CARBAZYMES

Project reference: 635595
Funded under: H2020-EU.2.1.4.

Sustainable industrial processes based on a C-C bond-forming enzyme platform

From 2015-04-01 **to** 2019-04-01, ongoing project

Project details

Total cost:

EUR 9 251 355

EU contribution:

EUR 8 202 966

Coordinated in:

Germany

Topic(s):

- BIOTEC-3-2014 - Widening industrial application of enzymatic processes

Call for proposal:

H2020-LEIT-BIO-2014-1

Funding scheme:

IA

Objective

C-C bond forming reactions are at the heart of industrial organic synthesis, but remain largely unexplored due to long development timelines and the lack of broad biocatalytic reaction platforms. CARBAZYMES addresses these challenges by assembling an interdisciplinary and intersectoral consortium as a powerful synergistic tool to promote innovation in the field of biocatalytic C-C bond formation at large scale, and thus the global competitiveness of the European chemical and pharmaceutical industry. The proposed consortium, with 50% industrial participation, represents academia but also commercial interests in different stages of the research-to-market process. This top-down approach, together with a life-cycle innovation approach ensures an industrial drive to the project.
Clearly aligned with the scope of topic BIOTEC3-2014, CARBAZYMES will pursue the biocatalytic synthesis (spanning TRLs 5-7) of 4 APIs and 3 bulk chemicals –corresponding to market needs detected by the industrial partners in the Consortium. This will be accomplished through an inter-disciplinary approach which includes: i) a broad platform of 4 types of unique C-C bond-forming enzymes, mostly lyases; ii) the capacity to rapidly evolve enzymes to operate under industrial conditions by means of novel enzyme panels and massive screening methods; iii) application of microreactor technology for bioprocess characterization; iv) demonstration actions comprising technical (up to 100L) and economic viability studies carried out by industrial partners.
CARBAZYMES unmistakably aims to have social and economic impact by addressing markets worth bn €, developing enzyme evolution technologies beyond the state of the art and creating qualified jobs and technical-scale facilities at the industrial partners' sites. CARBAZYMES will also achieve an environmental impact by enforcing that the developed processes replace more energy and resource intensive processes, thus leading to reduced environmental footprints.

Coordinator

TECHNISCHE UNIVERSITAET DARMSTADT
Germany

Germany

EU contribution: EUR 1 469 606

Participants

AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS
Spain

Spain

EU contribution: EUR 1 145 190

UNIVERSIDAD AUTONOMA DE MADRID
Spain

Spain

EU contribution: EUR 786 375

TECHNISCHE UNIVERSITAT BRAUNSCHWEIG
Germany

Germany

EU contribution: EUR 677 018

RIJKSUNIVERSITEIT GRONINGEN
Netherlands

Netherlands

EU contribution: EUR 726 452

SVEUCILISTE U ZAGREBU FAKULTET KEMIJSKOG INZENJERSTVA I TEHNOLOGIJE
Croatia

Croatia

EU contribution: EUR 544 260

BIOCHEMIZE SL
Spain

Spain

EU contribution: EUR 207 987

BIO-PRODICT BV
Netherlands

Netherlands

EU contribution: EUR 463 736

SUSTAINABLE MOMENTUM SL
Spain

Spain

EU contribution: EUR 109 200

INSTITUT UNIV. DE CIENCIA I TECNOLOGIA SA
Spain

Spain

EU contribution: EUR 416 325

ENZYMICALS AG
Germany

Germany

EU contribution: EUR 380 800

ALBERT-LUDWIGS-UNIVERSITAET FREIBURG
Germany

Germany

EU contribution: EUR 412 500

PROZOMIX LIMITED
United Kingdom

United Kingdom

EU contribution: EUR 384 892

EVONIK INDUSTRIES AG
Germany

Germany

EU contribution: EUR 478 625

Last updated on 2015-05-05
Retrieved on 2015-06-15

Permalink: http://cordis.europa.eu/project/rcn/193340_en.html