

Nanion Introduces New Product Family: CardioExcyte 96 for Cardiac Toxicity Profiling and Screening

Munich, Germany, September 12, 2013; The CardioExcyte 96 is a high resolution device recording contractility in intact cardiomyocyte networks utilizing non-invasive impedance measurements. The system allows cost-efficient, early compound safety profiling using stem cell-derived cardiomyocytes, freshly dissociated cardiomyocytes or beating 3D-cell clusters.

Cardiac safety assessment is a vital part of drug development since late withdrawals of compound candidates, due to heart liability issues such as ventricular arrhythmia, are very costly. *In-vivo* methods give highly relevant information but are extremely low throughput allowing the analysis of only a handful of compounds. *In-vitro* methods, such as automated patch clamp and other methods, offers higher throughput, however from one type of cardiac ion channels, typically over-expressed in cell lines. Nanion's new device, the CardioExcyte 96, has the potential to bridge this gap, by allowing reliable label-free measurements of short- and long-term compound effects on the beating pattern of stem cell-derived cardiomyocytes. The system offers the highest impedance time-resolution (sub-millisecond) on the market and records from 96 wells in parallel. Efficiency and ease-of-use are facilitated by an outstanding software package for data handling and export; thus an essential part of the CardioExcyte system.

Dr. Sonja Stölzle-Feix, Senior Scientist, Nanion Technologies, Munich, says:

"CardioExcyte 96 is an easy-to-use system, providing impedance-based cardiac safety data from a diversity of stem cell-derived cardiomyocytes. Concentration- and time-dependence of a compound's potential cardiotoxicity can efficiently be obtained. Further on, the powerful software, used for recordings and analysis, employs comprehensive beat investigation algorithms, displaying detailed beating kinetics in real-time. Data handling and export is straightforward, easy to grasp and yet very, very powerful."

Dr. Niels Fertig, CEO of Nanion, continues:

"CardioExcyte is a new branch in Nanion's product portfolio. This label-free impedance system constitutes an excellent complement to automated patch clamp-based safety screening. It offers cost-efficient and highly relevant data on a drug candidate's effect on intact networks of beating heart cells. Alteration of beating patterns can give a hint on what cardiac ion channel is affected, which is where detailed electrophysiology investigations take on the further investigations. Cardiac network responses offer a comprehensive view of a compound's safety profile, without having to use in-vivo methods, and thus save time, costs and suffering."

The CardioExcyte 96 is an automated device, recording from 96 wells at a time. With embedded electronics and a sophisticated sensor technology inside the well-plate based consumables, CardioExcyte 96 is a turn-key system for efficient impedance measurements, also allowing recordings residing inside of the incubator. The system has been validated with stem cell derived cardiomyocytes from several providers (Axiogenesis, Cellular Dynamics International, GE Healthcare), as well as beating, 3D-clusters (Cellecrist).

About Nanion Technologies:

Nanion Technologies GmbH is a German Private Limited Company and was founded in 2002 as a spin-off from the Center for Nanoscience (CeNS) of the University of Munich. Nanion's team has developed and globally established three highly successful automated patch clamp instruments as enabling tools for sophisticated and high throughput applications for ion channel research and drug discovery.

Nanion recently launched the Orbit 16, for parallel bilayer recordings, and SURFE2R N1, a device for parallel membrane transporter protein recordings.