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Automated Patch Clamp Meets High-Throughput Screening

CHICAGO – A new research report published in the December 2016 issue of the *Journal of Laboratory Automation* (JALA) features a planar patch clamp system with modular design capable of recording up to 384 cells simultaneously. Authors Alison Obergrussberger et al. of Nanion Technologies (Munich, Germany; and Tokyo, Japan) report that the module can be incorporated into different state-of-the-art pipetting robots for seamless integration into high-throughput screening processes.

The SyncroPatch 384PE maintains high data quality due to tight, in the order of Giga-ohm, seals and flexibility of experimental design. This is an important development in the field of scientific and medical research, particularly for ion channel drug discovery and pre-clinical safety screening of compounds.

Ion channels are expressed in almost all living cells and are involved many physiological processes and disease. There are estimated to be around 400 ion channels in the human genome and as therapeutic targets they are still underexploited. Because of their physiological and pathophysiological importance, reliable methods to study ion channels for drug discovery and safety testing are critical. The gold standard for measuring ion channels remains the patch clamp technique developed by Neher and Sakmann for which they won the Nobel Prize for Physiology or Medicine in 1991. However, the conventional patch clamp technique is technically demanding and not suitable for high-throughput screening efforts. The planar patch clamp technique has been introduced over the years in an attempt to automate the technique and increase throughput.

Visit JALA Online at http://jla.sagepub.com/content/21/6 to read this report and listen to a free podcast with corresponding author Alison Obergrussberger of Nanion Technologies in Munich, Germany.

JALA is one of two official scientific journals published by SLAS. In 2017, JALA's name will change to ***SLAS Technology*** (Translating Life Sciences Innovation). For more information about SLAS and its journals, visit www.slas.org/publications/scientific-journals.

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*SLAS publishes two internationally recognized, MEDLINE-indexed journals, now in their 21st year of publication**. The Journal of Laboratory Automation (JALA)** and **Journal of Biomolecular Screening (JBS)** uniquely serve life sciences discovery and technology professionals. Together, JALA and JBS address the full spectrum of issues that are mission-critical to this important audience, enabling scientific research teams to gain scientific insights, increase productivity, elevate data quality, reduce lab process cycle times and enable experimentation that otherwise would be impossible.*

*Specifically, **JALA** explores ways in which scientists adapt advancements in technology for scientific exploration and experimentation. In direct relation to this, **JBS** reports how scientists develop and utilize novel technologies and/or approaches to provide and characterize chemical and biological tools to understand and treat human disease.*

***Journal of Biomolecular Screening (JBS):** 2015 Impact Factor 2.218. Editor-in-Chief Robert M. Campbell, Ph.D., Eli Lilly and Company, Indianapolis, IN (USA). In 2017, JBS's title will change to **SLAS Discovery** (Advancing Life Sciences R&D).*

***Journal of Laboratory Automation (JALA):** 2015 Impact Factor 1.297. Editor-in-Chief Edward Kai-Hua Chow, Ph.D., National University of Singapore (Singapore). In 2017, JALA's title will change to **SLAS Technology** (Translating Life Sciences Innovation).*