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.

http://www.lipes.eu

Type of Action: Innovation Action - Demonstration

Feedstock origin: VC3 – agro-based

Start date: 01 September 2016

End date: 31 August 2021

BBI JU contribution: € 4,295,153.67

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

Expected impacts

- Strengthen the competitiveness of EU oleo-chemicals 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

Consortium

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

Project coordination

Organisation name: Oleon NV (Belgium)