Genetic Improvement of Algae for Value Added Products

Fact Sheet

Project Information

GIAVAP
Grant agreement ID: 266401
Status
Closed project
Start date 1 January 2011
End date 31 December 2013

Funded under
FP7-KBBE

Overall budget € 7 184 970,60
EU contribution € 5 596 607

Coordinated by
BEN-GURION UNIVERSITY OF THE NEGEV
Israel

Objective

Microalgae are a highly promising resource for the sustainable production of a wide variety of biomaterials for a wide range of applications. Microalgae can transform solar energy at high efficiency directly into valuable biological products using marginal water resources, waste nutrients and exhaust CO2 without the needs for high value cropland. A wide variety of eukaryotic microalgae of high evolutionary diversity produce naturally valuable products like polyunsaturated fatty acids, carotenoids, medically active carbohydrates etc. Nevertheless only a few commercially viable algal products have entered the market. Algal cultivation and induction of high value product accumulation is a complex problem, algae grow in diluted solutions and require large areas and water volumes, causing high cultivation and harvesting costs and posing contamination problems and variable productivities due to climate variability. Genetic modifications to make microalgae better suit industrial applications are possible over a wide range of target mechanisms: stress tolerance, product accumulation pathways, cellular chlorophyll contents, novel
metabolic pathways, resistance to pathogens and competition, etc. Due to the wide variability of algal strains under consideration, available techniques for genetic manipulations have to be adapted or developed for all algal strains of interest. Our consortium will adapt genetic engineering techniques to various algal strains of economic interest focusing on carotenoid and PUFA production and the overexpression of peptides of commercial value. In parallel we will develop cultivation technologies, harvesting and extraction methods for lipids, carotenoids and proteins using existing model algae strains that will then be adapted to suitable improved strains. Furthermore products will be tested for energy, pharmaceutical, nutritional or medical applications for economic evaluation of the production processes and their economic exploitation.

Field of science

/natural sciences/biological sciences/biochemistry/biomolecules/lipids
/engineering and technology/environmental engineering/energy and fuels/renewable energy/solar energy
/natural sciences/earth and related environmental sciences/hydrology
/social sciences/economics and business/economics/production economics
/natural sciences/biological sciences/microbiology/phycology
/medical and health sciences/medical biotechnology/genetic engineering

Programme(s)

Topic(s)

Call for proposal

FP7-KBBE-2010-4

Funding Scheme

CP-IP - Large-scale integrating project

Coordinator

BEN-GURION UNIVERSITY OF THE NEGEV

Address

84105 Beer Sheva

Activity type

Higher or Secondary Education Establishments

EU contribution

€ 699 719,25
Participants (13)

**ROTHAMSTED RESEARCH LIMITED**  
United Kingdom  
EU contribution  
€ 520,181.75

Address  
West Common  
AL52JQ Harpenden

Activity type  
Research Organisations

Administrative Contact  
Schneider Dori (Ms.)

**JOHANN WOLFGANG GOETHE-UNIVERSITAT FRANKFURT AM MAIN**  
Germany  
EU contribution  
€ 402,879.60

Address  
Theodor W Adorno Platz 1  
60323 Frankfurt Am Main

Activity type  
Higher or Secondary

Administrative Contact  
Schmitt Mareike (Ms.)

**GEORG-AUGUST-UNIVERSITAT GOTTINGEN STIFTUNG ÖFFENTLICHEN RECHTS**  
Germany  
EU contribution  
€ 466,200

Address  
Wilhelmsplatz 1

Activity type  
Higher or Secondary
University College London

United Kingdom
EU contribution
€ 527 416

Address
Gower Street
WC1E 6BT London

Activity type
Higher or Secondary Education Establishments

Website
Contact the organisation

Administrative Contact
Nadja Daghbouche (Ms.)

A4F ALGAFUEL SA

Portugal
EU contribution
€ 400 550

Address
Estrada Do Paco Do Lumiar Campus Do Lumiar Edificio E R/c
1649 038 Lisboa

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

Website
Contact the organisation

Administrative Contact
Teresa Alvarez (Ms.)

ROSETTA GENOMICS LTD

Israel

Address
Plaut Street 10
76706 Rehovot

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

Website
Contact the organisation
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<td>Limor Zur-Stoller (Mrs.)</td>
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**Record number:** 97420  

**Permalink:** [https://cordis.europa.eu/project/id/266401/](https://cordis.europa.eu/project/id/266401/)

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