



Ribometrix: Improving Management of a Complex Sample Inventory

Toby Winchester & Chloe Carter
Titian Software Ltd

v1.0

Ribometrix is a platform therapeutics company whose mission is to leverage RNA expertise to discover and develop transformative small-molecule drugs. Numerous diseases could be cured and lives of many millions of people could be improved by changing the behaviour of disease-causing RNA.

“Most drugs used to treat human disease target proteins, but only a small fraction of proteins known to cause disease have ever been successfully drugged. At Ribometrix, we are dedicated to developing therapies which disrupt disease-causing proteins before they are ever made by targeting the mRNA involved” explains Nick Taylor, Senior Research Associate at Ribometrix.

Many RNAs implicated in disease contain clefts and crevices into which small molecule drugs will bind. Ribometrix scientists use state-of-the-art strategies to identify and optimise ligands that bind specifically in these crevices and therapeutically modulate these RNAs.

Ribometrix's success is demonstrated by its multimillion dollar collaboration with Genentech to discover, develop and commercialise small molecule drug candidates against several RNA targets that are difficult to address with conventional approaches.



The Ribometrix Team



THE SAMPLE INVENTORY CHALLENGE

Ribometrix's library is not one of the largest, with currently over 17,000 samples. This breaks down to around 2000+ tubes of RNA; 8000+ tubes of liquid stock small molecules; and 7000+ vials of solid stock small molecules. The requirement for Ribometrix to accurately track these samples is as important, if not more so, than for a large pharma equivalent.

The exact amounts are variable because the company is constantly shipping samples around the world to CROs and dispatching them internally to its own assay scientists, while also receiving new samples weekly. Ribometrix focuses on many types of sample:

“Currently we have RNA constructs, small molecules (both liquid and solid stocks), and high-density pools for our compound libraries” says Taylor.

This library diversity creates challenges for sample inventory and logistics, as each type of sample has different characteristics, different storage conditions and different labware to track. In addition, a sample's permissions, ownership and genealogy (including division, subsampling or cloning) often need to be recorded. Pooling also relies on extremely accurate sample tracking to ensure the integrity of the resultant data.

INSTALLING A SOLUTION

Ribometrix installed Mosaic sample management software in 2020 to improve its inventory management. Taylor explains **“Prior to Mosaic we primarily were operating through Excel sheets and institutional memory. The level of stress we were under was considerable because we needed to rely on ourselves for integrity, data tracking and error avoidance.”**

Implementation of any new system – especially ones involving legacy data – is often resource intensive and Ribometrix's installation of Mosaic happened at the height of the pandemic.



“Considering our implementation occurred primarily during 2020, it went about as well as it could have since we didn’t have any on-site support or travel from Titian” says Taylor.

He continues: **“Whenever we have severe issues, support is quick to respond to our communications and provide solutions. I don’t think we’ve ever had an outage that lasted long enough to severely impact our processing capabilities.”**

PRESENT OPERATIONS AND FUTURE PLANS

Mosaic is proven to handle tens of millions of samples of all types throughout their lifetime and is now the main hub for all Ribometrix's sample inventory. **“All our orders go through Mosaic so that we can accurately track the weights and volumes available for our scientists’ work”** says Taylor.

Mosaic records all sample events from creation to disposal, including monitoring stock levels, tracking sample locations, movements and expiry dates.



We have samples that have short lifespans and need to be kept at optimal temperatures.

With Mosaic we’ve been able to create restriction lists so that samples past their prime aren’t orderable, which keeps our assay data reliable.

Nick Taylor

Senior Research Associate at Ribometrix



Mosaic can deal with a range of different cases where sample use needs to be restricted by expiry dates or other criteria. It allows users to easily place restrictions either at the substance level (compound ID, batch, or tissue sample) or on the labware (tube or plate).

If samples are restricted, Mosaic ordering automatically triggers and manages the approval process. It also ensures that all requests and authorisations are logged in Mosaic's detailed audit trail, which is 21 CFR Part 11 compliant and time stamped, so suitable for use in regulated environments.

So how do Ribometrix see their future sample management operations and their use of Mosaic developing?

"We're at a point where we can start adding cell lines for our tissue culture work, so we'll be implementing that as the need arises" says Taylor. **"Right now, our operations aren't so complex that we need to use Mosaic's network connections to liquid handlers for processing orders – but knowing that it is available to us is comforting."**





Thank you for your interest in this document



White
papers



Application
notes



Product
brochures



Video
content



Webinar
recordings

You can find a collection of further related material in the resources section on
Titian's website. Scan the logo QR code with your mobile or tablet to visit.



info@titian.co.uk
www.titian.co.uk

UK Tel:
+44 20 7367 6869

USA Tel:
+1 508 366 2234