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Nucleofection® & other Technologies Enabling Advances in Pharmaceutical Research

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The maintenance of physiological relevance in cell models while introducing nucleic acids and other molecules is key to effective life science research and the efficient development of novel therapies. The increasing drive toward use of primary cells is triggered by the limitations of 'easy-to-use' cell lines, such as their predictive power regarding whole-organism physiology. The use of physiologically relevant and validated cell models together with technologies enabling the fine dissection of signal transduction and metabolic pathways is pivotal in increasing the efficiency of pharmaceutical research and development.

To accelerate research and development in these areas, robust high-quality and high-throughput approaches are needed. Nucleofection®, an electroporation-based technology, allows the efficient, high-throughput engineering of virtually all cell types including primary cells and stem cells, many of which were previously considered difficult or even impossible to transfect. The latest developments and applications in mammalian cell engineering – with focus on the delivery of proteins, peptides and low molecular weight chemical compounds into cells – will be presented and their impact for basic research as well as drug development delineated.
