

FORSKALLIN project (2024–2026) aims to develop the world's first commercial forskolin biosynthesis process, with significant advantages over the standard production method, extraction from the plant *Plectranthus barbatus*. Biosynthesis will have higher reliability, lower environmental impact, and deliver a forskolin product of higher purity and consistency, creating opportunities for new commercial applications (e.g. pharmaceutical products). FORSKALLIN will deliver a pilot-scale demonstration of an end-to-end (E2E) forskolin biosynthesis process, comprising the improvement of production strain, the optimization of fermentation, and downstream processing. Importantly, it will deliver a production and recycling process for a cost-effective cyclodextrin-derivative to solubilize forskolin and reduce the bioprocess costs. The overall goal of this Eurostars project is to obtain the world's first forskolin biosynthesis process demonstrated at pilot scale and ready for commercial scale-up. To achieve this, Biosyntia from Denmark will use its expertise in synthetic biology and fermentation to improve the efficiency and scale-up the biosynthesis process, whereas the Hungarian SME CycloLab will use its leading cyclodextrin R&D knowledge to develop a cost-effective cyclodextrin alternative to methyl- β -cyclodextrin. CycloLab will add the cyclodextrin developed in the project to its product portfolio and will be the supplier of Biosyntia for this molecule. Initially the cyclodextrin will be produced in-house. When the demand surpasses internal production capacity, CycloLab will start outsourcing production. After the project, CycloLab will also target other biotech companies, mainly focused on the biosynthesis of natural products of poor aqueous solubility for pharmaceutical or nutraceutical use.