

COST Action CA15223 iPLANTA

A new international consortium funded by the EU-Horizon 2020 is launched focusing on novel techniques and associated regulatory issues in plant biotechnology

The new EU funded initiative is a European Cooperation in Science and Technology (COST) Action called iPlanta : Modifying plants to produce interfering RNA

PRESS RELEASE

We now live in a world with increasing threats to food, energy, water and land security. It is predicted that we shall need to increase world food production by 70% by 2050 and we will need to do this on less land, using less water, with fewer pesticides and fertilisers. Governments, policymakers, manufacturers and farmers all need the scientific knowledge and technological tools to meet this challenge. Interfering RNA (RNAi) can be used to improve plant composition while enhancing levels of beneficial nutrients, and to improve plant productivity. This can be achieved using RNAi to suppress undesirable characteristics of plants and to switch resources to more beneficial quality and yield traits. In addition, pathogens and pests can be targeted and managed potentially more effectively without the need of pesticides by modifying the plants to produce double stranded RNA molecules which target the pests ability to attach the plant and/or survive.

This COST Action held its first scientific meeting on 15-17 February at National Research Council (CNR) and Sapienza University in Rome. The meeting was attended by 100 scientists from organisations from 28 European countries. Delegates also included representatives from EFSA and other national and international organizations (eg. FAO, NEPAD). The program included discussion of recent advances in RNAi technology, novel and existing applications in crop plants, biosafety, socio-economic implications and communication issues.

The COST Action iPlanta is chaired by Prof Bruno Mezzetti from Universita Politecnica delle Marche. In his welcome speech to the conference he said “Methods to exploit plant defence mechanisms or changing plant metabolism by RNA silencing show great potential. However many of the modes of activity of the interfering RNAs that mediate the silencing effect are not yet fully understood and knowledge of systemic propagation, turnover and specificity of these molecules is limited.” He announced that this iPlanta COST Action will define and coordinate the most important research tasks for the development of these novel transgenic strategies. The activities include:

- a) Evaluation of the efficacy of RNAi for the induction of disease and pest resistance and metabolic changes;
- b) Examination of the specificity of the RNAi systems and their impacts on both target and non-target/off-targets;
- c) Developing specific risk assessment and risk management guidelines which relate specific effects of interfering RNAs on food, feed and the environment;
- d) Understanding the modes of transmission, uptake, systemic spread and degradation of interfering RNAs;
- f) Determining the environmental, health and socio-economic impacts of plant RNAi technology and products.

Further information on the EU COST is available at <http://www.cost.eu/>

Additional information are available at: [www. iplanta.univpm.it](http://www.iplanta.univpm.it)

http://www.cost.eu/COST_Actions/ca/CA15223

COST Action CA15223 iPLANTA

More detailed description of the iPLANTA COST Action

Title

Modifying plants to produce interfering RNA

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Details

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Start of Action: 27/10/2016	Entry into force: 11/03/2016
End of Action: 26/10/2020	CSO approval date: 26/02/2016

Objectives

Methods to exploit plant defence mechanisms or changing plant metabolism by RNA silencing show great potential. Interfering RNA can be used to improve plant composition while enhancing levels of beneficial nutrients, and to improve plant productivity by suppressing undesirable traits and switching resources to more beneficial quality and yield traits. Gene expression in pathogens and pests can be targeted and plants modified to produce dsRNAs which trigger silencing and affect essential physiological functions in pest or disease-causing organisms. Many of the modes of activity of the micro- and small interfering RNAs (miRNAs, siRNAs) that mediate the silencing effect are not yet fully understood and knowledge of systemic propagation, turnover, specificity etc. of these molecules is limited. This Action will define and coordinate the most important research tasks for the development of these novel transgenic strategies across many EU and nearby countries with inputs from cooperating researchers in Associated countries in N and S America, Australasia etc.. Activities Include : a) Evaluation of the efficacy of the RNA molecules for the induction of disease and pest resistance and metabolic changes .b) Examination of the specificity of the selected miRNAs and siRNAs and their impacts on both target and non-target/off-target systems. c) Developing specific risk assessment and risk management guidelines which relate specific effects of the miRNAs and siRNAs on food, feed and the environment.d) Understanding the modes of transmission, uptake, systemic spread and degradation of dsRNAs, mi- and siRNAs. f) Determining the environmental and socio-economic impacts of plantRNAi technology and products

Parties

Country	Date	Country	Date	Country	Date	Country	Date
Austria	07/07/2016	Belgium	21/04/2016	Bosnia and Herzegovina	20/09/2016	Bulgaria	05/03/2016
Croatia	07/04/2016	Czech Republic	18/04/2016	Denmark	01/04/2016	Estonia	15/03/2016
Finland	13/09/2016	France	09/03/2016	Germany	14/03/2016	Greece	20/09/2016
Hungary	11/03/2016	Ireland	28/09/2016	Israel	05/07/2016	Italy	14/03/2016
Latvia	07/03/2016	Netherlands	09/03/2016	Norway	13/04/2016	Poland	21/04/2016
Portugal	28/04/2016	Romania	04/04/2016	Serbia	30/03/2016	Slovakia	27/06/2016
Slovenia	19/05/2016	Spain	03/05/2016	Sweden	09/09/2016	Switzerland	02/05/2016
Turkey	12/04/2016	United Kingdom	09/05/2016	fYR Macedonia	22/09/2016		

Total: 31

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