

Program and Abstract Book



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First PhD symposium of the
Berlin-Brandenburg School for Regenerative Therapies

“Stem Cells: Hopes, Fears and Reality”

Axolotl (ambystoma mexicanum)

The axolotl is the symbol of regeneration. This amphibian is able to completely regenerate its extremities, organs and even parts of its brain after injuries.

Kindly supported by the "Verein der Freunde und Förderer der Berliner Charité e.V. "



Program

Wednesday 01 December 2010

Arrival and Registration		11:00-16:00
Opening Lecture	James Adjaye (Max Planck Institute for Molecular Genetics, Berlin) <i>Basic mechanisms underlying the induction of pluripotency in somatic cells.</i>	16:00-16:30
Workshop on Career Prospects in Biotech Industries		
BectonDickinson:	Susanne Stoehr (Sales Area Manager)	16:30-16:50
Miltenyi:	Sylvia Niebrügge (Sales Area Manager)	16:50-17:10
Poster Session with Speed Dating		17:30-20:00

Thursday 02 December 2010

Session I: Stem Cell Biology

Key Note Speaker	Elly Tanaka (DFG Research Center for Regenerative Therapies Technical University of Dresden) <i>Axolotl spinal cord regeneration</i>	08:30-09:10
Student Speaker 1	Axel Göhring (Charité Universitätsmedizin Berlin) <i>A screening tool for post-transcriptional control of genes typic for stem cells by microRNAs</i>	09:10-09:30
Student Speaker 2	Adam Sharples (Manchester Metropolitan University) <i>Intrinsic skeletal muscle myoblast ageing</i>	09:30-09:50

Coffee break

Session II: Isolation and Manipulation of Stem Cells

Key Note Speaker	Bruno Péault (University of Pittsburgh) <i>Dire straits toward stem cell identification</i>	10:30-10:10
Student Speaker 3	Maria Fernanda Forni (University of Sao Paulo) <i>Murine skin as a source of multipotent stem cells</i>	11:10-11:30
Student Speaker 4	Anne Neumann (Leibniz Universität Hannover) <i>Mesenchymal stem cell-like cultures from human umbilical cord: identification, characterization and cultivation</i>	11:30-11:50

Lunch break

Poster Session

12:30-13:30

Session III: Stem Cells in the Body

Key Note Speaker	George Lacaud (University of Manchester) <i>Using embryonic stem cells to model early haematopoiesis</i>	13:30-14:10
Student Speaker 5	Bacskai Ildikó (University of Debrecen) <i>Mechanisms of mesenchymal stem cells affecting the function of monocyte-derived dendritic cells</i>	14:10-14:30



Program

Thursday 02 December 2010

Session III: Stem Cells in the Body

Student Speaker 6 **Agnieszka Grabowska** (Jagiellonian University Medical College) 14:30-14:50
Fetal stem cells circulating in maternal blood – the new approach for prenatal diagnosis

Coffee break 14:50–15:30

Session IV: Stem Cells in Medical Applications

Key Note Speaker **Christof Stamm** (German Heart Institute, Berlin) 15:30-16:10
Regenerating the heart: perfect in zebrafish, impossible in man?

Student Speaker 7 **Piotr Radojewski** (Charité Universitätsmedizin Berlin) 16:10:16:30
Immediate local transplantation of mesenchymal stem cells into a severely injured skeletal muscle in rats improves the functional outcome comparable to delayed transplantation

Student Speaker 8 **Dimitra Zagoura** (Biomedical Research Foundation of the Academy of Athens) 16:30-16:50
Therapeutic potential of human amniotic fluid mesenchymal stem cells and their secreted molecules into mice with acute hepatic failure

Dinner in Berlin Mitte 19:00–open end

Friday 03 December 2010

Session V: Stem Cells and Biomaterials

Key Note Speaker **Alicia J El Haj** (Keele University, Newcastle) 08:30-09:10
Engineering cells for cell therapies

Student Speaker 9 **Alessandro Bertolo** (Swiss Paraplegic Research) 09:10-09:30
Human mesenchymal stem cells in vitro differentiation into intervertebral disc-like tissue – comparison of different biodegradable matrixes

Student Speaker 10 **Annika Kasten** (University of Rostock) 09:30-09:50
Biological responses of mesenchymal stem cells due to integrin mediated mechanical stimulation are dependent on environmental factors

Coffee break 09:50-10:20

Session:VI: Applications, Limitations and Safety

Key Note Speaker **Rocky Tuan** (University of Pittsburgh) 10:20-11:00
Tissue Engineering and Regeneration, Osseointegration and Therapeutic Applications

Student Speaker 11 **Debasish Mishra** (Indian Institute of Technology Kharagpur) 11:00-11:20
Role of gap-junction in osteoblast compaction and pro-functionality: potential in cell based bone tissue engineering application

Student Speaker 12 **Julia Schulz** (Fraunhofer IBMT) 11:20-11:40
Xeno-free cryopreservation of human stem cells for clinical and therapeutic applications

Lunch break 11:40-12:45



Program

Friday 03 December 2010

Panel Discussion: Hopes, Fears and Reality 12:45-14:15

Frida Grynspan (Pluristem)

Roland Lauster (Technische Universität Berlin)

Klaus Tanner (Ruprecht-Karls-Universität Heidelberg)

The Nikolaus lecture and award ceremony will be held at the Paul Ehrlich Lecture Hall
(Charité – Campus Mitte)

Nikolaus Lecture

Key Note Speaker

Hans R. Schöler (Max Planck Institute for
Molecular Biomedicine)

16:30-17:30

Induced pluripotent stem cells: future prospects for pharma and the clinic

Award Ceremony

17:30-18:00

Guided city tours

18:30-open end

Clubbing in the Soda Club

From 24:00

Posters

Poster I.1: Pluripotent parthenogenetic human stem cells form functional neurons.

Ahmad Ruhel, Wolber Wanja, Koch Philipp, Brüstle Oliver, McLaughlin K. John, Sirén Anna-Leena, Müller Albrecht M. (University of Wuerzburg)

Poster I.2: Analysis of the lymphoid organs and blood in NOD/LtSz-scid IL2Rgnull mice engrafted with human cord blood derived stem cells

Andersson A, Brösel S, Lange D, Knosalla C, Shultz LD, Egger D, Volk HD, Schmitt-Knosalla I (Charité)

Poster I.3: Application of Design of Experiments (DoE) methodology for human embryonic stem cell medium optimization

Knöspel F, Wönne E, Schindler RK, Gerlach JC and Zeilinger K (Charité – Berlin-Brandenburg Center for Regenerative Therapies)

Poster I.4: The Loss of Differentiation Potential of Human Mesenchymal Stem Cells Can Be Predicted by Use of a Set of Senescence Markers

M. Mehr, A. Bertolo, N. Aebli, S. Ferguson, J. Stoyanov (Swiss Paraplegic Research)

Poster I.5: Influence of different cultivation methods for murine embryonic stem cells on their pluripotency and differentiation potential in vitro and in vivo

Stecklum M, Siegert A, Keil M, Haider W, Eckert K, Fichtner I (Max-Delbrück-Centrum)

Poster I.6: Reprogramming of MEFs by non-viral transfection of mRNA encoding 4 reprogramming factors

Tavernier G, Rejman J, Demeester J, De Smedt SC (University of Ghent)

Poster I.7: GDF3 in stem cell biology

Karolina Tykwinska, Mark Rosowski (TU Berlin)

Poster I.8: The LARGE Principle of Cellular Reprogramming: Lost, Acquired and Retained Gene Expression in Foreskin and Amniotic Fluid-Derived Human iPS Cells

Katharina Wolfrum, Ying Wang, Alessandro Prigione, Hans Lehrach, James Adjaye (MPI for Molecular Genetics (Max Planck Institute for Molecular Genetics))

Poster II.9: Nile Red staining allows for quantification of differentiation efficiency and fluorescence-activated cell sorting of adipogenic differentiated cells

Julian Braun, Juliane Frucht, Mark A. Wolter, Andreas Thiel, Andreas Kurtz, Jun Dong (Charité – Berlin-Brandenburg Center for Regenerative Therapies)

Poster II.10: Breast Stem Cells - A toxicological model for endocrine disruptors, such as soy isoflavones

Bumke Scheer MA, Stempin S, Chang CC, Trosko JE, Lampen A (Bundesinstitut für Risikobewertung)

Poster II.11: Different approaches for the transfection of canine hematopoietic stem cells

Killian D, Sekora A, Schomaker M, Willenbrock S, Knueppel A, Murua Escobar H, Heisterkamp A, Nolte I, Freund M, Junghanss C (University of Rostock)

Poster II.12: Generation of induced pluripotent stem cells from patients with hereditary immune defects

Kuehle J, Warlich E, Walter C, Turan S, Zychlinski D, Galla M, Maetzig T, Cantz Tobias, Klein C, Grez M, Baum C, Schambach A* (Medical School Hannover)*

Poster II.13: Mesenchymal Transition of Amnion Epithelial Cells

Roy R, Brodarac A, Nitschke M, Kang SK, Stamm C (Deutsches Hertzzenrum Berlin)

Posters

Poster III.14: Identification of novel human adult kidney progenitors with unequivocal tubular regeneration capacities based on embryonic renal stem cell markers

Buzhor Ella, Harari-Steinberg Orit, Omer Dorit, Mark-Danieli Michal, Noiman Tsahi, Goldstein Ronald S., Dekel Benjamin (Tel Aviv University)

Poster III.15: BMP signaling is required for muscle stem cell dependent growth and regeneration of skeletal muscle

Elja Schirwis, Etienne Mouisel, Cyriaque Beley, Guillaume Précigout, Luis Garcia, Helge Amthor (Université Pierre et Marie Curie)

Poster III.16: No sex-differences on muscular regeneration after transplantation of MSCs (in rats)

K. Strohschein, P. Radojewski, P. v. Roth, T. Winkler, C. Perka, G.N. Duda (Charité - Julius Wolff Institute)

Poster IV.17: Stem Cell Therapy of Equine Tendon Injuries - Clinical Outcome

Burk J, Gittel C, Brehm W (University of Leipzig)

Poster IV.18: MEK inhibitor treatment reowns osteoblastic differentiation of NF1 konock out murine MSCs

El-khassawna T, Duda GN. (Charité – Julius Wolff Institute)

Poster IV.19: In vitro nephrogenesis using human pluripotent cells

Krithika Hariharan (Charité - Berlin-Brandenburg Center for Regenerative Therapies)

Poster IV.20: Genetic modification of skeletal myoblasts in therapy of infarcted heart – overexpression of connexin 43.

Tomasz Kolanowski, Tomasz Kolanowski, Natalia Rozwadowska, Agnieszka Wacławowska, Monika Frączek, Wojciech Seniuk, Piotr Lipiec, Ewa Szymczyk, Jarosław Kasprzak, Maciej Kurpisz (Institute of Human Genetics, Polish Academy of Sciences)

Poster IV.21: Novel mobilization strategies for myocardial regeneration after acute myocardial infarction

Annalena Krost, Constantin Rüder, Nicole Langwieser, Jan Peter, Heinz-Peter Schultheiss, Dietlind Zohlnhöfer-Momm (Charité - Berlin-Brandenburg Center for Regenerative Therapies)

Poster IV.22: Increased immunosuppressive potential of adult stem cells as a therapeutic approach for chronic inflammatory diseases

Sandra Laggies, Virginia Seiffart and Gerhard Gross (Helmholtz Centre for Infection Research)

Poster IV.23: Combination Therapy of Traumatic Brain Injury in Rats with a Stem cell Mobilization by Granulocyte-Colony Stimulating Factor and Human Umbilical Cord Matrix Stem Cell(Wharton Jelly Stem Cell) Intraven

Mohsen Marzban (Iran University of Medical Sciences)

Poster IV.24: Anti-apoptotic and immunomodulatory effects of mesenchymal stem cells reduce Cocksackievirus B3-induced myocarditis

K. Miteva, S. Van Linthout, K. Savvatis, J. Peng, D. Westermann, J. Ringe, M. Sittlinger, H.-P. Schultheiss, C. Tschöpe. (Charité – Berlin Brandenburg Center for Regenerative Therapies)

Poster IV.25: In vivo Imaging of rMSCs

Müller Y, v. Roth P, Radojewski P, Winkler T, Duda GN (Charité - Julius Wolff Insitute)

Poster IV.26 Safety and efficacy of G-CSF administration following autologous intramuscular implantation of bone marrow mononuclear cells: a randomized controlled trial in patients with advanced lower limb ischemi

Zafarghandi MR, Ravari H, Aghdami N, Namiri M, Moazzami K, Taghiabadi E, Fazel A, Pournasr B, Farrokhi A, Sharifian RA, Salimi J, Moini M, Baharvandh (Royan Institute)

Posters

Poster IV.27: Histological and clinical effects of glial-derived neurotrophic factor (GDNF) expressing human mesenchymal stem cells (MSC) from adipose tissue in the 6-OHDA rat model of Parkinson's Disease (PD)

Schwerk A, Roch M, Gossen M, Kurtz A, Berg J, Winter C, Steiner B (Charite – Berlin Brandenburg Center for Regenerative Therapies)

Poster IV.28: Systemic Mesenchymal Stem Cell Transplantation for the

von Roth, P; Radojewski, P; Preininger, B; Matziolis, G; Duda, GN; Perka, C, Winkler, T (Charité)

Poster V.29: Development of a proteomic technique to analyze integrin-associated complexes in human embryonic stem cells

Jila Ajeian, Jonathan Humphries, Adam Byron, Janet Askari, Sue Craig, Sue Kimber, Martin Humphries (University of Manchester)

Poster V.30: Development of a perfusion bioreactor: „Artificial Artery“

Janke D, Jankowski J, Lemke HD, Jacobi D, Pfitzner J, R uth M, Jankowski V, Spindler J, Buschmann I, Lehmann K (Charit  - Julius Wolff Institut)

Poster VI.31: Inducing Resistance to Senescence in Adult Stem Cells Using Partial Transcriptional Reprogramming

Lisa B Boyette, Rocky S Tuan (University of Pittsburgh)

Poster VI.32: The effect of G-CSF Receptor Missense Single Nucleotide Polymorphisms on CD34+ Stem Cell Enrichment in Autologous and Allogeneic Hematopoietic Stem Cell Transplantation

Bahar Camurdanoglu, Gunes Esendagli, Hande Canpinar, Evren Ozdemir, Dicle Guc, Emin Kansu (Institute of Oncology, Hacettepe University)

Poster VI.33: Two models of experimental muscle injury – applicability for the stem cell research

Czerwińska A. M., Ciemerych M. A., Grabowska I. (University of Warsaw)

Poster VI.34: Myelotoxicity of thienopyridines

Maseneri S, Brecht K, Kr henb hl S (University Hospital Basel)

Poster VII.35: Geometric control of three-dimensional tissue growth

C cile Bidan, Krishna Kommareddy, Inderchand Manjubala, Monika Rumpfer, Peter Fratzl, and John W. C. Dunlop (Max Planck Institute for Colloids and Interfaces)

Poster VII.36: Neohepatocytes, a patient-specific cell culture system for the study of hepatitis C virus infection

Christina R. Hohn and Michael Ehrhardt, Mirjam B. Zeisel, Andreas N ssler, Thomas F. Baumert and Andreas Meyerhans (Universit t des Saarlandes)

Poster VII.37: Functional characterization of stem cell homing factors in myocardial infarction

Silke M hlstedt, Cemil  zcelik, Michael Bader (Max Delbr ck Center)

Poster VII.38: Evaluation of safety and efficacy of H1N1 swine-origin Influenza A vaccination in renal transplant patients

Vinay Rambal, Karin Mueller, Arne Sattler, Mikalai Dziubianau, Peter Liman, Peter Nickel, Jan Horstrup, Peter Friedrich, Brunhilde Schweiger, Nina Babel, Petra Reinke (Charit  - Berlin Brandenburg Center for Regenerative Therapies)

Poster VII.39: Fracture healing is enhanced in RAG 1-/- mice

I Schroeder, T El Khassawna, J Lienau, H Schell, A Serra, A Radbruch, GN Duda, D Toben (Charite- Julius Wolff Institute)



Posters

Poster VII.40: Histological analysis of the processes underlying non-healing of bone defects in a rat model

Schwarz, C; Peters, A; Schmidt-Bleek, K; Ellinghaus, A; Duda, G N; Schell, H; Lienau, J (Charité - Julius Wolff Institute)

Poster VII.41: Bone Morphogenetic Protein 2 Variants with Increased Antagonist Resistance

J. Zimmer, J. König, M. Walther, M. Schmidt v. Kegler, J. Lienau, W. Sebald, C. Reissner, J. Hecht, G. Duda, S. Mundlos, P. Seemann (Charité - Berlin Brandenburg Center for Regenerative Therapies)



Key Note Speakers

Dr. James Adjaye

Max Planck Institute for Molecular Genetics

Dr. Frida Grynspan

Pluristem

Prof. Alicia J El Haj

Keele University

Dr. George Lacaud

University of Manchester

Prof. Roland Lauster

Technische Universität Berlin

Dr. Bruno Péault

University of Pittsburgh -McGowan Institute for Regenerative Medicine

Prof. Hans R. Schöler

Max Planck Institute for Molecular Biomedicine

Prof. Christof Stamm

German Heart Institute Berlin

Prof. Elly Tanaka

DFG Research Center for Regenerative Therapies Technical University of Dresden

Prof. Klaus Tanner

Ruprecht-Karls-Universität Heidelberg

Dr. Rocky Tuan

University of Pittsburgh -McGowan Institute for Regenerative Medicine

Addresses and Public Transport in Berlin

Youth Hostel Wannsee

Badeweg 1
14129 Berlin
Phone: +49 (0)30 8035908
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Paul Ehrlich Lecture Hall

Charité – Campus Mitte
Charitéplatz 1
10117 Berlin
Campus Address
Virchowweg 4

Restaurant Oranium

Oranienburger Straße 33/34
10117 Berlin
Web: www.orianium.de

SODA Club

Schönhauser Allee 36
10435 Berlin
Web: www.soda-berlin.de

How do I travel within Berlin?

Here are some directions which will help you to find your way. However, there are always different options to get from A to B with the public transport in Berlin so you may want to check for other routes. If you have to make more than two journeys a day we recommend you get a day ticket (Tageskarte) for € 6.10. Otherwise get a single ticket for the AB zone (Einzelfahrkarte AB) for € 2.10. If you are travelling in a group of 3 to 5 people you can share a 5-person group card for € 15.90 for a whole day (Kleingruppenkarte).



How to get to the Youth Hostel Wannsee

Please note:

Get off at the S-Bahn station Nikolassee and not Wannsee! There will be this blue road sign leading you to the Youth Hostel Wannsee.

From Tegel Airport:

Take the bus 109 to S-Bahn station Charlottenburg and change into S-Bahn S7 to Potsdam. Get off at Nikolassee and walk to the Youth Hostel (about 650 m)
Approximate travel time: 40min

From Schönefeld Airport:

Take the bus SXF1 to S-Bahn station Südkreuz. Change to S-Bahn S41 and travel to S-Bahn station Westkreuz. Change to S-Bahn S7 direction Potsdam. Get off at Nikolassee and walk to the Youth Hostel (about 650 m)
Approximate travel time: 60min

From the Main Railway Station (Hauptbahnhof):

Take the S-Bahn S7 to Potsdam. Get off at Nikolassee and walk to the Youth Hostel (about 650 m)
Approximate travel time: 25min

How to get to the restaurant Oranium

Go to the S-Bahn station Nikolassee and take the S-Bahn S1 direction Frohnau. Get off at Oranienburger Straße and go to house number 33 (50 m)
Approximate travel time: 45min

How to get to the Charité – Campus Mitte for the Nicolaus lecture

Go to the S-Bahn station Nikolassee and take the S7 to the Hauptbahnhof. The latest train you can take will go at 15:45. At the Hauptbahnhof take the exit Washingtonplatz and walk along the road bridge to the left (Rahel-Hirsch-Straße). Turn left into the Unterbaumstraße (it will lead into the Schumannstraße) until you reach the entrance of the Charité - Campus Mitte. Go to the Paul Ehrlich Lecture Hall (Hörsaal) at Virchowweg 4.
Approximate travel time: 40min

[Download here the public transport map](#)



Charité Campus Mitte (CCM)

The Nicolaus Lecture takes place in the Paul Ehrlich Lecture Hall on the Charité – Campus Mitte. The campus address is Virchowweg 4.



PhD Symposium Organisation Team

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Kindly supported by the "Verein der Freunde und Förderer der Berliner Charité e.V."