

CLIB2021 Projekt: Fermentative production of
1,3-Dihydroxy-2-amino-octadecen (Sphingosin); FerDi

The project aims on developing a cost-efficient fermentative process to 1,3-Dihydroxy-2-amino-octadecen (sphingosin) starting from biorenewables. Sphingosin and derivatives are applied in cosmetic formulations. The yeast *Pichia ciferria* will be optimized by metabolic engineering to produce sphingosin in high yield. In a first step limiting bottlenecks will be identified. Next these bottlenecks will be opened by suitable measures (enhanced geneexpression, enzyme-evolving, screening of deregulated mutants). In parallel product characteristics relevant in the cosmetic application like stability, formulation, penetration-efficiency) will be tested.

Sphingosin and sphingosin-containing ceramides currently are produced by Evonik Industries through cost-intensiv chemo-synthetis and marketed successfully. Considering the existing market access in combination with the cost benefits of a fermentative process the later market success is anticipated.

period of project: 2008-2011

Funding Agency: BMBF (Bioindustrie 2021)

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