolated PBMC were used as effectors with labeled K562 as target cells. Both assays were equally sensitive in a 96-well plate assay, however, the TVA™ Assay is far less labor-intensive and requires a fraction of the investigator's time. The TVA™ Assay has no background noise, has high inter-assay repeatability, intermediate precision, and provides audit trails.



CTL. TVA™: Non-Radioactive NK/ADCC Activity Assessment

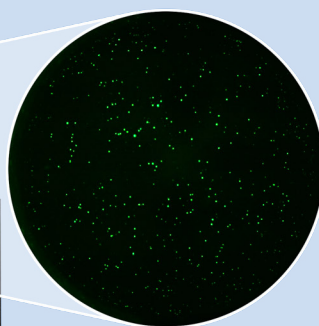
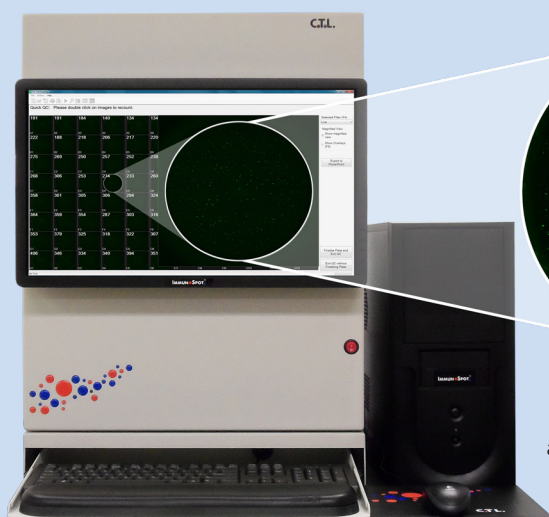
TVA™ vs. Chromium Release Assay (CRA)		
Features and Benefits	TVA™	CRA
Non-radioactive	✓	✗
Direct visualization of results	✓	✗
Number of cells required	10 ⁶ cells (for 96-well format and 1x10 ⁵ (for Terasaki format)	2x10 ⁶ cells
Background noise	✗	✓
Labor intensive	✗	✓
Ability to transfer multiple wells during plate transfers	✓	✗
Isolation of NK cells	✗	Preferred
Automated analysis and evaluation	✓	✗
Audit trails	✓	✗
Reference effector controls (PBMC) available	✓	✗
Assay kit available	✓	✗
Assay consultation available	✓	✗

Assay Instrumentation

The CTL S6 Ultimate Fluorescent Analyzer is designed to support fluorescence-based, single-cell assays. It is well-suited for imaging live, dead and apoptotic cells, and/or different target cells that have been labeled with fluorescent dyes. Four selectively activatable light sources, and a multi-filter design allows users to take advantage of the entire fluorescence-based spectrum, detecting up to eight colors. Next to single-cell analysis, the CTL S6 Ultimate Analyzer can also be used as a dedicated reader for the analysis of fluorescent or white light-based morphometric assays, including ELISPOT and various virus neutralization assays.

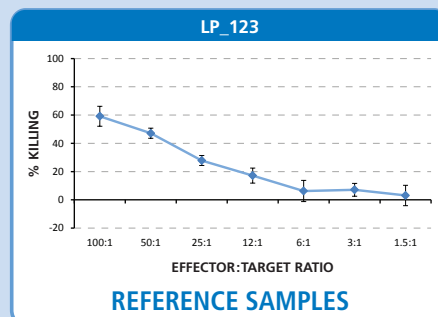
Detection of natural killer-mediated cell cytotoxicity has never been faster, simpler, and more precise, involving less effector cells. Join the community of researchers using the TVA™. **Contact us today for more information!**

INSTRUMENTATION • AUTOMATED ANALYSIS • AUDIT TRAILS



SINGLE-CELL IMAGING

Measuring viability, apoptosis, and in vitro cytotoxicity using cells labeled with fluorescent dyes.



ASSAY KITS



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