Current Opinion Conferences

Structural Biology & DNA Repair

Amsterdam, The Netherlands • 16-18 October, 2011

A Current Opinion in Structural Biology Conference

Program Outline

Sunday, 16 October 2011	
10.30 - 12.00	**Author Workshop**
13.00 - 15.00	**Session 1 - DNA Repair Machines** **Session Chair: Tom Blundell**
13.00 - 13.05	Welcome by Elsevier
13.05 - 13.15	Introduction by Conference Chairs: Tom Blundell and John Tainer
13.15 - 13.50	[K01] **Setting the scene: DNA repair complexes and a dawn for structural and mechanistic systems biology** John Tainer, *The Scripps Research Institute, USA*
13.50 - 14.25	**[K02] Molecular machines of double-strand break repair: What they look like and how they work** Claire Wyman, *Erasmus Medical Center, The Netherlands*
14.25 - 15.00	**[K03] Structural architecture and remodeling of modular multi-domain proteins in DNA repair machines** Walter Chazin, *Vanderbilt University, USA*
15.00 - 15.30	**Refreshment Break**
15.30 - 17.40	**Session 2 - Chromatin & Damage Responses** **Session Chair: Laurence Pearl**
15.30 - 16.05	**[K04] The role of the RSC chromatin remodelling complex in DNA damage responses** Jessica Downs, *University of Sussex, UK*
16.05 - 16.40	**[K05] Structure and mechanism of the INO80 complex** Dale Wigley, *The Institute of Cancer Research, UK*
16.40 - 17.00	**[O2.1] Chromatin dynamics revealed by time-lapse AFM** Y. Lyubchenko*, L. Shlyakhtenko, A. Miyagi; *University of Nebraska Medical Center, USA*
17.00 - 17.20	**[O2.2] Lesion-induced pairing of sister chromatids enables homologous repair of double-strand DNA breaks in bacteria** N. Shechter, A. Weiner, A. Minsky*; *The Weizmann Institute of Science, Israel*
17.20 - 17.40	**[O2.3] Structure of TDG bound to substrate analogue informs its catalytic mechanism and its weak G•T repair activity** A. Maiti, E. Pozharski, A.C. Drohat*; *University of Maryland School of Medicine, USA*
18.00 - 19.30	**Welcome reception and poster session 1**
Monday, 17 October 2011	
8.30 - 10.40	**Session 3 - DNA Remodeling & Fidelity** **Session Chair: Jessica Downs**
8.30 - 9.05	**[K06] Recognition and repair of DNA single-strand breaks** Laurence Pearl, *University of Sussex, UK*
9.05 - 9.40	**[K07] Towards damage verification in nucleotide excision repair** Caroline Kisker, *University of Würzburg- Rudolf Virchow Center, Germany*
9.40 - 10.00	**[O3.1] The UvrA•UvrB DNA damage sensor: Structure and mechanism** D. Jeruzalmi*, D. Pakotiprapha, M. Samuels, K. Shen, J. Hu; *Harvard University, USA*
10.00 - 10.20	[**O3.2] Structure of REV7 in complex with a REV3 fragment and structural**

	implication of the interaction between DNA polymerase ζ and REV1 H. Hashimoto*[1], K. Hara, Y. Murakumo[2], S. Kobayashi[3], S. Takeda[3], M. Sato[1]; [1]*Yokohama City University, Japan,* [2] *Nagoya University, Japan,* [3] *Kyoto University, Japan*
10.20 - 10.40	**[O3.3] Characterization of the structure and dynamics of hMutSα- and hMutSα-hMutLα-heteroduplex complexes using AFM and single molecule fluorescence** D. Burke[1], V. DeRocco[1], B. Wang[1], C. Du[2], P. Hsieh[2], D.A. Erie*[1]; 1*University of North Carolina, USA,* [2]*NIDDK, NIH, USA*
10.40 - 11.10	**Refreshment Break**
11.10 - 13.00	**Session 4 - Replication & Mismatch Repair** **Session Chair: Wei Yang**
11.10 - 11.45	**[K08] Molecular insights into the function of proteins important for DNA replication and repair** Luca Pellegrini, *University of Cambridge UK*
11.45 - 12.20	**[K09] Molecular insight into polymerase fidelity** Lars C. Pedersen, *NIH,USA*
12.20 - 12.55	**[K10] Genesis and repair of DNA replication errors** Lorena Beese, *Duke University, USA*
13.00 - 14.30	**Lunch + Meet the Professors** **Walter Chazin, Loreena Beese, Luca Pellegrini, Caroline Kiser and Jessica Downs**
14.30 - 16.00	**Poster Session 2 + refreshments**
16.00 - 17.40	**Session 5 - Repair Mechanisms & Disease** **Session Chair: Oscar Llorca**
15.30 - 16.05	**[K11] Conformational dynamics of the Mre11-Rad50-Nbs1 complex in DNA double-strand break repair** Karl-Peter Hopfner, *Ludwig-Maximilians-University Munich, Germany*
16.05 - 16.40	**[K12] DNA repair enzymes: Structure, chemistry and disease** Wei Yang, *NIH,USA*
16.40 - 17.00	**[O5.1] DNA replication and repair enzymes as targets for antibacterial drug discovery** G. Sanyal, *AstraZeneca R&D Boston, USA*
17.00 - 17.20	**[O5.2] Defining key molecular mechanisms of the sumoylation pathway functioning to regulate DNA repair** J.J.P. Perry*, J. Prudden, A.S. Arvai, C. Hitomi, J.A. Tainer, M.N. Boddy; *The Scripps Research Institute, USA*
17.20 - 17.40	**[O5.3] Self-catalyzed site-specific DNA depurination and the origin of mutations in disease-related genes** J.R. Fresco*, O. Amosova; *Princeton University, USA*
19.00 - 22.00	**Conference dinner**
Tuesday, 18 October 2011	
8.30 - 10.40	**Session 6 - Processing Breaks and Forks** **Session Chair: Luca Pellegrini**
8.30 - 9.05	**[K13] Structural biology of double-strand breaks repair in both non-homologous end joining and homologous recombination pathways** Tom Blundell, *University of Cambridge, UK*
9.05 - 9.40	**[K14] DNA double strand break repair: Assembly of a functional repair complex** Murray Junop, *McMaster University, Canada*
9.40 - 10.00	**[O6.1] Structural characterization of the filaments formed by the Xrcc4-Cernunnos/XLF complex by crystallography and electron microscopy** J.B. Charbonnier*[1,2], V. Ropars[1,2], P. Drevet[1,2], P. Legrand[3], S. Baconnais[2], J. Amram[1,2], et al; [1]*CEA, France,* [2]*CNRS, France,* [3]*Synchrotron SOLEIL, France*
10.00 - 10.20	**[O6.2] Molecular architecture and switching mechanism of DNA replication fork**

	complex as revealed by single particle analysis K. Mayanagi, *Kyushu University, Japan*
10.20 - 10.40	**[O6.3] Structural basis of aprataxin DNA ligase proofreading with insights into AOA1 neurodegenerative disease** R.S. Williams, *NIH/NIEHS, USA*
10.40 - 11.10	**Refreshment Break**
11.10 - 13.00	**Session 7 - Healing Ends** **Session Chair: Stephen Smerdon**
11.10 - 11.45	**[K15] Mechanisms of 5' and 3' DNA recognition by the DNA repair enzyme, polynucleotide kinase/phosphatase** Mark Glover, *University of Alberta, Canada*
11.45 - 12.20	**[K16] Many ways to make ends meet: Polymerase-mediated orchestration of DNA double-strand break repair** Aidan Doherty, *University of Sussex, UK*
12.20 - 12.55	**[K17] Structural chemical biology of DNA end joining** Tom Ellenberger, Washington University School of Medicine, USA
13.00 - 13.30	**Sofa Session: Pathway interactions & possible chemical controls**
13.00 - 14.30	**Poster Session 3 + Lunch**
14.30 - 16.00	**Session 8 - Damage Signaling** **Session Chair: Claire Wyman**
14.30 - 14.40	**Poster Award Ceremony**
14.40 - 15.15	**[K18] Scaffolds and adaptors in DNA-damage response signalling** Stephen Smerdon, *MRC National Institute for Medical Research, UK*
15.15 - 15.50	**[K19] Molecular architecture and regulation of the large PI3K-like protein kinases (PIKKs)** Oscar Llorca, *Spanish National Research Council, Spain*
15.50 - 16.00	**Closing Remarks** Tom Blundell