



REPORT OF 2nd MEETING OF WG3

(Madrid, March 23-24, 2017)

Under the general topic of “**Plant Autophagy, improving crop and energy production**”, the meeting was held in Madrid, at the Biological Research Center of the Spanish National Research Council (CIB-CSIC). **More than 60 participants** from almost all groups of WG3 attended the meeting (only 3 groups of WG3 did not attend), they were from 12 different countries, COST members. They presented **50 communications** (23 oral and 27 posters) that were summarized in a **book of abstracts**. Around 50% of participants were PIs and senior researchers and 50% postdocs and PhD students.

The meeting was focused to present and discuss recent advances in autophagy research in plants and algae, and their challenges to transfer knowledge for improving crop protection and productivity in agriculture, as well as energy production from plant and algae biomass. For this purpose, the meeting included one **Keynote Lecture** and two

Invited Lectures of recognized scientists in the field (R. Vierstra, USA; P. Bozhkov, Sweden; JP Beltrán, Belgium), and four *Scientific Sessions* for oral and poster presentations and discussions. Topics covered were the most recent advances on the **molecular machinery of plant autophagy, regulatory mechanisms, role of autophagy in plant-pathogen interactions, in plant growth and development, in metabolism and in response of abiotic stress**. New findings were presented on the effects of autophagy modulators over plant fitness, over in vitro plant embryogenesis induction, or in plant and algae oil/lipids metabolism, among others plant features with potential applications in crop breeding, crop protection and biotechnology.

The President of the European Plant Science Organization (EPSO) gave a Lecture on the **promotion of plant science in Europe**, he presented EPSO main strategies to promote applied and translational plant research for developing a bio-based economy, to give scientific advice to policy in Horizont H2020 and other programs, and to work closely with industrial partners and farmer organizations in technological platforms to develop strategic plans for Research and Innovation. The lecture was object of an active discussion with participants of the meeting about **opportunities for funding of collaborative projects in the context of plant autophagy research**.

There was also a *Special Session on Biotechnological Applications for Biofuel and Bioproducts from Plants and Algae*, with the participation of companies (F. Witt, Algaenergy), scientists (nanotechnology in agriculture and environment, recent strategies for production of biodiesel and bioethanol from lignocellulose biomass) and a technological platform (BIOVEGEN, linking industrial and academic partners in plant biotechnology). During this Biotech session, discussion was conducted over the present challenges for the **use of plant and algae biomass for biofuel and bioproducts in a sustainable bioeconomy**.

Moreover, an *Open Debate on WG3 Agenda* was organized by the WG3 chair and vice-chair (H. Batoko, A. Sirko) to discuss on WG3 objectives and deliverables. Main conclusions of this debate were to establish a fluent **communication network** among participants (mailing list or similar), to share findings and initiate the elaboration of a list of plant autophagy modulators, with the coordination of WG chairs, to disseminate WG3 activities in social networks (e.g. twitter), to promote STSMs among members of WG3, and to organize a new meeting next year (first proposal, Vienna). In this context,

the Journal of Experimental Botany (high impact journal in Plant Sciences) will produce in the present year a Special Issue on Plant Autophagy from Madrid meeting participants, this will be a good opportunity to prepare common papers for WG3 members.

During the meeting, there was time for scientific networking and establishing new connections among members of the COST action, as a consequence several new collaborations were initiated (some countries involved are Sweden, Spain, Poland, Belgium, France). Some STSMs have already been performed on the basis of these collaborations among WG3 groups (e.g. STSM in Sweden of a Spanish group member).