

Programme 21. ERCS-Conference

Thursday, 27. April 2017

17:00 Registration

19:00 Welcome and opening

19:15 Keynote Opening Lecture

Antonio Piga

Modulation of Erythropoiesis for Thalassemias

20:30 Get together with Antipasti Buffet

Friday, 28. April 2017

Session 1 - "Novel Technology in Red Cell diagnostics and research" in collaboration with CoMMiTMeNT

Chair: Lars Kaestner

9:00 *Sebastian Himbert, Richard Alsop, Christian Wagner, Maikel Rheinstädter*

The Molecular Structure of Human Red Blood Cell Membranes from Highly Oriented, Solid Supported Multi-Lamellar Membranes

9:25 *Camille Roussel, Sylvain Monnier, Michael Dussiot, Elisabeth Farcy, Maël Le Berre, Olivier Hermine, Caroline Le Van Kim, Yves Colin, Mathieu Piel, Pascal Amireault, Pierre Buffet*

Displacement of surrounding fluorescence: a simple method to assess red blood cell volume and morphology

9:50 *A. Makhro, E. Seiler, A. Shatalov, G. Simionato, L. Kaestner, T. Ryan, A. Bogdanova*

Dynamic analysis of RBC structure and function: spleen and capillaries imitated

10:15 Coffee Break

Chair: Ingolf Bernhardt

10:45 *Sara El Hoss, Valentine Brousse, Michael Dussiot, Olivier Renaud, Yves Colin-Aronovicz, Caroline le van Kim, Wassim El Nemer*

Innovative methods to study splenic filtration function and red cell morphology in sickle cell disease

11:10 *Torsten Müller, Philipp Rauch, Elmar Hartmann, Torsten Jähnke*

Optical tweezers combined with AFM – Investigating cell mechanics and single molecules on multiple scales

11:35 *Kisung Lee, Francois Yaya, Alexander Priezzhev, Christian Wagner*

Optical tweezers for assessing red blood cells aggregation

12:00 - 13:00 Lunch Break

Session 2 - “Haematopoiesis”

Chair: Antonio Piga

13:00 *Martina Muckenthaler*

The hepcidin/ferroportin regulatory system in health and disease

13:25 *Taha Sen, Magnus Gram, Shamit Soneji, Carl R. Walkley, Sofie Singbrant*

Erythroid-specific deletion of pRb results in MDS-like anemia through impaired mitochondrial function and heme synthesis

13:50 *M. Moras, I. Marginedas-Freixa, C. Hattab, M. Cambot, C. Le Van Kim, S.D. Lefevre, M.A. Ostuni*

Characterisation of new actors in mitophagy throughout human erythropoiesis

14:15 Coffee Break

Chair: Marieke von Lindern

14:45 *Brian M Dulmovits, Julien Papoin, John Hale, Jianhua Li, Huan Yang, Yukio Nakamura, Betty Diamond, Kevin J. Tracey, Jeffrey M. Lipton, Narla Mohandas, Lionel Blanc*

Inhibition of human erythropoiesis during inflammation is mediated by High mobility group box protein 1 (HMGB1) through decreased commitment of hematopoietic stem cells to erythroid lineage and by increased apoptosis of terminally differentiating erythroblasts

15:10 *Luanne L. Peters, Lionel Blanc, Steven L. Ciciotte, and Raymond F. Robledo*

Requirement for RASA3 in Blood Formation

15:35 - 16:35 **Postersession 1**

Session 3 - "Clinical Aspects of Rare Anemia" in collaboration with ENERCA

Chair: Joan-Lluís Vives-Corrons

16:35 *Eliezer Rachmilewitz*

Hypercoagulability and thrombosis in hemoglobinopathies

17:00 *Anna Bogdanova, Asya Makhro, Seiler Elena, Max Gassmann, Inga Hegemann, Rouven Muller, Clelia Saselli, Marcus Manz, Jeroen Goede*

N-methyl D-glutamate receptor as a pharmacological target for treatment of sickle cell disease: effect of memantine on red cells of patients on a pilot clinical trial
MemSID

17:25 *P. Koralkova, R. Mojzíkova, D. Pospisilova, M. Divoka, J. Cermak, K. Indrak, M. Sukova, P. Timr, Z. Striezencova Luluhova, R. van Wijk, K. Lejhancova, M. Gresikova, V. Divoky*

Rare forms of congenital anemias in the Czech and Slovak populations: seven years of experience with the diagnosis of red blood cell enzymopathies

17:50 *Morgane Nudel, Anne Lambilliotte, Virginie Bodereau, Laurent Pascal, Christian Rose, Serge Pissard*

Hexokinase deficiency: study of two families; three new mutations and an unreported association with Pyruvate kinase deficiency

18:15 Coffee Break

Chair: Richard van Wijk

18:45 *R. Huisjes, P. Petkova-Kirova, A. Makhro, E. Llaudet-Planas, L. Hertz, L.P. Verhagen, E. Seiler, J.-L. Vives Corrons, M. Mañú-Pereira del Mar, L. Kaestner, A. Bogdanova, R. van Wijk*

In-depth characterization of the red blood cell in hereditary spherocytosis

19:10 *Ahmar Zaidi, Shengnan Wu, Tristan Knight, Gerard Goyette, Manisha. Gagdeel, Steven Buck, Yaddanapudi Ravindranath*

Hereditary spherocytosis (HS) and overhydrated stomatocytosis (HOHS) presenting in adolescents as mild polycythemia and compensated hemolytic anemia

19:35 *E. Fermo, A. Bogdanova, P. Petkova-Kirova, A. Zaninoni, A.P. Marcello, A. Makhro, P. Hänggi, L. Hertz, J. Danielczok, C. Vercellati, N. Mirra, A. Zanella, A. Cortelezzi, W. Barcellini, L. Kaestner, P. Bianchi*

'Gardos Channelopathy': a variant of hereditary Stomatocytosis with complex molecular regulation

20:00 *Eitan Fibach & Eliezer Rachmilewitz*

The involvement of oxidative stress during the development of normal and thalassemic erythroid cells

20:25 Canteen Dinner at EMBL

Saturday, 29. April 2017

Session 4A - "Physical properties of RBCs"

Chair: Saša Svetina

9:00 *Ingolf Bernhardt*

The Low Ionic Strength Effect and the History of the Discovery of the $K^+(Na^+)/H^+$ Exchanger in the Human Red Cell Membrane

9:30 *Herve Turlier, Thorsten Auth, Basile Audoly, Nir Gov, Cecile Sykes, Jean-Francois Joanny, Gerhard Gompper, Timo Betz, Dmitry A. Fedosov*

What can we learn from the observation of red blood cell membrane flickering?

9:55 *Mohandas Narla*

Spectrin dynamics regulate membrane deformability and tank treading

10:15 Coffee Break

Session 5A - "Transfusion medicine - red cell storage lesion" in collaboration with the European School of Transfusion Medicine

Chair: Peter Schlenke

10:45 *Eva Laurén, Feven Tigistu-Sahle, Sami Valkonen, Melissa Westberg, Anne Valkeajärvi, Juha Eronen, Pia Siljander, Ville Pettilä, Reijo Käkelä, Saara Laitinen, Erja Kerkelä*

Phospholipid composition of packed red blood cells and extracellular vesicles shows high resemblance and stability during storage

11:10 *Joanna F. Flatt, Waleed M. Bawazir, Tosti Mankelow, Gyongyver Gyorffy, Lesley Bruce*

Vesicle formation and function in the red blood cell

11:35 *Alexandre Morel, Michael Dussiot, Anaïs Martinez, Martin Colard, Mickaël Marin, Camille Roussel, Alioune Ndour, Caroline Le Van Kim, Pierre Buffet, Olivier Hermine, Pascal Amireault*

Identification and characterization of the parameters responsible for the rapid post-transfusion clearance of red blood cells using a murine model of blood banking

12:00 Group Foto

13:00 City Tour (Walking)

14:30 Time to explore Heidelberg

19:00 Conference Dinner at KULTURBRAUEREI Heidelberg

Sunday, 30. April 2017

Session 4B - "Physical properties of RBCs"

Chair: Christian Wagner

9:00 *Bojan Božič, Saša Svetina*

Protein curvature sensitivity as a possible factor in the regulation of red blood cell volume

9:25 *D. Flormann, O. Aouane, T. Podgorski, C. Wagner*

Membrane buckling in macromolecule induced red blood cell aggregation

9:50 *Christian Wagner*

The effect of fibrinogen on the physical properties of capillary flow

10:15 Coffee Break

Session 5B - "Transfusion medicine in a broader view"

Chair: Paola Bianchi

10:45 *Tomasz Walski, Anna Drohomirecka, Grzegorz Wąż, Natalia Trochanowska, Katarzyna Gałęcka, Wojciech Witkiewicz, Albert Czerski*

Blood Protection during Extracorporeal Circulation

11:10 *Novalia Pishesha, Angelina M. Bilate, Marsha C. Wibowo, Nai-jia Huang, Zeyang Li, Rhogerry Dhesycka, Djenet Bousbaine, Hojun Li, Heide C. Patterson, Stephanie K. Dougan, Takeshi Maruyama, Harvey F. Lodish, Hidde L. Ploegh*

Engineered erythrocytes covalently linked to antigenic peptides can protect against autoimmune disease

11:35 *Stephanie Van Straaten, Marc Bierings, Paola Bianchi, Kensuke Akiyoshi, Hitoshi Kanno, Isabel Badell Serra, Jing Chen, Xiaohang Huang, Eduard van Beers, Supachai Ekwattanakit, Tayfun Gungor, Wijnanda Adriana Kors, Frans Smiers, Reinier Raymakers, Lucrecia Yanez, Julian Sevilla, Wouter van Solinge, José Carlos Segovia, Richard van Wijk*

Stem Cell Transplantation in Pyruvate Kinase Deficiency

12:00 - 13:00 Lunch Break

Session 6 - "Red Cell Pathophysiology" in collaboration with GRex

Chair: Stephane Egee

13:00 *Caroline Le Van Kim*

Neutrophils and endothelin: fatal attraction in sickle cell disease

13:25 *V. Pretini, M.H. Fens, Q.de Mast, D.van Straten, G. Andringa, M.van de Vegte-Bolmer, J.T. Rasmussen, E. Mastrobattista, R. van Wijk, R.W. Sauerwein, R.M. Schiffelers*

Erythrophagocytosis of malaria-infected red blood cells by Endothelial cells

13:50 *Kate Hsu, Ting-Ying Lee, Ammasi Periasamy, Mei-Shin Kuo, Hui-Ju Lin, and Ching-Che Yao*

Exploring the roles of band 3 and aquaporin-1 in blood CO₂ transport

14:15 Coffee Break

Chair: Wassim El Nemer

14:45 *Laurent Pérès, Morgane Nudel, Martin Figeac, Judith Bruge, Véronique Picard, Guillaume Bouyer, David Monedero Alonso, Wassim El Nemer, Claude Preudhomme, Stephane Egée, Christian Rose*

New Piezo 1 variant with enhanced cation permeability: an unexpected phenotype

15:10 *Timothy J. Satchwell, Amanda J. Bell, Bethan R. Hawley, Kathryn E. Mordue, Stephanie Pellegrin, Cees Th. B. M. van Deursen, Nicole Heitink-ter Braak, Gerwin Huls, Mathie P.G Leers, Eline Overwater, Rienk Y. J. Tamminga, Bert van der Zwaag, Elisa Fermo, Paola Bianchi, Richard van Wijk, Ashley M. Toye*

Investigating the effects of Severe Ankyrin-R deficiency

15:35 - 16:00 Business Meeting

16:00 - 17:00 **Postersession 2**

Session 7 - "Red Cell Physiology and Pharmacology" in collaboration with RELEVANCE

Chair: Anna Bogdanova

17:00 *T.R.L. Klei, D.Z. de Back, P. Asif, P.J.J.H. Verkuijden, M. Veldthuis, J. Berghuis, E. Clifford, B.M. Beuger, T.K. van den Berg, R. van Zwieten, W. El Nemer and R. van Bruggen*

Lu/BCAM is a sialic acid binding molecule that is restricted by Glycophorin C

17:25 *Andreas Noe, Mauro C. Wesseling, Salome Asanidze, Ingolf Bernhardt*

Investigation of Phosphatidylserine Exposure in Human Red Blood Cells

17:50 *M.A. Lizarralde Iragorri, S. Lefevre, V. Brousse, S. El Hoss, M. Dussiot, S. Cochet, JA. Ribeil, Y. Colin-Aronovicz, C. Le Van Kim, B. Lepiouflé, F. Rodrigues-Lima, O. Français, W. El Nemer*

Effects of Mechanical and Oxidative Stress on Red Blood Cell properties: a microfluidic approach

18:15 Coffee Break

Chair: Giampaolo Minetti

18:45 *Izabela Sadowska-Bartosz, Mirosław Soszyński, Rafał Szewczyk, Ireneusz Stefaniuk, Grzegorz Bartosz*

Effects of 3-bromopyruvate, a potential anticancer drug, on the erythrocyte

19:10 *Mehrdad Ghashghaeinia, Daniela Giustarini, Pavla Koralkova, Martin Köberle, Kossai Alzoubi, Rosi Bissinger, Zohreh Hosseinzadeh, Peter Dreischer, Ingolf Bernhardt, Florian Lang, Mahmoud Toulany, Thomas Wieder, Renata Mojzikova, Ranieri Rossi, Ulrich Mrowietz*

Pharmacological targeting of glucose-6-phosphate dehydrogenase in human erythrocytes by Bay 11-7082, parthenolide and dimethyl fumarate

19:35 *David Monedero Alonso, Laurent Peres, Guillaume Bouyer, Poul Bennekou, Serge Thomas, Stéphane Egée*

NS3623, a known chloride conductance inhibitor, enhances the human red blood cell non-selective cation channel

20:00 End of conference