Madrid 20 – 22 May 2019 Abstract Submission deadline 22 April Application deadline 6 May

Structural and molecular biology of the DNA damage response



CNIO reserves the right to close registration and abstract submission when we reach full capacity.

STRUCTURAL AND MOLECULAR BIOLOGY OF THE DNA DAMAGE RESPONSE 20-22 May 2019

Venue:

Spanish National Cancer Research Centre - CNIO Auditorium, Madrid, Spain

Chairpersons and organizing committee:

Oscar Llorca, Spanish National Cancer Research Centre, Madrid, Spain Rafael Fernández Leiro, Spanish National Cancer Research Centre, Madrid, Spain Laurence H. Pearl, Genome Damage and Stability Centre-University of Sussex, Brighton, UK Titia Sixma, Netherlands Cancer Institute, NKI, Amsterdam, Netherlands

Rationale:

DNA is continuously exposed to insults from endogenous and exogenous sources, and, therefore, maintenance of genome integrity is essential to all organisms. There are multiple pathways that ensure that the information contained in DNA is not damaged or lost. When these errors skip the control mechanisms or when other DNA damage type is present, multiple macromolecular complexes detect it and start the signalling cascades that lead to repair by different pathways depending on the lesion. All these pathways are safeguarding our genome and when they are de-regulated or they can't work efficiently, damage to DNA is accumulated. This, together with the instability of the genome, can promote the development of cancer and other diseases. This meeting will bring together research leaders in the field with a focus on the structural basis and molecular mechanisms.

Speakers

James Berger Maria A. Blasco Alessandro Costa **Patrick Cramer** Aidan Doherty Daniel Durocher Rafael Fernández Leiro Karl-Peter Hopfner Oscar Llorca Juan Méndez Eva Nogales Lori Passmore Laurence H. Pearl Luca Pellegrini Titia Sixma Song Tan Nicolas Thomä Alessandro Vannini Roger Williams Wei Yang Xiaodong Zhang

Please, remember that this is a preliminary programme, and that talks and sessions may change time and date depending on the final topics of everyone's talk, and also attending specific needs of some participants.

The final programme will be closed a few months before the meeting.

Monday May 20th, 2019

8:30-09:15	Registration & welcome coffee for all the participants (hall)
09:15-09:30	Opening Remarks
09:30-12:30	Session 1: Chromatin and chromatin complexes <i>Chair: tbc</i>
	09:30–10:00 "Structural mechanism of the INO80 chromatin remodeller" Karl-Peter Hopfner, Gene Center Munich, Munich, Germany
	10:00– 10:30 "Structural studies of chromatin complexes" Song Tan, Penn State University, Pennsylvania, US
	10:30 – 10:45 short talk
10:45-11:15	Coffee break (social room)
	11:15 – 11:45 "Cryo-EM of complexes containing RUVBL1-RUVBL2 AAA-ATPases" Oscar Llorca , Spanish National Cancer Research Centre, Madrid, Spain
	11:45 – 12:15 "UV-damage recognition in chromatin" Nicolas Thomä, Friedrich Miescher Institute, Basel, Switzerland
	12:15 – 12:30 short talk
12:30-14:00	Lunch (cafeteria)
14:00-17:30	Session 2a: DNA Replication and replication stress <i>Chair: tbc</i>
	14:00 – 14:30 "Mechanisms for initiating DNA replication" James Berger, Johns Hopkins School of Medicine, Baltimore, US
	14:30 – 15:00 "Operating principles and catalytic mechanism of DNA replisome" Wei Yang, National Institutes of Health, NIH, Bethesda, US
	15:00 – 15:30 "Cooperative binding of multiple RPA molecules on single-stranded DNA" Xiaodong Zhang, Imperial College London, UK
	15:30 – 15:45 short talk
15:45-16:15	Coffee break (social room)
	16:15 – 16:45 "Molecular mechanisms of eukaryotic DNA replication and recombination" Luca Pellegrini, Cambridge University, Cambridge, UK
	16:45 – 17:15 "Eukaryotic DNA replication studied by cryo-electron microscopy" Alessandro Costa , The Francis Crick Institute, London, UK
	17:15 – 17:30 short talk
17:30-19:00	Poster session, wine & cheese (Social Room)



Tuesday May 21st, 2019

09:30 - 10:45 Session 2b: DNA Replication and replication stress

Chair: tbc

09:30 – 10:00 "The 3Rs (Recruitment, Role and Regulation) of PrimPol during DNA Replication in eukaryotic cells"

Aidan Doherty, Genome Damage and Stability Centre, Univ. of Sussex, Brighton UK

10:00 – 10:30 "PrimPol protein at cytotoxic DNA lesions"

Juan Mendez, Spanish National Cancer Research Centre, Madrid, Spain

10:30 - 10:45 short talk

10:45-11:15 Group picture (CNIO main door) & Coffee break (social room)

11:15 - 14:30 Session 3: DNA transcription

Chair: Tbc

11:15 – 11:45 "Structure-function studies of DNA transcription and repair"

Patrick Cramer, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany

11:45 – 12:15 "Unveiling RNA Polymerase III (extra)transcriptional complexes with EM"

Alessandro Vannini, Institute of Cancer Research, ICR, London, UK

12:15 - 12:30 short talk

12:00-14:00 *Lunch* (cafeteria)

 $14:\!00-14:\!30$ "Molecular visualization of the transcription initiation process"

Eva Nogales, HHMI/University of California at Berkeley, US

14:30-17:30 Session 4a: DNA damage and repair

Chair: Tbc

14:30 – 15:00 "Phosphorylation dependent assembly of DNA damage response complexes"

Laurence H. Pearl, Genome Damage and Stability Centre-University of Sussex,

Brighton, UK

15:00 – 15:30 "Induction of telomeric DNA damage as a novel anti-cancer strategy"

Maria A. Blasco, Spanish National Cancer Research Centre, Madrid, Spain,

15:30-16:00 Coffee break (social room)

16:00 - 16:30 Titia Sixma, Netherlands Cancer Institute, NKI, Amsterdam, Netherlands

16:30 - 17:00 "Mechanistic insights into DNA repair using cryo-EM"

Lori Passmore, MRC Laboratory of Molecular Biology, Cambridge, UK

17:00 – 17:15 short talk

17:15 - 19:00 Poster session – Wine & Cheese (social room)



Wednesday May 22nd, 2019

09:30-11:45 Session 4b: DNA damage and repair

Chair: Tbc

09:30 - 10:00 "Cryo-EM of DNA repair complexes"

Rafael Fernández Leiro, Spanish National Cancer Research Centre, Madrid, Spain

10:00 – 10:15 short talk

10:15-10:45 Coffee break (social room - certificates and invoices will be available at the reception desk)

10:45 – 11:15 "Charting the response to DNA damage using functional genomics" **Daniel Durocher**, The Lunenfeld-Tanenbaum Research Institute, Toronto, Canada

11:15 – 11:45 Roger Williams, MRC Laboratory of Molecular Biology, Cambridge, UK

11:15-12:30 Closing remarks & prizes for best posters and best short talks