Building a world-class compound

The fully integrated drug discovery and development company Amphora, based in North Carolina's Research Triangle Park in the USA, has chosen REMP automated storage and retrieval systems to take control of its compound library.

Over the last five years, Amphora's compound management laboratory has been building a library of over 130,000 compounds to serve the company's research projects that use chemogenomic, system biology and microfluidic technologies to develop targeted therapies for oncology, inflammation, Alzheimer's disease and diabetes.

Managing such a library and keeping up with all the internal and external customers' demands is no easy task, as Ioana Popa-Burke, Associate Director at Amphora, explained: "Although we are a relatively small biotech company, our compound management still needs to be first class. Tracking all the samples manually is logistically extremely complicated so we evaluated all the major compound store manufacturers prior to purchasing the REMP system. Many of us have previous experience of compound management from bigger pharmaceutical companies and we wanted to apply those same management principles to build a world-class management system on a smaller scale."

"We were really attracted to REMP for several reasons; firstly, the company has an extremely good reputation and every single independent user we talked to spoke very highly of it; secondly, by acquiring just the core of REMP's Small-Size Store™ (SSS) and Mid-Size Store™ (MSS) we are able to stay within budget and grow the system as we need to."

A high quality sample storage system such as REMP's is essential for Amphora as the company puts significant effort into ensuring that all of its compounds are of the highest quality. All of the compounds in the library are purified by LC/MS and are all more than 95% pure. Using analytical chemistry techniques, the compounds are constantly monitored for stability and solubility and, therefore, the reliable storage conditions and tracking advantages of REMP's systems are critical for Amphora's standards. This also provides further advantages for Amphora's screening processes, as Ioana explained.

"We depend on very high quality screening to be able to find highly selective, target-specific compounds. We screen kinases, proteases, phosphatases and some ion channels and we can pick compounds with any selectivity profile we want. If our compounds were not of sufficiently high quality then all our screening efforts would be effectively useless. This also has ramifications for all of our disease research areas. For one of our inflammation projects, for example, we have worked on a p38α inhibitor. Using our industrialized drug discovery

The compound management lab at Amphora

management system

platform, of which the REMP system is an integral part, we have been able to pick a p38α selective compound while most people are working on p38α/p38β dual inhibitors! Overall, we have been extremely pleased with the system, it has made a big impact on our daily routine as well as on the quality of the compounds and data tracking."

Amphora's REMP system includes the Tube Punching Module™ (TPM) and associated devices, the Reatrix™ DataMatrix Scanner for reading the storage tube rack bar codes and 2D barcoded REMP 96 Tube Technology™ consumables. The TPM is a desktop device that allows PC-controlled selection of REMP 96 (or 384) tubes, which are directly transferred from storage tube racks into delivery tube racks for collecting and reformatting. The TPM performs the transfer through a single axis movement, reducing handling error

Storage Tube Rack with 2D Code

rates, and is faster and more reliable than conventional pick and place methods. It allows tubes to be cherry picked at any time, leaving the destination tube racks within the storage environment until instructed otherwise, and is extremely useful for aiding sample tracking.

Brian Hardy, the Lead Scientist at Amphora, who runs the REMP system on a daily basis has found its ease of use and reliability particularly important: "The REMP system has been essential for us to set up our tube-based library. It has considerably improved our process, in terms of both speed and data quality, and we have had no problems at all. The TPM and Reatrix Scanner work seamlessly and are very reliable; they have drastically reduced our potential for error. We can now cherry pick compounds as and when we like, we can use multiple formats, and the technology has helped us a great deal already to meet customer and collaborator requirements. I operate the whole system daily and have never had to use REMP's helpline since the system has been up and running!"

Tube Punching Module

Automated Capper/Decapper

Reatrix

Small-Size Store

True scalability with REMP's Tube Technology

REMP's sample processing and storage concepts were originally adopted by large facilities, but are equally important for smaller scale laboratories to be able to access high quality sample management. The REMP Tube Technology consumables provide this all important entry level step, allowing you to set up your compound library in the tubes, which are supported by devices such as the Tube Punching Module (TPM), automated Capper/Decapper™ or Tube Sealer and the Reatrix 2D scanner. The TPM is easy to integrate into automated systems, so once your library grows it becomes easy to move the tubes into a fully automated REMP store, such as the SSS.