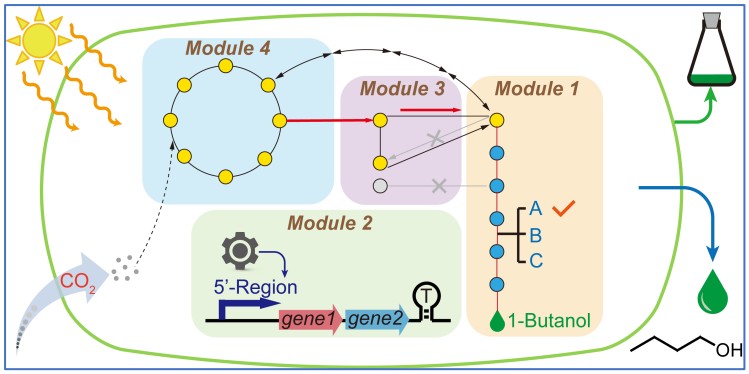
Degree project (*Examensarbete*) or similar at Microbial chemistry, UU
Butanol producing cyanobacteria

We use cyanobacteria as biocatalysts for renewable and direct production of solar chemicals and fuels from CO_2. Through advanced genetic engineering we introduce novel capacities, like to produce the alcohol butanol, and delete unwanted functions, like to store energy, with the aim to develop efficient and direct production of solar fuels and chemicals. We span from basic research through applied projects together with diverse partners to projects in direct cooperation with companies.



In this project you will use our designed and developed cyanobacteria producing photosynthetic 1-butanol from CO_2 (Liu *et al* 2019 Energy Environ-mental Science 12: 2765-77), examine the production under different external conditions and address the complete system from CO_2 to product including all efficiency etc calculations.


Top 10 Innovations
Research & Development: Commercial Potential of the Technological Innovation by 2050
No. A8
タイトル / Title
太陽光発電パネルを用いないバイオ燃料の製造
Solar energy becomes biofuel without solar cells
機関 / Organization
Uppsala University
期間 / Period
2019年6月
June/2019
ウプサラ大学は、バイオマスや太陽電池がなくても、二酸化炭素と太陽エネルギーからブタノールを効率的に産出できる微生物の開発に成功した。
Uppsala University has successfully developed microorganisms that efficiently produce butanol directly from carbon dioxide and solar energy, without the need for biomass or solar cells.
ICEF 2019

Vår forskning är med på IVAs 100-lista 2020 som listar forskningsprojekt inom området hållbarhet med stor potential att skapa nytta genom exempelvis affärs- och metodutveckling eller samhällspåverkan.
IVA
Research2Business
IVAs 100-lista

Our demonstration of 1-butanol producing cyanobacteria was, in 2019, selected as a Top 10 Innovation in Research & Development with Commercial Potential of the Technological Innovation by 2050 by ICEF (Innovation for Cool Earth Forum, yearly event hosted by the Government of Japan), and 2020 included in IVA´s 100-list.

For **more information**, see
www.kemi.uu.se/research/molecular-biomimetics/microbial-chemistry/lindblad-group/
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