

PROGRAMME

Wednesday, August 26th

14.00 - 17.00

arrival and registration

17.00 - 18.00

welcome

18.00 - 21.30

session 1: Dynamics of rDNA structure

chair: Brian McStay

18.00 - 18.10

Introduction

18.10 - 18.30 Joachim Griesenbeck: Biochemical characterization of DNAChromatin in *S. cerevisiae*

18.30 - 18.50 Ross Hannan: UBF-dependent but methylation-independent silencing and activation of rRNA genes during differentiation and malignant transformation

18.50 - 19.10 Brian McStay: The chromosomal context of human NORs

19.10 - 19.30 Craig Pikaard: Epigenetic mechanisms of uniparental rRNA gene silencing in hybrids: a role for RNA in nucleolar dominance

19.30 - 19.50

Break

19.50 - 20.10 Julio Sáez-Vásquez: In *Arabidopsis thaliana* plants with a disrupted nucleolin gene rRNA gene transcription dosage is controlled by switching the proportion of active and inactive rDNA gene variants

20.10 - 20.20 Holger Bierhoff: Metabolic control of rRNA synthesis: TIF-IA teams up with epigenetics

20.20 - 20.40 Luis Aragón: Cdc14 inhibits transcription by RNA Polymerase I during anaphase

20.40 - 21.00 Ann Beyer: Ribosomal RNA transcription in the context of extreme negative torsional stress in budding yeast cells lacking topoisomerase I

21.00 - 21.20 Attila Németh: High-resolution, genome-wide mapping and characterisation of nucleolus-associated DNA

Thursday, August 27th

9.00 - 12.30

session 2: rDNA transcription machinery and regulation of ribosome synthesis

chair: Pierre Thuriaux

9.00 - 9.10 introduction: rDNA transcription. The machine and its controls.

9.10 - 9.30 Sebastian Geiger: Functional architecture of RNA polymerase I

9.30 - 9.50 Olivier Gadal: Conservation of specific subunits of RNA polymerase I from budding yeast to human

9.50 - 10.10 David Schneider: The Paf1 complex plays an important, direct role in transcription elongation by RNA polymerase I

10.10 - 10.30 Joost Zomerdiik: Topoisomerase II controls the kinetics of reactivated rRNA gene transcription

10.30 - 10.50 break

10.50 - 11.00 Aziz El Hage: Site-specific RNA polymerase I pausing and pre-rRNA cleavage in the 5' region of the 18S rDNA in *Saccharomyces cerevisiae*

11.00 - 11.20 Jean-Jacques Diaz: Uncoupling ribosome biogenesis from RNA polymerase I activity.

11.20 - 11.40 Savraj Grewal: TOR-dependent regulation of ribosome synthesis during the *Drosophila* development

11.40 - 12.00 Oded Meyuhas: The role of the TSC-mTOR pathway in translational control of mammalian ribosomal protein mRNA by insulin, amino acids and oxygen

12.00 - 12.20 Tom Moss: Growth regulation, epigenetic silencing and tumour suppression in ribosome biogenesis

12.30 - 13.50 lunch

13.50 - 17.30

session 3: rRNA processing and folding

chair: David Tollervey

13.50 - 14.00 introduction

14.00 - 14.15 Susan Gerbi: Evolution of ribosomal RNA: eukaryotic conserved sequences and ribosome biogenesis

14.15 - 14.30 Martin Koš: Quantitative analyses and modelling of the ribosomal RNA processing in yeast

14.30 - 14.50 Joaquin Ortega: Visualization of the precursor sequences of 17S rRNA in an assembled 30S ribosomal subunit using cryo-electron microscopy

14.50 - 15.05 José-Luis Prieto: Transcription of ribosomal genes and processing of pre-ribosomal RNA are coupled

15.05 - 15.25 Katrin Karbstein: A conformational change regulates cleavage to generate the 3' End of 18S rRNA

15.25 - 15.45 break

15.45 - 16.05 Min Yao: The structure of the archaeal ribosomal stalk complex: insights into the function of translation factor recruitment in eukarya/archaea mode

16.05 - 16.25 Ger Pruijn: The role of RNase MRP and the exosome in the maturation of 5.8S rRNA in human cells

16.25 - 16.45 Aarti Sahasranaman: A functional cluster of assembly factors regulate the exonuclease Rat1 to create precise 5' ends of 5.8S rRNA and is necessary for construction of the polypeptide exit tunnel

16.45 - 17.05 Sander Granneman: Towards a comprehensive map of protein-RNA interactions in yeast pre-ribosomes; UV cross-linking and analysis of cDNAs (CRAC) reveals novel insights into protein functions and pre-rRNA processing mechanisms.

19.00 - 20.00 Conference Dinner / opening words by the mayor of Regensburg

20.00 – 22.00

session 4: special lectures:

Knud Nierhaus: The tricks of the ribosomes to be fast and accurate

Harry Noller: Ribosome structure and dynamics: translation in 4 dimensions

Friday, August 28th

9.00 - 11.00

session 5: quality control and degradation

chair: Jonathan Warner

9.00 - 9.20 Jonathan Warner: Introduction and pseudo-haploinsufficiency for a ribosomal protein has many outcomes

9.20 - 9.40 Christopher Merrikh: Characterization of nonfunctional rRNA decay in yeast

9.40 - 9.50 Makato Kitabatake: A role for ubiquitin in the clearance of nonfunctional rRNAs

9.50 - 10.00 Philip Farabaugh: Effects of haploinsufficiency of ribosomal protein and assembly factor genes on cellular physiology mediated by RACK1

10.00 - 10.10 Dimitri Pestov: Role of ubiquitination in regulation of ribosome stability

10.10 - 10.30 Georgeta Basturea: Mechanism of ribosome degradation during starvation in *Escherichia coli*.

10.30 - 10.50 break

10.50 - 12.30

session 6: snoRNPs

chair: Susan Gerbi

10.50. - 11.00 Susan Gerbi: introduction

11.00 - 11.20 Jonathan Dinman: Global rRNA pseudouridylation defects result in impairments in ribosome ligand binding and increased programmed -1 ribosomal frameshifting in yeast and human cells.

11.20 - 11.40 Christiane Branlant: Archaeal sRNPs and eukaryal snoRNPs: structure, assembly and mechanism of action

11.40 - 12.00 Nick Watkins: Identification of novel snoRNP-ribosomal RNA interactions through a comprehensive analysis of yeast Box C/D snoRNP structure and function

12.00 - 12.10 Stuart Maxwell: Archaeal and eukaryotic box C/D RNPs possess evolutionarily conserved structural and functional features essential for RNA-guided nucleotide methylation

12.10 - 12.20 Franziska Bleichert: Functional importance of the di-sRNP structure of archaeal methylation-guide box C/D sRNPs

12.20 - 12.30 Celine Verheggen: Trafficking of Box C/D snoRNP to nucleoli involves the hypermethylase Tgs1 in a CRM1-dependent manner

13.00 - 15.30

lunch and poster viewing (odd page numbers)

15.30 - 17.30

session 7: enzymatic activities

chair: Yves Henry

15.30 - 15.40 Yves Henry: introduction

15.40 - 16.00 Balaji Prakash: Structure function relationships in a circularly permuted GTPase, YqeH, involved in ribosome biogenesis.

16.00 - 16.20 Xinhua Ji: Structure of ERA in complex with the 3' end of 16S rRNA: Implications for ribosome biogenesis

16.20 - 16.40 Isabelle Iost: SrmB, an RNA helicase involved in Escherichia coli ribosome assembly, is specifically targeted to 23S rRNA in vivo

16.40 - 17.00 break

17.00 - 17.10 Nicolas Leulliot: Structure of the yeast Prp43p helicase involved in splicing and ribosome biogenesis.

17.10 - 17.30 Markus Bohnsack: The RNA helicase Prp43 has two major binding sites on the yeast pre-rRNA - with distinct functions in pre-rRNA cleavage and snoRNA release

17.30 - 17.50 Brigitte Pertschy: RNA helicase Prp43 and its co-factor Pfa1 promote 20S to 18S rRNA processing catalyzed by the D-site specific endonuclease Nob1

17.50 - 18.00 Lisa Kappel: The AAA-protein Drg1 interacts with the nuclear pore complex and is essential for early steps in cytoplasmic pre-60S ribosome maturation

18.30 dinner in the „Spital Biergarten“
(followed by guided tours through Regensburg)

Saturday, August 29th

9.00 - 11.00

session 8: assembly of prokaryotic ribosomes

chair: James Williamson

9.00 - 9.10 introduction

9.10 - 9.30 James Williamson: Bacterial ribosome assembly in vitro and in cells

9.30 - 9.50 Gloria Culver: Studies of small ribosomal subunit biogenesis in bacteria

9.50 - 10.10 Janine Maddock: Assembly of the *E. coli* 50S particle

10.10 - 10.20 Stefan Nord: RimP: a new player in 30S assembly

10.20 - 10.30 Janice Zengel: Analysis of macrolide-resistant *Deinococcus radiodurans* strains shows that r-protein L4 is dispensable for assembly and function of the 50S ribosomal subunit

10.30 - 10.40: Claudio Gualerzi: Ribosomal RNA synthesis and ribosomal subunits assembly during cold-acclimation of cold-shocked *Escherichia coli* cells

10.40 - 11.00 break

11.00 - 12.30

session 9: assembly and maturation

chair: John Woolford

11.00 - 11.10 introduction

11.10 - 11.30 Carl Correll: Contributions of RNA chaperone activity to ribosome biogenesis

11.30 - 11.50 Anthony Henras: The evolutionary conserved function of Tlr1 in early cleavages of the pre-ribosomal RNA and the production of the 40S ribosomal subunit

11.50 - 12.00 Nicole LaRonde-LeBlanc: Structural and functional characterization of the role of Nep1 in ribosomal RNA processing

12.30 - 15.00

lunch and poster viewing (even page numbers)

15.00 - 17.30

continuation of session 9: assembly and maturation

15.00 - 15.20 Arlen Johnson: Yvh1 is required for exchange of P0 for Mrt4 to facilitate assembly of the ribosomal stalk

15.20 - 15.40 Vikram Panse: Yvh1 is required for a late maturation step on the 60S biogenesis pathway

15.40 - 16.00 María Rodríguez-Mateos: Deletion of the *MRT4* gene causes premature assembly of ribosomal protein P0, which results in the formation of functional ribosomes carrying significant structural differences.

16.00 - 16.10 break

16.10 - 16.30 Pierre-Emmanuel Gleizes: Overview of the role of the ribosomal proteins in maturation and nuclear export of the 40S ribosomal subunit in mammals

16.30 - 16.50 Thomas Wild: Ribosome biogenesis in human cells analyzed by systematic RNAi

16.50 - 17.10 Ed Hurt: The Rea1 AAA ATPase forms a unique mechanochemical pulling device to remove non-ribosomal factors from nuclear 60S pre-ribosome

17.10 - 17.30 break

17.30 - 18.30

session 10: coupling ribosome synthesis to other cellular processes

chair: Lasse Lindahl

17.30 - 17.40 introduction

17.40 - 18.00 Ananth Bommakanti: Mechanisms of correlation of ribosome assembly and cell cycle control

18.00 - 18.20 Fabrizio Loreni: PIM1 oncoprotein is destabilized by ribosomal stress and inhibits cell cycle progression

18.20 - 18.30 Jane Lin: Novel mechanisms by which ribosomal proteins regulate growth and proliferation

19.30 Banquet Haus Heuport

Sunday, August 30th

9.00 - 9.50

continuation of session 10:

coupling ribosome synthesis to other cellular processes

chair: Lasse Lindahl

9.00 - 9.20 Stefano Fumagalli: Translational upregulation of rpL11 mediates p53 induction in response to inhibition of 40S ribosome biogenesis.

9.20 - 9.40 Keiko Mizuta: Ribosome assembly factors, Ebp2 and Rrs1, involved in telomere maintenance with a nuclear envelope SUN protein in budding yeast

9.40 - 9.50 Mercedes Dosil: A specific mutation reveals a role for the pre-ribosomal factor Rrp12 in the DNA-damage response

9.50 – 10.10 break

10.10 - 13.10

session 11: links between ribosomes, disease and aging

chair: Steven Ellis:

10.10 – 10.20 introduction

10.20 - 10.40 Hanna Gazda: Identification of new mutations in ribosomal protein genes in Diamond-Blackfan Anemia

10.40 - 10.50 Tamayo Uechi: Loss of ribosomal protein s19 leads to defective erythropoiesis in a zebrafish model of Diamond-Blackfan anemia

10.50 - 11.00 Anna Aspesi: Transcriptional and proteomic analyses in RPS19 deficient TF1 cells

11.00 - 11.20 Dirk Eick: Nucleolar targets of chemotherapy involved in cell cycle and growth control

11.20 - 11.40 Alan Warren: Structural and genetic approaches to elucidate Sdo1 function in Tif6 recycling

11.40 - 12.00 break

12.00 - 12.20 Steven Ellis: Inhibition of Histone Deacetylase Activity Suppresses the 60S Subunit Maturation Defect in a Yeast Model of Shwachman Diamond Syndrome

12.20 - 12.40 Tom Meier: X- Linked Dyskeratosis Congenita is a ribonucleoprotein assembly deficiency

12.40 - 12.50 Hannelore Breitenbach-Koller: Translation associated pathomechanisms in autism linked to ribosomal protein rpL10?

12.50 - 13.10 Matt Kaerberlein: A conserved role for ribosomal proteins in aging and age-associated disease

13.10 lunch / end of conference