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EVODIABIO

ENHANCING YOUR TASTING EXPERIENCE

By Hans Peter Bech

Evodiabio leverages the scifeon electronic lab notebook (eln) and laboratory information management system (lims) to become a leading supplier of bioengineered, industrial-scale condiments.

Using yeast-based biotechnology, EvodiaBio produces authentic, high-quality aromas without relying on agricultural or chemical sources.

Tastes, flavours, and fragrances are essential to countless everyday products, yet delivering these sensory experiences at scale – affordably, sustainably, and consistently – has long been challenging. Traditional methods, such as extracting aromas from plants or using chemical formulations, are increasingly resource-intensive and vulnerable to climate change.

EVODIABIO OFFERS A GROUNDBREAKING SOLUTION

Using yeast-based biotechnology, EvodiaBio produces authentic, high-quality aromas without relying on agricultural or chemical sources. This fermentation process reduces the use of water, energy, and raw materials while maintaining consistent flavour and fragrance profiles.

Initially developed for the beverage industry – including the sustainable beer flavour enhancer Yops™ – EvodiaBio's technology is now being explored in collaboration with other companies to address aroma challenges across multiple sectors. Their innovation supports supply chain resilience, environmental sustainability, and

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the growing demand for natural, eco-friendly products. By merging biotechnology with sensory science, EvodiaBio is redefining how flavours and fragrances are created – responsibly and reliably.

EMPOWERING R&D WITH SCIFEON

As an R&D-intensive company, EvodiaBio's core process – fermentation – requires tracking numerous variables and collecting samples over days or weeks. As fermentation progresses and mycelium grows, the team monitors the process closely to optimise efficiency and scalability. Identifying key variables and visualising data are critical tasks, and minimising the effort required to prepare data for graphical representation was a primary objective.

"Scifeon makes comparative analysis and graphic representation effortless," says Simon Dusséaux, Co-founder and CSO at EvodiaBio. *"These features alone have improved our productivity by at least 50%, benefiting us across the board."*

Previously, data management relied on cumbersome methods such as Excel, with manual copying, pasting, and graph building. Scifeon streamlined this workflow dramatically.

"Once the system is set up, configuring the experiment module takes very little time," explains Dusséaux. *"Now, I can simply select the experiments, choose the parameter for comparison, and the graph appears instantly. This lets me focus on analysing data instead of manipulating and formatting it."*

By eliminating tedious tasks, Scifeon not only accelerated lab throughput, but also enhanced staff motivation and reduced time to market.

RIGOROUS VALIDATION AND OPTIMISATION

Before fully implementing Scifeon, EvodiaBio conducted thorough testing using real-world data and processes. The team applied the Scifeon Application Pilot Project Approach (SAPPA), combining a 30-day preparation period with production use and business case development.

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"We already had an ELN/LIMS in place," recalls Dusséaux. *"Switching systems is disruptive, so we needed to ensure the new platform would meet current and future requirements. Testing took longer because of our tight daily work schedules."*

The laboratory staff meticulously evaluated every functionality:

- Project templates were configured to streamline setup and reduce repetitive tasks.
- Data entry workflows were refined for intuitiveness and error minimisation.
- Data import was validated across formats to ensure seamless integration.
- Data and file manipulation processes were assessed for ease and reliability.
- The user interface was optimised for minimal steps in routine tasks.

Particular emphasis was placed on reducing the time from data entry to visualisation and comparison – the phase where valuable analysis occurs. The team's comprehensive testing confirmed that Scifeon would fully support EvodiaBio's need for efficient, accurate, and high-value scientific operations.

ENSURING COMPLIANCE

For bioscience companies, regulatory compliance is critical.

Scifeon's ELN/LIMS centralises and organises experimental data for easy retrieval during audits and inspections. Real-time, accurate records reduce the risk of data loss and minimise manual entry errors. Automated data capture ensures consistency and integrity across experiments.

Scifeon also tracks sample lineage and maintains complete experiment histories, including metadata and audit trails, fulfilling traceability requirements. Strong version control documents every data change, and secure user access controls prevent unauthorised modifications.

The system complies with 21 CFR Part 11, supporting electronic signatures and detailed audit trails. Automated reporting simplifies the creation of FDA-compliant submissions, while standardised workflows enhance reproducibility and build trust with regulators.

ADDRESSING DATA MIGRATION CHALLENGES

Transitioning to a new ELN/LIMS system presents significant data migration challenges. Legacy data in varied formats and differing data structures can complicate transfer and introduce errors. Maintaining data history – including metadata, versioning, and audit trails – is essential for traceability and compliance, yet challenging to preserve during migration.

Manual data cleaning and validation increase workload and the risk of human error. Large data volumes can delay the process and strain computing resources. Currently, no standardised data migration path exists. However, Scifeon is actively developing a solution aimed at maintaining complete data history while streamlining migration, reducing disruption, and improving reliability and compliance.

EXTENDING SCIFEON BEYOND FERMENTATION

While Scifeon excels in supporting fermentation workflows, it can also be effectively configured for separation and purification, which are key downstream processes for biotech companies like EvodiaBio. During fermentation, Scifeon tracks variables such as temperature, pH, nutrient feed, and biomass growth with real-time monitoring and comprehensive data logging.

For separation, Scifeon captures process variables like boiling points, reflux ratios, and separation efficiency. The system records flow rates, pressures, and purity levels in purification processes, including filtration and chromatography. Complex sample tracking and complete data lineage are maintained throughout all processing stages.

This configurability is vital for EvodiaBio, where product consistency and regulatory compliance are paramount.

Our ambition is to use Scifeon's customisable workflows to seamlessly integrate batch records and quality control data across fermentation, distillation, and purification. Its powerful data visualisation tools enable quick comparisons of process runs and help identify optimisation opportunities. Scifeon supports our biological research and production and our critical downstream processes.

Simon Dusséaux,
Co-founder and CSO at EvodiaBio

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