

Innovation in biopharmaceutical downstream process development

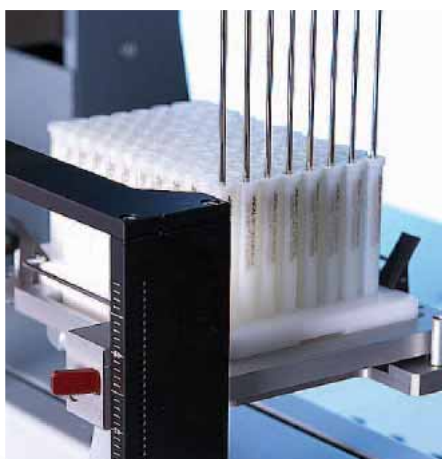
Automation of Atoll's 96-array MediaScout® RoboColumns on the Freedom EVO® workstation is proving a popular approach for development of biopharmaceutical manufacturing processes.



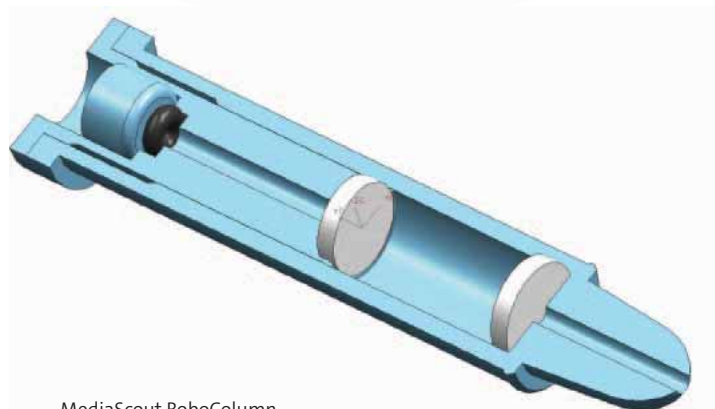
The production team at Atoll (l to r: Tim Schroeder, Nicole Sauter and Natalie Wehrwein)

Atoll GmbH in Weingarten, Germany, is a supplier of cutting-edge biotechnology screening products to customers in academia and the biopharmaceutical industry. The Company's user friendly technologies include a range of tools for selection of chromatography media and optimization of chromatographic processes for biomolecular separation, including the innovative MediaScout MiniColumns. These disposable columns are available prepacked with any commercially available biochromatography resin, allowing rapid screening of media for process design and optimization. To further accelerate this process, the Biomolecular Separation Engineering group at the Karlsruhe Institute of Technology (KIT) has developed an automated method for media screening based on the Freedom EVO platform. The system uses the workstation's liquid handling arm in conjunction with an array of 96 MiniColumns to increase throughput, and this has now been developed by Atoll as MediaScout RoboColumns.

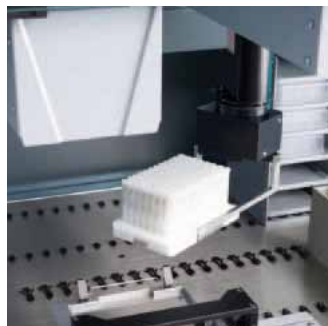
Tim Schroeder, now head of production at Atoll, was closely involved in the development of the RoboColumn system while he was a member of the Biomolecular Separation Engineering group, and explained why he chose to work with Tecan instruments: "When we first looked into developing an automated protocol for the media screening using Atoll's MiniColumns, the Freedom EVO platform offered us an unrivalled level of flexibility. The ability to integrate many different components onto the workstation is a significant advantage in this process, and the highly adaptable Tecan system is well suited to the wide range of applications that can be performed using RoboColumns. When this technology was transferred to Atoll for commercial development, Tecan was the logical choice of liquid handling partner. I already had a very good relationship with Tecan Germany, so knew that it was a good company to work with. Atoll acquired a Freedom EVO platform for development of the RoboColumns in 2006, and we have since worked with both Tecan and the KIT to further the potential of this novel approach."



The Te-Chrom™ module



MediaScout RoboColumn



Robotic manipulator (RoMa) arm improves throughput



Column flow is controlled via pressure-tight inlets

Automated processing of Atoll's MediaScout RoboColumns on the Freedom EVO platform has been successfully applied to a range of biopharmaceutical process development applications such as resin screening, condition screening and protein expression studies. Atoll is now working closely with Tecan to co-develop a fully integrated platform for this innovative automated solution. This workstation will offer customers a validated and tested solution for parallel processing of up to eight MiniColumns controlled by specific chromatography software, offering new levels of ease of use for downstream process development and process analytical technology (PAT) applications. Tim explained: "Automation of chromatography screening is an exciting new application for liquid handling platforms. This technique has proven very popular with biopharmaceutical companies, and many manufacturers are now following this approach using Freedom EVO workstations. The technology is still under constant development, and we are collaborating with Tecan to design a fully integrated system for this application, combining Atoll's MediaScout columns with Tecan's expertise in laboratory automation. We are working very closely with Tecan engineers to ensure that this new platform offers customers a flexible, user friendly system for automation of chromatography screening."

"To complement this project, the Freedom EVO platform in our production and development laboratory is being used to run a wide variety of chromatographic separation demonstrations and projects. Customers can come to us with a specific separation application they wish to develop, and we can use our Freedom EVO workstation to illustrate the automated chromatography process. In addition to this, we have recently expanded our laboratory to allow us to run pilot scale projects. Customers can bring their samples to our facility and work with our expert staff to develop the RoboColumn process for their application on the Freedom EVO system. This is a very important service for many of our customers, allowing them to confirm that this technology is appropriate before purchasing a combined Tecan / Atoll solution. This not only provides the customer with assurances to safeguard their investment, but also gives us the opportunity to demonstrate the power and flexibility of this innovative system."

To find out more about automation of chromatography on Tecan's Freedom EVO workstations, visit

www.tecan.com/proteinchromatography

MediaScout is a registered trademark of ATOLL GmbH, Weingarten, Germany.