Nanion's automated patch clamp platforms show unparalleled results using stem cell derived cardiomyocytes

Munich, Germany, September 16, 2011; The Patchliner and the SyncroPatch 96 have successfully been used for compound analysis under current- and voltage clamp recording conditions using different stem cell-derived cardiomyocytes. The exceptional cell-platform-compatibility and the unique experimental possibilities offered by Nanion's platforms open up whole new avenues for compound safety testing.

Pluripotent stem cell-derived cardiomyocytes have tremendous potentials for cardiac safety and efficacy testing of drug candidates. By offering an authentic cellular environment they are closer to the actual physiological situation compared to cell lines with over-expressed ion channels. All Nanion's patch clamp platforms, the Port-a-Patch, the Patchliner and the SyncroPatch 96, show exceptional compatibility with stem cell-derived cardiomyocytes provided by Axiogenesis, CDI and Geron/GE Healthcare.

In a joint publication of Nanion and Axiogenesis (Journal of Biomolecular Screening, 2011 July 20), drug-induced modulation of cardiac action potentials using the Port-a-Patch and Patchliner were shown for the first time. Stem cell-derived cardiomyocytes have also been investigated on the SyncroPatch 96, recording from 96 cells in parallel under voltage clamp conditions. Stable whole-cell recordings were obtained with high success rates and expected cardiac currents were recorded (K^+, Ca^{2+}, Na^+).

Ralf Kettenhofen, Senior Scientist of Axiogenesis, Cologne, Germany, says:
"At Axiogenesis, we were very impressed of the high success rates quickly obtained with Nanion's platforms. In our view, the combination of an in vitro cardiac cell model together with higher throughput patch clamp screening technology such as the Patchliner, allows for a cost effective cardiotoxicity prediction in a physiologically relevant cell system."

Axiogenesis is a provider of pure rodent embryonic stem cell-derived cardiomyocytes (Cor.At®) which have been proven to be a predictive tool in preclinical cardiac safety assessment and drug discovery and development. The Cor.At® cardiomyocytes will now be complemented by human induced pluripotent stell cell-derived (Cor.4U®) cardiomyocytes, which will be launched in Q1 2012.

Niels Fertig, CEO of Nanion Technologies continues:
"Over the past two years, the interest from the pharmaceutical industry in using stem cell-derived cardiomyocytes for safety testing purposes has grown dramatically. To meet this need we have developed our platforms to fit experimental requirements and industry quality standards. It is up to the user to decide: routine analysis in voltage clamp mode, or investigating the compound effect on action potentials since both screening modes are possible. No other APC platform on the market can compete with that at today's date."

About Nanion

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

Nanion's high quality instruments employ planar patch clamp chips which replace the traditional glass pipette used in the conventional patch clamp technique. In 2009 Nanion was awarded the German Founders Award (Gründerpreis), and the Innovation Prize Step Award. Next year, Nanion celebrates its 10th anniversary.

Contact details:

Niels Fertig, CEO, Phone: +49 89 2189 97972, Email: info@nanion.de, Web: www.nanion.de

About Axiogenesis

Axiogenesis is a biotechnology company located in Cologne, Germany. One focus of Axiogenesis is the generation and production of pure in vitro differentiated cells that display normal physiological properties. Axiogenesis` cells are either of rodent embryonic stem cell or human induced pluripotent stem cell origin. These cells are then used to develop novel assays for pharmacology and safety screening in the pharmaceutical, chemical, and cosmetics industries.

Pure rodent ES cell-derived (CorAt®) cardiomyocytes are available in unlimited amounts, can be shipped frozen overnight, and are quality controlled showing no lot-to-lot variation. Protocols and applications include but are not limited to cardiac specific cytotoxicity, electrophysiology, GPCR functionality, siRNA transfection and hypertrophy induction. The cells express and use all essential ion channels and K^+, Na^+, and Ca^{2+} currents have been recorded in patch clamp experiments. In addition, Cor.At® cardiomyocytes are highly predictive with respect to humans as revealed by the observation of expected effects of known ion channel and GPCR modulators (including hERG blocker) and specific cardiac cytotoxicants. Cor.At® cardiomyocytes have been validated successfully on almost all available instrument and assay platforms encompassing both high content applications like automated patch clamp and high throughput screening systems like fluorescent plate reader.

Using its stem cell technology Axiogenesis has consequently designed its proprietary Clinical Modeling platform utilizing cardiomyocytes with different disease phenotypes. This technology is able to substantially accelerate the drug development process. Axiogenesis is further offering exclusive customization services of cell lines and in house production of cardiomyocytes, endothelial cells, hepatocytes and neuronal cells.

Contact details:

For further information on Axiogenesis and its products please contact:
Felix von Haniel, Phone: +49 (221) 9988 1825, Email: info@axiogenesis.com, web: www.axiogenesis.com