

'Ship-Shape' Management of Active Pharmaceutical Ingredient (API) Stock and Shipments at Debiopharm





Debiopharm International SA

- Drug development (oncology and bacterial infections)
- >400 employees
- Two company sites (Lausanne and Martigny, Switzerland) and numerous global CRO partners
- Dotmatics solutions for: reagent registration/stock management, ELN, API chemical registration/DPM assignment, analysis/results sharing, API stock/shipment management, analytical lab analysis requests

Debiopharm has a clear goal — Deliver new therapies to patients faster.

But the path to success is often complicated. Many obstacles can stand in the way. Endless data. Disconnected teams. No centralized research platform. It can be challenging enough to manage internal processes, let alone truly leverage people and knowledge to drive innovation.

To address these challenges, Debiopharm worked with Dotmatics to adopt several solutions and implement a centralized research-data platform that helped:

- Unite data – API, project, and experimental data from all sites and CROs instantly accessible
- Streamline workflows – Ability to search prior work, clone experiments, and share results
- Improve decision-making – Easier collaboration and reliable data to guide projects

Details of this company-wide implementation can be found in the case study, Dotmatics as a Disruptive Technology at Debiopharm. In this case study, Jean Richardson (IT Scientist at Debiopharm) shares a closer look at how Debiopharm got a better handle of their API stock and shipment process with the help of Dotmatics.



Jean Richardson

IT Scientist
Debiopharm International SA



The Challenge: Lack of Up-to-Date Stock Levels and Movement

Synthesis and analysis are truly a team effort at Debiopharm. Compounds are synthesized at internal labs, as well as at numerous CROs. Likewise, analysis is done both internally and at specialty CROs around the world. With so many stock movements, there was risk of error. Luckily, there was also a lot of potential for improvement.



Image Credit - Debiopharm

The Approach: A Unified Informatics Platform for Real-Time Data

Having previously worked with Dotmatics to implement solutions for reagent registration, biology and chemistry electronic lab notebooks, and data reporting and analysis, Richardson's team knew that spending time upfront to define requirements would pay off in the long run.

So, her team worked closely with Dotmatics to detail key must-haves for an API stock and shipment management solution; these included:

- Live inventory – The team wanted a real-time, accurate account of shipped samples and remaining stock.
- Simple requests – Scientists wanted a way to quickly request a precise amount of an API based on available stock, define shipment specifications such as temperature, and see fulfillment status (requested, in progress, complete).
- Easy fulfillment – Inventory managers wanted an accurate account of all stock, easy access to shipping data united in one system, and clear insight into the details of each request (contact person, destination, batch, storage location, and associated project).
- Real-time tracking – The team needed to track not only stock sent to Debiopharm sites, but also stock sent between CROs synthesizing compounds and those analyzing them (which wasn't possible in the old system). Managers also wanted to visualize shipping statistics over time.

“We knew we needed a better system in place to keep everything in order, both internally and at our CRO-partner locations,” explains Richardson. “With our existing system, nothing was easy. Scientists were hitting bottlenecks when requesting supply via an Excel-based network file. We often had inaccurate stock measurements. We sometimes had little to no insight to where our stock was, especially when it was going directly from one CRO to another.”

Jean Richardson

The Solution: A Web-Based Stock and Shipment System

With these must-haves in mind, Dotmatics worked to configure an API stock and shipment system for Debiopharm using its solutions for:

- Inventory management** – The inventory system tracks all inventory, including incoming stock synthesized by both in-house scientists and CRO partners, as well as outgoing stock being sent internally or between CROs.
- Lab requests** – A simple form (accessible from the previously implemented ELN) takes researchers' detailed API requests and sends them to directly inventory managers for fulfillment. As shown in Figure 1, the request form accounts for details such as batch number, billing project, shipping specs, requested amount, current stock available, and request status. Figure 2 shows what the inventory manager processing the request would see, including who requested a sample and where the associated inventory is located.
- Web-based searching and reporting** - An interactive inventory summary report lets all users see details around a particular compound's history, such as current sample availability, associated batches, and request and shipment history (as shown in Figure 3).

Of course, it wasn't as simple as rolling out some new products. The Debiopharm team also needed to do some data migration and change some internal processes for the solution to work as planned. For example::

- The team needed to migrate all their chemical inventory data from previous systems onto the Dotmatics platform.
- Both in-house and CRO-based synthesis teams needed to be set up to input new samples into the new system.
- The inventory managers needed to accurately weigh samples shipped and also re-weigh stock being returned to a precise location in storage (X and Y position).

The screenshot shows a web-based API Order Form. It includes a table for 'Samples to Ship' with columns for Batch, Batch Name, Project, Requested Amount, Allocated Amount, Requested Date, Shipping Temperature, Analysis Type, and Comments. Below this is a 'Calculate Request Status' section with fields for Request Experiment ID, Requester, Order Status, and Shipping Destination. A 'Shipped Reference' table shows details for shipped samples, including Sample Name, Project, Amount Requested, Amount Sent, Quantity Unit, Analysis Type, and Status. Red boxes highlight the 'Batch' and 'Amount Sent' fields.

Figure 1: Debiopharm researchers can send API stock requests directly to inventory managers via a form that records details such as batch number, billing project, shipping details, requested amount, current stock availability, and request status.

The screenshot shows a detailed view of the API request form. It includes a 'Samples to Ship' table with columns for Batch, Batch Name, Project, Requested Amount, Allocated Amount, Requested Date, Shipping Temperature, Analysis Type, and Comments. Below this is a 'Calculate Request Status' section with fields for Request Experiment ID, Requester, Order Status, and Shipping Destination. A 'Shipped Reference' table shows details for shipped samples, including Sample Name, Project, Amount Requested, Amount Sent, Quantity Unit, Analysis Type, and Status. Red boxes highlight the 'Batch' and 'Amount Sent' fields.

Figure 2: Debiopharm inventory managers see all the details input on the API request form, as well as additional information, such as the person making the request and the specific storage location of matching stock.

The screenshot shows an interactive inventory summary report. It includes a table for 'Powder Samples in Inventory' with columns for Sample ID, Batch Code, Initial Quantity, Units, Current Amt, and Units. Below this is a table for 'DMG0 aliquots (Comp) in Inventory' with columns for Batch ID, Aliquot Volume, Units, and Num Aliquots. A 'Shipped Powder Samples' table shows details for shipped samples, including Sample Name, Project, Shipped Quantity, Units, Requester, Experiment ID, Shipping Date, Analysis Type, and Shipping Destination.

Figure 3: An interactive inventory summary report lets Debiopharm users dig into a compound's details, such as current sample availability, associated batches, and request and shipment history.

The Outcome: Streamlined Process Frees Scientists' Time

The detailed planning was worth it.

With the Dotmatics-based API stock and shipment solution, Debiopharm's internal sites and data from partner CROs are united on a single, secure system. The solution has streamlined the team's processes and reduced error, which has in turn decreased uncertainty and frustration across the board.

Richardson explains, "Our Active Pharmaceutical Ingredient (API) stock-management and shipping process is truly 'ship shape' now that we've implemented Dotmatics. Requests are simple. Stock availability is reliable. And we know exactly where our stock is at all times—whether it's on a certain shelf in a specific stock room or it's in transit from one CRO to another."

In fact, the solution was so well received that the team went on to implement an additional Dotmatics Cascade-based system for managing analytical-lab requests—the latest endeavor in a series of projects Debiopharm has done with Dotmatics.

"We've been working with Dotmatics for a few years now and they always take the time to understand our workflows and needs. Because their platform is open and configurable, we never feel like we're starting from scratch when we begin a new project together. Instead, we can build upon what's already been implemented, rolling out new functionality that further optimizes our processes and frees our scientists to make the most of their time and knowledge," concludes Richardson.

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Jean Richardson



Image Credit - Debiopharm



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