SIDURI: a user-friendly portal for data management, analysis and visualisation dedicated to fermentation

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Résumé

The grand challenge Ferments du Futur (FdF) is a public-private partnership ongoing since 2022. It aims to shift from empirical to data and knowledge driven design of fermented foods. Massive and heterogeneous data are expected to be generated by the FdF-funded projects in fields such as microbial ecology, sensory and biochemical characterization, bioprocesses design, hostmicroorganism interactions.
To tackle this data management challenge, the ontology-driven information system OpenSILEX was chosen. A dedicated instance, called Siduri, is developed and hosted at the Migale bioinformatics facility. It centralizes results from FdF projects and provides access to relevant public data, as well as bioinformatics analyses and interactive data visualization.

A catalogue of recommended tools and workflows has been built based on bio.tools registry and the EDAM ontology, at first for genomics analyses. This catalogue will be available in a Galaxy instance designed for Siduri. This way, users will select datasets to analyse, launch workflows through the Galaxy API and then explore results within the Siduri user-friendly interface.

To support the numerous FdF projects along the data life cycle, a data stewardship agenda has been designed. It encompasses the use of the DMP as a tool, data management guidelines and training, the continuous improvement of Siduri from the data model to the user-facing web application, data curation workflows, data federation, and contributions to ontologies such as TransformON.

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The talk will present the technical aspects of the implementation of data management and data science services for Siduri.

Mots-Clés: Information system, Fermentation, Food ecosystem