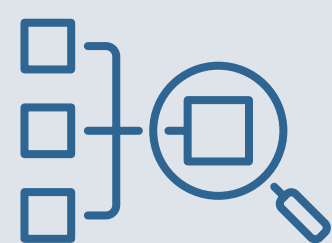


Gathering Requirements for a Successful LIMS Selection

Choosing the right LIMS begins with a thorough understanding of your laboratory's unique workflows, processes, and data management requirements. This initial step in the process of selecting a LIMS ensures alignment with your lab's operations and goals for implementing a system. The following pages focus on key areas to gather requirement for your lab.

- Lab Workflows & Processes
- Data Management
- Data Security & Access
- Reporting & Analytics
- Compliance & Quality Control
- Scalability & Future Needs





Lab Workflows & Processes

- Map all core laboratory workflows and identify routine versus specialized processes.
- Determine workflow complexity and identify areas for potential automation.
- Document sample tracking needs and turnaround time requirements.
- Establish points where automation could improve efficiency.

Map Out Core Laboratory Processes

Begin by documenting the end-to-end workflows for your laboratory's primary functions, such as sample accessioning, processing, testing, and reporting. Consider each step where samples are tracked, data is generated, and information flows.

Identify Routine and Specialized Workflows

Differentiate between daily routine processes and specialized or periodic tasks, such as sample preparation, data entry, or quality control checks. This will highlight both basic and advanced functionality needed in a LIMS.

Determine Workflow Complexity

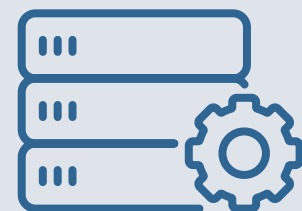
Some laboratories have complex, multi-step workflows with stringent quality controls, while others have simpler, high-throughput processes. Define the complexity of workflows to understand whether a flexible or highly structured LIMS is more appropriate.

Evaluate Sample Tracking Needs

Consider how samples are tracked through each stage in your lab. For example, assess if you need barcoding, RFID tracking, or manual tracking. Determine whether the LIMS must support multi-site sample tracking or track samples from external collaborators.

Define Turnaround Time Requirements

Labs with strict turnaround time requirements may benefit from workflow automation features. Document turnaround times for each workflow to help determine if automation capabilities are essential in the LIMS.



Data Management

- Estimate current data volume and define storage needs.
- Document capture methods (manual, automated, instrument integration).
- List data types and formats handled (e.g., numerical, text, images).
- List all instruments, systems and databases that the LIMS must integrate with.
- Define data analysis, reporting needs, and data retention policies.

Data Volume and Storage Needs

Estimate the volume of data generated in your lab, including the number of samples processed and data points generated daily, weekly, and monthly. Ensure the LIMS can handle your current data volume with scalability for future growth.

Data Entry and Data Capture

Determine how data is captured and entered into the system—whether manually, through automated instrumentation, or via integrations with other software. A LIMS should facilitate seamless data entry and minimize manual data handling.

Data Types and Formats

Identify the types of data your lab handles (e.g., numerical, textual, image files, or analytical results). Ensure the LIMS supports all relevant data formats, particularly if your lab relies on complex data types like chromatograms or microscopy images.

Data Analysis and Reporting Needs

Outline any specific data analysis or reporting requirements, including custom report generation, statistical analysis, or visualizations. Some LIMS come with built-in analytic tools, while others may require integration with third-party software.

Data Retention Policies

Laboratories must retain data for different time periods based on regulatory and internal policies. Define your data retention needs to ensure the LIMS supports archiving and data lifecycle management, allowing for efficient storage and retrieval of historical data.



Data Security & Access Control

- Ensure role-based access controls are available.
- Confirm data encryption capabilities for sensitive information.
- Check for secure backup and recovery features.
- Evaluate if the LIMS provides a comprehensive audit trail of all data interactions.

User Roles and Access Levels

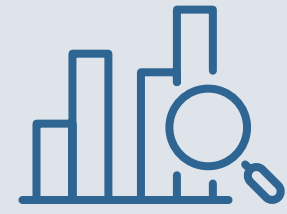
Define the roles within your lab and determine who needs access to different types of data and functionality. A LIMS should support granular role-based access controls (RBAC) to protect sensitive information and ensure appropriate data access.

Data Encryption and Backup Needs

Evaluate your lab's data security requirements, including encryption standards, data backups, and disaster recovery needs. Confirm that the LIMS provides adequate protection for sensitive or proprietary data.

Remote Access Requirements

Some labs may require remote access for off-site researchers or multi-site collaboration. Determine if the LIMS offers secure remote access options to facilitate data sharing without compromising security.



Reporting & Analytics

- Assess the availability of custom reporting options.
- Verify if the LIMS can perform trend analysis or visualization of data.
- Ensure the LIMS supports export of reports in multiple formats.
- Confirm integration with external analytics tools if needed.

Standard and Custom Reporting

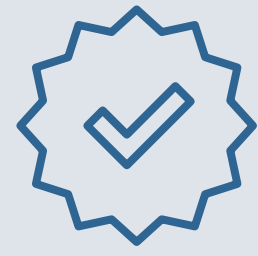
Most labs require standard reports for sample tracking, workflow monitoring, and quality control, as well as customizable reports for unique parameters like specific sample types or test results. Ensure the LIMS can support both standardized and custom report formats to capture the data most relevant to your operations.

Data Visualization and Trend Analysis

Data visualization, including charts, graphs, and dashboards, helps labs interpret trends such as sample throughput and test performance. Assess whether the LIMS offers built-in visualization tools or if it requires third-party integration to meet your lab's data interpretation needs.

Automated Report Scheduling

For labs needing frequent reports, automated scheduling is valuable for timely, consistent data delivery. A LIMS that can automatically generate and distribute reports at set intervals (e.g., daily, weekly), streamlines workflows and ensures essential data is readily available.



Compliance & Quality Control

- Ensure compliance features for relevant standards (e.g., GLP, GMP, 21 CFR Part 11).
- Confirm the presence of audit trails and electronic signatures.
- Verify if access logs are maintained for regulatory audits.
- Assess built-in features that support data integrity and secure record-keeping.

Compliance Standards

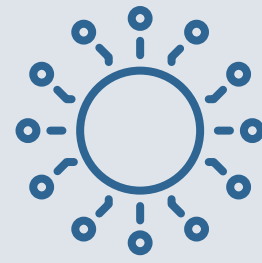
Identify industry regulations and standards (e.g., GLP, GMP, 21 CFR Part 11, ISO) relevant to your lab. Confirm that the LIMS can support compliance through audit trails, electronic signatures, and data security controls.

Quality Control and Assurance Needs

Determine if your lab requires specific quality control (QC) steps, such as batch control, control sample tracking, or automated QC rule applications. This will help you assess if the LIMS has built-in QC functionality or can be configured to meet these needs.

Audit Trails and Record-Keeping

If your lab must track data modifications, ensure the LIMS provides robust audit trails to capture who accessed, modified, or approved data records. This functionality is essential for labs under regulatory scrutiny or with strict quality control requirements.



Scalability & Future Needs

- Check if the LIMS can easily scale with increased data volumes or lab growth.
- Confirm options for custom fields, workflows, and configurations.
- Verify if additional modules or features can be added as needs evolve.
- Ensure adaptability to accommodate future regulatory or operational requirements.

Growth in Data Volume and Lab Operations

If your lab anticipates an increase in sample volume, instrument additions, or new data types, consider scalability in your LIMS requirements. The system should be capable of expanding in terms of data storage, processing capacity, and user count.

Anticipated Regulatory Changes

As regulations evolve, labs must adapt to new requirements. Assess if the LIMS vendor is committed to regular updates that ensure ongoing compliance, even as industry standards change.

Flexibility for New Workflows or Research Directions

Consider whether your lab's focus may shift or expand into new areas requiring additional workflows, instrumentation, or data types. A flexible LIMS with customization options will support future modifications without costly upgrades.



Elevate your lab's productivity and efficiency with LabKey LIMS—the intuitive, full-featured solution designed for modern scientific workflows.

- ▶ Robust sample and data management capabilities for effortless organization and tracking of inventory and research data.
- ▶ Powerful workflow automation streamlines day-to-day operations, boosts adherence to protocols and frees up valuable time for innovation.
- ▶ Customizable reports and insightful visualizations transform raw data into actionable insights.
- ▶ Centralize experiment documentation, protocols, and results with the integrated Electronic Lab Notebook.
- ▶ A user-friendly interface and intuitive features minimizes training and promotes adoption within the lab.

