RTCA
Технические характеристики

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Are You Still Using Endpoint Assays?

The Agilent real-time cell analysis (RTCA) instruments provide a powerful yet simple solution for live cell analysis.

Why xCELLigence RTCA?

– Label-free: Impedance based biosensor technology does not require markers or dyes.

– Real-time kinetic readouts: Obtain data continuously over assay windows that stretch from seconds to days.

– Fast: Read a 96-well plate in just 7 seconds. Simultaneously monitor up to six plates, without scheduling conflicts.

– Easy workflow: Simply plate cells and begin monitoring. With the eSight, combine the label-free xCELLigence technology with live cell imaging in one experiment.

– Broad applications: Suitable for many different cellular analysis applications with excellent accuracy and reproducibility.

Agilent Real-Time Cell Analysis Instruments – Discover What You've Been Missing Between Endpoints.

RTCA S16

- 1 × 16-well format is suited for assay development and optimization.
- Compatible with E-Plate 16, E-Plate VIEW 16, and E-Plate 16 PET.
- RTCA Software Lite is designed for RTCA S16 and provides predefined assay templates for easy experimental setup.

RTCA DP (dual purpose)

- 3 × 16-well format: Run up to three 16-well plates simultaneously or independently to maximize productivity.
- Cell invasion and migration: Measures cell number, size, morphology, and attachment properties, with the ability to perform kinetic analysis of cell invasion/migration (CIM).
- Versatile: Choose from three types of 16-well plates: E-Plate 16, E-Plate VIEW 16, or CIM-plate 16.

RTCA SP (single plate)

- 1 × 96-well format
- Rapid measurement: Average read time is approximately 7 seconds for a 96-well plate.
- Compact design: Station fits conveniently in regular cell culture incubator.
- Intuitive software: Set up and customize assay protocols quickly and easily.

RTCA MP (multiple plates)

- 6 × 96-well format: Run up to six 96-well plates simultaneously or independently to maximize productivity.
- Integrated data analysis tools facilitate processing large amounts of real-time data. These include diverse plot types and the calculation of parameters, such as IC50 or KT50.

Assays	RTCA S16	RTCA DP	RTCA SP	RTCA MP
Cell characterization/QC	✓	✓	✓	✓
Immunotherapy/cell killing	✓	✓	✓	✓
Adhesion	✓	✓	✓	✓
Receptor signaling	✓	✓	✓	✓
Cell invasion/migration		✓		
Cardiotoxicity				
Extracellular recording				
Live cell imaging				

Specs				
Format	1 × 16 wells	3 × 16 wells	1 × 96 wells	6 × 96 wells
Maximum throughput	16 wells	48 wells	96 wells	576 wells

RTCA HT
(high throughput)

- 384-well format: Up to four instruments can be integrated and controlled by a single control unit, a total of 1536 wells.
- Automated screening: Automate your high-throughput workflow using a liquid handler for fully automated screening applications.

RTCA Cardio

- Cardiomyocyte contractility and viability: Monitor cardiomyocyte beating in real-time for cardiotoxicity assessment.
- Physiologically relevant: No labels are needed for studying stem cell-derived, induced pluripotent stem cell (iPSC)-derived, or primary cardiomyocytes.

RTCA CardioECR

- Cardiomyocyte contractility, viability, field potential, and pacing: All the functionalities of the RTCA Cardio instrument are present with the added capacity to measure extracellular field potential and perform cardiomyocyte pacing. Pacing protocols can be used to functionally mature cardiomyocytes, a useful tool when screening inotropic compounds.
- Versatile: Monitor cells over both short and long durations, allowing for assessment of structural cardiotoxicity.

RTCA eSight

- 3 × 96-well format with impedance, 5 × 96-well format with imaging.
- Rapid measurement: Read a 96-well plate in 15 seconds with the xCELLigence biosensor technology, and image an entire 96-well plate in 6 minutes.
- Imaging platform supports three fluorescence channels, a plethora of well plate formats, an array of reporter reagents, and flexible user-defined schedules.

Assays	RTCA HT	RTCA Cardio	RTCA CardioECR	RTCA eSight
Cell characterization/QC	✓	✓	✓	✓
Immunotherapy/cell killing	✓	✓	✓	✓
Adhesion	✓	✓	✓	✓
Receptor signaling	✓	✓	✓	✓
Cell invasion/migration				
Cardiotoxicity		✓	✓	
Extracellular recording			✓	
Live cell imaging				✓

| Specs				
Format	1 × 384 wells	1 × 96 wells	1 × 48 wells	3 x 96 wells impedance 5 x 96 wells imaging
Maximum throughput	384 wells	96 wells	48 wells	288 wells impedance up to 480 wells total for imaging

Technology Behind xCELLigence RTCA

Noninvasive and label-free cell monitoring

The xCELLigence technology uses proprietary microplates (E-Plates) embedded with gold biosensors at the bottom of each well, which noninvasively quantify cell behavior. Over the course of an experiment, the biosensors monitor cell metrics such as proliferation, adhesion, morphology, migration, differentiation and more through the electric impedance measurement.
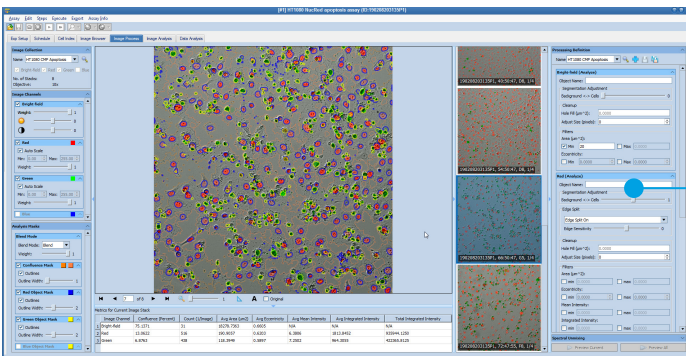
Single setup for dual measurements with the eSight

Live cell imaging and real-time biosensor measurements are performed on the same cell populations to provide rich information about cell behavior. Place the plates in the incubator, set up real-time data acquisition and analysis parameters, then let the xCELLigence do the work.
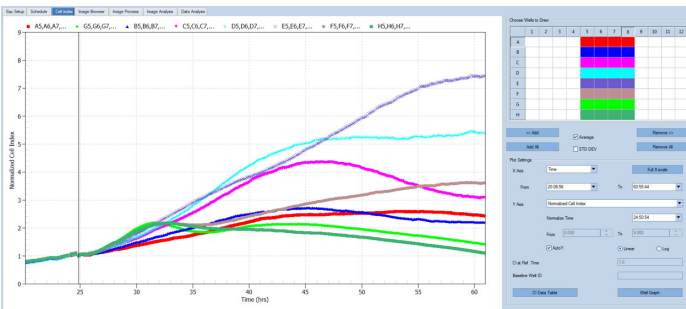
Compatible with a wide range of cell based assays

Dynamic changes in cell number, cell size, cell barrier function, and cell-substrate attachment quality are influenced by a large number of biochemical pathways. Agilent xCELLigence can be used for dozens of different applications, including:

- Immune cell killing
- Cell invasion and migration
- Cardiotoxicity testing
- Drug discovery/development

- Receptor signaling
- Virus cytopathic effects
- Biofilm dynamics
- Cell-cell interactions

E-Plates for xCELLigence

E-Plate

Gold biosensors enable dynamic monitoring in a label-free manner

E-Plates are single use, disposable devices used for performing cell-based assays on the xCELLigence instruments. Plate dimensions and well spacing are similar to industry standards. As seen Figure 1, the gold biosensors cover approximately 80% of the well bottom. This design enables large populations of cells to be monitored simultaneously, providing sensitivity to dynamic changes in the physical properties of the cells.
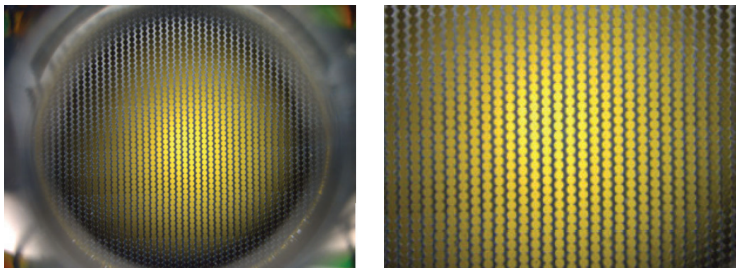
Figure 1. Left: View looking down into an E-Plate well. Right: Zoomed in view of E-Plate biosensors.
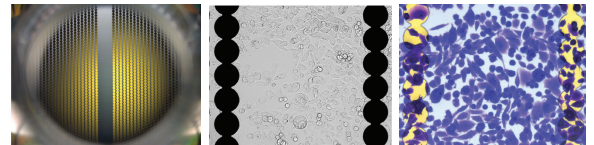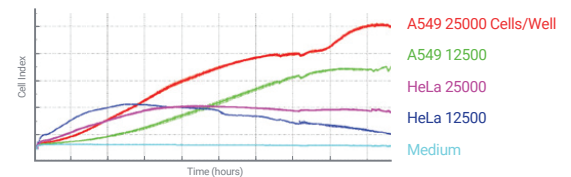
E-Plate VIEW

Visualize cellular changes

Combine biosensor-based monitoring of cell behavior with visual inspection in a single plate. The sensor-free window makes it possible to correlate the biosensor signal with changes in physical parameters, such as cell number or size.
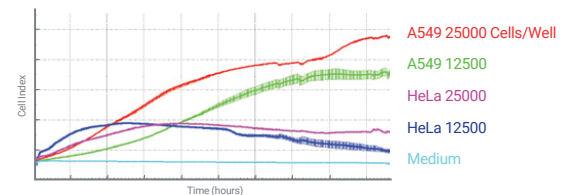

Figure 2. Left: View looking down into an E-Plate VIEW well. Center and right: Views of cells within the biosensor-free region.

E-Plate PET

Same performance, lower cost

In standard E-Plates, the gold biosensors are integrated into glass-bottomed wells. As an alternative to glass, polyethylene terephthalate (PET) plates are also available. While cell adhesion to, and proliferation on, PET is similar to glass (see Figure 3), some cell types display a preference for one substrate over the other. The availability of both plate types enables optimization during xCELLigence assay development.

E-Plate L8 PET

A549 25000 Cells/Well
A549 12500
HeLa 25000
HeLa 12500
Medium

E-Plate L8

A549 25000 Cells/Well
A549 12500
HeLa 25000
HeLa 12500
Medium

Figure 3. Cell proliferation in standard glass vs. PET E-Plates.

CIM-plates

Monitor cell invasion and migration in real time

Cell Invasion and Migration plates (CIM-plate; used exclusively with the xCELLigence RTCA DP system) contain electronically integrated Boyden chambers that provide quantitative kinetic data for migration and invasion. The data is delivered in real time without the use of labels, and requires minimal hands-on time from the researcher.

As cells move from the upper chamber towards chemoattractant in the lower chamber, they pass through a membrane containing 8 µm pores and adhere to gold biosensors. The resulting change in signal perfectly correlates with the number of cells attached to these electrodes, enabling easy collection of highly reproducible data over time.
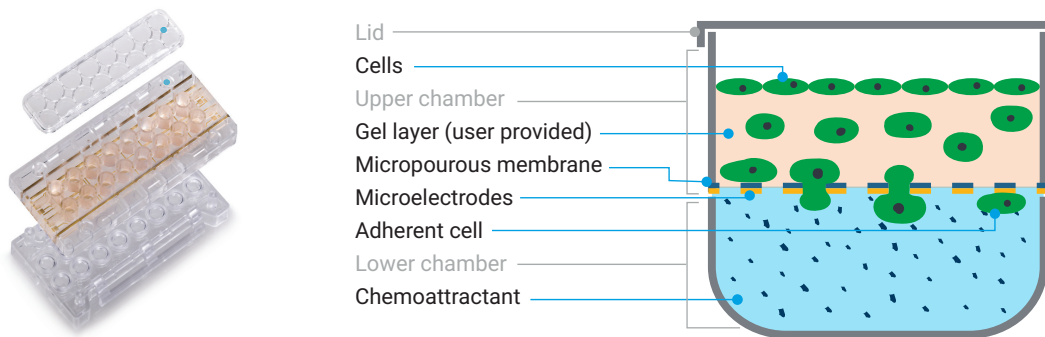
Lid
Cells
Upper chamber
Gel layer (user provided)
Micropourous membrane
Microelectrodes
Adherent cell
Lower chamber
Chemoattractant

Figure 4. Left: Components of the CIM-plate. Right: Schematic of an invasion assay.

E-Plate inserts

Coculture to easily measure indirect interactions between cells

The E-Plate Insert enables investigation of specific cell-cell interactions in real time, while maintaining the cells in separate compartments. Coculture different cell types under physiological conditions for a broad range of applications.

- Easily add compounds or replace media during an experiment using an access port in the E-Plate Insert.
- Perform real-time coculture experiments under physiological conditions.
- The 16-well E-Plate Insert is compatible with multiple E-Plate formats.

Table 1. Instrument bundle (complete system) includes an analyzer, station, and control unit for each product line.

Instruments - System Bundle	Part No.
Bundle - SP	00380601030
Bundle - MP	00380601040
Bundle - DP	00380601050
Bundle - HT	00380601070
Bundle - Cardio	00380601060
Bundle - CardioECR	00380601210
Bundle - eSight	00380601600

Table 2. xCELLigence E-Plates and accessories

Consumables	Part No.
E-Plate 16 (1 × 6 plates)	05469830001
E-Plate 16 (6 × 6 plates)	05469813001
E-Plate VIEW 16 (1 × 6 plates)	06324738001
E-Plate VIEW 16 (6 × 6 plates)	06324746001
E-Plate VIEW 16 PET (1 × 6 plates)	00300600890
E-Plate VIEW 16 PET (6 × 6 plates)	00300600880
E-Plate Insert 16 (6 × 16 well inserts)	06465382001
E-Plate 96 (1 × 6 plates)	05232368001
E-Plate 96 (6 × 6 plates)	05232376001
E-Plate VIEW 96 (1 × 6 plates)	06472451001
E-Plate VIEW 96 (6 × 6 plates)	06472460001
E-Plate VIEW 96 PET (1 × 6 plates)	00300600910
E-Plate VIEW 96 PET (6 × 6 plates)	00300600900
E-Plate insert 96 (36 × 16 well inserts)	06465412001
E-Plate insert 96 accessories (6 receiver plates and lids)	06465455001
E-Plate 384 (2 × 5 plates)	05867681001
E-Plate 384 (8 × 5 plates)	05867673001
RTCA CIM-plate 16 (1 × 6 plates)	05665817001
RTCA CIM-plate 16 (6 × 6 plates)	05665825001
E-Plate Cardio 96 (1 × 6 plates)	06417051001
E-Plate Cardio 96 (6 × 6 plates)	06417035001
E-Plate CardioECR 48 (1 × 6 plates)	00300600940
E-Plate CardioECR 48 (6 × 6 plates)	00300600950

# Agilent xCELLigence RTCA Cardio System

For preclinical cardiac safety assessment and functional monitoring of cardiomyocyte contraction

The Agilent xCELLigence real-time cell analysis (RTCA) Cardio system provides a powerful means of monitoring cells in real time, without the potential artifacts generated by using labels. The noninvasive measurement of cellular impedance enables detection of changes in cell adherence, morphology, and viability without the need for overexpression of reporter and target proteins. This provides highly physiologically relevant data throughout the course of the experiment.

The xCELLigence RTCA Cardio system enables continuous label-free measurement of cardiomyocyte function, and provides predictive information about cardiac safety during drug development by measuring cardiomyocyte beating under physiological conditions. This technology provides high throughput and a quantitative, predictive assay system for early cardiac liability detection of drug candidates in a 96-well format.

Obtain physiologically relevant data:

– Measure cardiomyocyte beating in real time using a high-throughput, 96-well plate format.

– Use stem cell derived, induced pluripotent stem (iPS) cell derived, or primary cardiomyocytes.

– Noninvasively monitor short-term (ms) and long-term (days and weeks) cell responses.

– Obtain beat rate and amplitude with rapid data acquisition (12.9 ms update rate/plate).

– Achieve optimal cell culture conditions by placing the RTCA Cardio station and Agilent E-Plate into a standard CO_2 incubator experiment.
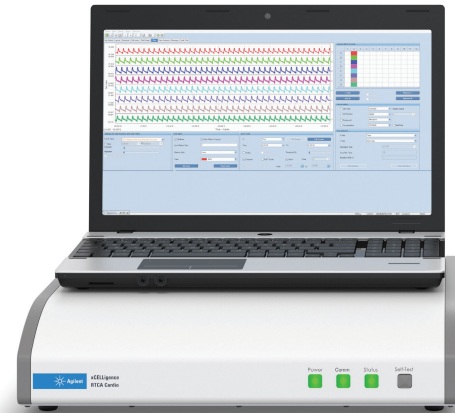
RTCA Cardio Station	
Dimensions	28.0 cm × 34.0 cm × 16.0 cm (W × D × H)
Weight	<10.0 kg
Electrical input	+5 V, −5 V, 5 W max
Electrical switch resistance	2 to 5 Ω
Electrical interface	Handling one E-Plate Cardio 96
Communication	LVDS in parallel
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation
Status indicators	Power and devices status

E-Plate Cardio 96	
Footprint	Compliance with ANSI/SBS 1-2004 requirements
Dimensions	12.77 cm × 8.55 cm × 1.75 cm (W × D × H) (with plate cover)
Spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard for 96-well microplates
Volume	243 ±5 µL
Bottom diameter	5.0 ±0.05 mm
Electronic interface	Interface with the RTCA Cardio station
Sensor impedance	17 ±5 Ω at 10 kHz, when measured with a 1x PBS solution, UV irradated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

RTCA Cardio Control Unit
Laptop computer with preinstalled RTCA Cardio software
User-friendly graphical user interface (GUI)
≥160 GB hard disk drive
≥2 GB RAM

RTCA Cardio Analyzer	
Dimensions	40.0 cm × 40.0 cm × 9.2 cm (W × D × H)
Weight	<8.0 kg
Electrical input	100 − 250 VAC, 50/60 Hz, 25 W max
Output test signal	22 mV rms ±20% with max. 5 mV DC offset at 10 kHz
Impedance measurement speed	Maximum 12.9 ms for 96 wells
Impedance measurement accuracy	±1.5% at 1 Ω
Impedance measurement repeatability	0.8%
Impedance dynamic range	20 Ω to 2 kΩ
Communication	USB 2.0
Environment	Temperature: +15 to +32 °C, relative humidity: 80% max, up to +32 °C without condensation
Status indicators	Power, communications, and analyzer status, analyzer self-test button

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Trusted Answers

Agilent xCELLigence RTCA CardioECR System

Simultaneously measure cardiomyocyte contractile and electrical activities to predict cardiotoxicity with confidence

The Agilent xCELLigence real-time cell analysis (RTCA) systems provide a unique and powerful means to monitor cells in real time without the potential artifacts generated by using labels. The noninvasive measurement of cellular impedance enables detection of changes in cell adherence, morphology, and viability without the need for overexpression of reporter and target proteins. This provides physiologically relevant data throughout the entire time course of the experiment.

The xCELLigence RTCA CardioECR is the second-generation cardio-specific system from Agilent. The CardioECR system combines impedance and multi-electrode array (MEA) technology, along with a pacing function, to simultaneously assess cardiomyocyte contractility, viability, and electrophysiology. Similar to all xCELLigence product lines, the CardioECR system is designed to be placed in a standard tissue culture incubator with physiological temperature, CO_2 levels, and humidity controls, allowing better regulated assays with short-term and long-term measurements in real time. This technology provides a quantitative and predictive assay system for early detection of the cardiac liability of drug candidates in a 48-well format.

Obtain physiologically relevant data:

- Simultaneously measure cardiomyocyte contractile and electrical activities in a 48-well plate format.

- Use stem cell-derived induced pluripotent stem (iPS) cell-derived or primary cardiomyocytes.

- Noninvasively monitor short-term (ms) and long-term (days and weeks) cell responses.

- Obtain beat rate and amplitude with rapid data acquisition (1 to 2 ms rate/plate).

- Capture electrical activity (field potential reading) at a high sampling rate (10 kHz).

- Achieve optimal cell culture conditions by placing the Agilent RTCA CardioECR station and Agilent E-Plate into a standard CO_2 incubator.

RTCA CardioECR Station	
Dimensions	30.0 cm × 37.5 cm × 14.0 cm (W × D × H)
Weight	<10 kg
Electrical input	+6 VDC, 1.5 W max
FP band-pass filter	1 Hz to 4.5 kHz
Stimulation voltage range	−2.5 to +2.5 V
Stimulation time resolution	10 µs
Electrical interface	Handling one E-Plate CardioECR 48
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation
Status indicators	Power and devices status

E-Plate Cardio 48	
Footprint	Compliance with ANSI/SBS 1-2004 requirements
Dimensions	12.77 cm × 8.55 cm × 1.77 cm (W × D × H) (with plate cover)
Spacing	9 mm center-to-center, as per the ANSI/SBS 4-2004 standard for 96-well microplates. Spacing of the wells between columns is 18 mm center-to-center.
Volume	243 ±10 µL
Bottom diameter	5.0 ±0.075 mm
Electronic interface	Interface with the RTCA CardioECR station
Sensor impedance	49 ±12 Ω at 10 kHz, when measured with a 1x PBS solution
Material	Biocompatible surfaces, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

Agilent xCELLigence RTCA DP System

For label-free, real-time cellular analysis

Introduction

The Agilent xCELLigence real-time cell analysis (RTCA) dual purpose (DP) system provides a unique and powerful means to monitor cells in real time without the potential artifacts generated by using labels. This noninvasive measurement allows detection of changes in adherence, morphology, and viability without needing to overexpress reporter and target proteins. This provides highly physiologically relevant data throughout the experiment.

The Agilent xCELLigence E-Plate features an innovative biosensor configuration that covers 80% of each well bottom surface area. The real-time measurement of impedance across the biosensors provides sensitive immediate detection of the cellular condition and response. This enables a wide array of potential applications including (but not limited to):

- Cell proliferation
- Cell quality
- Compound-mediated cytotoxicity
- Cell-mediated cytotoxicity
- Cell adhesion and spreading
- Functional monitoring of receptor tyrosine kinase and GPCR signaling
- Cell-mediated cytolysis
- Barrier function
- Viral quantification

The Agilent xCELLigence CIM-Plate is a modified Boyden chamber design comprised of a disposable top and bottom chamber featuring the same innovative microelectrode configuration on the bottom of a microporous polyethylene terephthalate (PET) membrane. The median pore size of this membrane is 8 μm. The design and real-time measurement allow for precise, quantitative, and dynamic information for applications in cell invasion and migration.

E-Plate 16	
Dimensions	4.0 cm × 8.7 cm × 1.96 cm (W × D × H, with cover)
Well spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard
Well volume	270 ±10 μL
Well bottom diameter	5.0 ±0.075 mm
Electrical interface	Compatible with RTCA DP analyzer
Sensor impedance	17 ±5 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	Polystyrene well plate, glass sensor substrate, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

E-Plate VIEW 16	
All E-Plate 16 specifications apply	
Viewing window	Four center electrodes removed to aid in microscopy (~400 μm width)

CIM-Plate 16	
Dimensions	4.0 cm × 8.7 cm × 2.6 cm (W × D × H, assembled, with cover)
Well spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard
Upper well volume	180 ±5 μL
Lower well volume	162 ±3 μL
Membrane	PET membrane with 8 μm pore size
Well bottom diameter	5.0 ±0.075 mm
Electrical interface	Compatible with RTCA DP analyzer
Sensor impedance	24 ±8 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	PET well plate, PET membrane sensor substrate UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

RTCA DP Analyzer	
Electrical input	+5 VDC, 1 W max.
Electronic switch resistance	2 to 5 Ω
Electronic interface	Handling three E-Plate 16 devices or three CIM-Plate devices
Communication	USB 2.0
Environment	Temperature: +20 to +40 °C, relative humidity: 98% max noncondensing
Output test signal	22 mV rms ±(2% +5 mVrms) at 10, 25, and 50 kHz
Impedance measure accuracy	±(1% + 1.5 Ω)
Impedance measurement repeatability	0.8%
Impedance dynamic range	10 to 5,000 Ω
Status indicators	Analyzer status

RTCA DP Control Unit
Computer with pre-installed RTCA software
User-friendly graphical user interface (GUI)
≥500 GB hard disk drive
≥4 GB RAM
≥256 MB graphics device

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xCELLigence® RTCA *ePacer*

An innovative solution for maturing human iPSC Cardiomyocytes into a more predictive model for drug discovery, safety pharmacology, and cardiac disease research

TUNABLE

The *ePacer* enables precise control of the beating rate over different time durations, improving the functionality of hiPSC Cardiomyocytes and their response to inotropic compounds
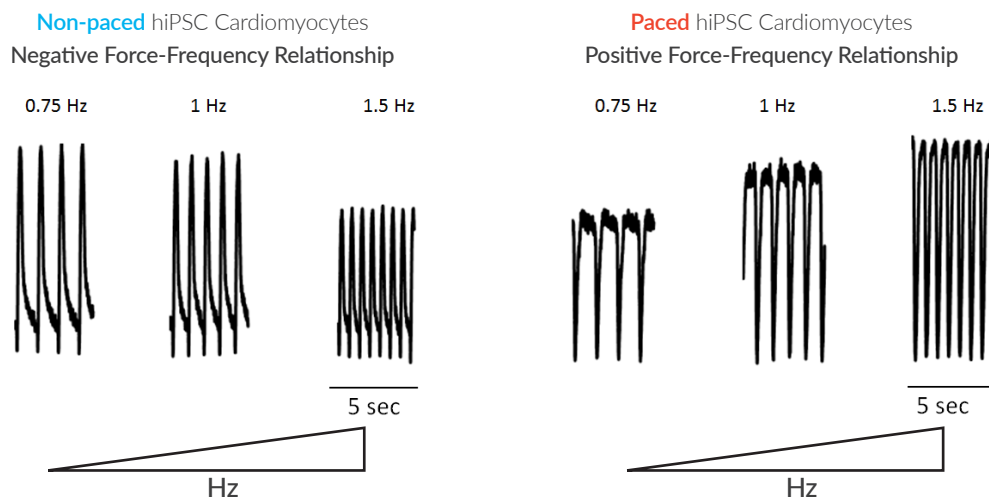
SCALABLE

Simultaneously pace your cells from just a few wells up to 6 microtiter plates for more high-throughput experiments

CONSISTENT

Highly controlled pacing conditions result in consistent data across different plates and different experiments

FLEXIBLE

Compatible with different types of relevant workflows, such as calcium measurements, high content microscopy, voltage sensitive dyes, and plate readers.

Non-paced hiPSC Cardiomyocytes
Negative Force-Frequency Relationship

0.75 Hz   1 Hz   1.5 Hz

5 sec

Hz

Paced hiPSC Cardiomyocytes
Positive Force-Frequency Relationship

0.75 Hz   1 Hz   1.5 Hz

5 sec

Hz

Figure 1: hiPSC cardiomyocytes display a negative force-frequency relationship (left panel) which is reversed by long-term electrical pacing using the *ePacer* (right panel)

Functional Maturation

The xCELLigence RTCA e*Pacer* provides an easy and effective way to produce functionally mature hiPSC cardiomyocytes. Under precise and consistent electrical pacing conditions, the e*Pacer* improves the maturation status of the hiPSC cardiomyocytes in just 2-3 weeks, without any detectable toxicity or stress to the cells.
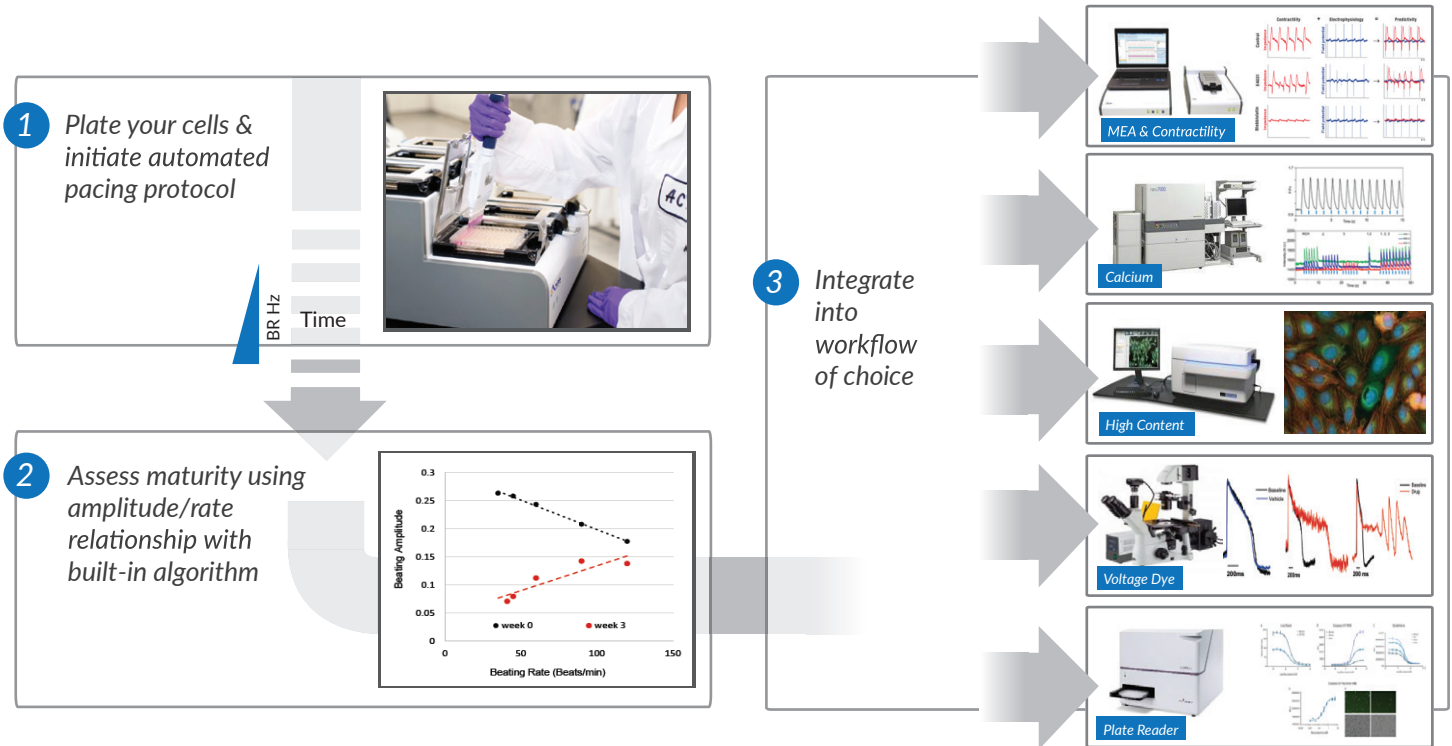

A. Functional properties
1) **Reverse** force-frequency relationship
2) Positive Responses to positive inotropes

B. Structure

C. Gene expression
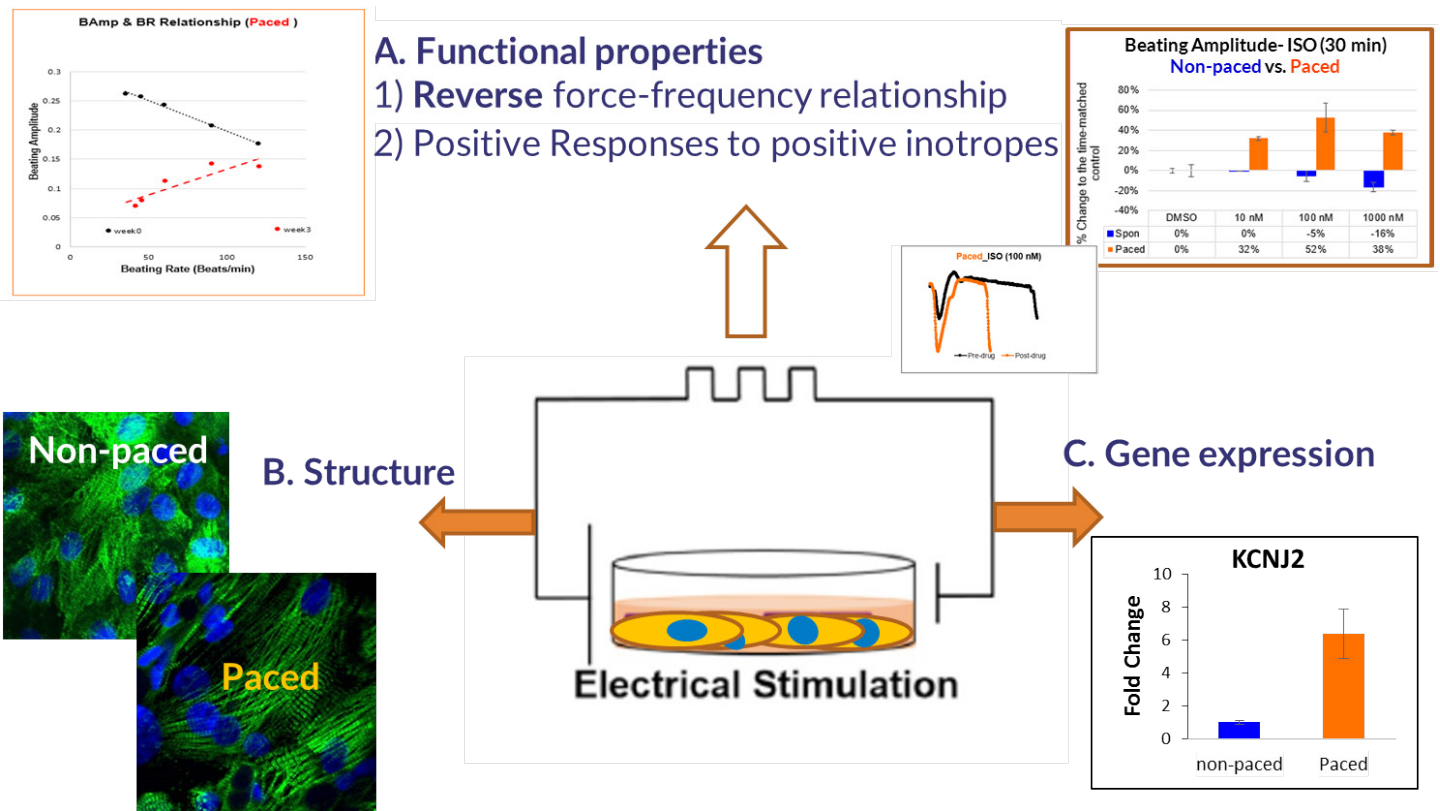
Figure 2: After being subjected to directed progressive electrical pacing using the xCELLigence RTCA e*Pacer*, the hiPSC cardiomyocytes were able to demonstrate A. positive force-frequency relationship and appropriate contractile responses to inotropes; B. significantly improved organized sarcomere structure; and C. proper gene expression.
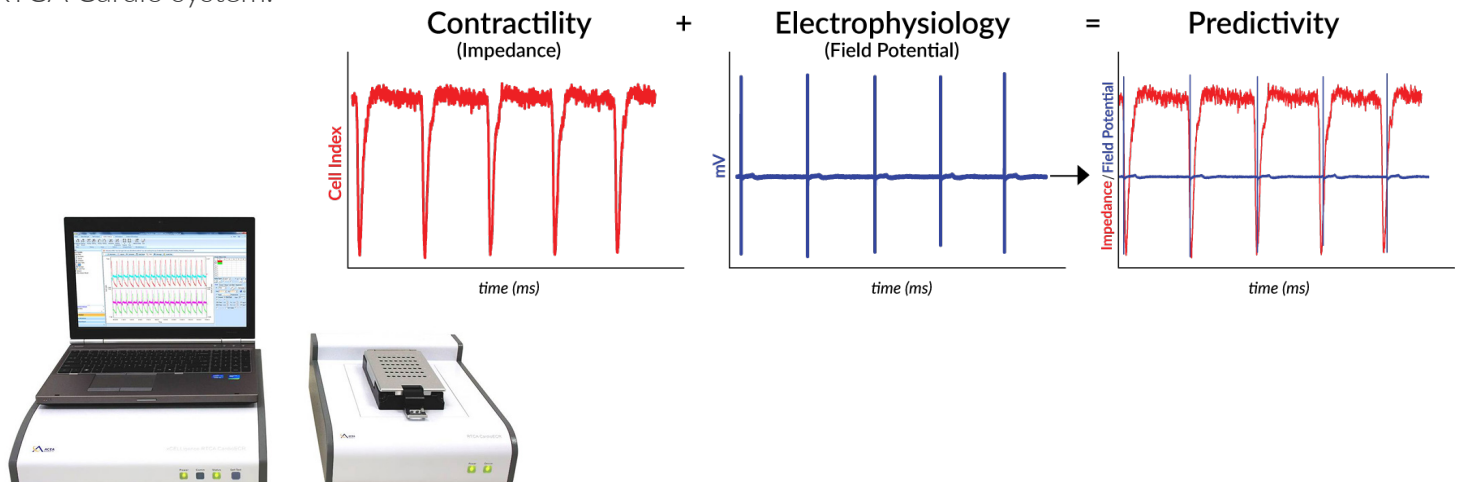
Integrate into Your Existing Workflow

The xCELLigence RTCA e*Pacer* is adaptable and can easily integrate into your existing assay workflow. The view area on the E-Plate Cardio View 96 allows for integration of paced cells with other optical assays.

1 *Plate your cells & initiate automated pacing protocol*

BR Hz   Time

2 *Assess maturity using amplitude/rate relationship with built-in algorithm*

3 *Integrate into workflow of choice*

MEA & Contractility

Calcium

High Content

Voltage Dye

Plate Reader

MEA & Contractility

After being subjected to long-term electrical pacing on the xCELLigence RTCA e*Pacer*, contractile and electrical responses of the hiPSC cardiomyocytes can be assessed using the xCELLigence RTCA CardioECR system; alternatively, the contractile responses can be evaluated using the xCELLigence RTCA Cardio system.

Contractility   +   **Electrophysiology**   =   **Predictivity**
(Impedance)   (Field Potential)

time (ms)   time (ms)   time (ms)

Calcium Transient Measurements

After long-term electrical pacing using the xCELLigence RTCA *ePacer*, iCell® Cardiomyocytes[2] were preincubated with Ca^{2+} dye and buffer for 1 hour. The Ca^{2+} signals were then measured using the Hamamatsu FDSS/µCELL before and after DMSO and ISO addition.
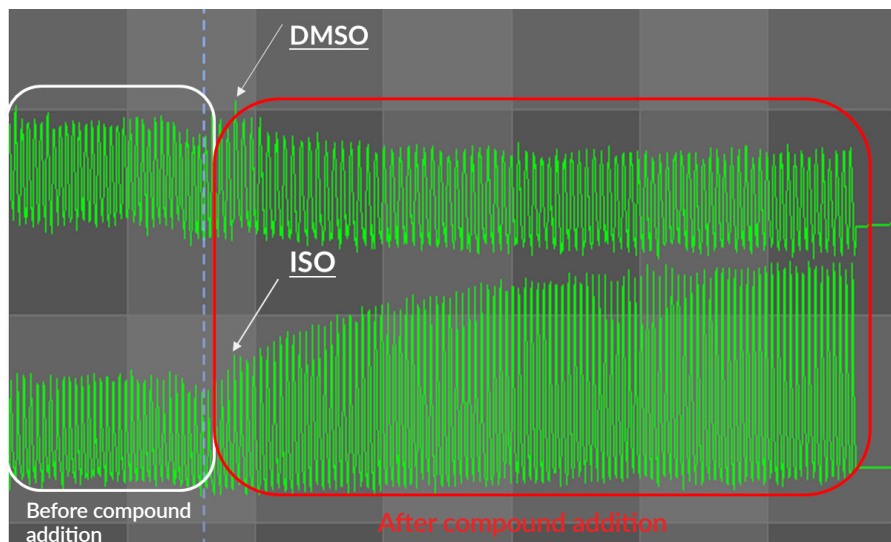
High-Content Imaging

After being subjected to a long-term electrical pacing using the xCELLigence RTCA *ePacer*, iCell Cardiomyocytes[2] were immunostained for cardiac troponin C (green) and nuclei (blue) right on the E-Plate® Cardio VIEW 96. The image (20X) was obtained using ImageXpress® Micro confocal.
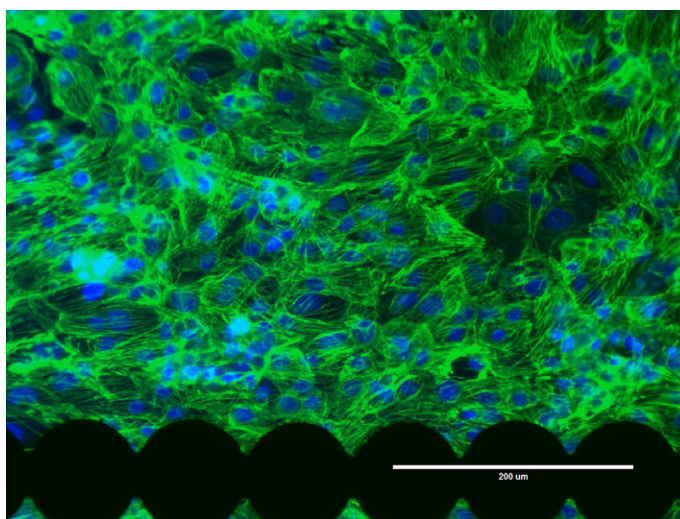
Ordering Info

Product	Cat. No.
xCELLigence RTCA ePacer – Bundle (complete system)	
xCELLigence RTCA ePacer Analyzer	00380601520
ePacer Station with 6 Cardio Cradles	00380601530
ePacer Station with 6 CardioECR Cradles	00380601540
ePacer Station with 3 Cardio Cradles and 3 CardioECR Cradles	00380601550
ePacer Station-Customer Configuration	00380601560
E-Plate Cardio 96 (6 plates)	00300601050
E-Plate Cardio 96 (36 plates)	00300601060
E-Plate Cardio View 96 (6 plates)	00300601080
E-Plate Cardio View 96 (36 plates)	00300601090
E-Plate CardioECR 48 (6 Plates)	00300601110
E-Plate CardioECR 48 (36 Plates)	00300601120

The Power of Live Cell Imaging now combined with

Introducing the xCELLigence RTCA eSight™

xCELLigence RTCA eSight
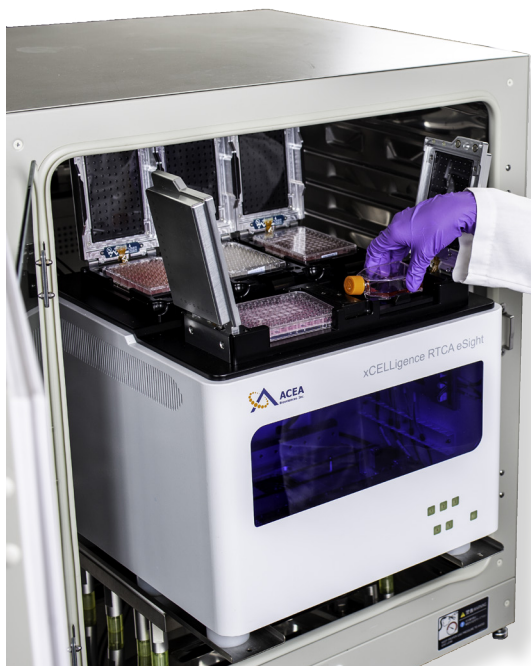
EXCEPTIONAL VERSATILITY: Providing label-free, real-time biosensor measurements and kinetic imaging of the same live cell populations, independently or simultaneously.

GENERATE PHYSIOLOGICALLY RELEVANT DATA: Easily monitor cell health, adhesion, morphology, proliferation and cytolysis in primary or native cells alone or in co-culture, providing unprecedented insight into cellular mechanisms and functionality.

MORE IN LIVE CELL IMAGING: The imaging platform supports 3 fluorescence channels, a plethora of well plate formats, an array of reporter reagents, and flexible user-defined schedules.

VERY FAST: Can read a 96 well plate in 15 seconds with the xCELLigence biosensor technology, and image an entire 96 well plate in 6 minutes.

Two Complementary Modalities, One Experiment, Easy Workflow

### Single Set Up For Dual Measurements
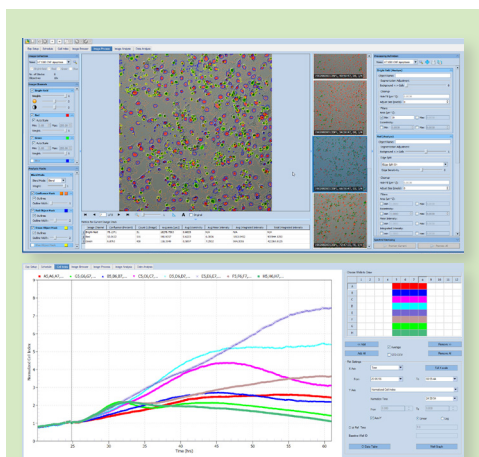
Live cell imaging and real-time biosensor measurement are performed on the same cell populations to provide incisive information on cell behavior. Place plates in incubator, set up real-time data acquisition & analysis parameters, then walk away.

Multi-modal Data Acquisition

27hr   38hr   58hr

Camptothecin-induced apoptosis of HT1080
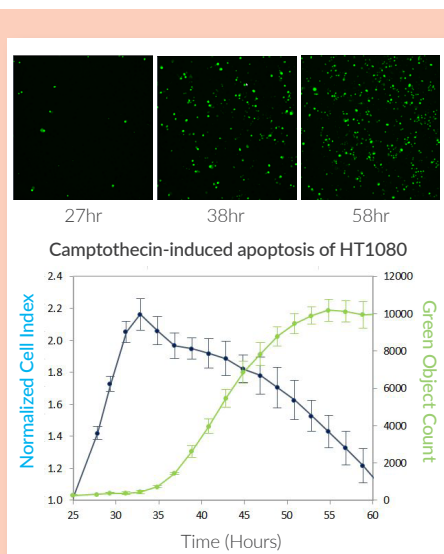
Automatically acquires biosensor signal and images over time. Powerful software integrates two data types in one temporal display.

Information Rich & Powerful Analysis

Fluorescent Image Processing

KT_{50}

% Cytolysis

IC_{50}

IC50 = 4.38 x 10^{-8}
R^2 = 0.9833
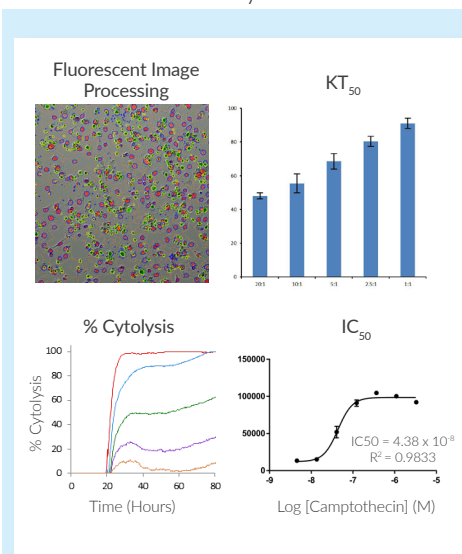
Cell analysis can be displayed and exported in diverse formats, such as fluorescent images, KT_{50} (time to reach 50% cytolysis at a given E:T ratio), % Cytolysis dose response, or IC_{50} dose response curves.

the Sensitivity of xCELLigence Biosensor Technology

Functionality Overview

The xCELLigence technology utilizes proprietary microtiter plates (E-Plates®) embedded with gold biosensors at the bottom of each well, which serve to non-invasively quantify cell behavior. Over the course of an experiment, the biosensors monitor cell metrics such as proliferation, adhesion, morphology, migration, differentiation and much more. The measurement is exceptionally fast and provides exquisite temporal resolution so that all relevant responses can be measured in seconds, minutes, hours, and days. In concert with the biosensor measurements, cell images can be captured in real-time, thereby providing a spatial and temporal dynamic view of the cell populations and validating time-dependent cell health and behavior at an unprecedented level of details for any cell based assay.

Broad Applications

The streamlined workflow, high reproducibility, and quantitative kinetics of the eSight system makes it ideal for a wide range of cell-based assays such as proliferation, cytotoxicity and apoptosis. The example below illustrates the monitoring of immune cell-mediated killing of cancer target cells in real-time. MCF7 breast cancer cells were transfected with a lentivirus expressing a red fluorescent protein (eLenti Red, Cat# 8711011), seeded on an E-Plate for 25 hours, and then treated with NK92 cells at different Effector:Target (E:T) ratios.
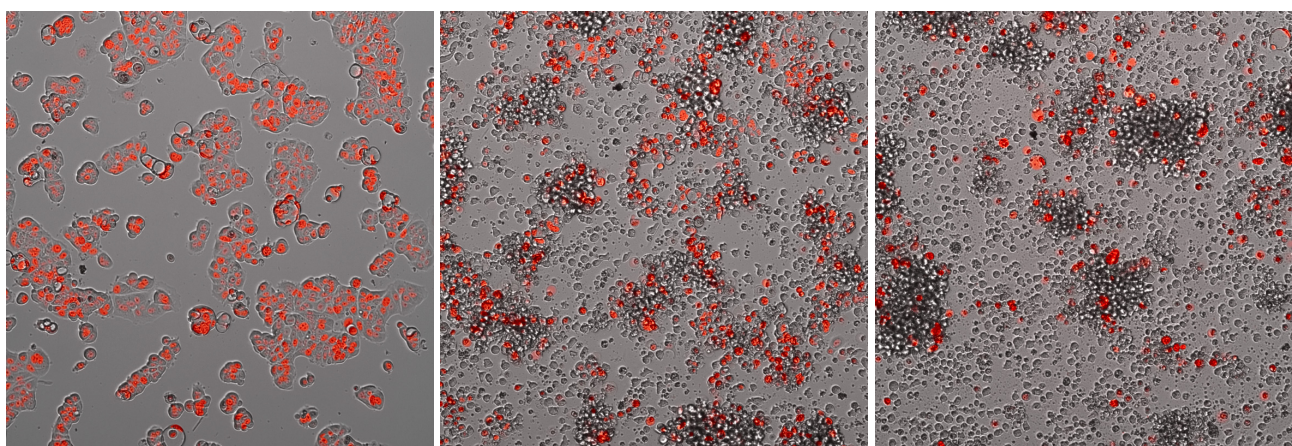
Images taken before (left), or 12hr (center) and 30hr (right) after NK92 effector cells addition at an E:T ratio of 2.5:1 allow visualization of target cell (red) death over time.
.
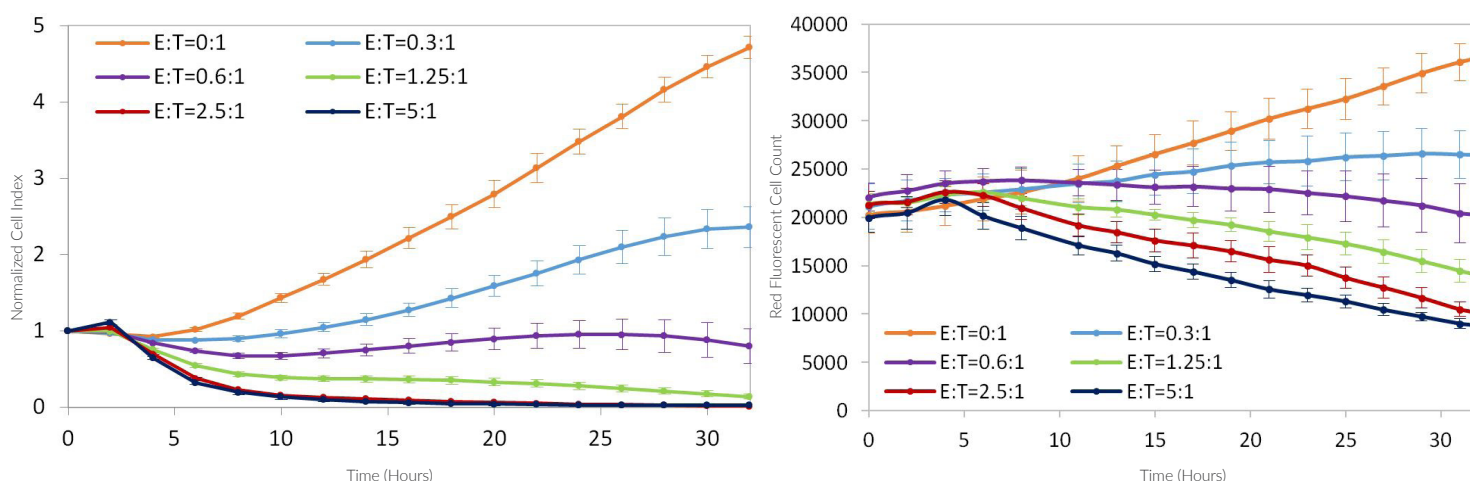
Effectors addition causes cancer cell death in a E:T ratio-dependent manner as shown by biosensor (left) and imaging (right) measurements. Red fluorescent cell count indicates number of living target cells.

Ordering Information

Instruments - Bundled Product	Description	Cat. No.
xCELLigence RTCA eSight Instrument Bundle	xCELLigence RTCA eSight Instrument xCELLigence RTCA eSight Control Unit (desktop; software pre-installed) & Monitor	00380601600
xCELLigence RTCA eSight Instrument E-Plate Biosensor Module Only Bundle	xCELLigence RTCA eSight Instrument E-Plate Biosensor Module Only xCELLigence RTCA eSight Control Unit (desktop; software pre-installed) & Monitor	00380601610

Reagents	Description	Cat. No.
eLive Green	Live cell labeling reagent. 50µl/vial	8711003
eLive Red	Live cell labeling reagent. 50µl/vial	8711004
eCaspase-3 NucView® 488	Apoptotic cell labeling reagent. 20µl/vial	8711005
eAnnexin V Green	Apoptotic cell labeling reagent. 5µg/vial lyophilized	8711006
eAnnexin V Red	Apoptotic cell labeling reagent. 5µg/vial lyophilized	8711007
eTox Green	Dead cell labeling reagent. 10µl/vial (4-pack)	8711008
eTox Red	Dead cell labeling reagent. 10µl/vial (4-pack)	8711009
eLenti Green	Green Lentivirus (EF1α promoter, puromycin selection, nucleus-localized fluorescence)	8711010
eLenti Red	Red Lentivirus (EF1α promoter, puromycin selection, nucleus-localized fluorescence)	8711011
eLenti Blue	Blue Lentivirus (EF1α promoter, puromycin selection, nucleus-localized fluorescence)	8711012

Agilent xCELLigence RTCA HT System

Label-free, real-time cellular analysis for high-throughput screening applications

Introduction

Agilent xCELLigence technology is now available for high-throughput screening using modular 384-well plate stations designed for use on robotic platforms. Up to four 384-well plate stations can be used in parallel for increased throughput and flexibility.

The Agilent xCELLigence real-time cell analysis (RTCA) high throughput (HT) system provides a unique and powerful means to monitor cells in real time without the potential artifacts generated by using labels. The noninvasive measurement of cellular impedance enables detection of changes in cell adherence, morphology, and viability without the need for over-expression of reporter and target proteins. This provides highly physiologically relevant data throughout the experiment.

The Agilent xCELLigence E-Plate 384 features an innovative biosensor configuration that covers 80% of each well bottom surface area. Real-time measurement of impedance across these biosensors provides sensitive detection of cell health and behavior from low cell numbers to confluency. This enables a wide array of potential applications including (but not limited to):

- Functional monitoring of GPCR and receptor tyrosine kinase signaling

- Cell proliferation

- Cell quality

- Compound-mediated cytotoxicity

- Cell-mediated cytotoxicity

- Cell adhesion and spreading

RTCA HT Station	
Dimensions	16.5 cm × 24.0 cm × 13.5 cm (W × D × H)
Weight	<10.0 kg
Electrical input	+5V, -5V, +12V, 15 W max
Electrical switch resistance	7 to 12 Ω
Electrical interface	Handling one Agilent E-Plate 384 device
Communication	RS-232 serial communications at a band rate of 57,600 bits/second
Environment	Temperature: +15 to +32 °C, relative humidity: 80% max. up to +32 °C, without condensation
Status indicators	Single LED for system, heater, and motor status

E-Plate 384	
Footprint	Compliance with ANSI/SBS 1-2004 requirements
Dimensions	12.77 cm × 8.55 cm × 1.75 cm (W × D × H, with plate cover)
Spacing	The spacing of the wells is 4.5 mm center-to-center as per the ANSI/SBS 4-2004 standard for 384-well microplates
Volume	95 ±5 µL
Bottom dimension	(2.5 ±0.1 mm) × (2.5 ±0.1 mm)
Electronic interface	Interface with RTCA HT station
Sensor impedance	112 ±22 Ω at 10 kHz, when measured with a 1x PBS solution
Material	Biocompatible surfaces, gamma irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% max. without condensation

RTCA HT Analyzer	
Dimensions	45.0 cm × 45.0 cm × 11.0 cm (W × D × H)
Weight	<13.6 kg
Electrical input	100 to 250 VAC, 50 to 60 Hz, 80 W max
Output test signal	22mV rms ± 20% with max. 5 mV DC offset at 10, 25, and 50 kHz
Impedance measurement accuracy	±(1.5% at 1 Ω)
Impedance measurement repeatability	0.8%
Impedance dynamic range	50 Ω to 2 kΩ
Communication	USB to RS-232 serial communications at a band rate of 57,600 bits/second
Environment	Temperature: +15 to +32 °C, relative humidity: 80% max. up to 32 °C, without condensation
Status indicators	Power and four separate analyzer status LEDs (one for each channel), analyzer self-test button

RTCA HT Control Unit
≥160 GB hard disk drive
≥1 TB second hard disk drive
≥Intel Pentium Dual-Core 1.8 GHz
≥2 GB RAM
Two ethernet cards
Two USB 2.0 ports
≥256 MB graphics device
≥19 in monitor with 1280 × 1024 pixels display resolution

Agilent xCELLigence RTCA MP System

For label-free, real-time cellular analysis

The Agilent xCELLigence real-time cell analysis (RTCA) multiple plates (MP) system provides a unique and powerful means to monitor cells in real time, without the potential artifacts generated by using labels. This noninvasive measurement allows detection of changes in adherence, morphology, and viability without the need for overexpression of reporter and target proteins. This provides physiologically relevant data throughout the entire experiment.

The Agilent xCELLigence E-Plate features an innovative biosensor configuration that covers 80% of each well bottom surface area. The real-time measurement of impedance across the biosensors provides sensitive, immediate detection of the cellular condition and response from low cell numbers to confluency. This enables a wide array of potential applications including (but not limited to):

- Cell proliferation
- Cell quality
- Compound-mediated cytotoxicity
- Cell-mediated cytotoxicity
- Cell adhesion and spreading
- Functional monitoring of receptor tyrosine kinase and GPCR signaling
- Cell-mediated cytolysis
- Barrier function
- Viral quantification

RTCA MP Station	
Electrical input	±5 VDC, +12 VDC, 10 W max.
Electronic switch resistance	2 to 5 Ω
Electronic interface	Handling six Agilent E-Plate 96 devices
Communication	RS-232 serial communications at a baud rate of 57,600 bits/second
Environment	Temperature: +20 to +40 °C, relative humidity: 98% max. noncondensing
Measurement rate	<10 s per measurement for one E-Plate 96 or <1 minute per measurement for six E-Plates
Dimensions	44 cm × 44 cm × 18 cm (W × D × H)
Status indicators	Power and device status

E-Plate 96	
Footprint	Compliance with ANSI/SBS 1-2004 requirements
Dimensions	12.77 cm × 8.55 cm × 1.75 cm (W × D × H, with cover)
Well spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard
Well volume	243 ±5 µL
Well bottom diameter	5.0 ±0.05 mm
Electrical interface	Compatible with RTCA SP and MP stations
Sensor impedance	17 ±5 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	Polystyrene well plate, glass sensor substrate, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity 98% maximum without condensation

E-Plate 96 VIEW 96	
All E-Plate 96 specifications apply	
Viewing window	Four center electrodes removed to aid in microscopy (~400 µm width)

RTCA MP Control Unit
Laptop computer with pre-installed RTCA software
User-friendly graphical user interface (GUI)
Flexible experimental protocol setup
Real-time data acquisition
Real-time numeric and graphic data display
Multiple output formats

RTCA MP Analyzer	
Electrical input	100 to 240 VAC, 50 to 60 Hz, 25 W max
Output test signal	22 mV rms ±20% at 10, 25, and 50 kHz
Impedance measure accuracy	±(1% + 1.5 Ω)
Impedance measurement repeatability	0.8%
Impedance dynamic range	10 to 5 kΩ
Communications	RS-232 serial communications at a baud rate of 57,600 bits/second
Environment	Temperature: +15 to +32 °C, relative humidity: 80% max. up to 31°C decreasing linearly to 50% max. at 40 °C
Dimensions	40 cm × 40 cm × 8 cm (W × D × H)
Status indicators	Power, communications, and analyzer status, analyzer self-test button

RTCA Consumables

For label-free, real-time cell analysis

The different Agilent xCELLigence systems provide a unique and powerful means to monitor cells in real time without using labels. This noninvasive measurement allows detection of changes in adherence, morphology, and viability without the need for overexpression of reporter and target proteins. This provides physiologically relevant data throughout the experiment.

The Agilent E-Plate features an innovative gold biosensor configuration that covers 80% of each well bottom surface area. The real-time measurement of impedance across the biosensors offers sensitive and immediate detection of cellular conditions from low cell numbers to confluency. This enables a wide array of potential applications including (but not limited to):

- Cell proliferation
- Cell quality
- Compound-mediated cytotoxicity
- Cell-mediated cytotoxicity
- Cell adhesion and spreading
- Functional monitoring of receptor tyrosine kinase and GPCR signaling
- Cell-mediated cytolysis
- Barrier function
- Viral quantification

The Agilent xCELLigence CIM-Plate is a modified Boyden chamber design, comprised of a disposable top and bottom chamber. It features the same innovative biosensor configuration as the Boyden chamber on the bottom of a microporous polyethylene terephthalate (PET) membrane. The median pore size of this membrane is 8 µm. The design and real-time measurement allow for precise, quantitative, and dynamic information for applications in cell invasion and migration.
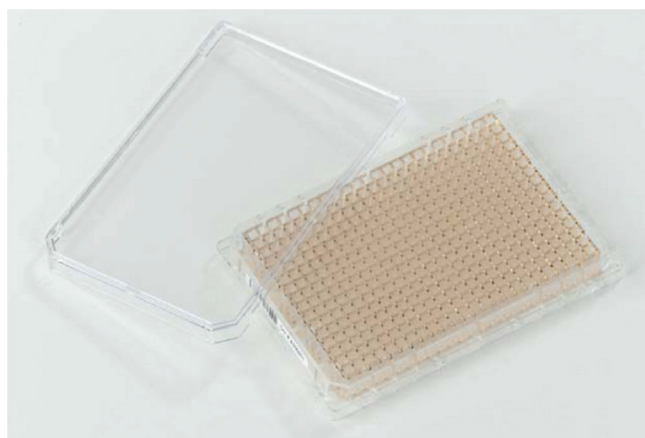

E-Plate 16	
Dimensions	4.0 cm × 8.7 cm × 1.96 cm (W × D × H, with cover)
Well spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard
Well volume	270 ±10 µL
Well bottom diameter	5.0 ±0.075 mm
Electrical interface	Compatible with RTCA DP analyzer
Sensor impedance	17 ±5 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	Polystyrene well plate, glass sensor substrate, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

E-Plate VIEW 16	
All E-Plate 16 specifications apply	
Viewing window	Four center biosensors removed to aid in microscopy (~400 µm width)

CIM-Plate 16	
Dimensions	4.0 cm × 8.7 cm × 2.6 cm (W × D × H, assembled, with cover)
Well spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard
Upper well volume	180 ±5 µL
Lower well volume	162 ±3 µL
Membrane	PET membrane with 8 µm pore size
Well bottom diameter	5.0 ±0.075 mm
Electrical interface	Compatible with RTCA DP analyzer
Sensor impedance	24 ±8 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	PET well plate, PET membrane sensor substrate, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

The Agilent xCELLigence E-plate 96 is compatible with the RTCA SP and MP stations. The E-plate VIEW 96 has four center biosensors removed to aid in microscopy. The E-plate 384 well is compatible with the RTCA HT station, and the E-plate Cardio 96 is recommended for use with the RTCA Cardio station.

E-Plate 384	
Footprint	Compliance with ANSI/SBS 1-2004 requirements
Dimensions	12.77 cm × 8.55 cm × 1.75 cm (W × D × H, with cover)
Well spacing	4.5 mm center-to-center as per ANSI/SBS 4-2004 standard
Well volume	95 ±5 μL
Well bottom dimension	2.5 ±0.01 mm (square)
Electrical interface	Compatible with RTCA HT station
Sensor impedance	112 ±22 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	Polystyrene well plate, PET sensor substrate, gamma irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

E-Plate 96	
Footprint	Compliance with ANSI/SBS 1-2004 requirements
Dimensions	12.77 cm × 8.55 cm × 1.75 cm (W × D × H, with cover)
Well spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard
Well volume	243 ±5 μL
Well bottom diameter	5.0 ±0.05 mm
Electrical interface	Compatible with RTCA SP and MP stations
Sensor impedance	17 ±5 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	Polystyrene well plate, glass sensor substrate, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

E-Plate VIEW 96	
All E-Plate 16 specifications apply	
Viewing window	Four center biosensors removed to aid in microscopy (~400 μm width)

E-Plate Cardio 96	
Footprint	Compliance with ANSI/SBS 1-2004 requirements
Dimensions	12.77 cm × 8.55 cm × 1.75 cm (W × D × H, with cover)
Well spacing	9 mm center-to-center as per ANSI/SBS 4-2004 standard
Well volume	243 ±5 μL
Well bottom diameter	5.0 ±0.05 mm
Electrical interface	Compatible with RTCA Cardio stations
Sensor impedance	17 ±5 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	Polystyrene well plate, glass sensor substrate, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

E-Plate L8	
Dimensions	4.0 cm × 8.7 cm × 1.9 cm (W × D × H, with cover)
Well spacing	8-well, single column, 9 mm center-to-center spacing as per ANSI/SBS 4-2004 standard
Well volume	830 ±10 µL
Well bottom area	64 mm^2 ±10%
Electrical interface	Compatible with RTCA iCELLigence instrument
Sensor impedance	5.6 ±1.7 Ω at 10 kHz, when measured with a 1x PBS solution
Materials	Polystyrene well plate, glass sensor substrate, UV irradiated
Environment	Temperature: +20 to +40 °C, relative humidity: 98% maximum without condensation

E-Plate L8 PET	
All E-Plate L8 specifications apply, with the exception of the following	
Materials	Polystyrene well plate, PET sensor substrate

E-Plate Insert 16	
Dimensions	7.02 cm × 1.7 cm × 1.11 cm (W × D × H)
Well format	16-well (8 × 2) format as per ANSI/SBS 4-2004 standard for 96-well microplates
Well volume	95 µL ±10%
Membrane material	PET
Membrane area	5.4 mm^2 ±12%
Pore size	0.4 ±0.1 µm
Pore density	8E+07 pores/cm^2 – 1.5E+08 pores/cm^2, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

Receiver Plate	
Dimensions	7.46 cm × 2.43 cm × 1.5 cm (W × D × H, with plate cover)
Well format	16-well (8 × 2) format as per ANSI/SBS 4-2004 standard for 96-well microplates
Well volume	244 ±25 µL (without insert)
Well volume	114 ±17 µL (with insert)
Material	Biocompatible surfaces, UV irradiated
Environment	Temperature: +15 to +40 °C, relative humidity: 98% maximum without condensation

RTCA Microplates

RTCA Resistor Plates for QC RUO

Agilent xCELLIgence RTCA Resistor Plates are used for performing instrument quality control and diagnosis of potential hardware issues. The RTCA Resistor Plate is used with its corresponding xCELLIgence system as a standard accessory.

Resistor Plate Verification is a very important step to verify the installation and the functionality of the xCELLIgence RTCA system.

For Research Use Only. Not for use in diagnostic procedures.
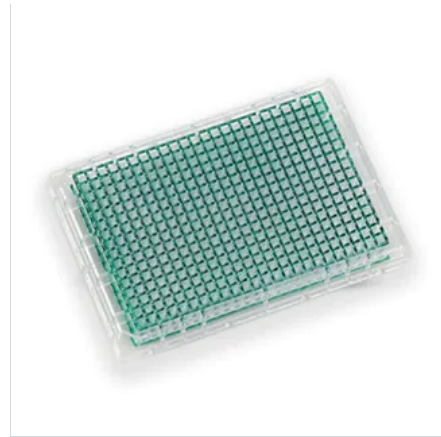
Part Number	Description
380600980	RTCA resistor plate, L8
380601220	RTCA resistor plate, CardioECR
5232350001	RTCA resistor plate, 96-well
5469783001	RTCA Resistor Plate, 16-well
5867878001	RTCA resistor plate, 384-well
6417027001	RTCA resistor plate, Cardio

Features

- Perform instrument quality control and operation
- Troubleshoot and diagnose potential hardware issues
- Verify installation and functionality of the xCelligence RTCA system

AccuWound 96 and E-Plate WOUND 96:
For high throughput scratch wound healing assays

Using spring-loaded Teflon™ pins that make contact with the bottom of microtiter plate wells, combined with a mechanism for precisely dragging these pins laterally across the well bottoms, the AccuWound 96 scratch tool simultaneously produces identical scratch wounds in every well of a 96-well microtiter plate. Requiring just 10 seconds of hands-on time to produce the scratch wounds, AccuWound simplifies workflow and improves efficiency compared to manually-producing scratch wounds. By consistently producing wounds of identical size and shape, the AccuWound also significantly improves precision/reproducibility, with coefficients of variation that are ~4% (compared to ~20% for manually-produced scratch wounds).

The E-Plate WOUND 96 is an electronic microtiter plate that has specifically been optimized for use with the AccuWound 96 tool. Once scratch wounds have been generated, the E-Plate WOUND 96 is placed inside an xCELLigence® SP or MP instrument to monitor cell migration/wound healing in real-time. The simple workflow, automated data acquisition, high reproducibility, and quantitative kinetics of this assay make it a game changer for diverse applications, including but not limited to:

- Cell migration
- Wound healing
- Metastasis
- Drug screening
- Cell-cell interactions
- Cell-matrix interactions
- Angiogenesis
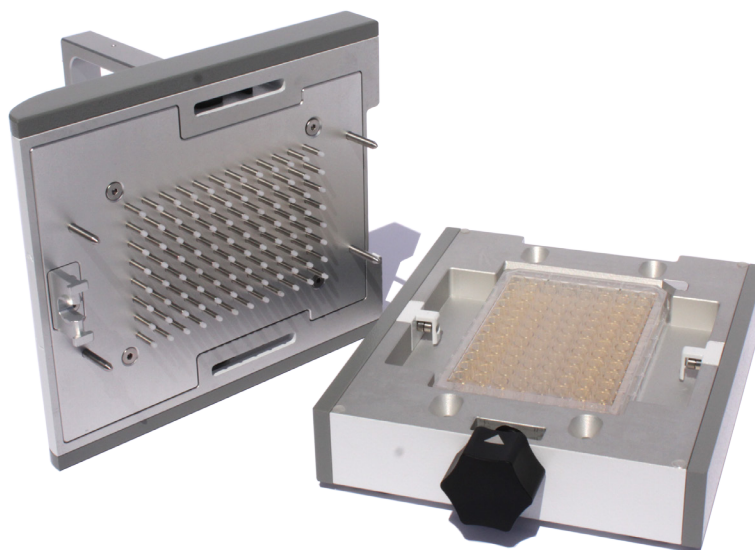
AccuWound 96 Scratch Tool

Dimensions:
- 16.7 cm wide
- 22 cm deep
- 6.7 cm tall (handle in horizontal position)
- 15.3 cm tall (handle in vertical position)

Weight: 3.5 kg

Materials:
- Aluminum (base and lid)
- Teflon™ (scratch pins)

E-Plate WOUND 96

Dimensions: W 12.77 cm x D 8.55 cm x H 1.75 cm (with cover) – Footprint complying with ANSI/SBS 1-2004 requirements

Well Spacing: 9 mm center-to-center as per ANSI/SBS 4-2004 standard

Well Volume: 243 µl ± 5 µl

Well Bottom Diamater: 5.0 mm ± 0.05 mm

Electrical Interface: Compatible with RTCA SP and MP Stations

Materials: Polystyrene well plate, glass sensor substrate, UV irradiated

Environment: Temperature +15°C to +40°C relative humidity 98% maximum without condensation

Monitor the efficacy of liquid cancer immunotherapies inside your incubator

Use Agilent xCELLigence immunotherapy kits with your real-time cell analysis (RTCA) system for a noninvasive solution to a broad range of applications. Improve reproducibility in your liquid cancer immunotherapy and suspension tumor cell killing applications, while maintaining cell health with continuous kinetic measurement.

- **Real time:** Quantitative monitoring of both fast (hours) and slow (days) killing

- **Simple workflow:** Reduce the number of sample handling steps

- **Improved sensitivity:** Physiologically relevant, low effector-to-target ratios

- **Automatic data plotting:** Eliminate subjective data
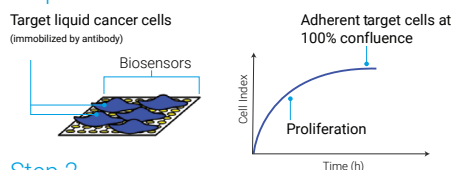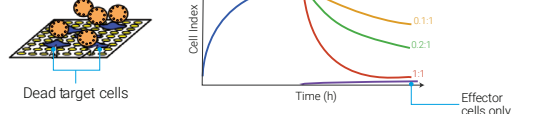
Step 1

The target liquid cancer cells are first seeded in the wells of an electronic microplate (E-Plate) that have been precoated with a tethering antibody. This biosensor signal, also known as Cell Index, increases as cells proliferate and then plateaus as cells approach 100% confluence.

Step 2

When added, nonadherent immune effector cells in suspension do not cause impedance changes (due to lack of adherence to the gold biosensors).

Step 3

If effector cells induce cell death of the target tumor cells, this cytolytic activity is precisely detected with high sensitivity. The continuous acquisition of impedance data for each well enables the generation of real-time killing curves for multiple conditions simultaneously.

Immune effector cells and liquid cancer target cells in use

Liquid Tumor Tethering Specificity	Effector Cells	Target Cells
anti-CD40	NK-92, CAR-T, primary CD8+ T cells	Daudi, Raji, Ramos, MEC2
anti-CD29	NK-92	K562, HEL 92.1.7
anti-CD19	NK-92, primary CD8+ T cells	Raji
anti-CD9	NK-92	NALM6, RS4;11, RPMI 8226
anti-CD71	NK-92	K562

Liquid tumor killing assay (anti-CD40) application data

The wells of an Agilent E-Plate are precoated with an anti-CD40 reagent, enabling liquid tumor targets to be immobilized on the plate bottom (Figure 1A). 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). With or without tethering reagent coating the wells, the effector cells (NK-92 cells) produce minimal signal on their own (Figure 1B). The 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 immobilized (analyzed by Agilent xCELLigence) or in suspension (analyzed by flow cytometry). This assay was used to assess whether the physical immobilization of liquid tumor cells, via CD40 tethering, affects the efficiency with which they are killed. As shown in Figure 1D, the killing trends observed by these two methods correlate closely. The results were consistent with several previous publications, demonstrating that xCELLigence data reinforces data obtained by traditional assays.
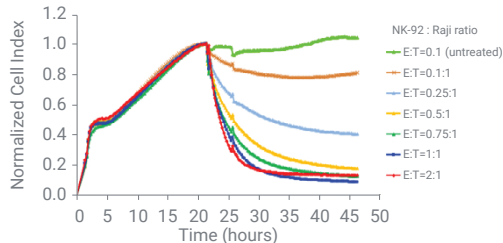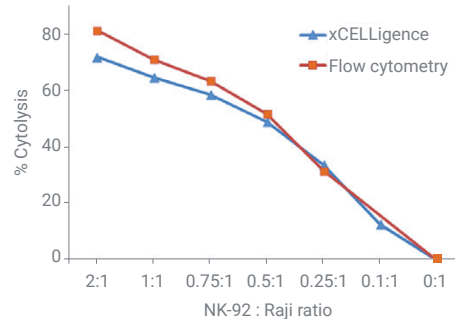
Figure A.

Figure B.
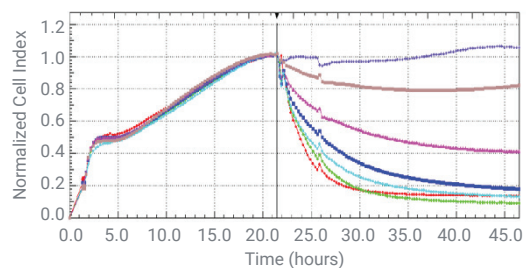
Figure C.

Figure D.

Agilent xCELLigence instruments for immunotherapy assays

Dual Purpose (DP)	Single Plate (SP)	Multiple Plates (MP)	High Throughput	Impedance and Imaging
3 × 16 wells	1 × 96 wells	6 × 96 wells	Up to 4 × 384 wells	Up to 5 × 96 wells

Liquid tumor killing assay (anti-CD40)

Tethering Kit (up to 6 × 96 well plates) **Part Number 8100005**
125x Tethering reagent (anti-CD40) (250 µL)
10x tethering buffer (10 mL)
Cytolysis reagent (1.5 mL)

Sample Kit (up to 2 × 96 well plates) **Part Number 8100006**
125x Tethering reagent (anti-CD40) (90 µL)
10x tethering buffer (10 mL)
Cytolysis reagent (1.5 mL)

Liquid tumor killing assay (anti-CD29)

Tethering Kit (up to 6 × 96 well plates) **Part Number 8100008**
250x Tethering reagent (anti-CD29) (125 µL)
10x tethering buffer (10 mL)
Cytolysis reagent (1.5 mL)

Sample Kit (up to 2 × 96 well plates) **Part Number 8100009**
250x Tethering reagent (anti-CD29) (45 µL)
10x tethering buffer (10 mL)
Cytolysis reagent (1.5 mL)

Liquid tumor killing assay (anti-CD19)

Tethering Kit (up to 6 × 96 well plates) Part Number 8100011
125x Tethering reagent (anti-CD19) (250 µL)
10x tethering buffer (10 mL)
Cytolysis reagent (1.5 mL)

Sample Kit (up to 2 × 96 well plates) Part Number 8100012
125x Tethering reagent (anti-CD19) (90 µL)
10x tethering buffer (10 mL)
Cytolysis reagent (1.5 mL)

Liquid tumor killing assay (anti-CD9)

Tethering Kit (up to 6 × 96 well plates) Part Number 8100014
125x Tethering reagent (anti-CD9) (250 µL)
10x tethering buffer (10 mL)
Cytolysis reagent (1.5 mL)

Sample Kit (up to 2 × 96 well plates) Part Number 8100015
125x Tethering reagent (anti-CD9) (90 µL)
10x tethering buffer (10 mL)
Cytolysis reagent (1.5 mL)

Liquid tumor killing assay (anti-CD71)

Tethering Kit (up to 6 × 96 well plates) Part Number 8100017
125x Tethering reagent (anti-CD71) (250 µL)
10x tethering buffer (10 mL)
Cytolysis reagent (1.5 mL)

Sample Kit (up to 2 × 96 well plates) Part Number 8100018
125x Tethering reagent (anti-CD71) (90 µL)
10x tethering buffer (10 mL)
Cytolysis reagent (1.5 mL)

Related products

Part Number	Part
300600890	E-Plate 16 PET (6 plates)
300600880	E-Plate 16 PET (36 plates)
5469830001	E-Plate 16 (6 plates)
5469813001	E-Plate 16 (36 plates)
300601140	E-Plate VIEW 16 (6 plates)
300601150	E-Plate VIEW 16 (36 plates)
300600910	E-Plate 96 PET (6 plates)
300600900	E-Plate 96 PET (36 plates)
5232368001	E-Plate 96 (6 plates)
5232376001	E-Plate 96 (36 plates)
300601020	E-Plate View 96 (6 plates)
300601030	E-Plate View 96 (36 plates)
5867681001	E-Plate 384 (10 plates)
5867673001	E-Plate 384 (40 plates)

xCELLigence Maintenance Kits RUO

Agilent xCELLigence RTCA instrument Maintenance kits and cleaning kits are designed for routine maintenance of the instruments by the end users.

For Research Use Only. Not for use in diagnostic procedures.

Part Number	Description
380101390	Cleaning tools kit for RTCA DP/SP/Cardio
380101400	Cleaning kit for RTCA MP
380101610	RTCA eSight Maintenance Toolbox
380300030	
380300130	Assessory Parts Kit for RTCA S16
380601580	

Features

- Routine maintenance can easily be performed by end users
- Cleaning kits designed for operators
- Ensure proper operation with scheduled maintenance and tools