German**StemCell**Network

2nd International Annual Conference

A Life Without Cancer

of the German Stem Cell Network (GSCN) November 3-5, 2014

German Cancer Research Center (DKFZ)Heidelberg



Program

MONDAY. November 3rd

11:00 – 12:00 Registration and light lunch

Opening

Lecture hall:

- 12:00 12:05 Welcome to the German Cancer Research Center (DKFZ): Otmar Wiestler (Chairman and Scientific Director, DKFZ)
- 12:05 12:15 Andreas Trumpp (Acting President, GSCN)
- 12:15 12:30 Opening remarks Bärbel Brumme-Bothe (Department Head "Life Sciences", BMBF)
- 12:30 13:15 Keynote lecture I

K1 - Exploring the hierarchical organization of colorectal cancer Eduard Batlle; Institute for Research in Biomedicine Barcelona, Spain (Chair: *Andreas Trumpp*) supported by Eppendorf AG

13:15 - 14:00 Keynote lecture II

K2 - Myocardial regeneration by ESC-derived cardiac progenitors Philippe Menasché; Hospital European George Pompidou, Paris, France (Chair: *Ulrich Martin*)

14:00 – 14:30 Coffee break / industry exhibition

Concurrent scientific working group session I

Lecture hall: Stem cells in regenerative therapies I (chair: Ulrich Martin / Hans-Dieter Volk)

- 14:30 14:50 Stem cells in regenerative therapies Introduction *Ulrich Martin;* Rebirth / Hannover Medical School
- 14:50 15:05 T01 Intranasal delivery of migratory neural stem/progenitor cells: A noninvasive passage to therapeutically target intracerebral brain tumors Nils Ole Schmidt; University Medical Center, Hamburg-Eppendorf
- 15:05 15:20 T02 MicroRNA-181a promotes human neuronal differentiation by downregulating genes involved in neural stem cell maintenance Laura Stappert; Institute of Reconstructive Neurobiology, Bonn
- 15:20 15:35 T03 Pulmonary transplantation of multipotent- or pluripotent-stem cell derived macrophages as a novel treatment option for pulmonary alveolar proteinosis Nico Lachmann; Hannover Medical School

Solvig Diederichs; University Hospital Heidelberg

- 15:35 15:50 T04 Human iPSC-derived MSC-like progenitor cells: functional differences from primary MSCs affecting their use in cartilage regenerative medicine
- 15:50 16:00 Group discussion

Room K 1: Stem cells in disease: cancer stem cells (chair: Thomas Brabletz / Andreas Trumpp)

- 14:30 14:50 Concepts of cancer stem cells Introduction Andreas Trumpp; German Cancer Research Center, Heidelberg
- 14:50 15:05 T05 Shp2 Signaling is essential to the suppression of senescence in mammary gland cancer stem cells in mice Linxiana Lan; Max Delbrück Center, Berlin
- 15:05 15:20 T06 Humanization of mouse models for human breast cancer using mesenchymal stem cells Maxine Silvestrov; Experimental Pharmacology & Oncology (EPO) GmbH, Berlin
- 15:20 15:35 T07 Targeting the kinome to induce differentiation in human breast cancer stem cells Jochen Maurer; University Medical Center Freiburg
- 15:35 15:50 T08 CD151+ cells drive tumor-initiation, hierarchical growth and proliferationassociated signaling in patient-derived models of serous ovarian cancer Franziska Zickgraf; German Cancer Research Center, Heidelberg
- 15:50 16:00 Group discussion

Room K 2: Computational stem cell biology (chair: Georg Fuellen / Ingo Roeder)

- 14:30 14:45 Computational stem cell biology Overview and introduction Ingo Roeder; Dresden University of Technology
- 14:45 14:55 T09 What makes stem cells move? Studying stem cell migration in vitro (back-to-back presentation with T10) Michael Ansorge; Leipzig University
- 14:55 15:05 T10 What makes stem cells move? Studying stem cell migration in silico (back-to-back presentation with T09) Axel Krinner; Dresden University of Technology
- 15:05 15:20 T11 Characterizing transcriptional cell-to-cell heterogeneities during stem cell differentiation Fabian Theis; Helmholtz Center Munich
- 15:20 15:35 T12 A network-based strategy to direct cell fate determination Antonio del Sol; Luxembourg Center for Systems Biomedicine
- 15:35 15:50 T13 Computational identification of pluripotency networks Maryam Nazarieh; Saarland University, Saarbrücken
- 15:50 16:00 Group discussion

ZMBH (ground floor): Somatic stem cells (chair: Thomas Braun / Ana Martin-Villalba)

- 14:30 14:50 Studies on somatic stem cells an introduction Thomas Braun; Max Planck Inst. f. Heart and Lung Res., Bad Nauheim
- 14:50 15:05 T14 The RNA helicase DDX6 regulates cell-fate specification in neural stem cells via miRNAs Sarah Nicklas; Luxembourg Center for Systems Biomedicine
- 15:05 15:20 T15 Angiogenesis controls neural stem cell expansion by regulating tissue oxygenation and HIF signaling Christian Lange; VIB KU Leuven Campus, Belgium

15:20 – 15:35	T16 - Regulation of asymmetric/symmetric stem cell division in human epidermis <i>Katharina Nöske;</i> German Cancer Research Center, Heidelberg		
15:35 – 15:50	T17 - Clonal heterogeneity within the exocrine pancreas Damian Wollny; German Cancer Research Center, Heidelberg		
15:50 – 16:00	Group discussion		
16:00 – 16:15	Coffee break / industry exhibition		
16:15 – 18:15	Poster session I: P001 – P097 (posters will be displayed in the tent) P001 – P017: Pluripotency and embryonic stem cells P018 – P038: Programing and reprograming P039 – P061: Stem cells in development P062 – P072: Somatic stem cells (posters will be displayed in front of room K 1+2) P073 – P097: Hematopoietic stem cells	supported by Fluidigm Europe B.V	
	Even numbers: please present your poster from 16:15 Uneven numbers: 17:15 – 18:15	5 – 17:15	
18:15 – 19:15	Dinner		

Lecture hall:

19:15 – 20:45 GSCN General Membership Meeting

20:45 - 21:30 Get-together

TUESDAY, November 4th

Concurrent scientific working group session II

Lecture hall: Stem cells in disease modeling and drug development

(chair: Oliver Brüstle / Karl-Ludwig Laugwitz)

supported by Lonza Cologne GmbH

- 09:00 09:20 The use of stem cells in disease modeling and drug development Overview Oliver Brüstle; Institute of Reconstructive Neurobiology, Bonn
- 09:20 09:35 T18 Probing mitochondrial DNA disorders using iPSC-derived neural progenitors Alessandro Prigione; Max Delbrück Center, Berlin
- 09:35 09:50 T19 Modeling Dravet syndrome in iPS cell-derived neurons Matthias Hebisch; Institute of Reconstructive Neurobiology, Bonn
- 09:50 10:05 T20 The functionality of stem cell derived neurons: How to define it? Sebastian Illes; Inst. of Molecular Reg. Medicine, Salzburg, Austria
- 10:05 10:20 T21 Modeling and pharmacological rescue of ion channel diseases enabled by improved cardiac induction of human pluripotent stem cells in 2D and 3D

Boris Greber; Max Plank Institute for Molecular Biomedicine, Münster

10:20 - 10:30 Group discussion

Room K 1+2: Pluripotency and embryonic stem cells (chair: James Adjaye / Mathias Treier)

- 09:00 09:20 Pluripotency and embryonic stem cells: Introduction and overview James Adjaye; University Hospital of Düsseldorf
- 09:20 09:35 T22 Primate-specific endogenous retrovirus driven transcription defines naïve-like stem cells Jichang Wang; Max Delbrück Center, Berlin
- 09:35 09:50 T23 A novel IncRNA-protein interaction characterizes mouse embryonic stem

Debojyoti Chakraborty; Dresden University of Technology

09:50 - 10:05 T24 - NANOG and CDX2 pattern distinct subtypes of human mesoderm during exit from pluripotency

Sasha Mendjan; Cambridge Stem Cell Institute, United Kingdom

- 10:05 10:20 T25 Insights from the streak: identification of novel genes associated with germ-layer formation and mesendoderm differentiation Cantas Alev; RIKEN Center for Developmental Biology, Kobe, Japan
- 10:20 10:30 Group discussion

ZMBH (ground floor): Stem cells in development (chair: Jan Lohmann / Francesca Spagnoli)

- 09:00 09:15 Stem cells in development Overview Jan Lohmann; Centre for Organismal Studies Heidelberg
- 09:15 09:30 T26 Tet-dependent processing of 5-methylcytosine protects DNA methylation canyons against hypermethylation Achim Breiling; German Cancer Research Center, Heidelberg

09:30 – 09:45	T27 - PIEZO2 is required for mechanotransduction in human ES-cell-derived touch receptors	12:20 – 12:50 C09 – Building bridges from research to therapy: A roadmap for the sugeneration of clinical-grade iPSCs	uccessful
	Katrin Schrenk-Siemens; University of Heidelberg	Thomas Fellner; Lonza Cologne GmbH	
	T28 - Transcriptional and epigenetic dynamics underlying cell lineage commitment Filippo M. Cernilogar; Ludwig Maximilian University, Munich	12:50 – 14:30 Lunch buffet / industry exhibition / poster viewing supported by STEMCELL Technology	ologies SARL
	T29 - The histone 3 lysine 4 methyltransferase Mll2 primes the Nxt2 promoter for neural differentiation Katrin Neumann; Dresden University of Technology	13:15 – 14:15 Room K 1+2: Explaining science and motivating people – Outreach ma for stem cell research (<i>Tobias Cantz/Ira Herrmann</i>)	aterials
10:15 – 10:30	T30 - Signals from the injury niche increase fate potential of adult neural stem cells Enric Llorens Bobadilla; German Cancer Research Center, Heidelberg	Concurrent strategic working group session A	
	Coffee break / industry exhibition	Lecture hall: Career development (chairs: Hartmut Geiger / Insa Schröder)	
10:30 – 11:15		14:30 – 14:45 Careers in industry, <i>Andreas Bosio;</i> Miltenyi GmbH, Berg. Gladbach	
Industry	gion, "Tochnologies from CSCN industry portners"	14:45 – 15:00 Careers in science administration, <i>Hella Lichtenberg</i> ; DLR Bonn	
Industry session: "Technologies from GSCN industry partners"		15:00 – 15:15 Careers in academia, <i>Hartmut Geiger / Insa Schröder</i>	
Lecture hall: Main supporters		15:15 – 15:30 Panel discussion	
	Introduction (Andreas Trumpp) CO1 - High throughput screening using iPSC-based models		
11.20 – 11.50	Jared Sterneckert; CRT Dresden, representing PeproTech GmbH	Room K 1+2: Clinical trials and regulatory affairs I	
11:50 – 12:20	CO2 - Controlling expansion and cardiomyogenic differentiation of human	(chair: Andreas Kurtz / Torsten Tonn / Hans-Dieter Volk) supported by apceth Gm	nbH & Co. KG
	pluripotent stem cells in scalable suspension culture	14:30 – 14:50 Development of iPS cell-based cardiac therapy Ulrich Martin, MH Hannover	
	Robert Zweigerdt; MH Hannover, representing Eppendorf AG	14:50 – 15:10 Regulatory challenges of stem cell-based medicinal products	
12:20 – 12:50	CO3 - Raw materials in the manufacture of advanced therapies medicinal	Egbert Flory; Paul Ehrlich Institute, Langen	
	products: Quality attributes and quality assurance	15:10 – 15:30 Group discussion	
	Bernd Leistler; CellGenix GmbH	15.10 15.50 Group discussion	
Room K 1+2: S	Supporters	ZMBH (ground floor): Large scale banking of human pluripotent stem cells – worksho (chair: Andreas Kurtz / Joana Namorado)	ор
	Introduction (Michael Cross)	14:30 – 14:45 Biomedical applications of iPS cell technology	
11:20 - 11:50	CO4 – Efficient neural and cardiac differentiation systems for iPSC	Angel Raya; CMRB Barcelona	
	Mohan C. Vemuri; Life Technologies GmbH	14:45 – 15:00 The need for large-scale iPSC collections - a pharma perspective	
11:50 – 12:20	CO5 - Cell-based gene delivery leverages conventional immunotherapy for	Alex Gutteridge; Pfizer	
	cancer; Treatment of advanced gastrointestinal cancer in a phase I/II trial with modified autologous MSC apceth 101	15:00 – 15:15 Delivery of human pluripotent stem cells for therapy: Phase IV of the U	UK Stem
	Volker Scherhammer; apceth GmbH & Co. KG	Cell Bank Project	
12:20 – 12:50	CO6 - Scalable enzyme-free protocols for the isolation and maintenance of human induced pluripotent stem cells without mechanical colony scraping Alexandra Blak; STEMCELL Technologies SARL	Lyn Healy; UK Stem Cell Bank, South Mimms, U.K.	
		15:15 – 15:30 The relaunch of the human pluripotent stem cell registry (hESCreg) Andreas Kurtz; BCRT Berlin	
ZMBH (ground floor): Supporters		15:30 – 15:45 Short break	
	Introduction (Torsten Tonn)		

Lecture hall: Stem cell technologies (chair: Andreas Bosio / Frank Emmrich)

15:45 – 15:50 Introduction: Andreas Bosio, Miltenyi GmbH, Berg. Gladbach

15:50 – 16:05 Methods of genetic engineering Claudio Mussolino; University of Freiburg

Concurrent strategic working group session B

Fluidigm Europe B.V.

11:20 – 11:50 C07 - The future is counting – Digital analysis of RNA, DNA and protein biomarkers

Wolfgang Enard; Ludwig Maximillians University, Munich; representing

Maik Pruess; NanoString Technologies Germany GmbH

11:50 – 12:20 CO8 – Primate iPS cells as tools for evolutionary analyses

16:05 – 16:20	Reprogramming technologies Micha Drukker; Helmholtz Center Munich
16·20 – 16·35	Methods of laser cell printing
10.20 10.33	Boris Chichkov; Laser Center Hannover (LZH)
16:35 – 16:45	Group discussion
	linical trials and regulatory affairs II
•	ndreas Kurtz / Torsten Tonn / Hans-Dieter Volk)
15:45 – 16:05	Placenta expanded mesenchymal (PLX) cells— preclinical data for preparing clinical trials
	Lena Pinzur; PluriStem Therapeutics Inc., Haifa, Israel
16:05 – 16:25	PLX cells – from preclinical to clinical studies – what did we learn so far from biomarker studies?
	Hans-Dieter Volk; Berlin-Brandenburg Center for Reg. Therapies (BCRT)
16:25 – 16:45	Panel discussions
	floor): Funding opportunities for young and advanced scientists artmut Geiger / Albrecht Müller)
13.43 – 10.30	Funding opportunities of the DFG for stem cell scientists at various career stages Eckard Picht; German Research Foundation (DFG), Bonn
16:30 – 16:45	Group discussion
16:45 – 17:15	Coffee break / industry exhibition
16:45 – 17:45	DKFZ Mensa: Meet-the-expert table: Stem cell technologies – genetic engineering (Claudio Mussolino) limited to 10 registered participants
17:15 - 10:15	Poster session II: P098 – P187
17.13 – 19.13	(posters will be displayed in the tent)
	P098 – P129: Stem cells in regenerative therapies
	P130 – P161: Stem cells in disease modeling and drug development
	(posters will be displayed in front of room K 1+2)
	P162 – P178: Stem cells in disease: Cancer stem cells
	P179 – P187: Computational stem cell biology
	Even numbers: please present your poster from 17:15 – 18:15 Uneven numbers: 18:15 – 19:15
19:15 – 20:00	Free bus shuttle to Networking Evening (busses will depart from the DKFZ main entrance)
20:00 – 01:00	Networking Evening with dinner buffet at Schlosshotel "Molkenkur" Klingenteichstr. 31, 69117 Heidelberg (www.molkenkur.de)
	(Opening: Oliver Brüstle) (included in the registration fee)

supported by CellGenix GmbH

WEDNESDAY, November 5th

Concurrent scientific working group session III

Lecture hall: Hematopoietic stem cells (chair: *Anthony Ho / Claudia Waskow***)**

- 09:00 09:20 Introduction "Hematopoietic stem cells" Claudia Waskow; Technical University Dresden
- 09:20 09:35 T31 Stroma-derived osteopontin regulates hematopoietic stem and progenitor cells function upon aging Novella Guidi; University of Ulm
- 09:35 09:50 T32 Identification of regulatory networks in HSCs and their immediate progeny via integrated proteome, transcriptome, and DNA methylome analysis Daniel Klimmeck; German Cancer Research Center, Heidelberg
- 09:50 10:05 T33 Kit deficiency regulates stable human hematopoietic stem cell engraftment in mice Susann Rahmig; Technical University Dresden
- 10:05 10:20 T34 STAT5-regulated miRNA193b controls hematopoietic stem and progenitor cell expansion by fine tuning cytokine signaling Nadine Hätscher; University Hospital Frankfurt
- 10:20 10:30 Group discussion

Room K 1+2: Programming and reprogramming (chair: Micha Drukker / Frank Edenhofer)

- 09:00 09:15 Introduction to re-programming Frank Edenhofer; University of Würzburg
- 09:15 09:30 T35 Selective gene delivery into human iPS cells based on CD30-targeted lentiviral vectors Thorsten Friedel; Paul Ehrlich Institute, Langen
- 09:30 09:45 T36 Generation of iPS cells from young vs. aged cell sources influence of donor age on reprogramming efficiency and genetic stability of iPS clones Katarzyna Osetek; LEBAO / Hannover Medical School
- 09:45 10:00 T37 Mesenchymal stem cells derived from iPS cells from aged individuals acquire fetal characteristics Lucas Spitzhorn; University Hospital of Düsseldorf
- 10:00 10:15 T38 TRIM32, a dual player regulating the entry and exit from pluripotency Lamia'a Bahnassawy; University of Luxembourg
- 10:15 10:30 T39 Robust generation of cardiomyocytes from human iPS cells requires precise modulation of Bmp and Wnt signaling Asifiqbal Kadari; Julius Maximilians University, Würzburg

DKFZ SR 4th floor: Stem cells in regenerative therapies II (chair: *Michael Cross / Frank Emmrich*) H2.04.073

The meeting point for this session is at the registration desk!

09:00 – 09:15 Introduction to session II stem cells in regenerative therapies Michael Cross; University of Leipzig

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09:15 – 09:30	T40 - Efficient generation of functionally defined iPSC-derived human neural		Panel:
	stem/progenitor cells and oligodendrocytes		Oliver Brüstle; LIFE & BRAIN GmbH, Bonn
	Giacomo Frati; San Raffaele Scientific Institute, Milan, Italy		Ralf Heilker; Boehringer Ingelheim Pharma GmbH & Co. KG, Div. Research Germany
09:30 - 09:45	T41 - Aging affects the mesenchymal stem cell derived oligodendrogenic /		Jörg Hüser; Bayer Pharma AG, Lead Discovery Wuppertal Bert Klebl; Lead Discovery Center GmbH, Dortmund
	remyelination activities: implication for a potential therapy of multiple sclerosis		Moderation: Ira Herrmann; Stem Cell Network NRW, Düsseldorf
00.45 10.00	Francisco J. Rivera; Paracelsus Medical University, Salzburg, Austria		
09:45 – 10:00	T42 - The european project REBORNE: Multipotent mesenchymal stromal cells		floor): Proceedings of the German Society for Stem Cell Research (GSZ e.V.)
	and biomaterial for bone healing Alexander Erle; Ulm University Hospital	(chair: <i>Ji</i>	ürgen Hescheler)
10.00 10.15		11:00 - 11:10	Introduction
10:00 - 10:15	T43 - Identification, isolation and targeted inhibition of a fibroblast lineage responsible for scarring and cancer stroma	11:10 - 11:30	Sinus nodal cells from pluripotent stem cells
	Yuval Rinkevich; Stanford Institute for Stem Cell Biology and Regenerative		Robert David; Reference and Translation Center for Cardiac Stem Cell
	Medicine, U.S.A.		Therapy (RTC), Rostock
10:15 – 10:30	T44 - Proofing the (Un)Proven: Proven or approved stem cell therapies –	11:30 – 11:50	Chondrogenic lineage determination during differentiation of mouse embryonic
10.10 10.00	that is the question		stem cells Jürgen Rohwedel; University of Lübeck
	Bianca Büchner; Center for Ethics and Law in the Life Sciences (CELLS), Hannover	11.50 12.10	Use of transcriptomics and epigenetic approaches in human ESC-based
		11.50 - 12.10	developmental neuro toxicology (DNT) testing
10:30 – 11:00	Coffee break / industry exhibition		Tanja Waldmann; University of Konstanz
		12:10 - 12:30	Long term culture of iPSC-derived cardiomyocytes on mechanically-defined
Concurrent v	workshops	12:10 12:00	substrates
Lecture hall: C	Clinical relevance of animal models in stem cell research and regenerative		Carlos Heras; University of Cologne
	ne (chair: Georg Duda / Frank Emmrich)	42.20 42.45	
(Worksh	nop of the 'Regenerative Medicine Initiative Germany (RMIG)')	12:30 – 12:45	Short break
11:00 - 11:20	Introduction: Animal models in research for regenerative medicine	Lecture hall:	
	Axel Haverich; Rebirth / Hannover Medical School	12:45 - 13:30	Keynote lecture III
11:20 - 11:30	Cell transplantation into pre-clinical models of retinal degeneration		K3 - Molecular and cellular regulation of muscle stem cells during development
	Marius Ader; Center for Regenerative Therapies Dresden		and regeneration
11:30 - 11:40	Medical devices and the application of stem cells		Shahragim Tajbakhsh; Institute Pasteur, Paris, France
	Konrad Kohler; zrm, Tübingen University Hospital		(Chair: Oliver Brüstle)
11:40 - 11:50	Regenerative medicine for an aging society: How relevant are our current	13:30 - 15:00	Lunch buffet / industry exhibition
	animal models?		supported by Nanostring Technologies Germany GmbH
	Georg Duda; BCRT Berlin	13:45 - 14:45	Room K 1+2: Explaining science and motivating people – Outreach materials for
11:50 – 12:00	Heterogeneity, age, comorbidities and the translational failure – can we do		stem cell research (Tobias Cantz / Ira Herrmann)
	better in projecting from preclinical stem cell studies to clinical trials?	13:45 - 14:45	DKFZ Mensa: Meet-the-expert table: Stem cell technologies – laser printing
12.00 12.10	Johannes Boltze; TRM Leipzig		(Boris Chichkov) and – reprogramming technologies (Micha Drukker) limited to
12:00 – 12:10	Hurdles for clinical translation of regenerative stem cell therapy –		10 registered participants each
	lessons learned from the cardiac Phase III PERFECT multicenter trial Gustav Steinhoff; RTC Rostock	61	
12.10 12.20		Closing cerer	mony
12:10 - 12:30	Panel discussion	Lecture hall:	
Room K 1+2:	Big pharma and the stem cell field – matching expectations?	15:00 - 15:15	Poster award ceremonies and announcement of industry quiz winners
	(organizer: Oliver Brüstle / Ira Herrmann)		(Daniel Besser; GSCN) supported by PeproTech GmbH
	(Workshop of the Stem Cell Network North Rhine Westphalia)	15:15 – 15:30	Outlook and closing remarks
			Incoming president: Thomas Braun

Conference program Conference program 15:30 – 16:15 Keynote lecture IV – Joined session with the 6th BMBF symposium –
Adult neural stem cells (Chair: Magdalena Götz / Ana Martin-Villalba)
K4 - Modeling human brain development and disease in 3D culture
Jürgen Knoblich; Institute of Molecular Biotechnology (IMBA)
Vienna, Austria

16:15 – 17:00 K5 - Adult hippocampal neurogenesis: What are new neurons good for?

And what is good for them?

Amelia Eisch; UT Southwestern, Dallas, U.S.A.

17:00 – 17:45 K6 - A mechanism for the segregation of age in mammalian neural stem cells Sebastian Jessberger; University of Zurich, Switzerland

End of GSCN conference

Announcements:

18:30 – 20:00 Public outreach event of the GSCN in collaboration with the Schering Stiftung and the DKFZ (in German)

Stammzellen als Chance – Realität und Perspektiven

Podiumsdiskussion zur aktuellen Forschung in Labor und Klinik

Panel: Magdalena Götz (LMU München), Anthony Ho (Uni. Heidelberg),

Andreas Trumpp (DKFZ)

Moderation: Stefanie Seltmann (DKFZ)

20:00 – 21:00 Reception public outreach event

and

November 6th, 2014 – GSCN Satellite Event: 6th BMBF Symposium – Adult neural stem cells The program of the satellite event is available at the reception desk.

Supported by:















