

5th German-French DNA Repair Meeting

12-13 NOVEMBER ONLINE



DGDR



5th German-French DNA repair meeting Virtual

Thursday 12 November

Session I, chair: **Angelos Constantinou**

- 8:45** Welcome address
- 9:00** **Thomas Carell** - Nucleic Acids Chemistry
- 9:25** **Alexander Buerkle**: Automated screening for oxidative or methylation-induced DNA damage in human cells
- 9:40** **Daniel Pfeffel**: Investigation of DNA double-strand break induction by oxidative stress
- 9:55** **Aswin Manguerich**: Real-time monitoring of PARP1-dependent PARylation by ATR-FTIR-spectroscopy"
- 10:10 Coffee break

Session II, chair: **Gaelle Legube**

- 10:40** **Mauro Modesti** - Dynamics and mechanics of DNA tethering by Non-Homologous End Joining factors and by the MRE11/RAD50/NBS1 complex
- 11:05** **Wael Mansour**: RAP80 regulates double strand break end resection and repair pathway choice through targeting EXO1 to proteasomal degradation
- 11:20** **Boris Pfander**: Interplay between nucleosomes and nucleases during DNA end resection
- 11:35** **Karine Dubrana**: The yeast heterochromatin protein Sir3 physically interacts and inhibits Sae2

11:50 Lunch

13:00 Flash talks

Session III, chair: Boris Pfander

15:00 Jean-Baptiste Charbonnier - Molecular basis of the dual role of the Mlh1-Mlh3 endonuclease in MMR and crossover formation in meiosis

15:25 Sophie Zinn-Justin: Disordered and conserved regions of BRCA2: structure and functions

15:40 Robert Haensel-Hertsch: G-quadruplex (G4) DNA structural landscape of breast cancers report on their genomic, transcriptomic and regulatory architecture

15:55 Alessio De Magis: uo1 supports G4 structure formation and directs repair towards nucleotide excision repair

16:10 Coffee break

Session IV, chair: Katrin Paeschke

16:40 Karl-Peter Hopfner - Structural Biology Genome integrity

17:05 Mahmoud Toulany : Cold shock protein YB-1 mediates radioresistance by stimulating homologous recombination and alternative non-homologous end joining

17:20 Hervé Menoni: Repair of oxidative DNA damage in various chromatin context: in vitro and live cell imaging approaches

17:35 Beatrice Rondinelli: Dissecting the role of oncogenic H3.3 mutations in genome instability and tumorigenesis.

Friday 13 November

Session V, chair: Françoise Dantzer

9:00 Helle Ulrich: GLOE-Seq – a genomic tool to map replication patterns and DNA lesions with nucleotide resolution

9:25 Vincent Pages: Replication of a damaged DNA: regulation of Error-free vs. Mutagenic lesion bypass at a single DNA lesion in yeast

9:40 Elena Lo Furno: Translesion synthesis-dependent mutagenesis during early embryogenesis of fast cleaving embryos.

9:55 Brian Luke: Checkpoint adaptation in repair-deficient cells drives aneuploidy and resistance to genotoxic agents

10:10 Coffee break

Session VI, chair: Markus Löbrich

10:40 Sarah Lambert: A novel function of RNase H activities at arrested DNA replication forks in priming fork-resection

11:05 Benjamin Pardo: Homologous recombination and Mus81 promotes replication completion in response to replication blockage

11:20 Jorg Fahrner: The herbal compound methyleugenol causes DNA damage-dependent replication stress and triggers caspase-dependent mitochondrial apoptosis

11:35 Julian Stingle: DNA structure-specific cleavage of DNA-protein crosslinks by the SPRTN protease

11:50 Lunch

13:00 Flash talks

Session VII, chair: Caroline Kisker

15:00 Evi Soutoglou: How to maintain the integrity of the repetitive genome

15:25 Maria Moriel: The lipidic composition of the nuclear membrane controls DNA damage sensing and repair

15:40 Camilla Frattini: TopBP1 assembles nuclear condensates to switch on ATR signaling

15:55 Aline Marnef: A cohesin/HUSH- and LINC-dependent pathway controls ribosomal DNA double-strand break repair

16:10 Coffee break

Session VIII, chair: Björn Schumacher

16:40 Detlev Schindler: Human Genetics - Genome stability

17:05 Gabriel De Matos Rodrigues: Poisoning homologous recombination in vivo leads to systemic inflammation and accelerated aging

17:20 Jochen Kuper: The TFIIH subunits p44/p62 act as a damage sensor during nucleotide excision repair

17:35 Rodrigo Martins: A unique function of Atrip during retinal neurogenesis and photoreceptor survival

17:50 Françoise Dantzer: The DNA repair protein PARP3 surveys astrocytic differentiation

18:05 Concluding remarks: Philippe Pasero

Flash talks

Session I

- 13:00** **Chanou Anna**, Defining the nucleosome configuration and in vivo chromatin architecture of licensed replication origins
- 13:03** **Aze Antoine**, A comprehensive survey of PCNA/Ub readers
- 13:06** **Lebdy Rana**, GNL3: a new protein involved in the protection of stalled replication forks
- 13:09** **Hamperl Stephan**, Genetic and epigenetic consequences of transcription-replication conflicts
- 13:12** **Questions**
- 13:27** **Rodriguez Marta**, Detection and characterization of erroneous bypass of DNA lesions during DNA and RNA synthesis
- 13:30** **Audoynaud Charlotte**, The role of RNA:DNA hybrids in replication fork processing in fission yeast
- 13:33** **Naiman Karel**, Polymerase delta Dependent Replication Fork Restart Forms a Stable Replisome
- 13:36** **Kramarz Karol**, Relocation to nuclear pore complexes and Pli1-mediated sumoylation modulates replication fork restart
- 13:39** **Questions**
- 13:54** **Schindler Natalie**, Rtt101/Cul4 may promote a TOP1-independent RER backup pathway in S phase
- 13:57** **Hove Tamsanqa**, Targeting XPD for cancer therapy
- 14:00** **Kastl Melanie**, Influence of G4 structure formation on macrophage function
- 14:03** **Questions**
- 14:21** **Korytiakova Eva**, Investigation of active demethylation of 5-methyl-2'-deoxycytidine

- 14:24** **Müller Nadine**, Direct and base excision repair-mediated control of transcriptional activation by 5-formylcytosine and 5-carboxycytosine in a GC-rich cis element
- 14:27** **Schomacher Lars**, NEIL1 and NEIL2 DNA glycosylases protect neural crest development against mitochondrial oxidative stress
- 14:30** **Özdemir Dilara**, Gdh interacts with Tet3 to supply a-ketoglutarate, linking 5mDC oxidation to metabolic state and neuronal function
- 14:33** **Questions**

Session II

- 13:00** **Ribbert Ann-Charlotte**, Impaired DSB repair after low doses of X-rays might be due to a lack of activation of DNA-PK
- 13:03** **Zahid Sayma**, Structural and functional insights on the NHEJ network around the Ku-DNA hub
- 13:06** **Wei Na**, Mammalian RAD52 promotes RNA-mediated c-NHEJ of resected DNA double-strand breaks in G1
- 13:09** **Bousset Kristine**, RAD50 regulates mitotic progression independent of DNA repair functions
- 13:12** **Questions**
- 13:27** **Puget Nadine**, Analysis of new candidate proteins in DNA double-strand breaks response
- 13:30** **Galanti Lorenzo**, Role of DDK kinase in DSB repair
- 13:33** **Ma Emilie**, Control of the Rad51 nucleoprotein filament formation by Rad52 and Srs2
- 13:36** **Marta Llorens Agost**, Rad52 and BRCA2 redundantly restrict Pol Theta-mediated NHEJ until the onset of mitosis
- 13:39** **Questions**
- 13:54** **Dupont Chloë**, Identification of the interaction domain within the complex of Rad51 paralogs Rad55-Rad57 in *Saccharomyces cerevisiae*

- 13:57** **Clouaire Thomas**, Chromatin dynamics during DNA Double Strand Break repair
- 14:00** **Audibert Sylvain**, The proteome of Lamin Associated domains and NPC chromatin in the presence of DNA damage
- 14:03** **Questions**
- 14:21** **Holly Thomas**, Regulation of Homologous Recombination during development
- 14:24** **Yu Wei**, Repair of G1 induced DNA double-strand breaks in S-G2/M drives genetic instability
- 14:27** **Techer Hervé**, Is cytosolic DNA a cause or a consequence of oncogene-induced senescence?
- 14:30** **Questions**