

Year of CfP: 2008

Project No 0801-006

Project title: Structuring scientific platform “Characterization of raw and biotransformed **Plant Lipids** and hydrophobic **Polymers** for a **Green** and sustainable chemistry” (PlantLipPol-Green)

Unit submitting the project: IATE, Agropolymer Engineering and Emerging Technologies (CIRAD, INRA, Montpellier SupAgro, UMII)

Project leader: Eric Dubreucq (Eric.Dubreucq(a)supagro.inra.fr)

Countries involved in the project: Brazil, India, Portugal, Thailand, Uruguay, USA

Research units from the Foundation’s scientific network involved: SPO, BPMP, DIADE

Sub-thematic axes: IBP1 (Integrative Plant Biology 1: *Genetics and genomics, plant breeding, ecophysiology*), STD12 (Socio-Technical Dynamics of Innovation 2: *Agrifood innovations, food and non-food use of plant crops*)

Objectives:

Green and sustainable production of chemicals and materials relies on the development of eco-efficient technologies for the transformation of agro-resources into biofuels, biomaterials and other biomolecules.

In order to meet technological, industrial and economic requirements of sustainable biorefinery-based transformation, a reliable scientific knowledge of the composition and the properties of the plant materials and of the products obtained is necessary. This knowledge is the main basis for the definition of criteria for the (i) selection and the improvement of plants used as bioresources (ii) selection of suitable microorganisms and enzymes for biotransformations (iii) conception and optimization of suitable transformation processes.

The project concerns more specifically lipids and hydrophobic biopolymers (polyisoprene, polyesters, hydrophobic proteins, complex lipids, waxes...), for which the need of new high-end analytical tools has been identified within a large scientific community. The funds are used for the acquisition, the setting-up and the operation of the analytic chains as the basis of a scientific platform for collaborative research projects.

The platform has several objectives:

- to provide a unique set of powerful and innovative tools for (i) the analysis of structure and architecture of lipids and hydrophobic plant biopolymers and derivatives (polyisoprene, polyesters, complex lipids, hydrophobic proteins...) in complement to the existing facilities within partner units; (ii) the identification, study, isolation and modification of new molecules issued from the biodiversity of Mediterranean and tropical plants.
- to contribute to the development of the interface between plant sciences and the biotransformation of plant lipids and polymers in the context of green and sustainable chemistry.

Funding by Agropolis Fondation: € 436,800 (acquisition of high-end equipment, functioning costs, maintenance contracts, salary of an engineer for 24 months)

Funding categorie(s): Structuring scientific platform

Project duration: 01 February 2009 – 30 April 2013

Keywords: lipids – platform – sustainable chemistry – green chemistry – Mediterranean crops