

## Research Project

### From Biodiversity to Chemodiversity: Novel Plant Produced Compounds with Agrochemical and Cosmetic Interest

#### Third-party funded project

**Project title** From Biodiversity to Chemodiversity: Novel Plant Produced Compounds with Agrochemical and Cosmetic Interest

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**Organisation / Research unit**

Departement Pharmazeutische Wissenschaften / Pharmazeutische Biologie (Hamburger)

**Department**

**Project start** 01.04.2010

**Probable end** 31.03.2014

**Status** Completed

The consortium will discover and carry to the stage of development candidates, plant derived small molecules with potential as new cosmetic and agrochemical agents. These compounds will derive from plants originating from major biodiversity hotspots in Europe, Africa, Latin America, and the Asia-Pacific region. The starting point of the project will be a diversity-oriented natural product library of 500 compounds from the existing compound repositories of three project partners. Screening of this compound library in assay panels for agrochemical (antifungal, herbicidal, insecticidal) and cosmetic properties (UV-protection, anti-aging, anti-hyperpigmentation) will rapidly identify promising scaffolds. This knowledge will serve as entry points for a chemotaxonomy and chemodiversity oriented collection of plants which are thought to contain structural variants and decorations of these scaffolds. A liquid library of 3600 extracts will be generated and screened. Stringent prioritization and profiling procedures will generate 300 compounds as focused sub-libraries around the privileged scaffolds. A state-of-the-art technology platform for miniaturized natural product discovery will be used for the purpose. Evaluation of these sub-libraries will lead to 30 compounds which will undergo advanced testing to qualify 5 compounds as development candidates for novel agrochemical and/or cosmetic agents with new or improved properties over existing active ingredients. An additional outcome of the project will be an extract library with a unprecedented level of associated spectroscopic information and metadata, to be used for future purposes. The high-caliber consortium brings together international leaders in small molecule natural products, bioprospection, leading industries in agrochemistry, cosmetics, and spectroscopic data management and analysis.

**Financed by**

Commission of the European Union

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Specify cooperation partners

<b>ID</b>	<b>Kreditinhaber</b>	<b>Kooperationspartner</b>	<b>Institution</b>	<b>Laufzeit - von</b>	<b>Laufzeit - bis</b>
470279	Hamburger, Matthias	Skaltsounis Leandros, Prof.	University of Athens, Faculty of Pharmacy	16.02.2009	31.12.2013
470293	Hamburger, Matthias	Spraul Manfred, Dr.	Bruker Biospin	01.04.2010	31.03.2014
470297	Hamburger, Matthias	Gupta Mahabir, Prof.	University of Panama, CI-FLORPAN	01.04.2010	31.03.2017
470299	Hamburger, Matthias	Stien Didier, Dr.	CNRS, ECOFOG, Kourou, French Guyana	01.04.2010	31.03.2014
470302	Hamburger, Matthias	Breuninger Delphine, Dr.	BASF	01.04.2010	31.03.2014
470304	Hamburger, Matthias	Kletsas Dimitris Prof.	Demokritos Institute, Athens	01.04.2010	31.03.2014
470305	Hamburger, Matthias	Vasilatou Katerina, Dr.	Korres, Athens	01.04.2010	31.03.2014
169728	Hamburger, Matthias	Nivan Moodley, Dr.	Center for Industrial and Scientific Research (CSIR), Pretoria	13.08.2009	13.08.2012