

BioTech360 Plasmid Management App

Streamline, Centralize Plasmids for Faster, Smarter Decisions

Effective plasmid management is critical for innovation in biologics, molecular medicine, and synthetic biology. Disorganized data, manual workflows, and disconnected systems slow research, increase errors, and risk compliance. The BioTech360 Plasmid Management App ensures structured, searchable, and traceable data, creating a centralized repository to view, access, and reuse plasmids. As part of the [BioTech360 scientific knowledge management ecosystem](#), the app seamlessly integrates into your digital R&D environment for a single source of truth for plasmid management.



Revolutionize Management of Plasmids

Across diverse fields — from synthetic biology to molecular medicine — the exponential growth of plasmid constructs poses significant challenges for researchers. Inefficient data management and siloed systems can slow progress and compromise innovation. Our Plasmid Management App eliminates these challenges with:

- **End-to-End Traceability:** Assigns unique IDs for each plasmid, supports clear audit trails, compliance readiness, and IP documentation.
- **Seamless Workflow Integration:** Securely connects with LIMS, ELN, and more via BioTech360's knowledge graph; REST-API interfaces ensure smooth bidirectional data exchange.
- **Knowledge Graph-Driven Insights:** Establishes relationships between plasmid data, experimental results, and other integrated resources (e.g., UniProt, PDB), for a structured foundation that enables AI to follow FAIR data principles and enhance data trustworthiness.

Key Features Driving Innovation

1. Centralized Plasmid Management

- Effortlessly register, store, and organize plasmid sequences in a centralized and structured repository that ensures data integrity and compliance with organizational standards.
- Automatically group identical sequences, assign unique master IDs, and support parent-child plasmid relationships, enhancing lineage tracking and reproducibility.
- Streamline operations, regulatory compliance, and intellectual property management using configurable workflows and standardized metadata annotation
- Ensure accountability and traceability of key data with embedded audit trails.

Example: Through the app, a biotech company managing multiple biologics programs can reduce errors, simplify data retrieval, and facilitate smooth knowledge transfer between teams as they move from discovery to production.

2. Integrations that Leverage, Protect IP

- Combine plasmid data with internal experimental results (e.g., high-throughput screening, protein expression) and external resources like public biological databases (UniProt, PDB) and bioinformatics tools (e.g., BLAST) for deeper insights.
- Track plasmid origins, modifications, and usage history, including parent-child relationships between plasmids, to support research integrity, compliance, and IP protection.

Example: A synthetic biology team accelerates strain optimization by correlating plasmid constructs with past experimental results and annotations, ensuring proper documentation for research continuity and intellectual property protection.

3. Advanced Search & Metadata Standardization

- Quickly retrieve plasmid sequences and associated metadata using powerful, user-friendly advanced search functionalities.
- Enhance metadata consistency by standardizing key attributes such as promoter strength, expression conditions, and plasmid functions, ensuring seamless integration with other research systems.
- Adhere to FAIR principles as the app makes plasmid data findable, accessible, interoperable, and reusable.

Example: A research lab accelerates experiment design by leveraging standardized metadata to efficiently identify plasmids with desired properties, reducing trial-and-error and improving experimental reproducibility.

4. Scalable, Collaborative Ecosystem for Knowledge Preservation

- Enables real-time collaboration across R&D, process development, and manufacturing.
- Supports global access, facilitating multi-site projects.
- Preserves institutional knowledge by maintaining a central repository of well-documented plasmid data and associated annotations.

Example: A multinational pharmaceutical company leverages a cloud-hosted repository and centralized platform to coordinate plasmid research across global teams. By maintaining well-documented data and annotations, it preserves institutional knowledge, avoids duplication, and enhances collaboration to streamline future projects.

TRANSFORMING R&D WITH INTELLIGENT DATA MANAGEMENT



More than just a tracking tool, our Plasmid Management App leverages a connected knowledge graph for AI-driven insights and automation. By streamlining data management, ensuring compliance, and enhancing collaboration, the app empowers research teams to:

- **Accelerate Discovery:** Centralized plasmid data eliminates inefficiencies to speed the R&D lifecycle and remain competitive in the market.
- **Enhance Collaboration:** Cross-functional teamwork and data-sharing yield smarter strategies and faster go-to-market execution.
- **Ensure Compliance & Integrity:** Transparent, traceable records ensure adherence to industry regulations, reducing the risk of non-compliance and penalties.

TO LEARN MORE ABOUT Optimizing Plasmid Data Management, contact us at lvinfo@labvantage.com for a demo of the Plasmid Management App.



LabVantage Solutions, Inc.
265 Davidson Avenue, Suite 220
Somerset, NJ 08873
Phone: +1 (908) 707-4100

www.labvantage.com

ABOUT LABVANTAGE SOLUTIONS

A recognized leader in enterprise laboratory software solutions, LabVantage Solutions dedicates itself to improving customer outcomes by transforming data into knowledge. Its highly configurable, 100% browser-based platform consists of LIMS, ELN, LES, SDMS, and advanced analytics, supporting seamless deployment into any environment. Serving over 1,500 customers across life sciences, pharmaceuticals, biobanking, food & beverage, forensics, and more, LabVantage Solutions empowers innovation, helps improve product quality, and ensures compliance with industry regulations. Headquartered in Somerset, NJ, with offices worldwide, LabVantage Solutions has driven laboratory digital transformation for over 40 years.

For more information, visit www.labvantage.com.