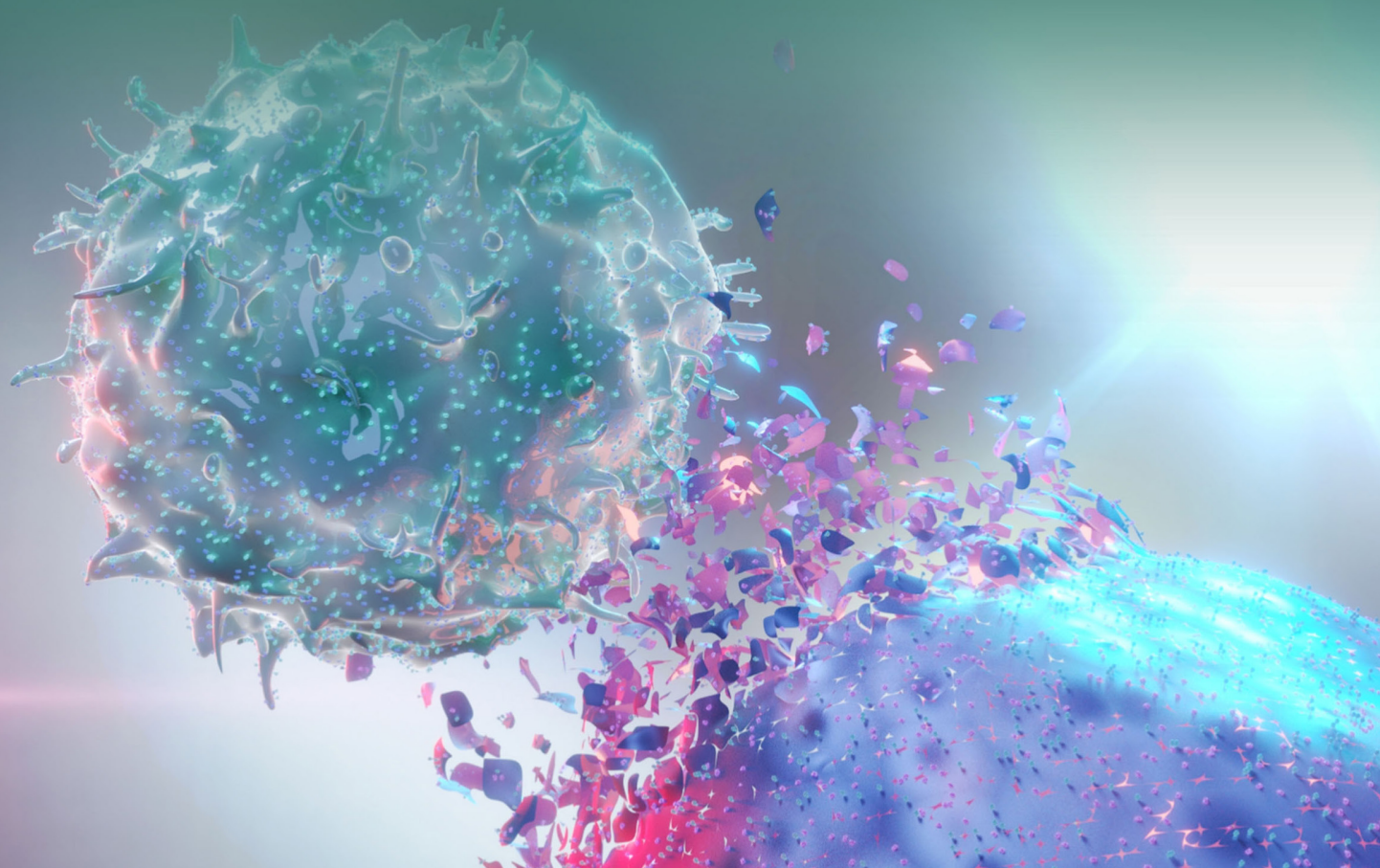




MEASURE DIRECT CYTOTOXIC CELL DEATH IN CO-CULTURE

KILR CYTOTOXICITY PRODUCT SOLUTIONS

Robust, Ready-to-Use ADCC & ADCP Bioassays to Accelerate Your Drug Development Program



The KILR® cytotoxicity assay platform specifically measures the killing of antigen-expressing target cells in co-culture with effector cells. This robust and flexible platform is used for the quantitation of direct cell death mediated through multiple mechanism-of-actions (MOAs) such as ADCC (antibody-dependent cell-mediated cytotoxicity), ADCP (antibody-dependent cellular phagocytosis), CDC (complement-dependent cytotoxicity), and T-cell redirection.

KILR CYTOTOXICITY ASSAYS FOR ADCC & ADCP APPLICATIONS

Traditional ADCC assays use multistep-long protocols and presents inherent challenges due to variability from effector cells and target cells in continuous culture. Traditional ADCP assays have difficulty measuring the MOA of several antibody-based biologics as they measure the association between target cells and macrophages. However, co-localization does not indicate phagocytosis. To address the existing challenges with ADCC and ADCP assays and ensure long-term assay reproducibility, ready-to-use (RTU) bioassay formats have been developed for ADCC and ADCP applications for some of the most studied cell models. These physiologically-relevant, robust bioassays are fit-for-purpose for screening applications and relative potency testing in lot-release programs. The KILR ADCP Bioassay Kit is the first-to-market plate-based, MOA reflective bioassay kit that measures phagocytosis of target cells expressing the relevant antigen of interest in a homogenous format.

SPECIFICALLY MEASURE TARGET CELL DEATH WITHIN 1 DAY

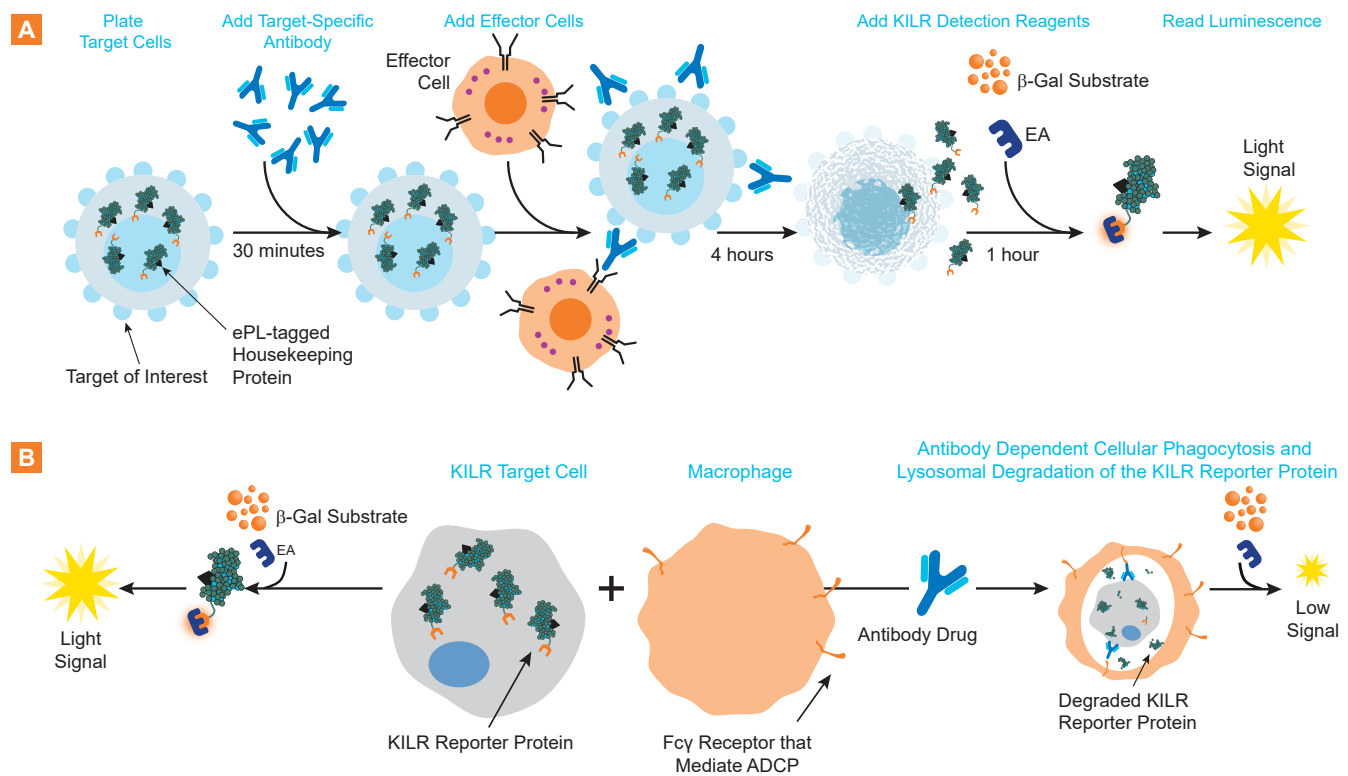


Figure 1. KILR cytotoxicity assay principles. A. ADCC and B. ADCP assays for measuring direct target cell death in co-culture.

ACCURATELY QUANTIFY TARGET CELL DEATH IN CO-CULTURES

Robust, Ready-to-Use ADCC & ADCP Bioassay to Measure Direct Target Cell Death

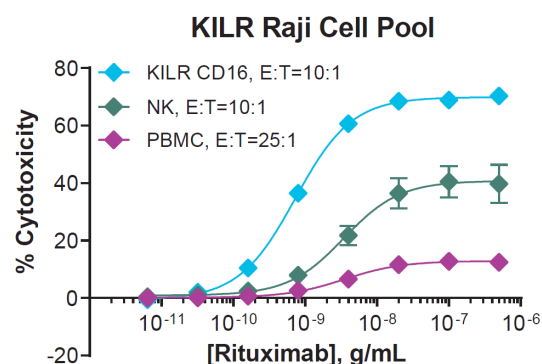
KILR BIOASSAYS COMPATIBLE WITH DIFFERENT EFFECTOR CELLS

- Accelerate your drug development programs with RTU target cells for most studied models in a bioassay format
- Excellent concordance in assay performance between KILR RTU cells and cells in continuous culture
- Ensure long-term assay reproducibility with high signal-to-background ratios
- Kits include all optimized reagents and methods to run the ADCC or ADCP assay
- Flexibility of platform-option to bring in effector cells of choice
- Eliminate donor variability with KILR CD16 Effector Cells for ADCC assays
- Qualified with relevant innovator biologic drugs
- Custom assay development program can be used to generate optimized bioassays with target cell models of interest and for data generation

PRODUCT INFORMATION

Product Name	2-Plate Kit Part Number	10-Plate Kit Part Number	KILR CD16 Effector Cells	Part Number
KILR Raji ADCC Bioassay Kit	97-1012Y026-00169	97-1012Y026-00170	1 Vial	97-0007-01
KILR Daudi ADCC Bioassay Kit	97-1009Y025-00171	97-1009Y025-00172	5 Vials	97-0007-05
KILR NCI-N87 ADCC Bioassay Kit	97-1004Y021-00173	97-1004Y021-00174		
KILR Raji ADCP Bioassay Kit	97-1012Y026-00179	97-1012Y026-00180		
KILR Daudi ADCP Bioassay Kit	97-1009Y025-00177	97-1009Y025-00178		
KILR NCI-N87 ADCP Bioassay Kit	97-1004Y021-00181	97-1004Y021-00182		

KILR BIOASSAYS COMPATIBLE WITH DIFFERENT EFFECTOR CELLS



Effector Cells	EC ₅₀ ng/mL	S/B	E _{Max}
KILR CD16 (10:1)	0.73	28.2	70%
Primary NK's (10:1)	3.46	10.9	41%
PBMCs (25:1)	3.51	4.9	13%

Figure 2. More robust ADCC is observed with KILR® CD16 Effector cells than with primary cells. In KILR Raji cells treated with Rituximab, KILR CD16 Effector Cells mediate a 2.5-fold higher assay window and E_{max} than primary NK cells when used at the same effector-to-target (E:T) ratio (E:T = 10:1). The difference in assay window and E_{max} is even more pronounced when comparing primary PBMCs (used at an E:T = 25:1).

For more information on KILR Cytotoxicity assays, please visit discoverx.com/kilr

ACCELERATE YOUR BIOLOGICS DRUG DEVELOPMENT PROGRAMS

Ready-to-Use Target Cells for Most Studied Models in a Bioassay Format

EVALUATE DIVERSE CANCER MODELS WITH ROBUST KILR ADCP ASSAYS

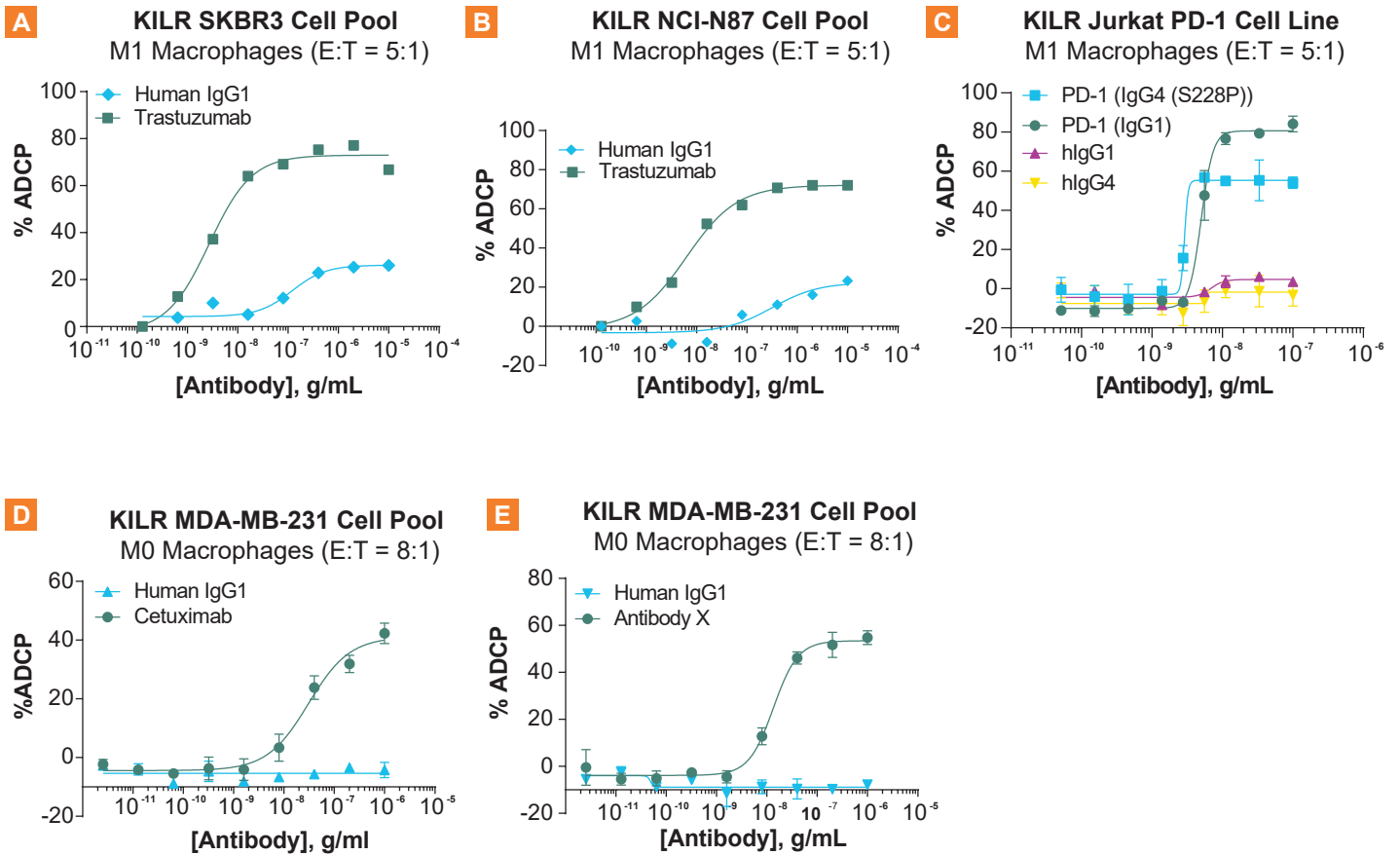


Figure 3. Robust ADCP observed for diverse antigens in multiple solid and liquid tumor models. ADCP is mediated by Trastuzumab to an IgG1 control in HER2+ as seen in **A**. KILR® SKBR3 cells, a breast cancer model, and **B**. KILR NCI-N87 cells, a gastric cancer model. **C**. ADCP is shown in a KILR Jurkat PD-1 cell model with two commercial anti-PD-1 antibodies (IgG1 and IGG4 (S228P) formats) relative to the two isotype controls (human IgG1 and human IgG4). ADCP is also shown in KILR MDA-MB-231 breast cancer cells using **D**. Cetuximab or **E**. Antibody X, which recognizes a novel antigen expressed on MDA-MB-231 cells. M1 and M0 macrophages correspond to effector cells.

ENSURE LONG-TERM ASSAY REPRODUCIBILITY

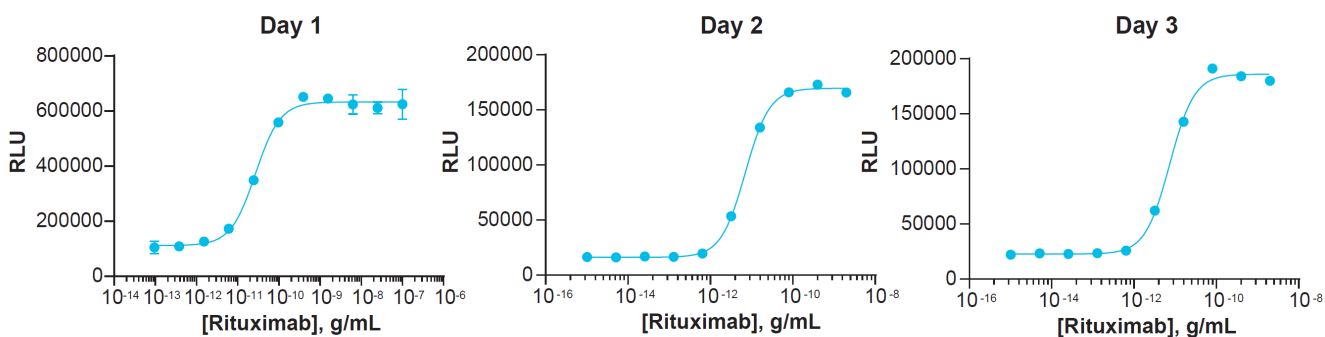
KILR Cytotoxicity Bioassays Deliver Excellent Reproducibility & Repeatability

KILR ADCP ASSAY DELIVERS HIGH REPRODUCIBILITY

Inter-Plate Variability – Same Day (EC ₅₀ , ng/mL of Anti-HER2)					Inter-Day Variability (EC ₅₀ , ng/mL of Anti-HER2)				
Plate 1	Plate 2	Plate 3	Mean	%CV	Day 1	Day 2	Day 3	Mean	%CV
7.99	6.12	8.95	7.69	18.76	*7.69	5.3	6.3	5.8	12.19

Figure 4. ADCP assay with KILR® SKBR3 cell pools shows high reproducibility between experiments. The same antibody, anti-HER2, was run on three different plates on the same day (inter-plate experiment) and over the course of two days. EC₅₀'s (ng/mL for Anti-HER2) between plates varied by less than 20% CV, while inter-day %CV was only 12.2%. *Average of plate 1, 2, and 3 data.

HIGH REPEATABILITY OF ADCC ASSAYS OVER 3 DAYS



Parameter	Day 1	Day 2	Day 3	% RSD
EC ₅₀ , pg/mL	6.2	7.03	7.4	8.90%
S/B	9.8	10.6	8.3	12.20%
E _{Max}	135%	114%	75.80%	27.70%

Figure 5. High repeatability of ADCC using KILR Raji Bioassay target cells. Dose response of the anti-CD20 antibody rituximab was evaluated by a single analyst on 3 different days using KILR CD16 Effector Cells (E:T = 10:1). Each day represents an independent vial of the target bioassay cells.

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