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Find the *ACEA Biosciences RT-CES* at our website: *Click HERE*

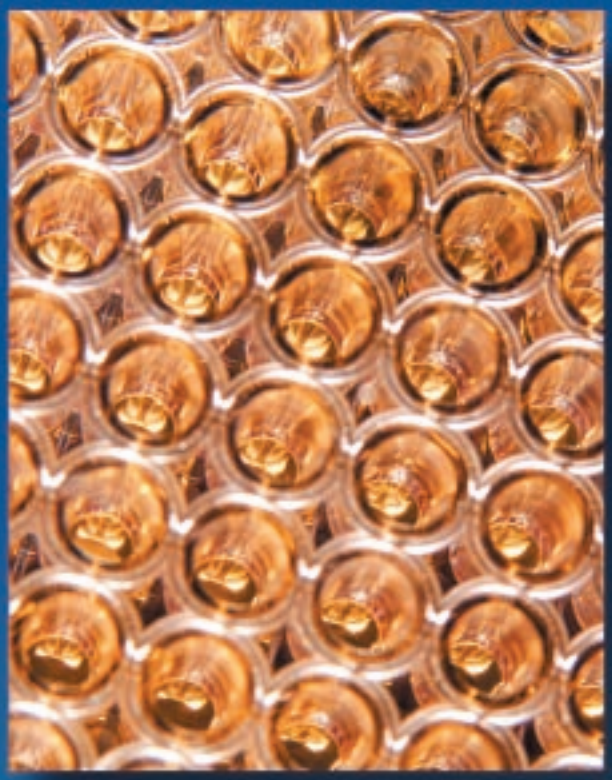
RT-CES™

Revolutionary Solution for Cell-based Assays

Label Free

Real Time

Automated



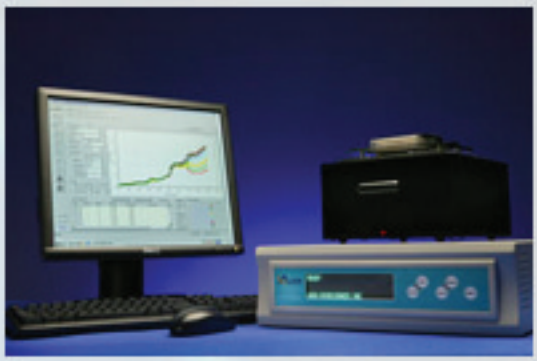
ACEA Biosciences, Inc.

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The Concept

ACEA RT-CES™ System* is a revolutionary microelectronic cell sensor system. The core of the system is the microelectronic cell sensor arrays that are integrated into the bottom of microtiter plates. For cell-based assays, cells are grown in the individual, sensor-containing wells of the microtiter plate. The electronic sensors provide continuous, quantitative information concerning the biological status of the cells present in the well. Changes to the biological status of the cells are measured automatically and in real time by the RT-CES™ system. There are no labeling steps with expensive reagents and the entire process is non-invasive and harmless to the cells.

Superior Performance



Label free–
Assays require no expensive labels or reporters.

Non invasive–
Electronic measurement does not interfere with cell growth or assays.

Accurate and Precise–
Quantitative measure of cell growth provides greater than 2 logs of dynamic range, with well-to-well CV's typically less than 5%.

Automated, real time measurements–
Data are collected automatically and analyzed in real time throughout the entire experiment, greatly improving on "end point" assay results.

Flexible–
Unique design allows customization of assay protocols, increases laboratory productivity.

Easy to use–
User friendly software, straightforward assay set up simplifies training and operation.

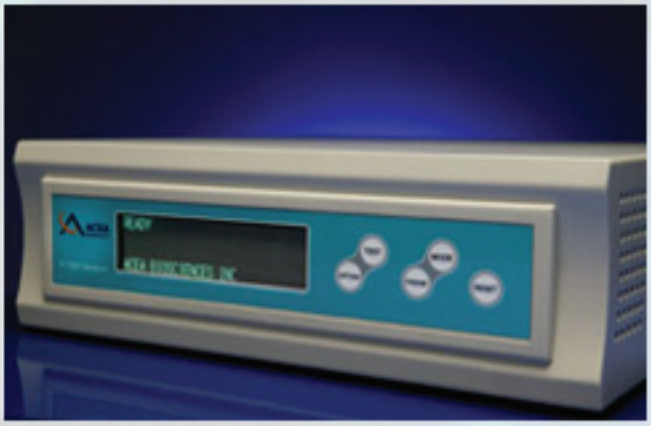
System integration–
The microwell sensor device is compatible with existing microtiter plate equipment.

* patents pending

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ACEA RT-CES™ System

The ACEA RT-CES™ System consists of the following components:



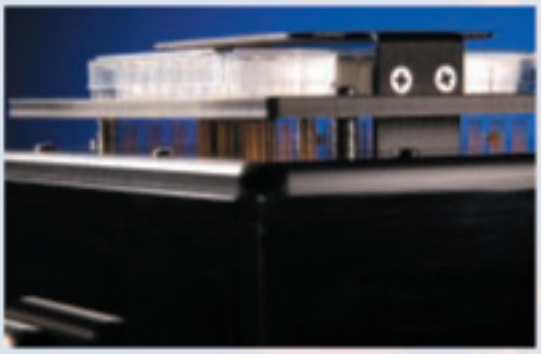
Sensor Analyzer

- Computer controlled signal generation and analysis
- Automatic frequency scanning
- Rapid scan time – 60 sec. for 96-well plate
- Excellent accuracy and precision
- Easy to use
- Lightweight, bench top design



16X Device Station

- Six individual slots for 6 16X devices
- Zero insertion force socket with connection indicators
- Precision electronic switches control individual sensors in each well
- Moisture resistant circuits
- Compact, lightweight design



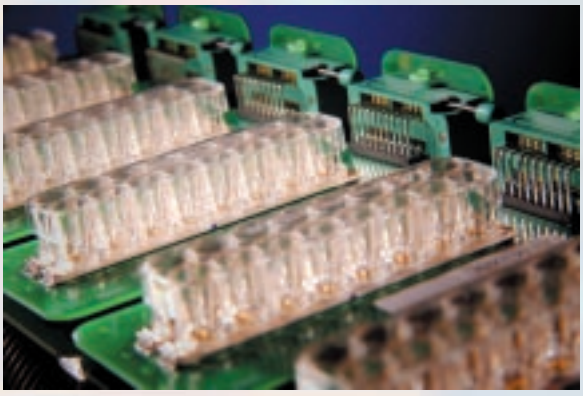
96X Device Station

- Conveniently handles 96-well plates
- Mechanically designed for high reliability and ease of use

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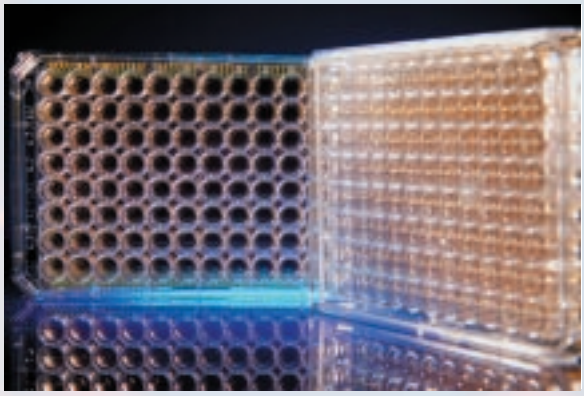
ACEA RT-CES™ Devices

The Multi-Well RT-CES™ Device is a 16x or 96x single-use, sterile, tissue culture microtiter plate. Arrays of electronic sensors are integrated into individual wells of a cell culture microtiter plate. The 96 well plate has the same footprint as the standard 96 well microtiter plate and is compatible with existing microtiter plate handling equipment.



16X Device

- 16 individual wells
- Maximum Well Volume: 250 ul
- Well bottom surface area: 19.6 mm^2
- Sensor detection area: 19.6 mm^2
- Cell culture surface material – biocompatible gold and glass
- Tissue culture treated
- Sterile



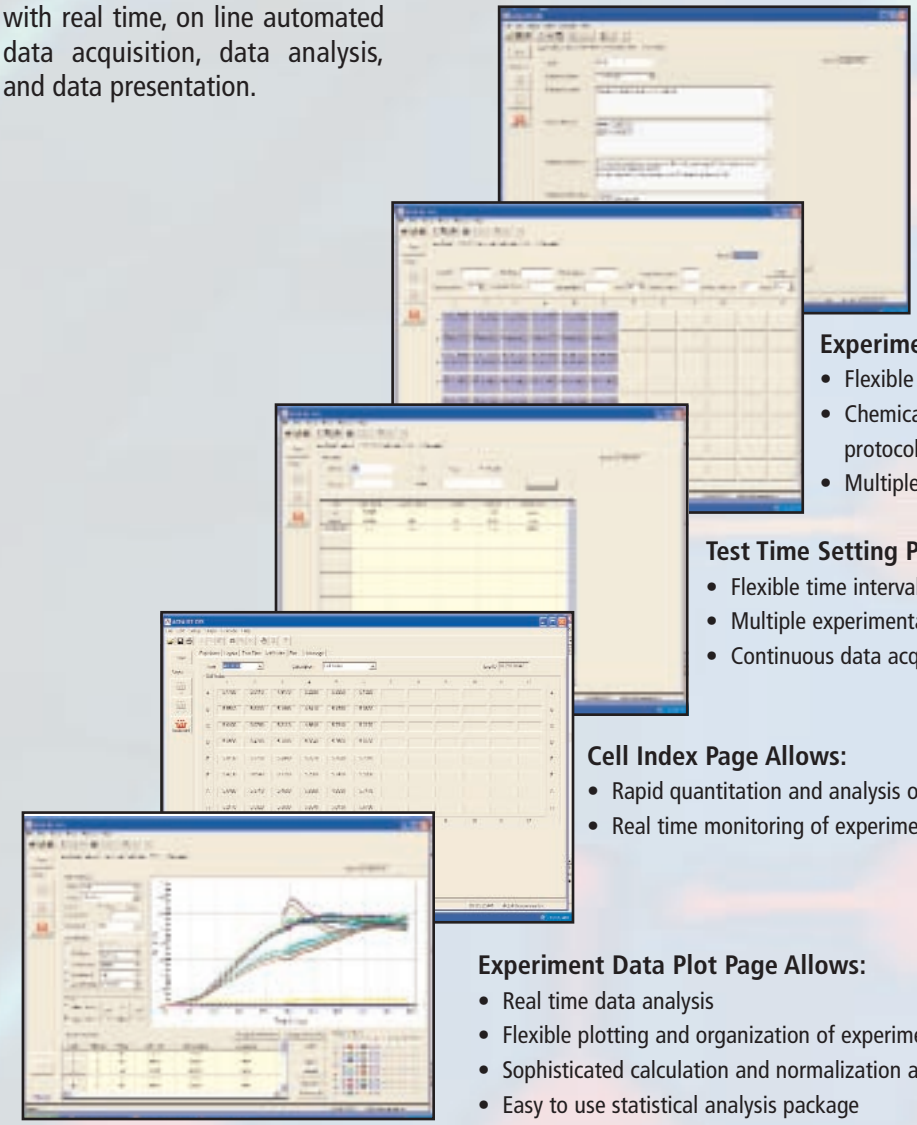
96X Device

- 96 individual wells in a microtiter plate format
- Maximum well volume: 250 ul
- Well bottom surface area: 19.6 mm^2
- Sensor detection area – 19.6 mm^2
- Cell culture surface material – biocompatible gold and glass
- Tissue culture treated
- Sterile
- Compatible with existing microtiter plate equipment

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ACEA RT-CES™ Integrated Software

ACEA RT-CES™ Software allows rapid experimental design and set up, under full instrument control, with real time, on line automated data acquisition, data analysis, and data presentation.



Experiment Note Page Records:

- Key information about the experiment
- Detailed description of the goals and purpose of the experiment

Experiment Layout Page Allows:

- Flexible experimental design
- Chemical compound screening protocols
- Multiple compound evaluation

Test Time Setting Page Allows:

- Flexible time interval scheduling
- Multiple experimental steps management
- Continuous data acquisition

Cell Index Page Allows:

- Rapid quantitation and analysis of cell status in culture
- Real time monitoring of experimental data and results

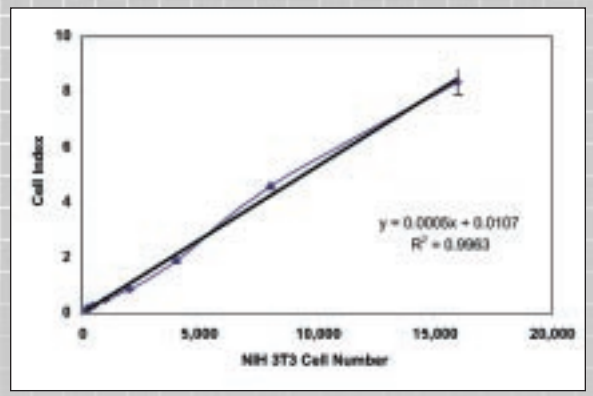
Experiment Data Plot Page Allows:

- Real time data analysis
- Flexible plotting and organization of experimental data
- Sophisticated calculation and normalization algorithms
- Easy to use statistical analysis package

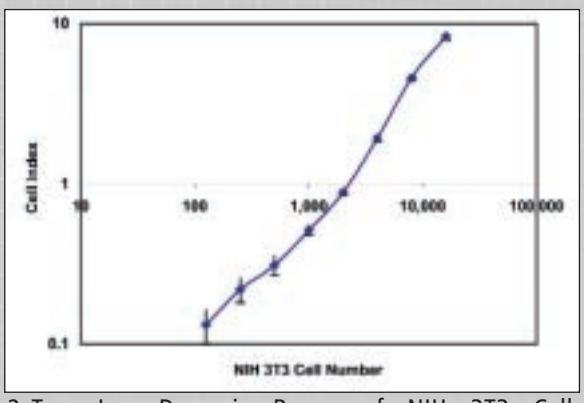
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Broad Applications

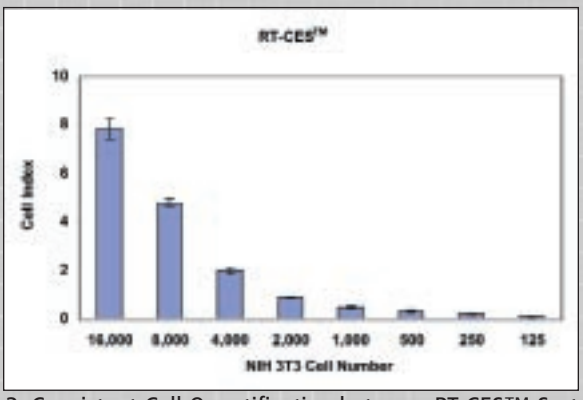
The ACEA RT-CES™ System enables a broad range of quantitative, label-free, cell based assays for use in biomedical and pharmaceutical research laboratories.

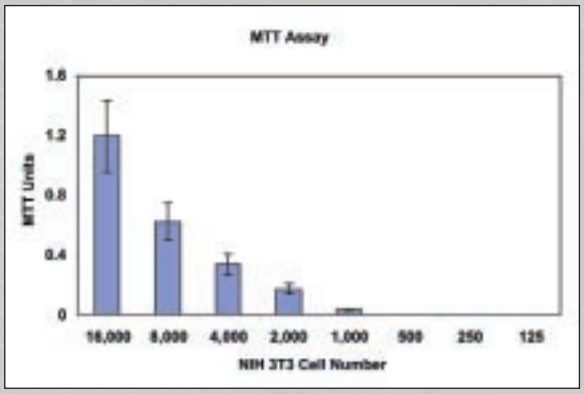


1. Linear Cell Quantification of NIH 3T3 Cells on RT-CES™ System

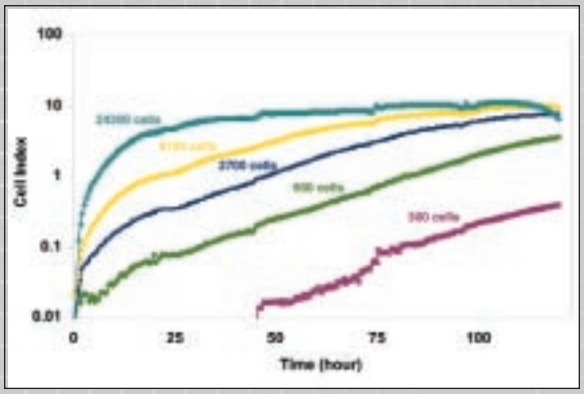


2. Two Log Dynamic Range of NIH 3T3 Cell Quantification on RT-CES™ System

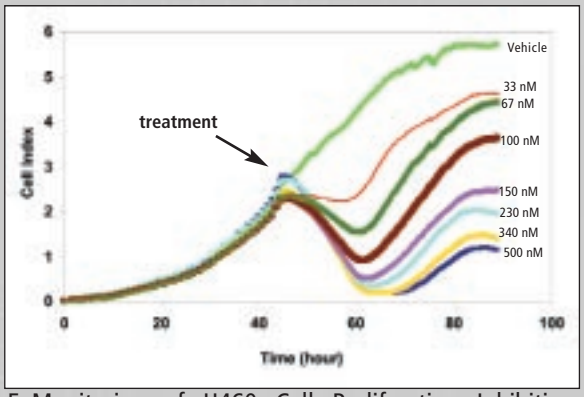




3. Consistent Cell Quantification between RT-CES™ System and MTT Assay

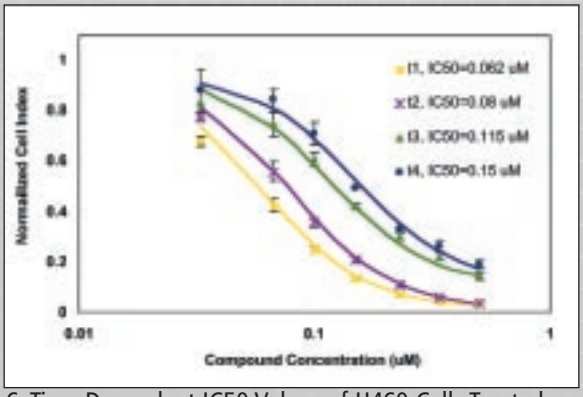


4. Monitoring of H460 Cell Proliferation at Different Initial Cell Seeding Numbers on RT-CES™ System in Real Time *(every 15 min)*

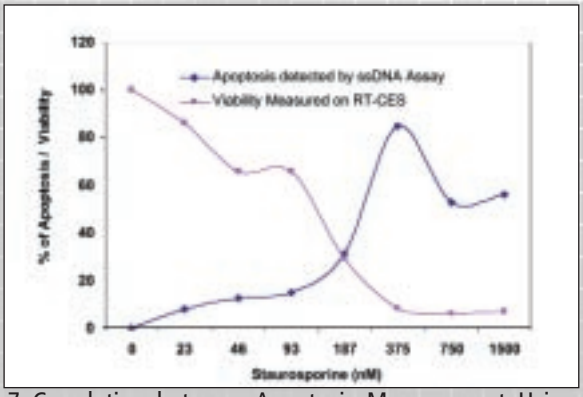


5. Monitoring of H460 Cell Proliferation Inhibition by Paclitaxel on RT-CES™System in Real Time *(every 15 min)*

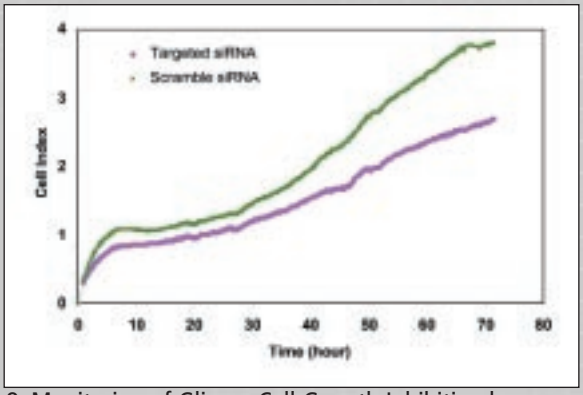
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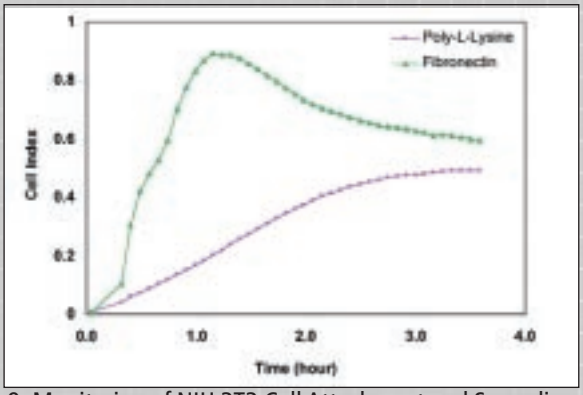
6. Time-Dependent IC50 Values of H460 Cells Treated with Paclitaxel



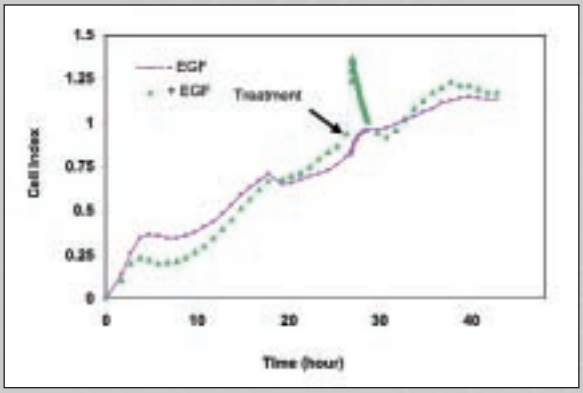
7. Correlation between Apoptosis Measurement Using ssDNA Assay and Cell Viability Measurement on RT-CES™ System



8. Monitoring of Glioma Cell Growth Inhibition by siRNA-mediatied Specific Target Gene Silencing on RT-CES™ System in Real Time *(every 15 min)*



9. Monitoring of NIH 3T3 Cell Attachment and Spreading on Devices Coated with either Poly- L-Lysine or Fibronectin on RT-CES™System in Real Time *(every 3 min)*



10. Monitoring of Cos-7 Cell Morphological Changes on RT-CES™System in Real Time *(every 3 min)*

Other applications

- dynamic monitoring of drug or receptor desensitization
- label free detection of G-protein coupled receptor activity
- cell cycle monitoring in real time
- over 100 cell lines and primary cell types tested

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RT-CES™



Ordering Information

ITEM NUMBER	DESCRIPTION	QTY/PACK
RCW0018	RT-CES™ W100 Electronic Sensor Analyzer for fully automated data collection and processing in real time	1
RCA0016	RT-CES™ A16 device Station including Electronic interfaces connecting six 16X devices. The station is designed to work stably in the environment of cell culture incubators	1
RCA0096	RT-CES™ A96 device Station including electronic interfaces connecting one 96X devices. The station is designed to work stably in the environment of cell culture incubators	1
RCS-v2.00	Automated control system including an Intel Pentium-4 PC, 17" monitor, and a fully integrated software package for system operation, automated data acquisition, analysis, and display	1
One Year Service Contract	One year service contract including training, technical support, software upgrade, system maintenance and calibration	1
RCD16	RT-CES™ 16X device	6
RCD96	RT-CES™ 96X device	5

To order ACEA RT-CES™ system, see our web site: www.aceabio.com.

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