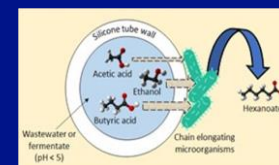


# TECHNOLOGY OFFER

## Silicone pertraction-based chain elongation bioprocess to synthesize middle-chain carboxylic acids (butyrate, valerate, hexanoate, heptanoate, octanoate) from ethanol containing wastewaters / fermentate

The need to find sustainable ways to produce valuable chemical compounds has increased due to global warming and the reduction of fossil resources. Fermentation of organic wastes or industrial by-products is a highly promising method, but it has been hampered by the negative effects of biological contamination and non-optimal ethanol:acetic acid ratios on product yield and purity. To address this issue, the proposed solution involves using a hydrophobic membrane to allow for a controllable, adjustable, cost-effective, and energy-free diffusion of hexanoate precursors. This new method will increase the production efficiency and purity of those valuable chemicals.



## COMPETITIVE ADVANTAGE

- Optimal use with any ethanol-containing wastewaters
- Adaptable to work under sterile conditions
- No dilution required even for concentrated substrates
- No energy and/or toxic solvents required for the diffusion of precursors

## OBJECTIVE MARKET

- Chemical, personal care and pharmaceutical industries
- Agriculture and animal feed applications
- Bioenergy and biofuels

## POTENTIAL APPLICATIONS

- Green pesticides
- Mass production of sustainable aviation fuels (SAFs)
- Supplementation as additives for animal nutrition and health

## ROADMAP / TIME-TO-MARKET

- Patented solution EP23382585.0 (2023)
- PCT filing (2024)

## RESEARCH GROUP

Laboratory of Chemical  
and Environmental  
Engineering  
(LEQUIA)  
University of Girona

TRL – 5  
In Development

## CONTACT

Knowledge Transfer  
Unit – Tech Transfer  
Office (TTO)  
UdG

valoritzacio@udg.edu  
+34 972 41 89 65