



# CardioExcyte 96

Contractility. Electrophysiology. Viability.



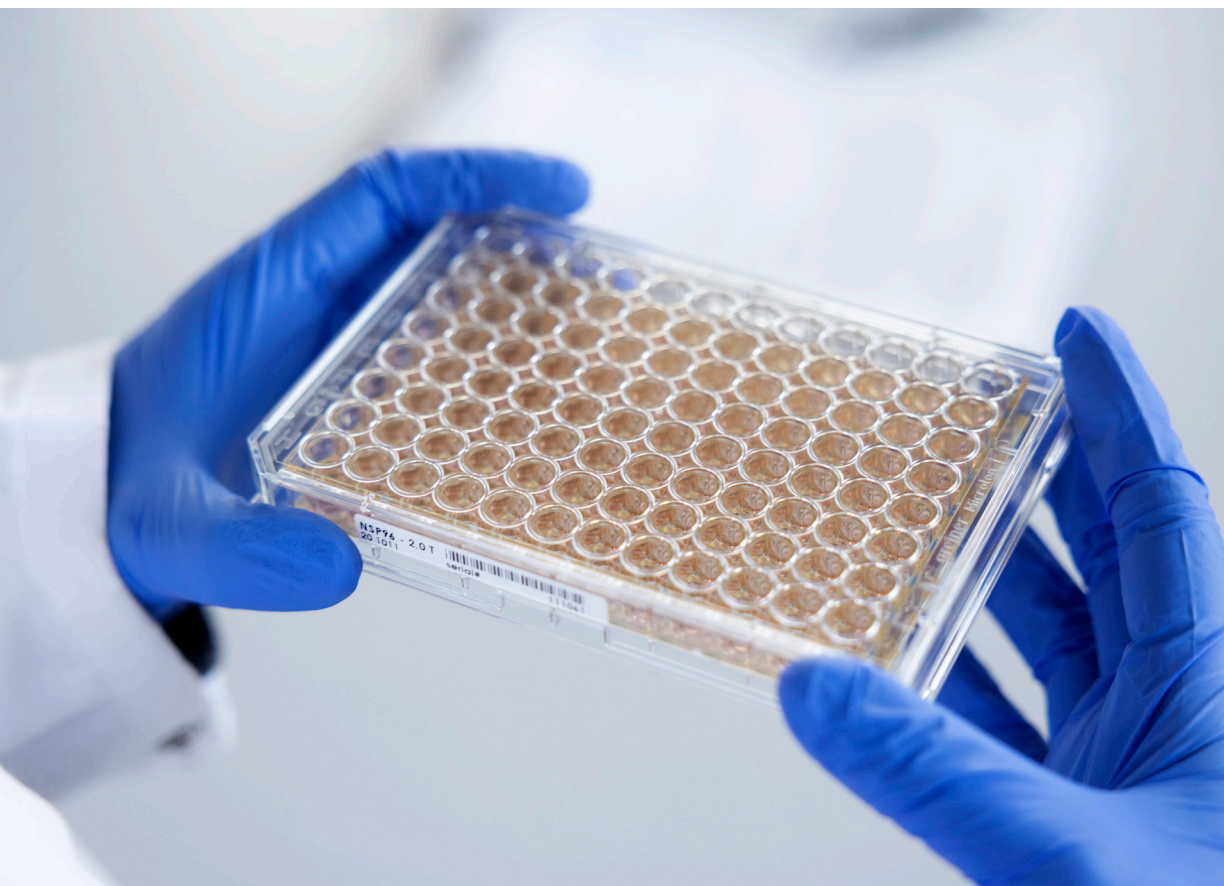
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# Human physiology and disease models in a dish

The CardioExcyte 96 offers a unique experimental constellation, uniting electrical field potential (EFP) and contractility readouts from the same cells, such as human iPSC derived cardiomyocytes. This gives valuable insight in both electrophysiological and mechanical cellular phenotypes.

With embedded control electronics and sophisticated impedance sensor technology, the CardioExcyte 96 is a turn-key system for efficient cardiac safety screening and long-term monitoring of cell viability and toxicity in 2D and 3D.

Although small in footprint, this powerful instrument performs fully automated recordings from 96 wells in parallel.



## Key features at a glance

- |   |                                                      |   |                                                            |
|---|------------------------------------------------------|---|------------------------------------------------------------|
| 1 | 96 recording wells in parallel                       | 5 | High resolution, real-time access to beating parameters    |
| 2 | Contractility and EFP recordings from the same cells | 6 | Acute and chronic assessment of cell activity and toxicity |
| 3 | Physiological and hypoxia environment                | 7 | Electrical and optical pacing options                      |
| 4 | Non-invasive & label-free measurements               | 8 | Cost efficient consumables                                 |



# Sophisticated solutions for cardiac research

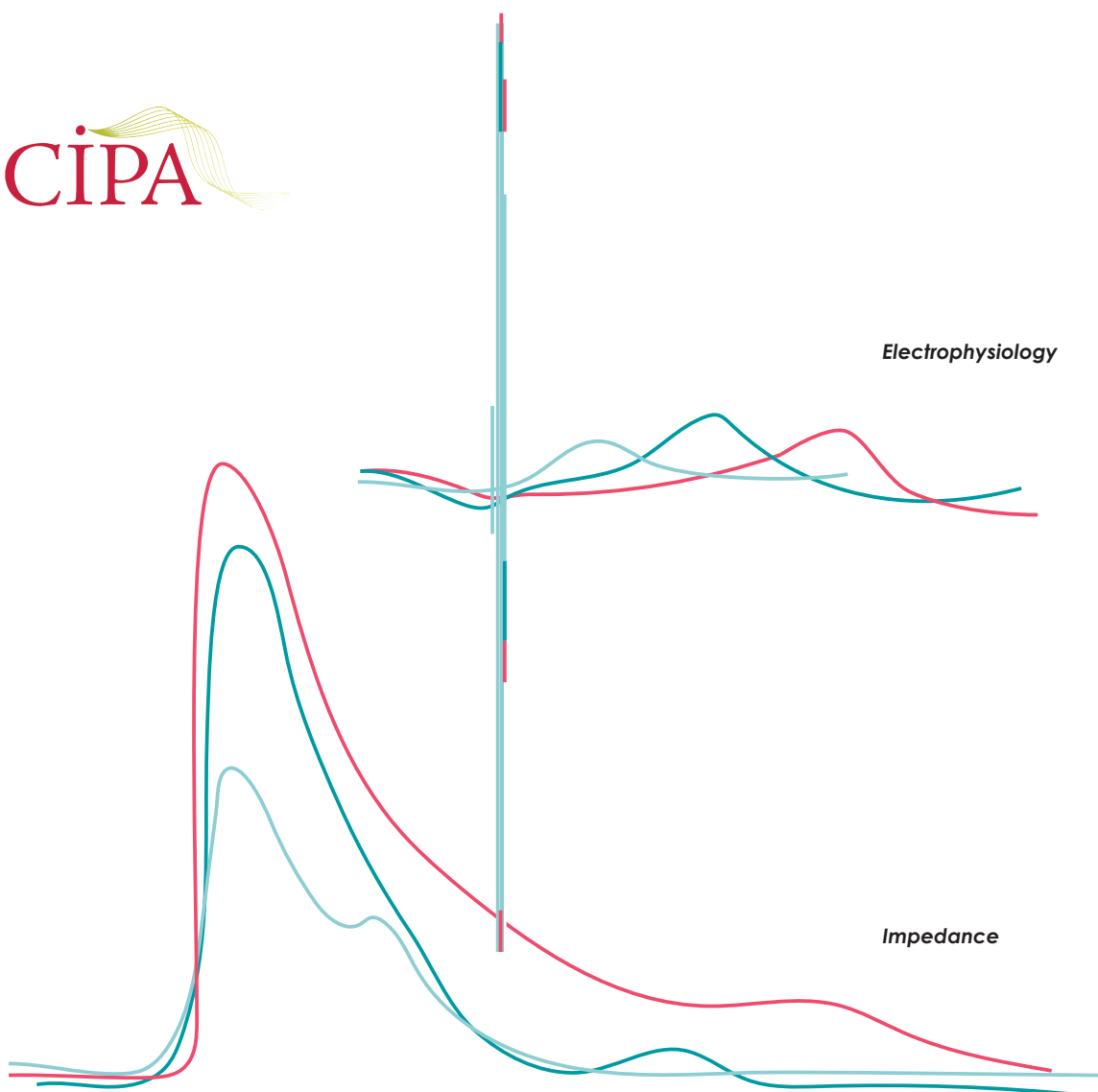
## Standardized protocols

Standardized recording and analysis protocols for highly resolved impedance and EFP recordings performed on CardioExcyte 96 are derived from the efforts of the Comprehensive In vitro Proarrhythmia Assay (CiPA) myocyte working group.

## Automated arrhythmia detection

Automated detection of arrhythmic events allows a fast and accurate analysis process over multiple wells simultaneously.

- Real-time geometric beat analysis
- Intelligent peak detection with primary and secondary (arrhythmia) beat distinction
- Compound Arrhythmia Factor analysis



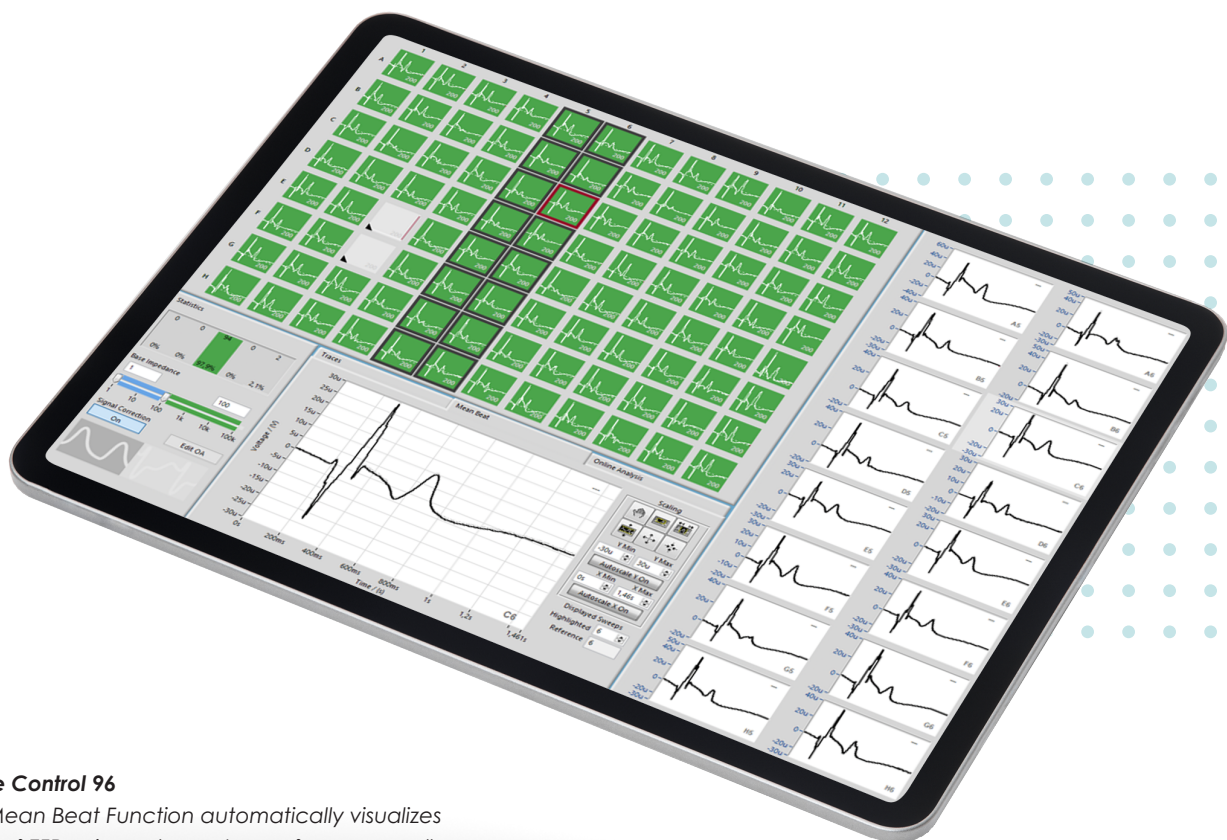
# Versatile data analysis and fast data handling

**CardioExcyte 96 control** is an easy-to-use yet very powerful software enabling recording and online analysis of a broad range of beating parameters.

- Online monitoring of raw data traces, mean beat and online analysis all in one single screen
- Intuitive and easy to navigate
- Versatile cardiac readouts: Beat rate/regularity, amplitude, FPD-max, FPD-zero, rise and fall time, pulse width etc.
- Base impedance readout
- Sensor temperature readout

**DataControl 96** allows fast and accurate analysis and standardized processes by automated preloading of recorded files and custom defined analysis templates.

- Extremely powerful, yet easy to use analysis software
- Instant recalculation of data upon parameter changes with broad range of QC options
- Control group normalization or pooling of data
- Compound effects visible in seconds
- Highly customizable exporting to databases



## CardioExcyte Control 96

The unique Mean Beat Function automatically visualizes the average of EFP or impedance traces from one well, enveloped by the standard deviation, indicating the consistency of the beat pattern within the recording wells, i.e. if the cellular network is synchronously beating or not.

# Your research, our passion



## Cardiac activity profiling

Electrical and contractile fingerprint of iPSC-derived cardiomyocytes.



## Assay development and validation

Full flexibility to design assays for a wide variety of cell lines.



## Cardiac safety and toxicity

Designed to detect toxic compound effects and abnormal beating patterns.



## CiPA validation study

The CardioExcyte 96 is delivered with all the CiPA validated protocols.



## Academic research

Easy solutions tailored to ensure your next scientific breakthroughs.



## Disease modeling

Investigate various diseases in a dish using patient derived cells.



## Pharma and CROs

Suitable for standardized screens, with fast, precise and reproducible results.



## Beyond cardiomyocytes

Electrical impedance spectroscopy allows for monitoring of cell viability and more.

# The CardioExcyte 96 includes

- Recording system with environmental control and a gas mixer (hypoxia feature optional)
- Impedance and electrical field potential (MEA-like) recordings
- Recording and analysis software package
- Automated multichannel pipetting—Integra Viaflo Assist (optional)
- SOL optical stimulation (optional)
- Various CardioExcyte recording plates
- 1 year warranty with further optional comprehensive service plans available
- Unmatched application support



## Specifications

|                                                |                                                            |
|------------------------------------------------|------------------------------------------------------------|
| Supported recording modes                      | Impedance-, electric field potential (MEA-like) recordings |
| Impedance / EFP resolution                     | Imp: 1 ms / EFP: 0.1 ms                                    |
| Impedance aquisition frequency                 | 10 kHz                                                     |
| Parallel recording channels                    | 96                                                         |
| Temperature sensing                            | Multi-sensor temperature control                           |
| Validated human induced pluripotent stem cells | Yes                                                        |
| Validated embryonic stems cells                | Yes                                                        |
| Stand-alone system                             | Integrated Incubation System                               |
| Automated liquid handling                      | Integra Viaflow Assist                                     |
| Cardiac cell pacing                            | Electrical and optical (optional)                          |
| Plates available                               | Standard plates, stimulation plates, transparent plates    |

# accelerate your research

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