Harnessing AI to unlock the next wave of material innovation

Cambrium

CAMBRIUM

CAMBRIUM + 🧬 Benchling

Building protein biomaterials for a sustainable future through the power of LLMs and generative AI

Cambrium is a Germany-based biotechnology company that harnesses nature's protein building blocks to create sustainable, high-performance materials for the future. Using their proprietary molecular design technology, Cambrium is already commercializing high performance collagen for skin care, and is on a path to create more breakthrough materials for innovators across cosmetics, fashion and other industries. Rather than extracting it from animals, their micro-molecular collagen is grown through a precision fermentation. These molecules allow innovators to create products that are better for people and the planet.

Company Profile

Industry
Industrial Biotech

Corporate HQ
Berlin, Germany

Improved data quality

Structured data capture allows for more effective AI models, leading to overall better candidate selection

Faster time to milestone

AI and ML feedback loops across the product lifecycle from protein design to candidate identification allows scientists to perform more experiments per month

Reduced costs

Through faster new user onboarding, increased IT efficiencies, and swifter collaboration, time is saved and costs are reduced

"Biology for the longest time has been about writing numbers in a paper notebook. Benchling helps us move towards having a way more reliable data capture. It provides us with a unified basis and uniform language in between the teams to capture the data."

Pierre Salvy
CTO

CAMBRIUM

Challenges

Developing a central source of truth for data

Centralizing and standardizing data capture required a solution that would support integrations and compatibility with lab instrument data, while making it easier to retrieve that data later on.

Creating a common language for internal teams

Cambrium identified two sources of data: the instrument and the scientist. To achieve a shared language between these sources, stakeholders needed to align on an efficient data structure.

Improving R&D efficiency

Scaling R&D throughput requires a radical change in mindset in how people think about designing experiments and recording their results. Helping the teams learn data-centric approaches is key to success.

Outcomes

Improved data capture with AI/ML ready data

With Benchling, Cambrium has moved towards a new, more reliable approach to data capture. With newfound instrument connectivity, all of the data generated in the lab goes through Benchling, serving as the primary way for pipelines to ingest lab data. This ensures that the team is able to keep visibility into processes and data models, and it prevents parallel data journeys from emerging.

Improving data capture has also facilitated the development and application of more effective AI models. Benchling's database allows Cambrium to seamlessly plug in AI models with ease, making AI more accessible and less time intensive.

Increase in cross-functional collaboration

Benchling also provides a uniform language for Cambrium, between and amongst teams. They started using Benchling since their lab's inception, keeping cross-functional collaboration smooth even as the team grows.

Building the wet lab and the dry lab alongside from the beginning allowed Cambrium to quickly iterate and improve processes within Benchling. Developing these workflows with an organization-wide compatibility in mind has resulted in faster, data-driven decision making, especially with respect to which strains performed best in which conditions.

10x improvement in protein synthesis capabilities

By improving IT and scientist efficiency, Cambrium has experienced an increase in the number of successful experiments per month. Capturing data at every single part of our processes enables teams to compare it over time and notice trends.

Analyzing this data, for example, has surfaced a key outcome: a 10x improvement in the protein synthesis capability within the lab and from end-to-end. The ability to use AI at just the right time has contributed to this success, helping Cambrium to improve throughput drastically within just a year.