

PROGRAMME

SY Stem

21–23 March 2019
Vienna, Austria

Symposium for the next generation of stem cell researchers





Special thanks to all sponsors of the SY-System symposium:





Welcome to the Vienna BioCenter!

We are very happy to welcome you to the second **SY-Stem** symposium! We founded this meeting in 2018 with a particular focus on young scientists, the next generation of stem cell researchers. Our goal is to bring together scientist from Europe and all over the world to foster a greater community connection.

With a successful start last year, we are looking forward to more exciting talks in 2019.

In the First Author Session young aspiring postdocs are presenting their latest findings while we could win well-established speakers for the keynote lectures.

Jonas Frisén will share insights about the role of stem cells in cell turnover in healthy and pathological situations, with a focus on adult neurogenesis as well as cell renewal in the heart and use the intestine as a stem cell and cancer model system.

Janet Rossant will highlight the mechanisms of cell fate decisions in the early mouse embryo and their application to the maintenance and differentiation of embryo-derived stem cells, combining methods like single cell RNA-seq data with experimental analysis of cell plasticity.

For the 2019 sessions we have selected a diverse area of stem cell related research fields ranging from topics like adult stem cells, germ lines & totipotency, organoids, pluripotency, differentiation & reprogramming to regeneration and ageing.

Poster sessions, coffee breaks, symposium dinner and a social event on Friday provide us with plenty of occasions to discuss those research areas, exchange ideas and results and create new connections. New this year is a “**meet the editor**” slot that will take place on Saturday. We encourage you to reach out and talk to somebody that you did not meet before.

We are again very happy to welcome to this symposium researchers from all over Europe as well as locations from all over the world.

We want to extend a very warm welcome to our external guest, who come to us from 25 different countries. You make this symposium a truly international event and we are confident you will carry our message back to your home institutions. We would particularly like to thank our speakers who contribute their knowledge and ideas to this symposium. We would also like to extend a special thanks to the large number of industrial sponsors of this year's symposium. Finally, we want to thank all colleagues from the **Vienna BioCenter**, who will be helping to connect our guests to the campus and showcase the exciting atmosphere.

We hope that everyone will enjoy the conference and look forward to an exciting and fruitful symposium!

Elly Tanaka, Juergen Knoblich, Uli Elling, Kikue Tachibana, BonKyoung Koo & Noelia Urban

Venue

Campus - Vienna - Biocenter



- EXHIBITORS:
- | | | |
|-------------------------|-------------------|-----------------|
| 1 Eppendorf | 4 Biomedica | 7 VWR |
| 2 Szabo Scandic | 5 Takara Bio | 8 World Courier |
| 3 Stemcell Technologies | 6 Miltenyi Biotec | 9 Biozol |

Programme

Thursday, 21st March 2019



- 12.00 Registration
12.30 **Welcome & introduction**

Keynote lecture

- Chair: **Jürgen Knoblich**
12.45 **Jonas Frisé (Karolinska Institute)** New cells in old brains
13.45 *Coffee break (IMP Foyer)*

Session 1 – Pluripotency, Differentiation & Reprogramming

- Chair: **Christa Buecker**
14.15 **Thorsten Boroviak (University of Cambridge)** How to build a primate: Towards a synthetic model of primate embryogenesis
14.45 **Joshua Brickman (University of Copenhagen)** Transcription Factor-Independent Enhancer Decommissioning and Plasticity in Early Differentiation
15.15 **Pablo Navarro (Institut Pasteur)** Mitotic bookmarking by TFs
15.45 *Coffee break (IMP Foyer)*
16.15 **Ulrich Elling (IMBA)** The Genetics of Cell Identity Change
16.45 **Marco Pellegrini (University of Padua)** Direct generation of human naïve induced pluripotent stem cells from somatic cells in microfluidics
17.05 **Mário Soares (Instituto Gulbenkian de Ciência)** Brn2 associates with mitotic chromosomes in neural stem/progenitor cells: possible role in M-G1 transition
17.25 *Coffee break (IMP Foyer)*

First Author Session

- Chair: **Ulrich Elling**
18.00 **Jimena Andersen (Stanford University)** Generating multi-region assembloids in vitro to study human development and disease
18.20 **Huili Hu (Hubrecht Institute)** Long-term expansion of 3D hepatocytes organoids
18.40 **Gregor Pilz (University of Zurich)** Live imaging in the adult mouse hippocampus uncovers cellular principles of adult neurogenesis and points towards stem cell heterogeneity
19.00 **Fredrik Salmén (Hubrecht Institute)** Single-cell whole transcriptomics with VASA-Seq reveals heterogeneity in snRNA variant expression within the murine HSPC compartment
19.20 *Symposium dinner*



Friday, 22nd March 2019

Session 2 – Germ Lines & Totipotency

Chair: **Kikue Tachibana**

- 09.00 **Déborah Bourc'his (Institut Curie)** Maternal epigenetic contribution to zygotic genome activation
- 09.30 **Petra Hajkova (MRC London Institute of Medical Sciences)** Molecular principles of epigenetic reprogramming and gametogenesis
- 10.00 **Katsuhiko Hayashi (Kyushu University)** A stem cell-based approach to understanding of mammalian oogenesis
- 10.30 *Coffee break (IMP Foyer)*
- 11.00 **Juan Vaquerizas (Max Planck Institute for Molecular Biomedicine)** Transposable element-driven reorganisation of 3D chromatin during early embryonic development
- 11.30 **Eva Hoernseder (Institute of Epigenetics and Stem Cells)** Epigenetic Barriers to Cell Fate Reprogramming
- 12.00 **Jacqueline Mermoud (Institute of Molecular Biology and Tumor Research)** SMARCAD1 ATPase activity is required to silence endogenous retroviruses in embryonic stem cells
- 12.20 **Jian Shu (Broad Institute of MIT and Harvard)** Reconstruction of cellular reprogramming landscapes and trajectories from large-scale single-cell profiles
- 12.40 *Lunch (Cafeteria)*

Session 3 – Organoids

Chair: **Sasha Mendjan**

- 14.00 **Madeline Lancaster (MRC Laboratory of Molecular Biology)** Advances in brain organoid technologies and their application to human biology
- 14.30 **Nicolas Rivron (MERLN Institute and Hubrecht Institute)** Blastoids: blastocyst-like structures formed from solely stem cells
- 15.00 **Joo-Hyeon Lee (Cambridge Stem Cell Institute)** Stem Cells and Their Dynamic Niche in Lung Repair and Regeneration
- 15.30 **Rana Fetit (University of Edinburgh)** Investigating the Effects of 16p11.2 Deletion on Cerebral Development and Interneuron Production
- 15.50 **Reiner Wimmer (IMBA)** Human blood vessel organoids model diabetic vasculopathy
- 16.10 **Poster session 1**
- 18.00 *Socializing*



Saturday, 23rd March 2019

Session 4 – Adult Stem Cells

Chair: **Noelia Urban**

- 09.00 **Marieke Essers (German Cancer Research Center)** Homeostatic IFN priming in hematopoietic stem cells (HSCs)
- 09.30 **Marlen Knobloch (University of Lausanne)** Metabolic regulation of neural stem cells
- 10.00 *Coffee break (IMP Foyer)*
- 10.30 **Carolina Florian (Center of Regenerative Medicine in Barcelona)** Aging alters the epigenetic asymmetry of HSC division
- 11.00 **Bon-Kyoung Koo (IMBA)** Defining the identity and dynamics of adult gastric isthmus stem cells
- 11.30 **Sophie Peron (University Medical Center of the University Mainz)** Direct in vivo glia-to-neuron conversion in the postnatal mouse cerebral cortex
- 11.50 **Olena Zhulyn (Stanford University)** Rapid remodeling of the transcriptome underlies tissue development and regeneration
- 12.10 *Lunch*
- 13.00 **Poster session 2**

Session 5 – Regeneration & Ageing

Chair: **BonKyoung Koo**

- 14.30 **Elisa Gomez Perdiguero (Institut Pasteur)** Ageing and Inflammation drive the specific loss of HSC-independent tissue resident macrophages
- 15.00 **Christian Petersen (Northwestern University)** Regenerative growth and scaling in planarians
- 15.30 *Coffee break (IMP Foyer)*

Keynote lecture

Chair: **Elly Tanaka**

- 16.00 **Janet Rossant (SickKids Research Institute)** From totipotency to pluripotency- how the early embryo makes its decisions
- 17.00 **Closing remarks**

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