



UCB Accelerates Life-saving and -enhancing Drug Discoveries by Reducing Query Latency 30X with SingleStore

30X

Speed improvements enabling real-time dashboards

48X

batch data refresh ops improvement

“Thanks to SingleStore, we can do more and do it faster, which is invaluable to our research.”

Frédéric Vancléf
Senior IT Expert, UCB

Discovering new medical therapies and drugs is an expensive and time-consuming process for biopharmaceutical companies, but high-performance computing and interactive data analytics can accelerate discovery and time-to-market.

UCB is a global biopharmaceutical company known for its work on finding cures for severe immunology and neurology disorders. Much like SingleStore, UCB’s focus is on the **moments that matter** — everything else follows.



Challenges/Goals

UCB’s existing data backbone built on legacy Oracle database technology was struggling to meet the new data platform’s performance demands. Scale was also a concern for UCB, as its projected future data volumes would make its current system unstable.

UCB wanted to build a data platform for early stage drug discovery enabling scientists to quickly access research data via self-service and thus accelerate the early discovery process. Its goals included:

- **Decreasing the time scientists spend waiting for data**
Previously, scientists had to wait for days or weeks for the data to be made available for analysis by IT.
- **Helping scientists reach answers faster**
A faster and easier-to-use system would allow scientists to test hypotheses quickly.
- **A user-friendly self-service interface**
Scientists would be able to use this system without needing assistance from IT. They could easily pick and choose the right data for their experiments, prepared in the way that makes the most sense for the success of the experiment.



Technology Requirements

The new early stage discovery data platform needed to drive faster query performance, while being able to easily scale to handle the large, complex queries scientists used to gather research data. The new solution had to accommodate massive data sets and growth so the company wouldn't need to transition to another database in the future.

More importantly, UCB's new early stage discovery data platform needed to be built around the FAIR principle: Findable, Accessible, Interoperable, and Reusable. The chosen database technology would need to fit this approach and easily connect with the rest of UCB's data stack.

Why SingleStore

Up to 800 scientists worldwide rely on UCB's data platform every day to power their essential research. "We chose SingleStore because it offered a modern database that can accelerate time to insight with ultra-fast ingestion, super-low latency, high-performance queries, and high concurrency," said Frédéric Vanclef, Senior IT Expert, UCB. SingleStore offers parallel, high-scale streaming data ingest that can handle trillions of events per second for immediate availability and concurrency for tens of thousands of users, which supports UCB's current needs and positions it for future growth.

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Solution

SingleStore DB was simple for UCB to implement. SingleStore offers SQL Wire Protocol compliance, which provided a familiar querying experience that many UCB project managers and developers were used to. Built-in batch and real-time data pipelines connect to a wide range of big data solutions, including Hadoop, Apache Spark, and Apache Kafka, supporting billions to trillions of rows.



Outcomes

With SingleStore, UCB is now giving scientists what they need in real time to get the answers they need faster to drive their research:

Empowering scientists with a high-performance self-service solution

UCB scientists can now collect and prepare their data themselves, getting exactly what they need for their experiments. The SingleStore-powered data backbone gathers all of the research and referential data into a single source of truth, allowing users to select from a wide range of high-quality data. Now, scientists can ask more questions during early stage drug discovery.

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Elevating the role of IT from tactical to highly strategic

UCB has a dedicated IT support team to assist its scientists. Before the rollout of the early stage discovery data platform, this team was responsible for handling data requests from scientists. Unfortunately, this scenario meant scientists experienced long delays between when they asked for the data and actually received it. With the new self-service solution, the IT team was able to transform its mission and actions from tactical to highly strategic.

Accelerating drug discovery

UCB’s new data backbone has massive improvements in query speed and latency. Instead of being forced to wait up to 20 minutes for query results, scientists now have access to real-time data and query results in 20 seconds, reducing query latency by more than 30X. They can check on available data sets in real time, eliminating delays between data publication and availability in the data mart. The platform’s batch data refresh operation run times dropped by 48X: from 4 hours to 5 minutes(!).

Providing scientists with analytical flexibility

Each data type has its own optimal analytics approach, requiring different tools to handle the wide range of information that UCB scientists work with. SingleStore DB supports multiple popular analytics solutions so that scientists can work with their preferred applications for a particular experiment..



SingleStore is helping companies compete and win across every vertical. [Learn More >](#)