

Automated solutions for cell biology

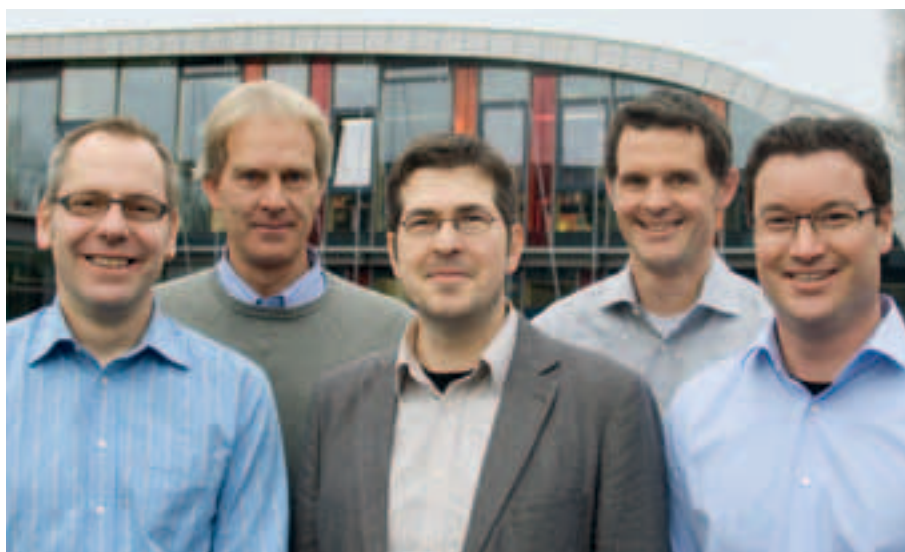
Tecan and Miltenyi Biotec are working together to develop a range of automated solutions for cell biology, based on the powerful MACS® magnetic bead technology.

Miltenyi Biotec, based in Bergisch Gladbach, Germany, is a leading provider of cell biology solutions, and is committed to advancing scientific understanding and medicine by providing products and services for biomedical research and cellular therapy. The Company's MACS technology, the gold standard method for magnetic cell separation, combines the use of MACS MicroBeads (nano-sized superparamagnetic particles coupled to specific antibodies), patented MACS Columns and MACS Separators (strong permanent magnets) to perform a wide range of separation, cultivation and analytical processes for cells and biomolecules.

Collaborating with Tecan has allowed Miltenyi Biotec to fully integrate its MultiMACS™ Separator family of biomolecular and cellular separation devices onto the Freedom EVO® liquid handling platform. The MultiMACS Cell24 Separator, for example, employs unique magnetic bead technology to isolate viable and unaltered cells from almost any cell type. Plus, for the extraction of RNA, the MultiMACS M96thermo Separator not only allows working in 96-well formats, but also enables one step RNA isolation and cDNA synthesis.

Miltenyi Biotec's instrument software has been updated with automation protocols, and Tecan has provided software drivers to allow straightforward incorporation of additional Miltenyi instruments – such as the MACSQuant™ Analyzer, a bench-top cell analyzer for highly sensitive multicolor flow analysis – onto the Freedom EVO.

Dr Simon Mauch, Global Marketing Manager for automated cell separation at Miltenyi Biotec, explained: "Laboratory automation is something we have been considering



From left to right front row: Dr Simon Mauch, Marketing Manager Automation; Dr Oliver Schilling, Project Manager Automation; Dr Tim-Oliver Stolle, Marketing Manager MACS Molecular
From left to right back row: Dr Uwe Janssen, Business Development; Dr Markus Zumbansen, Project Manager Automation

for some time, as some of our customers wanted integrated, automated systems, and so this plan has evolved strategically over a number of years. Initially we discussed doing this automation in house, however it became clear that we needed a strong, reliable partner to help us achieve our goal. Our specialty is in magnetic cell separation and cell analysis using a vast portfolio of reagent solutions as well as small bench-top devices. Being the market leader in automated cell separation and having many thousands of our bench-top instrument solutions successfully placed in the market, we understand that good service is essential to our customers. It was therefore important that we collaborated with a leading company in the field of automation, that could provide our customers with an equally strong technical support network, and Tecan was the obvious choice. We already had a very good

relationship with Tecan, it was a name our customers knew and was simply the best fit for our purposes."

"Many companies entering the automation market for the first time find that they have to redesign their product portfolio to be automation friendly. In our case, the products that we are integrating onto Tecan platforms were originally developed with the aim of producing fully automated systems, so we already had a number of instruments that, although not complete workstations, were suitable for integration into a liquid handling platform. We had worked with Tecan to automate our MultiMACS test system in house, and so had begun to develop protocols and scripts to enable Tecan's software to control the instrument, and these could be easily transferred onto the new systems."

Simon continued: "From a technical point of view, it was mainly simple things that made the Tecan system so suitable for our needs. For instance, we required a gripper that is able to handle labware/microplate from the short and the long side. Tecan offers this as a standard feature, whereas other systems either don't have this facility, or include it as an option. The robotic manipulator (RoMa) arm works better with our system than other robotic arms, making integration straightforward. Reliability was also very important and, having used Tecan platforms for many years, we knew that we could count on both the workstations and Tecan's support."

"We have a Cellerity™ and two Freedom EVO workstations which we use for in-house research projects, protocol development, and beta testing. Protocols are transferable between cell types, so we have some general methods available and work with customers

to optimize the application for their specific purposes. Automation is very individualized, but there are some applications, for example diagnostic applications, that are requested by more than one customer. Once these have been developed, they can be promoted as 'off-the-shelf' solutions."

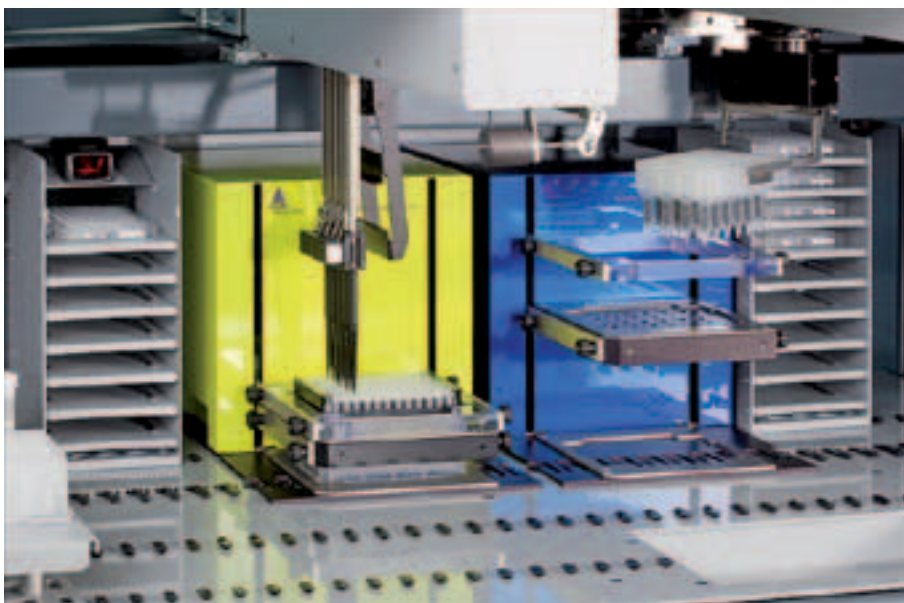
Application development involves very close cooperation between Tecan and Miltenyi Biotec, as well as joint visits to customers to get an understanding of the customer's needs and to develop the concept. Simon concluded: "This collaboration is an example of how two very different types of specialty can come together to produce a complete solution for the customer. Tecan's expertise is as an instrument company, with a strong engineering base, while Miltenyi Biotec specializes in reagents, specialized consumables, and small bench-top devices. Similarly, Tecan provides the primary support on technical issues, while Miltenyi

Biotec handles queries relating to reagents and protocol optimization. Our extensive, combined knowledge in these two very different areas makes this an extremely interesting collaboration, which will be of great benefit to our clients."

To find out more on Tecan's applications, visit www.tecan.com/miltenyi

To find out more on Miltenyi Biotec, visit www.miltenyibiotec.com

MultiMACS and MACSQuant are trademarks and MACS is a registered trademark of Miltenyi Biotec.



The MultiMACS™ Separator family offers fully automated separation of biomolecules and cells