

# LIPES

Life Integrated Process for the Enzymatic Splitting of triglycerides

## Summary

LIPES is dedicated to bringing the first market replication of greener and healthier fatty acids. The objective is to create high purity bio-based intermediates and end products from vegetable oils and fats.

The LIPES approach replaces current thermal hydrolysis and saponification production routes, instead using a new enzyme-based, environmentally friendly alternative.

Using this approach will make the process far more resource efficient, saving at least 45% water, 70% enzymes and 80% energy over current approaches.

## Objectives

- To perform the scale-up to pre-industrial level of a new environmentally friendly alternative to the traditional and current splitting routes of triglyceride producing free fatty acids and glycerol, thus at a lower variable and investment costs and in very resource-efficient way with a minimum saving of 45% water consumption, 70% of enzymes and 80% of energetic consumption
- To enzymatically produce selected commercially important fatty acids at an overall lower variable cost than the current processes and to showcase their use as intermediates in a wider range of application.
- To contribute to reaching the EC goals on waste reduction by elaborating and evaluating new value chains for making use of agricultural co-products



<http://www.lipes.eu>

**Type of Action:**  
Innovation Action -  
Demonstration

**Value Chain:** VC3 – agro-based

**Start date:** 01 September 2016

**End date:** 31 August 2021

**BBI JU contribution:** €  
4,295,153.67

## Expected impacts

- Strengthen the competitiveness of EU oleochemicals industry in a context of growing competition with Asian bio-based products through a cost effective process leading to high performance products
- Sustainable and innovative integrated new process leading to high quality products along the whole value chain
- Competitive biotech pathway as compared to the conventional processes
- Selection of enzyme(s) selective for vegetable oil hydrolysis
- Competitive biotech process as compared to the conventional processes
- Efficient enzyme for enzymatic splitting of oils
- New low trans FA for food application High quality FA
- New grade of dimer acids (C36 and C44)
- New grade of Co-polyesters

## Project coordination

- Oleon NV (Belgium)
- Biocatalysts Limited (United Kingdom)
- STC-Engineering GMBH (Germany)
- Technische Universitaet Berlin (Germany)
- DSM Materials Science Center  
(The Netherlands)

**Organisation name:** Oleon NV (Belgium)