

EMBO Workshop on Fission Yeast

The 10th International Meeting

July 14-19

Barcelona, Spain

Sunday 14 July

14.00 – 18.00 **Arrival & Registration**

18.00 – **Welcoming cava**

18.45 – 19.00 **Introduction by organizers**

José Ayté
Rosa Aligué
Elena Hidalgo

Opening Session **Special Lectures** by Keynote Speakers

19.00 – 19.30 **Takashi Toda**
Pathways leading to mitotic spindle assembly: conventional and new views

19.30 – 20.00 **Sergio Moreno**
Living in low nitrogen: implications in cell growth, cell cycle, cell differentiation and quiescence

20.00 – 20.30 **Jürg Bähler**
A natural variant of pyruvate kinase limits glycolytic flux and triggers systems-wide adaptations in energy metabolism, genome regulation, stress resistance and growth

20.30 – 21.00 **Paul Nurse**
CDK regulation of the cell cycle

Monday 15 July

09.00 – 12.20 Plenary Session 1: Chromosomes and Nuclear Architecture

Chairs: Julie Cooper and Paco Antequera

- 9.00 – 9.20 **Rafael Daga**
MAPKs signaling regulate spindle assembly checkpoint robustness through Slp1-Cdc20 degradation
- 9.20 – 9.40 **Yasushi Hiraoka**
Very-long-chain fatty acid elongase Elo2 rescues chromosomal defects associated with loss of nuclear membrane protein Lem2
- 9.40 – 10.00 **Julie Cooper**
Why centromeres fall apart in meiosis, and how telomeres promote their reassembly
- 10.00 – 10.20 **Karol Kramarz**
Control of replication fork integrity and replication competence by the nuclear pore complexes in fission yeast
- 10.20 – 11.00 Coffee break
- 11.00 – 11.20 **Junko Kanoh**
Casein kinase 2 regulates telomere protein complex formation through Rap1 phosphorylation
- 11.20 – 11.40 **Toru Nakamura**
Ccq1- and Poz1-dependent recruitment of Stn1-Ten1 and DNA Polymerase α to telomeres is essential for telomere protection in fission yeast.
- 11.40 – 12.00 **Francisco Antequera**
Nucleosome positioning and transcription directionality
- 12.00 – 12.20 **Xiangwei He**
Centromere repositioning causes inversion of meiosis and generates a reproductive barrier

12.30 Lunch

14.00 – 17.20 Plenary Session 2: Euchromatin and Transcription

Chairs: Marc Bühler and Damien Hermand

- 14.00 – 14.20 **Jason Tanny**
Cdk9 and H2Bub1 signal to Clr6-Cll/Rpd3S to exert cooperative effects on antisense transcription
- 14.20 – 14.40 **Tamas Fischer**
Lonely Single-Stranded DNA seeks RNA
- 14.40 – 15.00 **Marc Bühler**
The role of transcription-associated factors in building epigenetic memory
- 15.00 – 15.20 **Yota Murakami**
Phosphorylation of C-terminal repeat domain (CTD) of RNA polymerase II regulates RNAi-dependent heterochromatin formation by controlling transcription elongation process.

15.20 – 16.00 Coffee break

- 16.00 – 16.20 **Robert Fisher**
Control of the RNA polymerase II transcription cycle by CDKs and opposing phosphatases
- 16.20 – 16.40 **Fred Winston**
Spt5 plays vital roles in transcription and chromatin structure in *S. pombe*
- 16.40 – 17.00 **Damien Hermand**
Epitranscriptomic of modified uridines within mRNAs
- 17.00 – 17.20 **Songtao Jia**
Regulating transcription within heterochromatin

17.45 - 20.00 Concurrent Sessions A, B, C

Concurrent Session A: Genome-wide analyses / Systems Biology

Chairs: Charlie Hoffman and Jackie Hayles
Room MR 05+06

- 17.45 – 18.00 **Samuel Marguerat**
Fission yeast transcriptional heterogeneity surveyed by single cell RNA sequencing
- 18.00 – 18.15 **Kunihiro Ohta**
Chromatin and non-coding transcription during glucose starvation
- 18.15 – 18.30 **Charles Hoffman**
High throughput screening in *S. pombe* for mammalian adenylyl cyclase inhibitors
- 18.30 – 18.45 **Kazunori Kume**
Inner nuclear membrane protein Lem2 regulates nuclear size in fission yeast
- 18.45 – 19.00 Break
- 19.00 – 19.15 **Henry Levin**
Dense transposon integration reveals heterochromatin formation is promoted by essential cleavage and polyadenylation factors
- 19.15 – 19.30 **Giuseppe Facchetti**
Using geometry to decipher Cdr2-dependent cell size homeostasis in fission yeast
- 19.30 – 19.45 **Andrea Krapp**
Analysis of the *S. pombe* meiotic proteome reveals a global switch from anabolic to catabolic processes and extensive post-transcriptional regulation
- 19.45 – 20.00 **Cristina Cotobal**
Functional profiling of long non coding RNAs

Concurrent Session B: RNA metabolism

Chairs: Juan Mata and Jeffrey Pleiss
Room MR 07+08

- 17.45 – 18.00 **Francois Bachand**
Transcription elongation rate influences gene expression by alternative polyadenylation
- 18.00 – 18.15 **Norbert Käufer**

Prp4 kinase grants the license to splice

- 18.15 – 18.30 **Juan Mata**
Translational responses to stress: no homology required
- 18.30 – 18.45 **Stefan Hummer**
Cross talk between the 5' splice site and U2AF65 ensures combinatorial recognition of degenerated splice site elements

18.45 – 19.00 Break

- 19.00 – 19.15 **Beata Grallert**
Regulation of translation in response to stress
- 19.15 – 19.30 **Beate Schwer**
Inositol pyrophosphates impact phosphate homeostasis via modulation of RNA 3' processing and transcription termination
- 19.30 – 19.45 **Jeffrey Pleiss**
High-throughput phenotypic screening and whole genome sequencing of a library of thousands of temperature sensitive *S. pombe* strains reveals cancer-related mutations in the pre-mRNA splicing pathway
- 19.45 – 20.00 **Mathieu Rougemaille**
lncRNA-mediated mutual control of RNA-binding proteins involved in gametogenesis

Concurrent Session C: Cellular responses

Chairs: Reiko Sugiura and Dominique Helmlinger
Plenary Room

- 17.45 – 18.00 **Reiko Sugiura**
Phase separation orchestrates MAPK signaling ~The role of RNA granule as a platform to spatially regulate MAPK signaling~
- 18.00 – 18.15 **Wayne Wahls**
Chromatin-mediated regulators of meiotic recombination revealed by proteomics of a recombination hotspot
- 18.15 – 18.30 **Shigeaki Saitoh**
Schizosaccharomyces pombe cells monitor intracellular glycolytic flux and extracellular hexose concentration independently, regulating Ght5 hexose transporter expression
- 18.30 – 18.45 **Hiroshi Murakami**
Phosphorylation of Mei4 by Cds1 in the meiotic DNA replication checkpoint linking pre-meiotic DNA replication and meiotic recombination in fission yeast

18.45 – 19.00 Break

- 19.00 – 19.15 **Sylvie Tournier**
MAARS: A novel high content acquisition software for the analysis of mitotic defects in fission yeast
- 19.15 – 19.30 **André Verdel**
Epigenetics, gene silencing and noncoding RNAs: role in *S. pombe* sexual differentiation
- 19.30 – 19.45 **Dominique Helmlinger**
Principles of assembly of the SAGA and NuA4 transcription co-activator complexes

19.45 – 20.00 **Esther Pazo**

A two-step sequential mechanism is required to activate the MBF-dependent transcription

20.15 Dinner

21.30 Poster Session 1 (from number 1 to 81)

(Room MR 09)

Set up poster: July 15th from 09.30pm.

Take down poster: Tuesday 16th lunch time.

Tuesday 16 July

09.00 – 12.20 Plenary Session 3: Cell morphology and Polarity

Chairs: Pilar Pérez and Mohan Balasubramanian

- 9.00 – 9.20 **Fred Chang**
Regulation of cytoplasmic density in the fission yeast cell cycle
- 9.20 – 9.40 **Sophie Martin**
Visualization of sterols with a bacterial toxin bio-sensor reveals a novel sterol internalization pathway
- 9.40 – 10.00 **Pilar Pérez**
Distinct roles of cell wall glucans and actomyosin ring in cytokinesis
- 10.00 – 10.20 **Brian Hercyk**
Cdc42 inactivation during cytokinesis permits proper membrane barrier formation in *S. pombe*
- 10.20 – 11.00 Coffee break
- 11.00 – 11.20 **Nicolas Minc**
Cell wall dynamics in the control of fission yeast growth and morphogenesis
- 11.20 – 11.40 **Fulvia Verde**
Conserved ndr/lats kinase orb6 controls ras gtpase activity to regulate polarized cell growth and chronological lifespan
- 11.40 – 12.00 **Mohan Balasubramanian**
Reconstituting Eukaryotic Cytokinesis
- 12.00 – 12.20 **Ishutesh Jain**
Robustness of nuclear positioning in fission yeast: role of cell-size, microtubule-numbers, and microtubule-organization

12.30 Lunch

14.00 – 17.20 Plenary Session 4: Protein Quality Control: UPS and autophagy

Chairs: Li-Lin Du and Dieter Wolf

- 14.00 – 14.20 **Kenji Kitamura**
Regulation of oligopeptide and amino acid utilization by transcriptional network
- 14.20 – 14.40 **Margarita Cabrera**
Chaperones-facilitated aggregation of thermo-sensitive proteins as a mechanism to bypass degradation
- 14.40 – 15.00 **Li-Lin Du**
Selective autophagy pathways in fission yeast
- 15.00 – 15.20 **Quanwen Jin**
Heat-shock molecular chaperone Hsp90 is involved in RNAi-mediated heterochromatin assembly through stabilizing multiple complexes in fission yeast

15.20 – 16.00 Coffee break

- 16.00 – 16.20 **Kaoru Takegawa**
The class C Vps complex functions at multiple stages of the vacuolar transport pathway in *Schizosaccharomyces pombe*
- 16.20 – 16.40 **Damien Toullec**
The Hsp90 cochaperone TTT promotes the cotranslational maturation of PIKK kinases
- 16.40 – 17.00 **Dieter Wolf**
Conserved function of eIF3e in promoting the synthesis of mitochondrial proteins
- 17.00 – 17.20 **Kojiro Takeda**
SPX-RING ubiquitin ligase Pqr1 regulates intracellular levels of phosphate and polyphosphate, ensuring proper autophagic proteolysis

Special presentations:

- 17.30 – 17.50 **Valerie Wood**
Curate Globally, think locally (insights from the "big-picture" view of curation)
- 17.50 – 18.10 **Santiago Benito**
S. pombe applications in winemaking

18.10 – on Free evening

Wednesday 17 July

09.00 – 12.20 Plenary Session 5: Epigenetics and Heterochromatin

Chairs: Shiv Grewal and Benoit Arcangioli

- 9.00 – 9.20 **Genevieve Thon**
Roles of replication factors in epigenetic inheritance
- 9.20 – 9.40 **Danesh Moazed**
How epigenetic states are inherited
- 9.40 – 10.00 **Shiv Grewal**
Epigenetic genome control by RNA-based mechanisms
- 10.00 – 10.20 **Alessandro Stirpe**
Histone H3 ubiquitination regulates heterochromatin formation in *Schizosaccharomyces pombe*
- 10.20 – 11.00 Coffee break
- 11.00 – 11.20 **Robin Allshire**
Establishment of Specialized Centromere Associated Chromatin
- 11.20 – 11.40 **Karl Ekwall**
Studies of chromosome structure in quiescent *S. pombe* cells
- 11.40 – 12.00 **Benoit Arcangioli**
Quiescent cell population rapidly adapts by selecting mutation in the S/MAPK pathways
- 12.00 – 12.20 **Liz Bayne**
Mkt1 is required for efficient establishment of heterochromatin in fission yeast

12.30 Lunch

14.00 – 17.20 Plenary Session 6: DNA Repair and Checkpoints

Chairs: Paul Russell and Tim Humphrey

- 14.00 – 14.20 **Antony Carr**
Replication arrest, replication dynamics and genome stability
- 14.20 – 14.40 **Susan Forsburg**
Surviving Replication Stress
- 14.40 – 15.00 **Paul Russell**
Genome protection mechanisms in fission yeast
- 15.00 – 15.20 **Kim Kiat Lim**
Factors cooperating with histone H3K36 methyltransferase to regulate alkylation damage repair

15.20 – 16.00 Coffee break

- 16.00 – 16.20 **Pierre-Henri Gaillard**

Control of the Mus81-Eme1 endonuclease to maintain genome stability

16.20 – 16.40 **Hiroshi Iwasaki**
Activation of Mre11 endonuclease by Ctp1 in *Schizosaccharomyces pombe*

16.40 – 17.00 **Timothy Humphrey**
Cycles of resection, adaptation, segregation and replication of an unrepaired broken chromosome drives non-clonal genomic instability in fission yeast

17.00 – 17.20 **Jo Murray**
Single-molecule dynamics of Smc5/6 chromatin association

17.45 - 20.00 Concurrent Sessions D, E, F

Concurrent Session D: DNA replication

Chairs: Olaf Nielsen and Nick Rhind
Room MR 05+06

17.45 – 18.00 **Jenny Wu**
Modulating the replication program: inputs from CDK regulation

18.00 – 18.15 **Matmati Samah**
Telomerase repairs broken replication forks at telomeres

18.15 – 18.30 **Olaf Nielsen**
Mechanism of checkpoint activation by Spd1

18.30 – 18.45 **Ignacio Soriano**
Mutations in replicative DNA polymerases associated with cancer predisposition and tumour development

18.45 – 19.00 Break

19.00 – 19.15 **Hisao Masai**
Biochemical and genetic dissection of Rif1 protein which regulates replication timing through binding to G-quadruplex

19.15 – 19.30 **Thomas Kelly**
The dynamics of *S. pombe* DNA replication

19.30 – 19.45 **Nick Rhind**
Cdc25-Dependent Size Control is Regulated by a 25 bp Conserved Promoter Element

19.45 – 20.00 **Patroula Nathanailidou**
DNA re-replication drives gene amplification in fission yeast

Concurrent Session E: Morphology and Protein Transport

Chairs: Takashi Toda and James Moseley
Room MR 07+08

17.45 – 18.00 **Anne Paoletti**
Increasing ergosterol levels delays formin-dependent assembly of F-actin cables and disrupts division plane positioning

18.00 – 18.15 **Yolanda Sánchez**

Rho1p-GEFs involved in atypical functions

18.15 – 18.30 **James Moseley**

Cell polarity signalling pathways regulate the cytokinetic machinery

18.30 – 18.45 **Veneta Gerganova**

Multi-phosphorylation reaction and clustering tune Pom1 gradient mid-cell levels according to cell size

18.45 – 19.00 Break

19.00 – 19.15 **Ursula Fleig**

Inositol pyrophosphate controlled cellular processes

19.15 – 19.30 **Kenneth Sawin**

Reconstitution of microtubule nucleation in vitro reveals novel roles for Mzt1

19.30 – 19.45 **Maitreyi Das**

Cdc42 GEFs Gef1 and Scd1 crosstalk to promote transition from monopolar to bipolar growth in fission yeast

19.45 – 20.00 **Yasuhiro Hirano**

Lem2 and Lnp1 cooperatively maintain the nuclear membrane integrity through ESCRT-III functions

Concurrent Session F: Quiescence - Replicative and Chronological aging

Chairs: Jürg Bahler and Hidenori Nakaoka
Plenary Room

17.45 – 18.00 **Damien Coudreuse**

Cell cycle regulation and aging: is simpler better?

18.00 – 18.15 **Montserrat Vega**

Imbalances in mitochondrial homeostasis alter cell longevity

18.15 – 18.30 **Hidenori Nakaoka**

Slow adaptation to low-glucose environments

18.30 – 18.45 **Lu Gan**

Cryo-ET studies of remodeled nuclei in quiescent *S. pombe*

18.45 – 19.00 Break

19.00 – 19.15 **Charalampos Rallis**

TORC1-dependent transcriptional control of translation and lifespan regulation through the GATA transcription factor Gaf1

19.15 – 19.30 **Benjamin Roche**

RNA interference regulates RNA polymerase I via novel long non-coding RNAs in quiescence

19.30 – 19.45 **Stéphane Coulon**

Nuclear periphery is a safe-zone that limits transcription and rearrangements of telomeres in quiescent cells

19.45 – 20.00 **Shajahan Anver**

Ageing associated long non-coding RNA1 (*aal1*) may prolong cellular lifespan by fine-tuning of translation, autophagy and energy metabolism

20.15 Dinner

21.30 Poster Session 2 (from number 82 to 162)
(Room MR 09)

Set up poster: Wednesday 17th from 09.30pm.

Take down poster: Thursday 18th lunch time.

Thursday 18 July

08.30 – 11.50 Plenary Session 7: Signaling cascades

Chairs: Kaz Shiozaki and Sergio Moreno

- 8.30 – 8.50 **Janni Petersen**
AMPK and Target of Rapamycin (TOR) integrate environmental signals to control cell growth and division
- 8.50 – 9.10 **Sandra López-Avilés**
Roles of the PP2A regulatory subunits B55 and B56 in the control of the differentiation response in fission yeast
- 9.10 – 9.30 **Kazuhiro Shiozaki**
Identification of the interaction interface between TOR complex 2 and its substrate by *in-vitro* and *in-vivo* crosslinking
- 9.30 – 9.50 **Elisa Gómez**
Quorum sensing repress yeast to hypha transition in the fission yeast *Schizosaccharomyces japonicus*
- 09.50 – 10.30 Coffee break
- 10.30 – 10.50 **Robert Martienssen**
RNA interference in replication and quiescence
- 10.50 – 11.10 **Eishi Noguchi**
Maf1-dependent transcriptional regulation of tRNAs prevents genomic instability to extend lifespan
- 11.10 – 11.30 **Ronit Weisman**
The roles of TOR complex 2 as a survival complex and its interplay with the DNA-damage checkpoint proteins
- 11.30 – 11.50 **Kayoko Tanaka**
Constitutively active Ras1.G17V during the mating process causes only transient MAPKSpk1 activation but persisting Cdc42 activation

12.00 – 13.00 / 14.10 – 15.30 Plenary Session 8: Mitosis and Cytokinesis

Chairs: Kathy Gould and Iain Hagan

- 12.00 – 12.20 **Snezhana Oliferenko**
Exploiting divergent biology of two fission yeasts to understand membrane function
- 12.20 – 12.40 **Kathy Gould**
A tail of kinase regulation: how C-termini modulate CK1 substrate phosphorylation
- 12.40 – 13.00 **Silke Hauf**
Features of spindle assembly checkpoint gene expression
- 13:00-14:10 Lunch
- 14.10 – 14.30 **Sue Jaspersen**
Regulated, localized nuclear envelope breakdown during fission yeast mitosis

- 14.30 – 14.50 **Corey Allard**
A hierarchy of clustered kinases coordinate cell-cycle progression with cell size and nutrient availability
- 14.50 – 15.10 **Iain Hagan**
Looping the Loop: reinforcing mitotic control through SPB recruitment of Cut12
- 15.10 – 15.30 **Ana Loncar**
Comparative spindle dynamics during mitosis and meiosis in fission yeast

15.40 – 19.00 Plenary Session 9: Meiosis and Recombination

Chairs: Gerry Smith and Sarah Zanders

- 15.40 – 16.00 **Matthew Whitby**
Genome stability and recombination-dependent replication
- 16.00 – 16.20 **Ayumu Yamamoto**
Importance of metaphase chromosome oscillation in elimination of erroneous attachments at meiosis I
- 16.20 – 16.40 **Gerry Smith**
How Harmful Meiotic Crossovers Are Prevented near Centromeres
- 16.40 – 17.00 **Yu Hua**
An “essential gene” in fission yeast is actually a selfish killer
- 17.00 – 17.40 Coffee break
- 17.40 – 18.00 **Kazunori Tomita**
The telomere bouquet monitors progression of meiotic prophase
- 18.00 – 18.20 **Juraj Gregan**
Mutations that prevent methylation of cohesin render sensitivity to DNA damage in *S. pombe*
- 18.20 – 18.40 **Sarah Zanders**
wtf causes infertility

21.00 Banquet

Friday 19 July

Departure