

PROGRAMME

SY  Stem

23–25 March 2022
Vienna, Austria

Symposium for the next generation of stem cell researchers

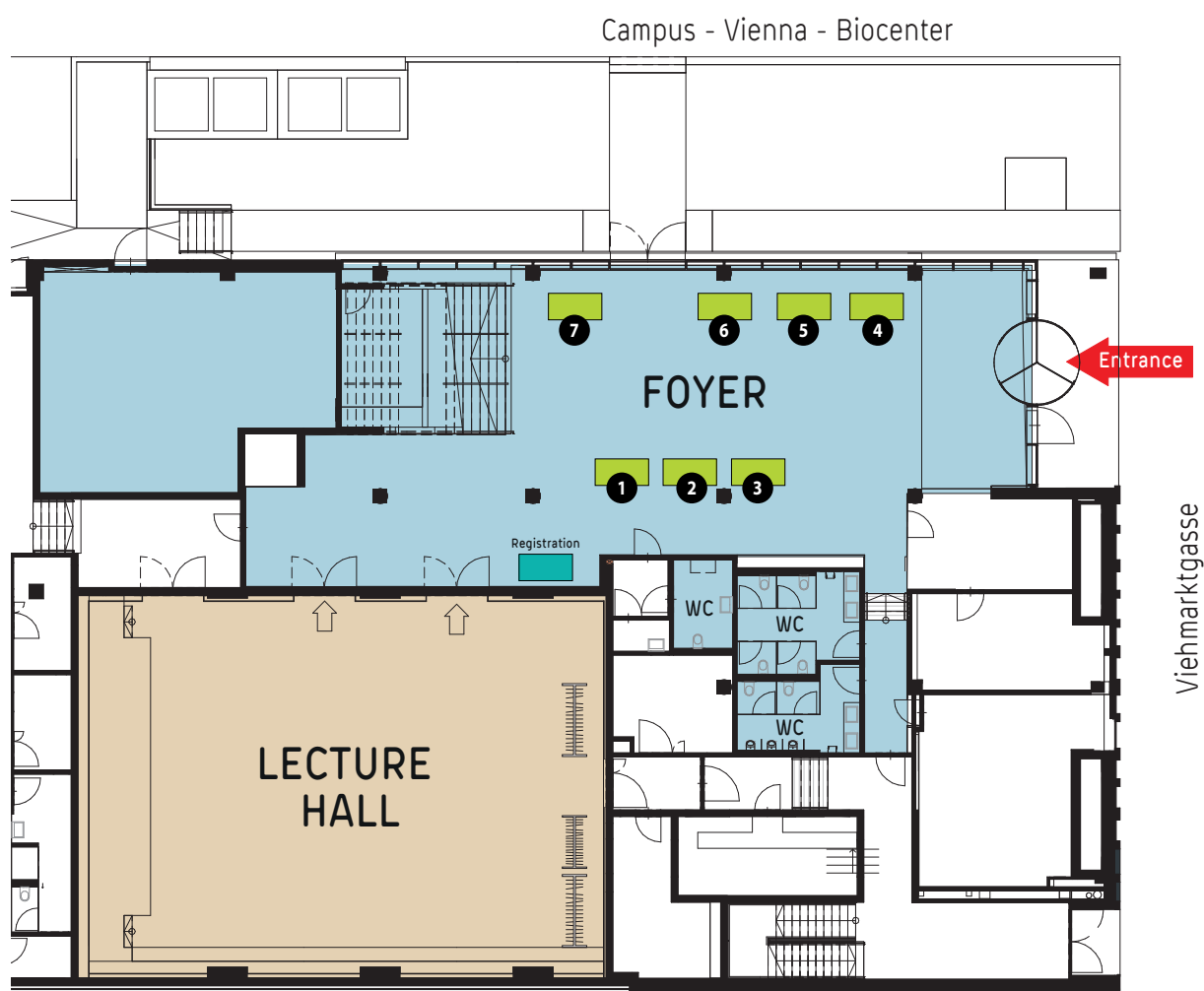


Special thanks to all sponsors of the SY-Stem symposium:






Venue



 Registration

 Coat rack

EXHIBITORS: **1** World Courier

2 Bio-Techne

3 Takara

4 10xGenomics

5 STEMCELL Technologies

6 LevitasBio

7 Miltenyi Biotec

Programme

Wednesday, 23rd March 2022

13:00 **Welcome and introduction**

Keynote lecture 1

Chair: **Noelia Urban**

13:15 **James Briscoe (The Francis Crick Institute)** About Time: The Dynamics of Neural Tube Development

14:15 *coffee break & group picture*

Session 1 - morphogenesis and signaling dynamics

Chair: **Anna Kicheva**

14:45 **Katharina Sonnen (Hubrecht Institute)** Signaling dynamics in the control of embryonic development and tissue homeostasis

15:15 **Diana Pinheiro (IST Austria)** Morphogen gradient orchestrates pattern-preserving morphogenesis via motility-driven (un)jamming

15:45 **Yasuhiro Takashima (Kyoto University CiRA)** Modeling in vitro embryonic development using naive human pluripotent stem cells

16:05 *break*

Session 2 - synthetic embryology / self-organization

Chair: **Vincent Pasque**

16:35 **Leonardo Morsut (University of Southern California)** Learning to Program Tissue Development with Artificial Genetic Circuits

17:05 **David Oriola Santandreu (EMBL Barcelona)** Towards a mechanochemical basis of symmetry breaking in a mammalian embryo-like system

17:35 **Naomi Moris (The Francis Crick Institute)** In vitro 3D gastruloid models of mouse and human development

17:55 *coffee break*

18:25 **Harunobu Kagawa (IMBA Vienna)** Four features of human blastoids that model human blastocysts

18:45 **Siddarth Dey (UC Santa Barbara)** Integrated single-cell sequencing reveals principles of epigenetic regulation of human gastrulation and germ cell development in a 3D gastruloid model

19:15 *Symposium dinner*



Thursday, March 24th

Session 3 - mechanobiology & cell fate transition

Chair: **Ulrich Technau**

09:00 **Kevin Chalut (University of Cambridge)** Mechanobiology of cell fate transitions

09:30 **Marta Shahbazi (MRC Laboratory of Molecular Biology)** Coordinating cell fate decisions and tissue shape changes during mammalian development

10:00 **Charisios Tsiairis (FMI Basel)** Mechanical tissue stretching drives Wnt organizer establishment in Hydra

10:20 *coffee break*

10:50 **Cornelia Schwayer (FMI Basel)** Symmetry breaking in intestinal organoid formation

11:10 **Alexandre Mayran (EPFL Lausanne)** Cell-specific coordination of epithelial to mesenchymal transition potentiates gastruloids self-organization

11:30 *coffee break*

Session 4 - development & disease

Chairs: **Sofia Grade & Frank Edenhofer**

12:00 **Federico Mauri (Boehringer-Ingelheim)** Switching to the dark side: role of NR2F2 in regulating tumor malignant progression, stemness and maintenance.

12:30 **Mercedes Paredes (UCSF)** Late to the Game: Human Cortical Interneuron Development

13:00 **Marcella Birtele (University of Southern California)** The autism-associated gene SYNGAP1 modulates human cortical neurogenesis

13:20 *lunch*

14:00 **Meet-the-editor**

14:20 **Poster session 1**

16:20 **Agnete Kirkeby (University of Copenhagen)** Repairing and modelling the human brain with stem cells

16:50 **Oliver Harschnitz (Human Technopole)** Human stem cell models to study host-virus interactions in the central nervous system

17:10 **Aleksandra Savina (Institut Cochin)** Single-cell transcriptomics reveals age-resistant maintenance of cell identities, stem cell compartments in naked-mole rats

17:30 **Simona Lodato (Humanitas University)** 3D Human Cortical Organoids to investigate early cortical activity and developmental and epileptic encephalopathy

18:00 *end of talks – free evening for attendees*

Friday, March 25th

Session 5 - metabolic control of stem cells

Chair: **Stephanie Ellis**

- 09:00 **Nina Cabezas-Wallscheid (MPI of Immunobiology and Epigenetics)** Regulation of dormant hematopoietic stem cells
- 09:30 **Marlen Knobloch (University of Lausanne)** How lipid droplet availability affects neural stem cell behaviour
- 10:00 **Noelia Urban (IMBA Vienna)** A full, dynamic view of neural stem cell quiescence
- 10:20 *coffee break*

Session 6 - cell identity and cell fate decision

Chair: **Graziano Martello**

- 10:50 **Sven Falk (FAU Erlangen-Nürnberg)** Molecular control of cellular identity acquisition
- 11:20 **Merrit Romeike (Max Perutz Labs)** Stem cell specific interferon stimulated gene expression is regulated by the formative pluripotency network through IRF1
- 11:40 **Tom Wyatt (Wellcome-MRC Cambridge Stem Cell Institute)** Patterning from the bottom up: hPSC patterning via spatially controlled stimulation from the basal side
- 12:00 *coffee break*
- 12:30 **Moritz Mall (DKFZ Heidelberg)** Transcriptional safeguarding mechanisms enable development and prevent disease
- 13:00 **Antoine Zalc (Cochin Institute)** Murine cranial neural crest cells reawaken pluripotency programs
- 13:20 **Irene Talon (KU Leuven-University of Leuven)** Polycomb repressive complex 2 restricts human trophoblast induction
- 13:40 *lunch*
- 14:40 **Poster session 2**

Keynote lecture 2

Chair: **Christa Bücker**

- 16:10 **Kathrin Plath** Dosage compensation of the X chromosome: An epigenetic phenomenon that teaches us how functional nuclear compartments form and how pluripotent cell states differ
- 17:10 closing remarks
- 17:25 *networking with snacks & drinks*

Posters

Please note that although all posters will be displayed at the same time, the presentations will take place on different days. Presenters with even numbers will present in Session 1 on Thursday, March 24, and presenters with odd numbers will present on Day 2, Friday, March 25.

SESSION 1 - Thursday March 24th

Poster Number	Name	Affiliation	Title
1	Adnan Mahly	Tel Aviv University	Anillin-mediated cortical actomyosin governs epidermal shape and growth
3	Albert Blanch Asensio	Leiden university medical center (LUMC)	STRAIGHT-IN: A platform for high-throughput targeting of large DNA payloads in human pluripotent stem cells
5	Andreas Denner	Universität Wien	Single-cell transcriptomics identifies conserved regulators of neurosecretory lineages in embryos and adults
7	Angeliki Spathopoulou	University of Innsbruck	Direct conversion of human fibroblasts into induced neural stem cells as a model for studying neural ageing and regeneration
9	Célia Bochaton	EPFL SV ISREC UPDUB	CTCF-driven insulation at the HoxB locus using gastruloids at a model system
11	Clara Schmidt	Institute of Molecular Biotechnology (IMBA)	Modeling all major compartments of the developing heart using cardioids
13	Daniela Řeháková	Fakultní nemocnice u sv. Anny v Brně ICRC	Telomere length in human pluripotent stem cells
15	Edoardo Sozzi	Lund University	SILK SCAFFOLDING DRIVES SELF-ASSEMBLY OF FUNCTIONAL AND MATURE HUMAN BRAIN ORGANOID
17	Felipe Ortega	Universidad Complutense de Madrid, Facultad de Veterinaria	Live imaging reveals cerebellar neural stem cell dynamics and the role of VNUT in lineage progression
19	Filippo Zoppi	FAU Erlangen-Nürnberg	Dissecting direct neuronal reprogramming as a tool to identify novel key players in human neurogenesis
21	Gaurav Singh Rathore	University of Copenhagen Department of Neuroscience	Mapping early human neurogenesis in an in vitro model of human brain development using Single Cell RNAseq
23	Gheorghe Proteasa	City University of New York - Queensborough Community College	An mTOR story. The pH dependency on Rapamycin-FRB domain complex binding affinity
25	Giulio Abagnale	St. Anna Kinderkrebsforschung GmbH	Modeling Langerhans Cell Histiocytosis using induced Pluripotent Stem Cells
27	Hannes Arnold	10x Genomics	Simultaneous single cell profiling of open chromatin and gene expression in B cell lymphoma highlights tumor-specific regulatory
29	Henrieta Papúchová	Medical University of Vienna	The role of the SWI/SNF chromatin remodeling complex in trophoblast identity
31	Isaree Teriyapirom	Institute of Molecular Biotechnology (IMBA)	Acquired epithelial WNT secretion drives niche independence in gastric cancer
33	Ji-Hyun Lee	Institute of Molecular Biotechnology (IMBA)	p57Kip2 imposes the reserve stem cell state of gastric chief cells
35	Julianne Beirute	Institute of Molecular Biology	Characterization of human-specific regulators of neurodevelopment
37	Katherina Tavernini	Institute of Molecular Biotechnology (IMBA)	Exploring the regulation of human neural stem cell quiescence in vitro
39	Keun-Tae Kim	Seoul National University	Glycogen modulates naïve pluripotency in embryonic stem cells and pre-implantation embryo development



Poster Number	Name	Affiliation	Title
41	Laura Santini	Max Perutz Labs	AktTORs in differentiation: the role of PTEN and TSC2 in coordinating ES cell exit from naïve pluripotency
43	Lisa Rahm	Radboudumc	Elucidation of the neuropathological defects in iPSC-derived iNeurons from patients with DM1
45	M Joaquina Delas	The Francis Crick Institute	Two distinct modes of cis regulation control cell specification in response to Shh during spinal cord development
47	Mansour Alkobtawi	INSERM - Institut Cochin - Faculté de médecine Paris Descartes	Contribution of fetal stem cells to maternal wound healing in sickle cell disease
49	Maria Sbeih	Institut Cochin	CCL2 dampens brain excitotoxic damage in post-partum mice by recruiting foetal microchimeric cells
51	Miha Modic	The Francis Crick Institute	Stepwise activation of selective mRNA decay synchronises pluripotency progression and morphogenesis
53	Nam Mi Kang	Department of Nursing, Konkuk University	Minor Fatty Acid Profiles of Transitional Breastmilk :Metabolic Analysis
55	Pascal Röderer	Institute of Reconstructive Neurobiology, University Hospital Bonn	Forward programming of human sensory neurons by overexpression of NGN1, BRN3A and ISLET1
57	Rut Gabarró Solanas	Institute of Molecular Biotechnology (IMBA)	Robustness of adult neurogenesis maintains homeostasis and neutralises the early effects of intermittent fasting
59	Sandra Edwards	Technische Universität Dresden (TUD)	Growth control and biomechanics during limb regeneration in the axolotl
61	Stefanie Rus	IST Austria	Self-organized pattern formation in the developing dorsal neural tube
63	Swathi Jayaram	Max Perutz Labs Vienna	Understanding the role of the cell cycle in the exit from naïve pluripotency
65	Teresa Krammer	Research Institute of Molecular Pathology (IMP)	Self-organization of a signaling center in neural tube organoids
67	Venkat Swaroop Achuta	Department of Neurology, Medical University of Vienna	Molecular characterization of loss-of-function HACE1 mutations identified in individuals with a rare neurodevelopmental disorder
69	Viviana Meraviglia	Leiden University Medical Center	hiPSC-derived three-dimensional cardiac microtissues to study the contribution of cardiomyocytes and cardiac fibroblasts in Arrh

SESSION 2 - Friday March 25th

Poster Number	Name	Affiliation	Title
2	Afrim Avdili	Medical University of Graz	CRISPR/Cas9 mediated gene editing of human iPSC to track haematopoietic development
4	Alexander Waclawiczek	German Cancer Research Center	Analysis of Leukemia Stem Cells in Acute Myeloid Leukemia to Predict Clinical Response to Venetoclax-Based Therapy
6	Anastasia Polikarpova	Research Institute of Molecular Pathology (IMP)	The specialist in regeneration – the Axolotl – a suitable model to study bone healing?
8	Canan Çeliker	Faculty of Medicine, Masaryk University	Identification of Novel Light Regulated microRNAs in Human Retina Using Retinal Organoid Model.
10	Alison Deyett	Institute of Molecular Biotechnology (IMBA)	Cardioids unravel mechanisms of compartment-specific cardiac defects
12	Constance ONFRAY	CRTI	Uncoupling Human Chimerism from Developmental Stage
14	Dominique Kolly	EPFL SV ISREC UPDUB	Gastruloids as a model to study complex developmental gene regulation – case study of Mesp1 and Mesp2
16	Elisa Gabassi	Institute of Molecular Biology, University of Innsbruck	A Progerin-induced human brain organoid model unravels age-mediated effects on heterochromatin and DNA damage patterns
18	Feyza Nur Arslan	IST Austria	Regulation of E-cadherin-mediated contacts via cortical F-actin flows
20	Gabriele Colozza	Institute of Molecular Biotechnology (IMBA)	Daam plays opposing roles in the canonical and non-canonical Wnt signaling pathways regulating intestinal stem cells
22	Georg Busslinger	CeMM	Molecular characterization of Barrett's esophagus at single-cell resolution
24	Giulio Di Minin	ETH Zurich - IMHS	Regulated ER exit initiates Smoothed activation in Hedgehog signalling
26	Hannah Helt	faCellitate	Innovative, animal free biomaterial for induced stem cell cultivation
28	Hatice Özge Özgüldez	Max Planck Institute for Molecular Biomedicine	Polarity inversion reorganises the stem cell compartment of the trophoblast lineage
30	Isabella Völkl	Max Perutz Labs	Mechanistic dissection of primary ciliogenesis during embryonic development using a 3D in vitro model system
32	Iskra Sainova	Bulgarian Academy of Sciences (BAS), Sofia	Novel anti-malignant and anti-viral strategies by differentiation and gene-engineering manipulations with embryonic cells
34	Julia Schröder	Max Planck Institute of Molecular Physiology	An imaging approach to identify cellular origins of species-specific differentiation timing
36	Katharina Günther	Institute of Molecular Biology, University of Innsbruck	EARLY HUMAN FETAL NEURAL PRECURSORS WITH HIGH SELF-RENEWAL AND BROAD NEURAL DIFFERENTIATION CAPACITY
38	Keisuke Ishihara	Research Institute of Molecular Pathology (IMP)	Topological morphogenesis of neuroepithelial organoids
40	Laura Capolupo	EPFL	Sphingolipids Control Dermal Fibroblast Heterogeneity
42	Lisa Kleißl	LBG GmbH - LBI Rare and Undiagnosed Diseases	Application of an inflammatory skin model with induced pluripotent stem cell-derived macrophages to study granuloma formation
44	Luis Miguel Cerron Alvan	Max Perutz Labs	Systematic dissection of an extended naïve pluripotency gene regulatory network
46	Maja Funk	German Cancer Research Center	Intestinal stem and progenitor cells acquire cell-intrinsic inflammation during ageing



Poster Number	Name	Affiliation	Title
48	Marcel Tisch	Leopold-Franzens-University Innsbruck, Institute of Molecular Biology	STUDYING THE PATHOLOGY OF VOLTAGE-GATED CALCIUM CHANNEL GAIN-OF-FUNCTION MUTATIONS USING PATIENT-DERIVED STEM CELLS
50	Medina Korkut-Demirbaş	Institute of Science and Technology	A systematic characterization of intrinsically formed microglia-like cells during retinal organoid differentiation
52	Nadja Milivojev	Max Perutz Labs, University of Vienna	Exploring a novel model of neurogenic plasticity as a function of endogenous timing mechanisms
54	Nicole Amberg	Institute of Science and Technology Austria	Tissue-Wide Genetic and Cellular Landscape Instructs the Execution of Sequential PRC2 Functions in Neural Stem Cell Lineage Prog
56	Renée Buurman	Radboudumc	IPSC-derived pericytes for the alleviation of the muscle phenotype in myotonic dystrophy type 1
58	Sabrina Nebel	University of Natural Resources and Life Sciences BOKU Vienna	Alginate Core-Shell Capsules for 3D Cultivation of Adipose-Derived Mesenchymal Stem Cells
60	Sina Schumacher	Max Planck Institute of Molecular Physiology	Embryo-like stem cell aggregates reveal the potential of the primitive endoderm for morphogenesis and differentiation
62	Sumit Garai	Max Planck institute of Cell biology and genetics	Reassessing transcriptomic landscapes of stem-cell based embryo models
64	Szu-Hsien Wu	Institute of Molecular Biotechnology (IMBA)	RED2FLPE - A VERSATILE MULTICOLOR SYSTEM FOR IN VIVO CONDITIONAL MOSAIC KNOCKOUT
66	Tereza Souralová	St.Anne´s University Hospital Brno	Establishment of human embryonic stem cells for stem-cell therapies
68	Verena Hübschmann	Institute of Science and Technology (IST) Austria	Characterization of human microglia colonizing developing retinal organoids
70	Yolanda Chang	Leiden University Medical Centre	Human PGCLC differentiation is influenced by hiPSC tissue-of-origin.

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