

Liquid Tumor Immunotherapy



Using xCELLigence Instruments to Monitor
Liquid Tumor Cell Killing in Real-Time



Monitor the Efficacy of Liquid Cancer Immunotherapies Inside Your Incubator

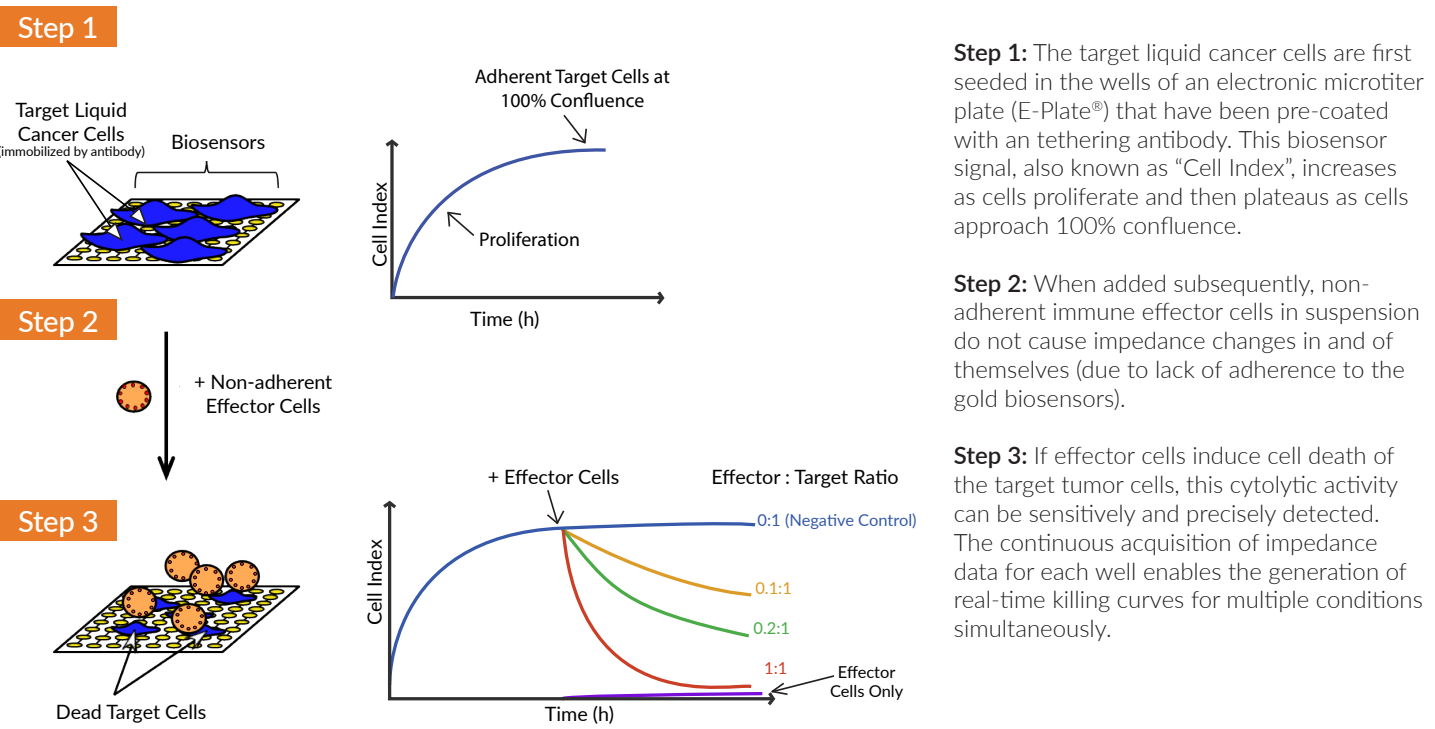
Use xCELLigence® Immunotherapy Kits with your Real-Time Cell Analysis (RTCA®) system for a non-invasive solution to a broad range of liquid cancer immunotherapies and suspension tumor cell killing applications. Improve reproducibility while maintaining cell health with continuous kinetic measurement.

REAL-TIME: Quantitative monitoring of both fast (hours) and slow (days) killing

SIMPLE WORKFLOW: Without Extra Sample Handling Steps

EXQUISITE SENSITIVITY: Physiologically relevant, Low Effector:Target Ratios

AUTOMATIC DATA PLOTTING: Precluding Subjective Data Vetting



Using an xCELLigence RTCA instrument and immunotherapy kit to monitor killing of liquid cancer target cells.

Immune Effector Cells and Liquid Cancer Target Cells That Have Successfully Been Utilized to Date:

| Liquid Tumor Tethering Specificity | Effector Cells | Target Cells |
|------------------------------------|--|-------------------------------------|
| anti-CD40 | NK-92, TALL-104, CAR-T, primary CD8+ T cells | Daudi, Raji, Ramos, primary B cells |
| anti-CD29 | NK-92 | K562 |
| anti-CD19 | NK-92, primary CD8+ T cells | Raji, primary B cells |
| anti-CD9 | NK-92 | NALM6, RS4;11, RPMI 8226 |
| anti-CD71 | NK-92 | K562 |

Example Data: Liquid Tumor Killing Assay (anti-CD40):

The wells of an ACEA electronic microtiter plate were pre-coated with an anti-CD40 reagent, enabling liquid tumor targets to be immobilized on the plate bottom (**Figure 1A**). Whereas immobilized target cells generate a robust impedance signal and proliferate to the point of confluence (resulting in a plateaued impedance signal), the growth of untethered target cells is essentially undetectable (**Figure 1B**). Importantly, with or without tethering reagent coating of the wells, effector cells (NK-92 cells used here) produce minimal signal on their own (**Figure 1B**). Addition of effectors to the immobilized targets results in target cell death in a dose dependent manner (**Figure 1C**).

Side-by-side four hour assays were performed for NK-92 cell-mediated killing of Raji B cells that were either immobilized (analyzed by xCELLigence) or in suspension (analyzed by flow cytometry). As seen in **Figure 1D**, the killing trends observed by these two methods correlate perfectly. This is consistent with a large number of publications showing that xCELLigence data consistently recapitulates data obtained by traditional assays.

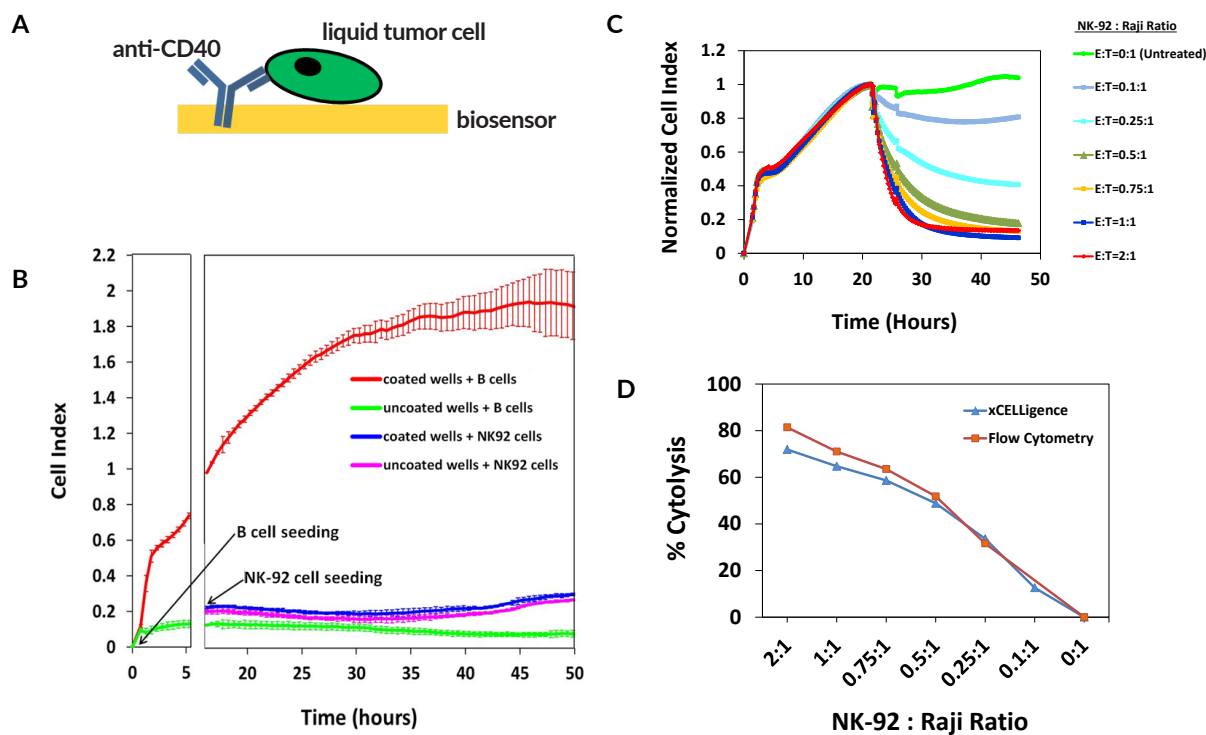






Figure 1: The xCELLigence Liquid Tumor Killing Assay (anti-CD40).

xCELLigence Instruments for Immunotherapy Assays:

| Dual Purpose | Single Plate | Multi Plate | High Throughput |
|---|---|--|---|
|  |  |  |  |
| 3x16 wells | 1x96 wells | 6x96 wells | Up to 4x384 wells |

Liquid Tumor Killing Assay (anti-CD40)

| Complete Kit | Cat. No. 8100004 |
|--|------------------|
| E-Plate View 96 (Qty=6) | |
| Tethering Reagent (anti-CD40) (250 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |
| RTCA Software Pro | |

| Tethering Kit | Cat. No. 8100005 |
|--|------------------|
| Tethering Reagent (anti-CD40) (250 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |

| Sample Kit | Cat. No. 8100006 |
|---|------------------|
| E-Plate View 96 (Qty=2) | |
| Tethering Reagent (anti-CD40) (90 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |
| Trial RTCA Software Pro for 1-month usage | |

Liquid Tumor Killing Assay (anti-CD29)

| Complete Kit | Cat. No. 8100007 |
|--|------------------|
| E-Plate View 96 (Qty=6) | |
| Tethering Reagent (anti-CD29) (125 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |
| RTCA Software Pro | |

| Tethering Kit | Cat. No. 8100008 |
|--|------------------|
| Tethering Reagent (anti-CD29) (125 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |

| Sample Kit | Cat. No. 8100009 |
|---|------------------|
| E-Plate View 96 (Qty=2) | |
| Tethering Reagent (anti-CD29) (45 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |
| Trial RTCA Software Pro for 1-month usage | |

Liquid Tumor Killing Assay (anti-CD19)

| Complete Kit | Cat. No. 8100010 |
|--|------------------|
| E-Plate View 96 (Qty=6) | |
| Tethering Reagent (anti-CD19) (250 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |
| RTCA Software Pro | |

| Tethering Kit | Cat. No. 8100011 |
|--|------------------|
| Tethering Reagent (anti-CD19) (250 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |

| Sample Kit | Cat. No. 8100012 |
|---|------------------|
| E-Plate View 96 (Qty=2) | |
| Tethering Reagent (anti-CD19) (90 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |
| Trial RTCA Software Pro for 1-month usage | |

Liquid Tumor Killing Assay (anti-CD9)

| Complete Kit | Cat. No. 8100013 |
|---------------------------------------|------------------|
| E-Plate View 96 (Qty=6) | |
| Tethering Reagent (anti-CD9) (250 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |
| RTCA Software Pro | |

| Tethering Kit | Cat. No. 8100014 |
|---------------------------------------|------------------|
| Tethering Reagent (anti-CD9) (250 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |

| Sample Kit | Cat. No. 8100015 |
|---|------------------|
| E-Plate View 96 (Qty=2) | |
| Tethering Reagent (anti-CD9) (90 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |
| Trial RTCA Software Pro for 1-month usage | |

Liquid Tumor Killing Assay (anti-CD71)

| Complete Kit | Cat. No. 8100016 |
|--|------------------|
| E-Plate View 96 (Qty=6) | |
| Tethering Reagent (anti-CD71) (250 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |
| RTCA Software Pro | |

| Tethering Kit | Cat. No. 8100017 |
|--|------------------|
| Tethering Reagent (anti-CD71) (250 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |

| Sample Kit | Cat. No. 8100018 |
|---|------------------|
| E-Plate View 96 (Qty=2) | |
| Tethering Reagent (anti-CD71) (90 µL) | |
| 10X Tethering Buffer (10 ml) | |
| Cytolysis Reagent (1.5 ml) | |
| Trial RTCA Software Pro for 1-month usage | |



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