
# Bringing Clarity to R&D Collaboration

The collaborative nature of scientific research and development frequently entails researchers, from multiple disciplines, sites or even time zones sharing samples, requesting experimentation or analysis, and reporting progress or results. Managing and tracking these requests and results has previously been challenging, especially in allowing sufficient flexibility for the ever-changing environment of the research lab. The ability to manage the over-all process in a single, integrated system offers the chance to restore essential clarity to the collaborative nature of research and development. PerkinElmer's E-Notebook R&D LIMS Module fulfills this need by bringing together four major components:

- Sample Management
- Request Management
- Test Execution
- Result Reporting

The E-Notebook R&D LIMS Module is designed to manage the disparate workflows between researchers. Components of a researcher's workflow would be:

- Conduct experiments
- Generate samples
- Request other researchers to provide additional studies or analyses
- Capture the results and report back progress
- Plan the next round of experimentation

All of these components are captured, documented, managed and cross-linked within the R&D LIMS Module for E-Notebook for easy retrieval and searching. Approval workflows, including electronic signatures, can be implemented on the experiments, requests and reports.

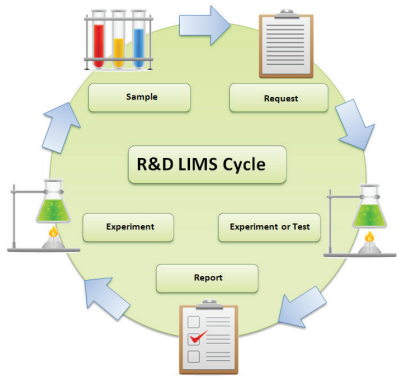


*Figure 1:* The iterative relationship between experiments, requests, tests, and reporting.

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Chain of custody tracking can be implemented on the samples to track their ownership and locations. Dashboards give immediate visual notification to the researchers of activity, such as requests for collaboration, or return of results. The result is immediate access to the experiments and data relating to your research, across a myriad of researchers and locations.

## Key Elements

### Creation and management of samples

The R&D LIMS Module for E-Notebook makes it easy to create and follow samples during the course of your experimentation. Samples can be used to initiate requests for further study and analysis. The full life cycle of the samples can also be tracked by utilizing the chain of custody to record the movements of the sample from creation, through various owners, to ultimate disposal. Barcode creation is also available to rapidly identify, update and track samples.

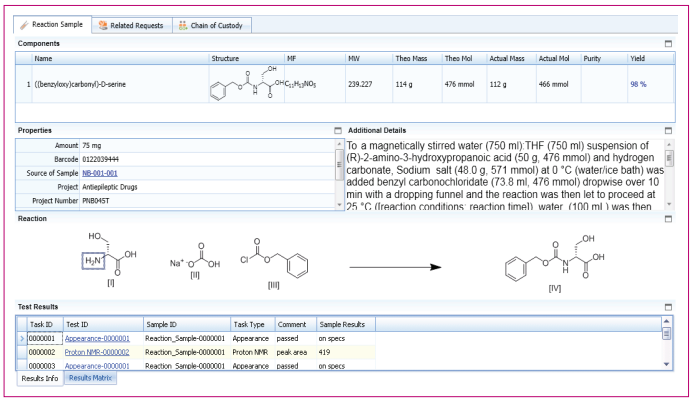


*Figure 2:* Samples keep track of all of the work done on them during their life cycle, providing a one stop source of information.

### Request Management and Test Execution

The R&D LIMS Module for E-Notebook facilitates your requests for collaboration with other researchers, be that a single or set of defined analytical tests, or a more complex investigative study, creating a streamlined, traceable workflow and cross-linking the disparate pieces of experimentation. Single or multiple samples can be consolidated within requests. As the requests are fulfilled the results are reported back immediately to you, either as reports or as defined values and units. Requests can be routed through team managers to enable monitoring and assignment of activities, as can approvals of reports and final data.

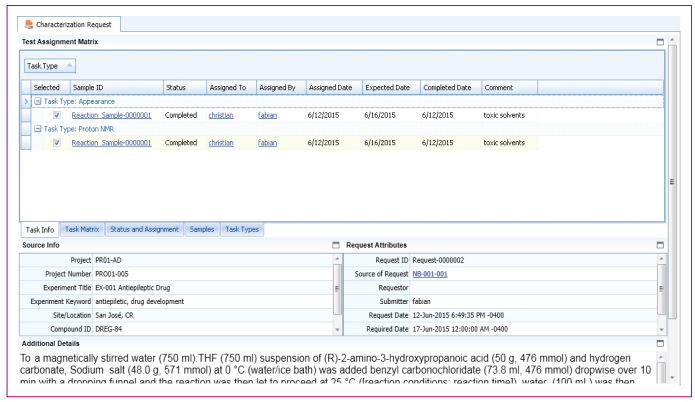


*Figure 3:* Requests allow simple creation of tests and samples matrix, updating each task individually over its life cycle.

Team managers are provided with dashboards in tabular format, giving them insight into the work that is being requested and fulfilled by their team. These dashboards allow for the filtering, sorting and grouping of metadata associated with requests, test type, due date and sample status. The dashboards have hyperlinks to any experiment, request and samples so that managers can drill down to the details as needed.

Workflows can map the requests with the available tests. Discrete tests are easily formatted, to control parameters such as the type of analysis and the relevant units. The requests can be mapped to the individual researchers so that they only see the requests that are relevant to them.

## Reporting

Data and reports from your collaborators are automatically passed back to you, either as unstructured reports, or as structured and discrete data values. Once all of your requests are fulfilled, one-click reporting tools allow you to consolidate all of the collaborators experimentation in a single file or document. The result is rapid creation of key documents such as patent reports, study reports and batch of materials analysis reports.

## Conclusion

The E-Notebook R&D LIMS Module enables multidisciplinary collaboration between scientists using a common E-Notebook, facilitating requests between different departments and providing live tracking of requests, tests, and reported results, elevating research efficiency to the next level.


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