

Biotech Insights: A Deep Dive into LIMS Software Evaluation

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Flow of evaluation:



1. Identify your challenges, pain points, and requirements
2. Prepare to find and research an initial set of products
3. Screen candidates - comparing features and trade-offs including demos
4. Dive deeper - Get hands on trialing the top product options with real-world data
5. Research vendors - Read reviews and testimonials, seek references
6. Make a decision aligned with your current and future needs

Why do you need a LIMS?



All increasingly problematic as your team and R&D complexity grow!

Efficiency:

- Manual processes taking time away from research
- Use of many disparate systems

Data Management & Analysis:

- Difficulty tracking data for planning, decision making, regulatory submissions
- Challenges managing samples and connecting them to results
- Excess effort generating views, reports, and analyses

Workflow & Collaboration:

- Siloing of data slowing cross-functional and post-hoc use
- Inconsistent data practices slowing aggregate and post-hoc use

Security:

- Reliant on individual responsibility to protect your IP

What can a LIMS do for you?



Efficiency:

- Increase efficiency and predictability for regular work
- Fewer errors, faster data processing, greater consistency, and improved findability
- Centralized source of truth for data

Data Management & Analysis

- High traceability of samples and other materials with automatic integration of data types
- Automated generation of routine data views, reporting, and analysis at each level
- Programmatic utility for bioinformatics applications such as ML/AI modelling

Workflow & Collaboration

- Cross-functional data accessibility and hand-offs
- Centrality of operations, standardization, concurrent usage, predictability, visibility of use

Security

- Genuine system security with granular permissions not requiring file management

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Questions to define your requirements:



What problems do you need to solve?

For whom?

- Scientist organization and efficiency?
- Data scientists, management or executive level decision-making?
- Representatives to lead this effort?

For what scientific functions?

- Is it all the scientific functions and teams enterprise-wide?
- Is it just your discovery and cell-line development groups?
- Outsourced functions?

Which pain points & priorities?

- Data governance, establishing a “source of truth”
- Connecting data from different steps and types
- Reducing manual spreadsheet work
- Facilitating hand-offs of data and requests between teams
- Structuring your data for data scientists (analytics and AI/ML modelling)



**What challenges are you having
that a LIMS could solve?**

(Please vote using the Zoom poll feature.)

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Before your evaluation you should determine:

- Establish selection criteria based on requirements gathered
- Onboard leadership about needs, budgets, and other resource availability
- Talk to IT/Security about their requirements
- Check for institutionally preferred vendors
- Establishing decision-makers
- Determine desired timing for decision making and implementation



Be ready to provide shortlisted vendors with:

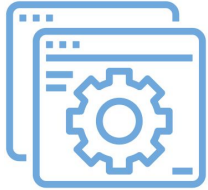
- Real-world data
- Defined processes needing support
- Who will use the product - #/type
- User flexibility and openness to change
- Biggest pain points, time sinks
- Future projections/plans - growth

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How Requirements Fit LIMS Functions



Common categories of LIMS functionality:

- Sample and Material Management
- Data Management
- Workflow and Collaboration Management
- Analysis
- Data Security

What to look for: Sample and Material Management



End-to-end tracking with relationships to each other and sources.

- Track the lineage of samples as they are processed, connecting them to experiment results and analyses.
- Manage glycerol stocks and plates through iterative antibody screening and characterization workflows
- Capture sample and plate-well metadata for inclusion with results and analysis
- Explore what materials you have meeting criteria for new projects

What to look for: Data Management



**Capturing, viewing,
integrating all useful
types of data.**

- **F**indable **A**ccessible **I**nteroperable **R**e producible
- Standardizing, connecting, integrating, organizing and auditing
- Enforcement of structure for consistent usage
- Importing results for integration with samples, QC, analysis, and reporting
- Capturing plate-based data for tracking and alignment
- Automatic processing of data

What to look for: Workflow and Collaboration



Facilitate accountability, communication, and data access.

- Standardize and manage processes
- Monitor work that is underway
- Assist with hand-off and notifications between operations
- Document experiments and highlight results
- Create and display reports that are routinely needed



**Accelerate routine
exploration and analysis.**

- Easily visualize and analyze results using native and external analytics tools
- Analyze data for multiple runs of the same type or look across types to meet broader decision criteria
- Unique analyses for specialized LIMS
 - View physical properties of candidate antibodies and sequences
 - View all data available for a molecule, sequence, or clone to make selection decisions



Ensure the security of your data for compliance and protection of your IP.

- Data location - On-premise vs. Cloud (multi-tenant vs private)
- Authentication options
- Data partitioning with user permissions & roles
- Locking notebooks or other data
- Compliance features for federal or other regulations



What are you using now to manage your data and processes?

(Please vote using the Zoom poll feature.)



 **The resources & information you need changes as the evaluation progresses.**

Initial evaluation and shortlisting:

- Explore vendor websites and collateral
- Peruse generic product tours and trials
- Request generalized demonstrations

Needed for more in-depth evaluation:

- Real conversations
- Tailored demonstrations with your data
- Tailored trials for hands-on assessment
- Pilot projects

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Test Real-World Scenarios:

Use real data and processes to test the software to get a clear idea of how well it can handle your workflows and data types.

Evaluate User Friendliness:

The interface should be intuitive and easy to navigate. A steep learning curve might indicate potential adoption issues.

Check Customization and Scalability:

Determine how easily the software can be customized to fit your requirements. Also, consider how it would handle an increasing volume of and integrating new processes.

Assess Integration Capabilities:

Check how well the LIMS integrates with other systems and instruments. Seamless integration is key to efficient data flow and reduced manual data entry.





Review Data Management and Security:

Understand how the LIMS manages data storage, backup, and recovery. Ensure it has robust security measures to protect sensitive information.

Request Feedback from Users:

During and after the trial, gather feedback from your team on their experience with the software. This feedback is invaluable in assessing whether the LIMS is a good fit for your lab.

Request Extended Trial if Necessary:

Don't hesitate to ask for an extended trial period if needed. This can give you more time to evaluate its features and make a well-informed decision.

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Choosing the Right Vendor



Keep in mind...

The sales process is an early indicator of how a vendor treats their clients and the support they will provide.

- What is the Long-Term Product Viability?
- What does Partnership and Vendor Support look like?
- What is the Pricing Structure and are there any additional costs?
- Does the Vendor Clearly Show Technical and Scientific Competence?
- *How do they treat you?*

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**Gather the decision makers.
Review the selection criteria
and what you have learned.**

- **Compare Against Requirements:** Initial and learned requirements against LIMS functionality prioritized by what is most critical
- **Review Trial Feedback:** Consider usability, efficiency improvements, and any challenges
- **User Acceptance:** Ease of learning and adoption
- **Total Cost of Ownership:** Purchase price plus custom work, upgrades, additional module costs, and training
- **Vendor Support and Culture:** Reliability, reputation, and support level offered
- **Scalability and Future-Proofing:** Accommodation for future growth and change
- **Product Roadmap:** Ensure that your operations and their vision aligns
- **Legal and Contractual Terms:** Review the contractual terms carefully

Thank You!

Questions?

