Case Study

Reprogramming T cells to defeat solid tumors

Lyell Immunopharma

Lyell + Benchling

Implement a central system of record for Research and Development teams to improve collaboration and data quality and support the company's mission of developing effective cell therapies for solid tumors

Lyell is a clinical-stage T-cell reprogramming company developing cell therapies for solid tumors based on innovative technologies. Cell therapies have proven highly effective for the treatment of hematologic malignancies, but success has not yet been achieved for solid tumors, which represent approximately 90% of all cancers. Lyell's products are enhanced with T-cell reprogramming technologies designed to overcome barriers to curative cell therapies in solid tumors.

Company Profile

Number of Employees
250-500

Industry
Biotechnology

Corporate HQ
South San Francisco, CA

↑ Data quality

Experiencing a reduction in data-related errors as a result of standardization and centralization within a connected ecosystem

↑ Faster time to insights

Automatic dashboards and reports save scientists time by eliminating manual, tedious steps, ultimately accelerating data review and decision making

↑ Increased productivity

Teams across R&D, including Next-Gen Sequencing (NGS), are reporting 3 times faster search, collation, and analysis, leading to more time spent on research

"Research studies are only as good as your data, and at Lyell by using Benchling since our inception, we have put systems in place to support high data quality."

Richard Goold
Chief Information Officer

Challenges addressed

Lyell required a paperless, easy-to-use lab notebook from day 1, with the ability to grow with company needs

Research & Development and Information Sciences teams realized the critical need for a digital platform at Lyell's inception. The system needed to be cloud-native, extensible — include a RESTful API, user-friendly and highly configurable.

The Lyell in vivo team needed a cloud-native digital solution to manage in-life study data that could integrate with the existing ELN

Prior to using Benchling Studies, Lyell found it cumbersome to create reproducible study designs and create reliable methods for in vivo data capture that enable accuracy and efficiency of their in vivo programs.

Research teams needed to manage candidate product identity, inventory and sequence integrity

Researchers were each maintaining a database of candidate products, resulting in errors and decreased productivity in identifying and locating product information.

Information Science's goal was to eliminate data silos and manual data copying between systems wherever possible

A rich RESTful API was an early requirement to enable future integration and customization between research and other data repositories, and to create customized solutions that could surround and supplement the ELN.

Outcomes delivered

Researchers wanted to save time on data management to focus on advancing research and accelerating time to scientific insights and regulatory filings

With Benchling, Lyell can effectively maintain traceability of their T-cell product development that supports data quality and compliance. The deployed system was a single searchable organized repository of information. As research needs change, new templates are quickly deployed to enable reproducibility and integrity of results.

In vivo team needed to capture accurate, intelligent in-life study data

With Benchling Studies, Lyell in vivo team can now quickly establish repeatable study designs, ensure accurate data collection using capabilities like data collection templates, automate task management, and perform multi-parameter randomization.

Research and Development teams wanted to improve sample utilization and data quality with shared sample management system

A structured system is required to effectively handle resources and container entities across multiple sites in a given experiment. On Benchling, Lyell is efficiently managing multiple key research products, across their end-to-end workflows, resulting in streamlined collaboration across teams.

Information Sciences at Lyell focused on increased connectivity across systems with strong API connections

Benchling's unique data model flexibility, API, and data warehouse capabilities has enabled Lyell to streamline data connectivity between Benchling and their data lake and instrument data. This has formed a holistic record in Benchling for experimental context and sample management. Having all their end-to-end data centralized in a contextual way has also proven to be a powerful tool that supports IND filings and creating program reports.

"Accuracy and efficiency are key focus areas for our in vivo programs. Benchling Studies has been a game-changer for how we approach in vivo R&D at Lyell. It has helped us be more structured in how we define, collect, and disseminate data within our vivarium teams and across our entire R&D organization."

Anna Spektor
Director, Data Analytics, Research