



Press Release

DISCOvery paves the path to a sustainable future using biotechnology

Launch of next-generation EU research initiative on cost-effective sustainable biosources

United Kindom, March 3, 2014 – At the height of health and environmental concerns in an increasingly industrialised world, biotechnology is the leading force in the investigation and discovery of renewable bio-production. Aqua-, and agriculture, health and beauty industries predominantly use chemically-produced substances in nutrition, medicine and cosmetics whose production has adverse effects on the ecosystem. Due to the vast chemical diversity, plants are still a vitally undiscovered and minimally exploited source of bioactive compounds found in nature. In order to alleviate the reliance on expensive chemical synthesis, there is a need to understand the mechanisms with which plants produce bioactive substances so that these processes may be optimised by metabolic engineering.

Among others there are two important plant families, namely Solanaceae and Iridaceae, which have recently been identified as promising biosources and which consist of different plant species such as tomato and potato as well as saffron respectively. These in turn contain natural compounds that can be used for multiple health and medicinal purposes: as antioxidants and prophylactics in cancer and arteriosclerosis treatment, for the production of the coenzyme Q10 found in anti-aging cosmetic products, and as analgesics to ease stomach cramps. Further investigating these sustainable, future-oriented biosources is at the heart of the new EU funded research project called *DISCO*.

From *DISCO*very to products

Equipped with a budget of 6.5 million euros, *DISCO (From DISCOvery to products: A next generation pipeline for the sustainable generation of high-value plant products)* sets out over the next four years to fine-tune bioactive compound extraction procedures using the latest enabling technologies to achieve industrial valorisation and commercialisation. Furthermore, with the delivery of sustainable biosources, *DISCO* aims to eliminate future detrimental chemical refining by developing “green factories”, and therefore reduce environmental impact.

The project coordinator, Professor Paul D. Fraser of Royal Holloway and Bedford New College has brought together a multi-national and multi-disciplinary alliance of experts from fifteen academic and industrial partner institutions. “Despite notable scientific achievements there have been relatively little commercialization or feasibility studies performed to date on the production of bioactives from renewable sources”, Fraser states. “Therefore one of our major objectives within *DISCO* is to address these issues and to create a framework that can act as a generic pipeline capable of taking discovery and innovation through application and validation, to translation and industrial valorisation.”

In particular, Fraunhofer Chile Research will contribute to the project with expertise in areas of downstream processing and biorefining as well as the demonstration of transforming bioactive

products from biosources into effective products, such as feed supplements for the aquaculture industry.

The *DISCO* partners have vast experience in metabolic engineering, hyper-production of high-value plant substances, and in bringing the technology to the market. The consortium is able to build on preceding achievements and preceding EU project outputs to deliver both scientific excellence with economic and societal impact. *DISCO* thus represents a timely opportunity to translate innovation into commercial practice.

About DISCO

The project *DISCO*: “From *DISCO* to products: A next generation pipeline for the sustainable generation of high-value plant products” is a four-year collaborative project, which started on November 1, 2013. It is funded by the European Commission under the Seventh Framework Programme for Research and Innovation (FP7) with a total budget of 6.5 million euros.

The partners in *DISCO* at a glance:

Belgium

- Fermented Product Partner SA (Prof. Philippe Thonart)

Chile

- Fundación Fraunhofer Chile Research (Dr Wolfgang Schuch)

Germany

- Max Planck Institute of Molecular Plant Physiology (Prof. Ralph Bock)
- Technische Universität Dortmund (Prof. Oliver Kayser)
- European Research and Project Office GmbH (Dr Verena Peuser)
- Boehringer Ingelheim Pharma GmbH & Co.KG (Dr Hansjörg Hagels)

Israel

- The Hebrew University of Jerusalem (Prof. Joseph Hirschberg)
- The Agricultural Research Organisation of Israel – The Volcani Centre (Dr Efraim Lewinsohn)
- IBR – Israeli Biotechnology Research Ltd. (Dr Fabien Havas)

Italy

- Agenzia Nazionale Per Le Nuove Tecnologie, L’Energia E Lo Sviluppo Economico Sostenibile (Prof. Giovanni Giuliano)
- IGA Technology Services S.r.l. (Dr Federica Cattonaro)

Romania

- Proplanta S.r.l. (Prof. Carmen Socaciu)

UK

- Royal Holloway and Bedford New College (Prof. Paul D. Fraser)
- The James Hutton Institute (Prof. Derek Stewart, Dr Mark Taylor)
- SB Drug Discovery Limited (Dr Ian McPhee)

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