

Workshop EPI-CATCH WG1 and WG3 Plant Epigenetics: From Methodology to Applications

Dates: 10th-11th May 2022

Venue: CIB Margarita Salas, CSIC, Madrid

Hybrid format (in presence + on line)

Participants registered: 87 (29 in presence)

Organizers:

Pilar S. Testillano, CIB-CSIC, Spain

Sophie Brunel-Muguet, INRAE, France

Stéphane Maury, University Orleans INRAE, France

Gloria Pinto, University Aveiro, Portugal

Valya Vassileva, IPPG-BAS, Bulgaria

Scope of the Workshop

Epigenetics refers to heritable changes in the control of gene and TEs activity without changing the underlying DNA sequence, while epigenomics pertains to the analysis of the complete set of epigenetic modifications, such as DNA methylation and histone modifications, on the cell genome. Given the complexity of the topic, it is very important to select an appropriate research approach and methodology for investigating the epigenetic regulation in plants.

In the workshop, diverse research approaches and their applications to answer hot scientific questions in model and crop plants were presented. Discussion on the criteria for choosing and applying the best experimental techniques in plant epigenetic studies were conducted. The workshop also provided excellent networking opportunities.

Eight speakers from different countries shared their knowledge expertise with the audience (face to face and remotely via zoom).

1st day: Scientific Sessions and discussions

Chairpersons: Pilar S. Testillano, Stéphane Maury, Valya Vassileva,

Crisanto Gutierrez (CBMSO-CSIC, Spain)

"Histone variants as novel early players in the abiotic stress response"

Stéphane Maury (Univ. Orleans, INRAE, France)

"How DNA methylation analysis can help to better understand plant plasticity and adaptation?"

Elena Caro (CBGP, Spain)

"Small RNA and DNA methylation regulation of gene expression in the response to climate change"

Frank Johannes (TUM, Germany)

"CG epimutations define a fast-ticking molecular clock in plants"

Pedro Crevillén (CBGP, Spain)

"Regulation of flowering time by histone demethylases in *Brassica rapa*"

Lorane Le Franc (Univ. Caen-Normandie, France)

"Analysis of histone modifications in thermo-primed oilseed rape plants by spectrometry and ChIP"

Luis Valledor (Univ. Oviedo, Spain)

"Analysis of epigenetic regulation of cold-stress acclimation in *Chlamydomonas reinhardtii* by direct DNA sequencing"

Carolina Escobar (UCLM, Spain)

"Epigenetics landscape during the development of root-knot nematodes induced galls"

2nd day: NETWORKING SESSION

Collaboration opportunities in EPI-CATCH and other projects

Chairperson: Stéphane Maury

Flash Talks of participants with 3 ppt slides, 3 minutes: (1) research lines + (2) skills+ (3) collaboration interests People

Proposals of join manuscript-review on epigenetic methodologies

Chairperson: Valya Vassileva

Presentation of a manuscript proposal on plant epigenetic methodologies

Discussion on content, contributors, working plan