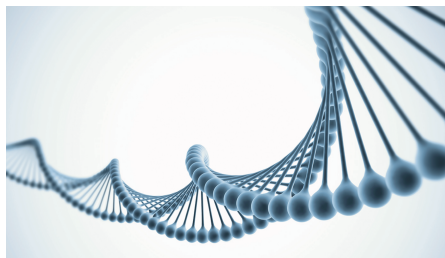


Streamlining qPCR Molecular Diagnostics with Applied Biosystems™ Diomni™ Software



Throughout the field of clinical diagnostics, improving efficiency of testing processes and data management is becoming more commonplace. Users expect smarter assay workflows that maximize productivity to meet increased test volumes and expectations of faster turnarounds and data handling needs to keep up, whether the lab is processing clinical diagnostic tests or developing its own assays. However, not all instrument software is equipped to integrate effectively with other applications, such as laboratory information management systems (LIMS or LIS). Though qPCR is an increasingly critical component of molecular diagnostic (MDx) operations, such gaps in software have traditionally held clinical qPCR.

To address these diagnostic challenges, Thermo Fisher Scientific has developed new software to support workflows on the QuantStudio 7 Pro Dx Real Time-PCR system. Applied Biosystems™ Diomni™ software is a web application that streamlines routine diagnostic testing and assists assay developers at every stage of the product development cycle. With the QuantStudio 7 Pro Dx system, Diomni offers scalable and flexible options for configuration in the laboratory. In this blog, we will walk through some of the top features that make Diomni software a strong partner for any qPCR molecular diagnostics application.

Capabilities That Make Integration Simple

Laboratory information management systems (LIMS or LIS) have become an essential tool for managing testing data and helping ensure data integrity. Still, full integration with the laboratory ecosystem remains a challenge for many users. Through the Diomni software, users can now easily integrate exported qPCR assay results with using a LIMS or LIS. This automatable LIMS integration also lets users manage lab workflows, track samples, and adhere to regulatory requirements, seamlessly transferring essential information to the lab's LIMS.

Additionally, for customers interested in automated integration of the QuantStudio 7 Pro Dx system into their current workflow, Diomni provides a customizable solution with APIs. At no additional cost, the Automation API package allows users to maximize efficiency by allowing the ability to integrate automation tools such as plate-moving robots and liquid handlers into QuantStudio 7 Pro Dx workflows. Full-feature API packages are also available at a cost to support customers who need additional embedded capabilities, which may be ideal for assay development or labs with a centralized workflow.

Flexibility, Versatility, and Support for Changing Demands of qPCR Molecular Diagnostics

For clinical labs and assay developers alike, a versatile and flexible qPCR ecosystem is essential to keep up with changing needs and demands. While the QuantStudio 7 Pro Dx is an impressive standalone system, Diomni software adds further versatility by providing additional sample-to-result workflow options beyond those available through the instrument touchscreen alone. Users can conveniently set up, queue, and initiate runs remotely on multiple instruments without entering the lab. Post-run, the data can be viewed on Diomni for in-depth quality checks and individual sample analysis through the program's comprehensive data visualization tools so users obtain immediate insights. Diomni enables scalability through a centralized setup which is accessible to multiple users via a web-based application that can also connect to many qPCR instruments.

A major component of Diomni's versatility is the use of assay definition files (ADFs), configuration files that contain all necessary parameters to perform and analyze a specific assay. ADFs provide a user-friendly workflow that can help minimize errors during instrument setup and support versatility. Even if a lab's testing needs change significantly from day to day, ADFs are a "plug-and-play" format that makes it easy for any user to set up and perform runs. Diomni also empowers the development of new molecular diagnostic assays. Because ADFs can be created for different regulatory use cases, labs developing new molecular diagnostic tests assays can use a single instrument to [seamlessly transition](#) from assay development to clinical testing.

Open Workflows Streamline Data Collection, Analysis, and Management

Whether a lab uses the QuantStudio 7 Dx Pro system with Diomni for routine diagnostic testing or developing regulated assays and tests—or if they switch between doing both—they can use a simplified 4-step process to improve the workflow and generate results they can trust. First, the user remotely selects the ADF for the specified test and adds samples to the plate layout. This run setup is then sent to one or more instruments or can be queued for a later time. After the run completes, users can see quality check results immediately on the instrument screen or configure more detailed reports and individual sample analyses through Diomni's data visualization tools. Finally, a PDF report or result data file can be directly transferred to a designated location, including a LIMS/LIS. Diomni enables a simple and easily configurable sample-to-result workflow that makes even complex MDx assays routine.

Automation is a growing part of MDx testing as labs seek to keep up with increased demand and maintain operational flexibility. Even for smaller labs that may not be situated to integrate broader testing automation, leveraging the innovative features of the QuantStudio 7 Pro Dx and Diomni software can add ease and efficiency to workflows and support further automation as their operations expand through Diomni's API interface.

To learn more about how the QuantStudio 7 Pro Dx and Diomni software can streamline assay development and clinical testing for labs of all sizes, visit thermofisher.com/diomni

For In Vitro Diagnostic use