

HORIZON
2020

Carbohydrate-based fine chemicals: Development of a glycosylation platform cell factory and optimization of downstream processing for the sustainable production of glycosides.

Fact Sheet

Project Information

CARBAFIN

Grant agreement ID: 761030

[Project website](#)

DOI

[10.3030/761030](https://doi.org/10.3030/761030)

Project closed

EC signature date

20 October 2017

Start date

1 January 2018

End date

30 June 2022

Funded under

INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Biotechnology

Total cost

€ 6 128 058,75

EU contribution

€ 5 362 908,75

Coordinated by

ACIB GMBH

 Austria

Objective

CARBAFIN will develop, based on an integrated biocatalytic production technology, a radically new value chain for the utilisation of surplus sucrose from sugar beet

biomass in the EU. CARBAFIN will demonstrate bio-based co-production of a functional glucoside and fructose. The glucoside products of CARBAFIN (glucosylglycerol, cellodextrin) have large-scale uses in nutrition and feed, cosmetics and detergents. Fructose is exploited in the production of 5-hydroxymethylfurfural (HMF), a versatile chemical building block currently considered for making bio-based plastics. Leading platform technologies in biocatalytic cell factories and downstream processing, conjointly optimised in CARBAFIN for performance efficiency and cost-effectiveness under full integration of LCA and economic evaluation, are key to make industrial co-production of glycosides and HMF via fructose competitive in today's markets. In addition, CARBAFIN contributes to the establishment of new, fully renewables-based value chains across the European industries, linking the sugar industry sector to the cosmetics, chemicals, polymer and detergents sectors and strengthening the sugar industries' role in food and feed. It supports the efficient cascading use of sugar beet-derived sucrose in combination with biomass-derived base chemicals (e.g. glycerol, glucose). CARBAFIN's HMF production aims at replacing petroleum-based chemicals with bio-based building blocks. CARBAFIN will thus contribute to development of a chemical industry that is low-carbon, resource-efficient and sustainable. CARBAFIN will help Europe to maintain global leadership in industrial biotechnology and secure position as innovation leader in sugar-based products. CARBAFIN's innovations will involve broadly the engagement of societal actors with particular emphasis on consumer awareness and acceptance.

Fields of science (EuroSciVoc)

[engineering and technology](#) > [industrial biotechnology](#)

[natural sciences](#) > [biological sciences](#) > [biochemistry](#) > [biomolecules](#) > [lipids](#)

[natural sciences](#) > [chemical sciences](#) > [catalysis](#) > [biocatalysis](#)

[social sciences](#) > [economics and business](#) > [economics](#) > [sustainable economy](#)

[natural sciences](#) > [biological sciences](#) > [biochemistry](#) > [biomolecules](#) > [proteins](#) > [enzymes](#)



Keywords

[carbohydrates](#)

[glycosides](#)

[cosmetics](#)

[detergents](#)

[nutrition and feed](#)

[biocatalysis](#)

[cell factory](#)

[platform](#)

Programme(s)

[H2020-EU.2.1.4. - INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies – Biotechnology](#)

MAIN PROGRAMME

Topic(s)

[BIOTEC-06-2017 - Optimisation of biocatalysis and downstream processing for the sustainable production of high value-added platform chemicals](#)

Call for proposal

[H2020-NMBP-2016-2017](#)

[See other projects for this call](#)

Sub call

H2020-NMBP-BIO-2017

Funding Scheme

[IA - Innovation action](#)

Coordinator



ACIB GMBH

Net EU contribution

€ 1 570 576,25

Total cost

€ 1 570 576,25

Address

KRENNGASSE 37/2

8010 Graz

 **Austria** 

SME 

Yes

Region

Südösterreich > Steiermark > Graz

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Participants (7)



TECHNISCHE UNIVERSITAET GRAZ

 Austria

Net EU contribution

€ 1 118 351,25

Address

RECHBAUERSTRASSE 12

8010 Graz 

Region

Südösterreich > Steiermark > Graz

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 1 118 351,25



PFEIFER & LANGEN GMBH & CO KG

 Germany

Net EU contribution

€ 730 870,00

Address

AACHENER STRASSE 1042 A
50858 Köln 

Region

Nordrhein-Westfalen > Köln > Köln, Kreisfreie Stadt

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[HORIZON collaboration network](#) 

Total cost

€ 1 044 100,00



AVA BIOCHEM BSL AG

 Switzerland

Net EU contribution

€ 393 750,00

Address

ROTHAUSSTRASSE 61
4132 Muttenz 

SME 

Yes

Region

Schweiz/Suisse/Svizzera > Nordwestschweiz > Basel-Landschaft

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 562 500,00



UNIVERSITEIT GENT

 Belgium

Net EU contribution

€ 888 631,25

Address

SINT PIETERSNIEUWSTRAAT 25

9000 Gent 

Region

Vlaams Gewest > Prov. Oost-Vlaanderen > Arr. Gent

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 888 631,25



BITOP AKTIENGESELLSCHAFT

 Germany

Net EU contribution

€ 506 380,00

Address

STOCKUMER STR. 28

58453 Witten 

SME 

Yes

Region

Nordrhein-Westfalen > Arnsberg > Ennepe-Ruhr-Kreis

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 723 400,00




GALAB LABORATORIES GMBH

 Germany

Net EU contribution

€ 79 975,00

Address

AM SCHLEUSENGRABEN 7
21029 Hamburg 

SME 

Yes

Region

Hamburg > Hamburg > Hamburg

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 114 250,00




PNO CONSULTANTS BV

 Netherlands

Net EU contribution

€ 74 375,00

Address

LAAN VAN ZUID HOORN 15
2289 DC Rijswijk 

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

Total cost

€ 106 250,00

Last update: 8 December 2023

Permalink: <https://cordis.europa.eu/project/id/761030>

European Union, 2025