

SURFs UP Project

Safe and sustainable
by design microbial
and lignin-based
biosurfactants sourced
from sustainable
feedstock for
home, personal care
and agrochemical
application



Funded by the EU and the CBE-JU, **SURFs UP** addresses this challenge by developing innovative and scalable routes to convert biobased feedstock such as hardwood (sugars and lignin from wood processing residues) and waste from regional food processing into high-performance bio-based surfactants. By integrating green conversion technologies with safe-and-sustainable-by-design (SSbD) principles and pre-industrial scale validation, the project aims to demonstrate the technical and economic feasibility of next-generation biosurfactants for applications in *home and personal care and agrochemicals*, supporting a more circular and competitive European bioeconomy.



About SURFs UP

In recent years, the need for **more sustainable surfactants** has grown rapidly, driven by environmental concerns and the need to reduce our dependence on fossil-based feedstocks. In parallel, Europe produces **large amounts of underutilized bio-based side-streams**, such as hardwood (sugars and lignin from wood processing residues) and waste from regional food processing, offering new possibilities for high-value valorization.



Objectives



Environmental and Social Sustainability Integration

Feedstock Mapping, Selection and Pretreatment Optimisation



Demo Plant design, Building and Commissioning

Prototype Formulation for Personal and Home-care and Agrochemicals



Bioprocess Optimization for Sustainable and Cost-Efficient Biosurfactant Production

Financial Modelling for Biorefinery



SSbD allignement

Why SURFs UP matters?

The goal of the SURFs UP project is to formulate **9 second-generation (2G) SSbD biosurfactant** products and integrate them into prototype formulations for **home care**, **personal care**, and **agrochemical** applications.



■ 7 Microbial based biosurfactants

- 2 drop-in sophorolipids based
- 2 new-to-market sophorolipids based,
- 1 new-to-market mannosyl erythritol lipids based
- 2 new-to-market lipopeptides

■ 2 chemically produced biosurfactants

- 2 Produced from lignin of wood processing waste

This approach enables the valorisation of underutilised industrial feedstocks, including lignocellulosic sugars lignin streams from wood processing, used cooking oils, and fatty acid side streams. At the same time, SURFs UP links fundamental research and pre-industrial demonstration by optimising bioprocess scale-up and advancing solutions from laboratory development to market-ready prototypes.



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Partners Consortium



AmphiStar
Sustainable Cells



Fibenol



LEITAT
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