



iPlanta

1st COST IPLANTA CONFERENCE
CREATING THE PLANT RNAI RESEARCH NETWORK
CA15223

FEBRUARY 15-17/02/2017

LA SAPIENZA – CNR HEADQUARTER

ROME ITALY

CONFERENCE OPEN TO ALL SCIENTISTS, TECHNICAL EXPERTS,
REGULATORS, POLICY MAKERS WITH AN INTEREST IN NEW
BIOTECHNOLOGY APPLICATIONS

EXPERTS CAN SUBMIT ABSTRACTS FOR ORAL AND POSTER
PRESENTATIONS RELATED TO THE AIM OF THE FIRST
CONFERENCE OF THE ACTION.

DEADLINE DECEMBER 15, 2016.

THE CORE GROUP OF THE ACTION WILL SELECT EXPERTS FOR
ORAL PRESENTATIONS. PARTICIPATION COSTS FOR SELECTED
EXPERTS WILL BE SUPPORTED BY COST FUNDS.

INTRODUCTION OF IPLANTA COST ACTION

Modern agriculture requires a continuous and fast expanding stream of novel scientific and technological innovations to tackle issues regarding quantity and quality of plant produce for the benefit of the farmer, the consumer and the environment. Development of new methods of plant pest and disease resistance and improving crop quality and yield are required to confront challenges of future food supply and security. Recently, methods to exploit plant defence mechanisms or changing plant metabolism, by RNA silencing, have been shown to be promising. RNA silencing is a sequence-specific mechanism of gene expression regulation present in eukaryotes that is based on the action of micro- and small RNA molecules (miRNAs and siRNAs) derived from double-stranded RNA precursors. These small RNAs can trigger post-transcriptional gene silencing (PTGS), since they guide the sequence-specific cleavage of a target RNA. RNA silencing-based strategies represent useful tools for functional genomics and crop biotechnology.

Interfering with RNA can be used in a 'within species' mode to improve plant composition by removing or reducing anti-nutrients, allergens and toxins while enhancing levels of beneficial nutrients, and to improve plant growth and productivity by suppressing undesirable traits and thus switching resources to more beneficial traits such as quality and yield. In addition, gene expression in pathogens (particularly viruses and fungi), invertebrate pests and parasitic plants can be targeted using a 'cross species' or 'host-induced' silencing approach. Plants can be genetically modified to produce double-stranded RNAs which trigger silencing and thus affect essential physiological functions in pest or disease-causing organisms. RNA silencing functions also as a defense mechanism against viral infection, and RNA silencing-based technologies have been successfully applied to induce virus resistance in different plant species, such as fruit trees.

Therefore, this technology has the potential to introduce novel pest and disease resistance, quality and nutritional improvements, and changes in metabolism which will increase crop productivity and/or reduce post-harvest losses. However, it is important to consider that the methods used are based on siRNA and miRNA initiating silencing of a target gene in a very precise manner. Many of the modes of activity of the miRNAs and siRNAs that mediate these silencing effects are not yet fully understood and knowledge of systemic propagation, turnover, target specificity etc. of these molecules is limited.

The new COST Action 15223 IPlanta has the main objective to examine the scientific challenges in manipulating RNAi production for disease and pest control, and metabolic enhancement of plants. It will identify the more advanced knowledges available for this tool and the more important applications for the improvement of agriculture, forestry and food sector. IPlanta activities will particularly address the safety of newly available RNAi plants in terms of food and environmental safety. For all major applications it will consider the best practices for risk assessment/management and the socio-economic impact of new products from RNAi technology.

AIM OF THE CONFERENCE

1. Review existing knowledge and state of the art to provide a solid background for new developments, applications and research information and to support risk assessments. Identify knowledge and data gaps.
2. Survey of the current situation on the development and application of RNAi in GM crop plants worldwide.
3. Highlight the relevant scientific issues about environmental and food safety aspects linked to RNAi GM plants and promote research collaborations in this area in order to reduce uncertainty about potential unintended effects of RNAi.
4. Review the social and economic impacts of GMP RNAi.
5. Defining effective communication strategy and platform for the Action for the scientific community able to reach all interested parties (stakeholders, regulators, policy makers, students and the general public).

Conference programme

DAY 1 – Wednesday, February 15th, 2017 Morning – Arrival

- 12.00 – 13.00 – Registration
- 13.00 – 16.15 - Opening of the conference – 5 separate WG meetings as parallel sessions. For each parallel session, the WGs Leader and Vice Leader will identify speakers among the Action experts presenting research programs in line with the scientific goals defined for the start of the Action. WG leaders will organise the programme in their session, promote and coordinate the discussion and develop plans of action for the WG.
- 16.15– 16.30 Coffee break (posters on display)
- 16.30 – 17.30 – Joint session – WG Leaders will summarize the most significant results presented during the WG meetings, and discuss future plans and activities of the WG.

DAY 2 – Thursday, February 16th, 2017

8.30 to 18.30 - Conference Joint Meeting organized in 5 sessions, one for each WG, of 90 min each. Each session will contain 1 Lecture of 30 min and 3 presentations and discussion each of 15 min.

DAY 3 – Friday, February 17th, 2017

- 9.00 -11.30 Round Table Discussion – Chairs – WG Leaders – Stakeholders – Policy makers ...
- 11.30 – 12.30 Press conference with national press (may be international) to be attended by CG members
- 11.30 -12.30 Poster Session
- 12.30 – 13.30 Lunch
- 13.30 – 16.00 MC Meeting – only for MC members.
- 16.30 End of the meeting