

18th Conference of the European Society for Clinical Hemorheology and Microcirculation

5-8 June 2016 | LISBOA | PORTUGAL

Faculty of Medicine, University of Lisbon, Edifício Egas Moniz



PROGRAMME



4

Welcome Message

5

Committees

7

Conference Venue & Floor Plans

8

Scientific Programme

8

Programme Overview

10

Daily Programme

38

Notes

Dear Colleagues,

On behalf of the Organising Committee we would like to personally welcome all participants to Lisboa and the 18th Conference of the European Society for Clinical Hemorheology and Microcirculation (ESCHM 2016), taking place from 5 to 8 June 2016.

The Sociedade Portuguesa de Hemorreologia e Microcirculação (SPHM) is proud to have been chosen to host the conference that will take place at the Faculty of Medicine and Institute of Molecular Medicine situated in a very central location in Lisboa.

As in the past, this conference has included a diversity of topics presented by authors from many different institutions. This brings a plurality of interests and perspectives to a single location. We hope you take advantage of this opportunity and contribute, through presentations, discussion and interaction, to the development of new ideas and new directions in research and applied technology.

The programme is organised in Plenary Sessions, Free Communications and a Poster Session.

As usual, Symposia will also make part of the conference agenda and these are organised by National Societies or other members of the International Advisory Committee with submission of abstracts by invitation only.

We are happy to welcome you all to Lisboa - a historic capital, a potpourri of unusual character and charm, where 800 years of cultural influences mingle with modern trends and life styles creating spectacular contrasts.

Yours sincerely,



A handwritten signature in black ink, appearing to read 'C. Saldanha'.

Professor Maria Carlota Saldanha
Chairman of the 18th ESCHM Conference



A handwritten signature in black ink, appearing to read 'J. Braz Nogueira'.

Professor José Braz Nogueira
Co-chairman of the 18th ESCHM Conference

INTERNATIONAL ORGANISING COMMITTEE

- A**
Adélia Sequeira, Portugal
Akos Koller, Hungary
Alexander Priezzhev, Russia
Alexei Muravyov, Russia
Anne Krüger-Genge, Germany
António Vaz Carneiro, Portugal
- C**
Can Ince, The Netherlands
Christian Lehmann, Germany
Cláudio Areias Franco, Portugal
- D**
David Lominadze, USA
Dirk Clevert, Germany
- E**
Eliete Bouskela, Brazil
Ernest-Michael Jung, USA
- F**
Fausto Pinto, Portugal
Friedrich Jung, Germany
- G**
Gerard B. Nash, United Kingdom
Geert Schmid-Schonbein, Germany
Gerald Meininger, United Kingdom
Giuseppe Ambrosio, Italy
Gregorio Caimi, Italy
- H**
Herbert Meiselman, USA
Hermona Soreq, Israel
- J**
Jean François Stoltz, France
Jean-Frédéric Brun, France
João Eurico, Portugal
João Martins e Silva, Portugal
José Albino, Portugal
José Fernandes e Fernandes, Portugal
- K**
Kalman Toth, Hungary
- L**
Lukas Prantl, Germany
- M**
Manuel Oliveira Carrageta, Portugal
Marco Rossi, Italy
Max Hardeman, The Netherlands
Michael Rampling, United Kingdom
Michael Simmonds, Australia
- N**
Nadia Antonova, Bulgaria
Norbert Nemeth, Hungary
- P**
Philippe Connes, France
- R**
Rafael Alis, Spain
- S**
Sayon Roy, USA
Sandro Forconi, Italy
- T**
Timur Vlasov, Russia
- W**
Walter Reinhart, Switzerland

NATIONAL SCIENTIFIC COMMITTEE

A

Alice Santos Silva, Portugal
Ana Santos Silva Herdade, Portugal
Ângelo Calado, Portugal

C

Carlos Moreira, Portugal
Carlos Neves, Portugal
Carvalho de Sousa, Portugal
Cláudio Areias Franco, Portugal

F

Flávio Reis, Portugal
Frederico Gonçalves, Portugal

H

Henrique Luz Rodrigues, Portugal
Henrique Sobral do Rosário, Portugal

J

João Martins e Silva, Portugal
João Morais, Portugal
Jorge Lima, Portugal
José Pereira Albino, Portugal

L

Luis Mendes Pedro, Portugal
Luís Sargento, Portugal

M

Mamede de Carvalho, Portugal
Maria Helena Baptista Manso Ribeiro, Portugal
Mário Marques, Portugal
Mello e Silva, Portugal
Mesquita Bastos, Portugal

P

Patricia Napoleão, Portugal
Paulo Ferreira da Silva, Portugal
Paulo Filipe, Portugal
Pedro Marques da Silva, Portugal

S

Sandra Hilário, Portugal

V

Vitor Oliveira, Portugal

LOCAL ORGANISING COMMITTEE

Maria Carlota Saldanha (President), Portugal

A

Ana Santos Silva Herdade, Portugal

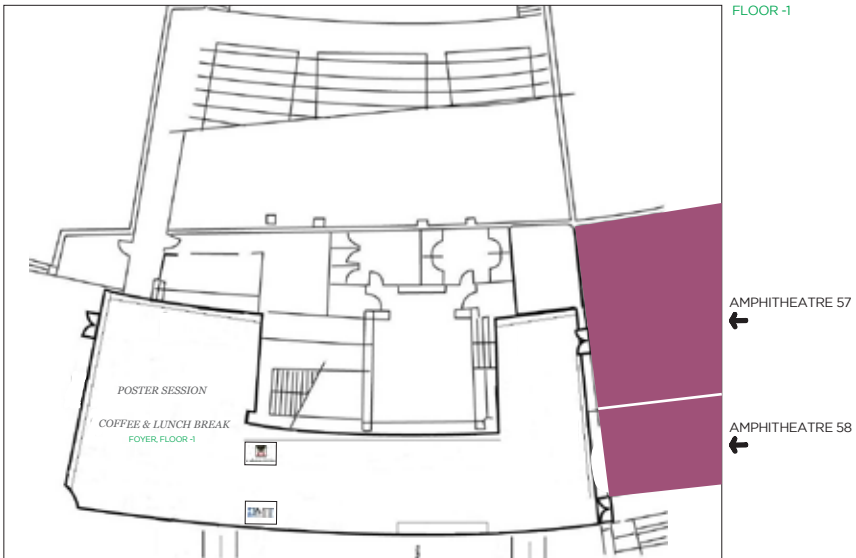
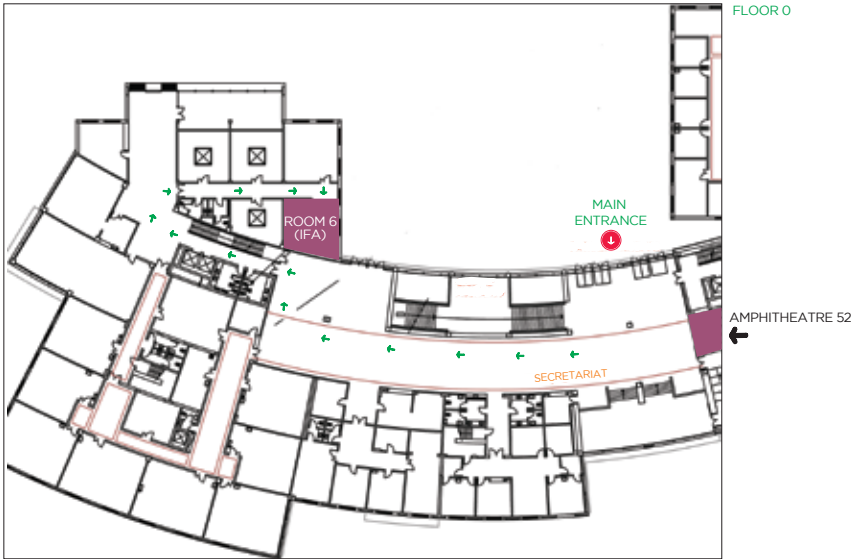
J

José Braz Nogueira, Portugal

P

Pedro Marques da Silva, Portugal

CONFERENCE VENUE & FLOOR PLANS



Faculty of Medicine, University of Lisbon
(located behind Santa Maria Hospital main building)

Avenida Professor Egas Moniz
1649-028 Lisboa, Portugal

5 JUNE SUNDAY	AMPHITHEATRE 52	AMPHITHEATRE 57	ROOM 6 (IFA building)	FOYER, floor 0
16:00 - 16:30	Opening Ceremony			
16:30 - 16:45	Fairfax Award Ceremony Tommaso Gori, Germany			
16:45 - 18:00	S1 Trends and Advances in Clinical Hemorheology - a tribute to Oguz Baskurt Jean-Frédéric Brun, France			
18:00 - 18:15	<i>Coffee-break</i>			
18:15 - 18:45	L1 Biological Evaluation of polymer-based Biomaterials Steffen Braune, Germany			
18:45 - 19:15	Oguz Baskurt Travel Award Tommaso Gori, Germany			
19:15 - 20:00	Musical Performance			Welcome Reception
6 JUNE SUNDAY	AMPHITHEATRE 58	AMPHITHEATRE 52	ROOM 6 (IFA)	FOYER
08:30 - 09:15	L2 Relationship between viscosity and endothelium function Tommaso Gori, Germany			
09:15 - 10:00	L3 Evidence-based Hemorheology: does it exist? António Vaz Carneiro, Portugal			
10:00 - 10:30	<i>Coffee-break</i>			
10:30 - 12:00	S2 Vascular Wall Microenvironments - Impact on Vessel Function Gerald Weininger, United States of America	S3 Disorders of Erythrocyte: Its Genetic Variation and Cardiovascular Risk Manuel Bicho, Portugal Paula Faustino, Portugal	F1 Free Communicators Jorge Lima, Portugal Jean-Frédéric Brun, France	S4 Inflammation, Hemorheology and Resistor Regulation Elisa Penha-Ribeiro, Croatia Eliza Bubaloja, Brazil
12:00 - 12:45	L4 Autodigestion in Inflammation: Digestive Enzymes on the Prow! Geert Schmid-Schonbein, Germany			
12:45 - 14:00	<i>Lunch-Break</i>	<i>Lunch-Break</i>		ESCHM Council Meeting
14:00 - 14:45	L5 The history of the theory of the circulation of the blood Michael Rampling, United Kingdom			
14:45 - 16:00	S5 Hemorheological and Microvascular Manifestations of Solid Nonmyeloid Malignancies Irina Tikhomirov, Russia	S6 Hemorheological Alterations in Hematological Diseases Gregorio Caimi, Italy Carlota Saldanha, Portugal	F2 Free Communicators Carlos Moreira, Portugal Alice Santos Silva, Portugal	S7 Studying the Microcirculatory Effects of Exercise in Clinical Populations Markos Klontzakis, United Kingdom Helena Lenasi, Slovenia
16:00 - 16:30	<i>Coffee-break</i>			
16:30 - 17:15	L6 Hemorheological Parameters in Different Forms of Coronary Heart Disease Kalman Toth, Hungary			
17:15 - 18:00				Clinical Hemorheology and Microcirculation Editorial Board Meeting
				Poster Session

7 JUNE TUESDAY	AMPHITHEATRE 58	AMPHITHEATRE 52	AMPHITHEATRE 57	ROOM 6 (IFA)	FOYER
09:00 - 09:45	L7 Apocalypse Now? Challenge of Arterial Disease in the First Quarter of the Century Fernandes e Fernandes, Portugal				
09:45 - 10:15		<i>Coffee-Break</i>			
10:15 - 12:00	S8 4th International MIDAS Microcirculation Meeting: Microcirculation as target in clinical medicine Vladimir, Cerny, Czech Republic Christian Lehmann, Canada Dragan Pavlovic, France	S9 German Society for Clinical Microcirculation and Hemorheology Session: Experimental Microcirculation Tommaso Gori, Germany Steffen Braune, Germany	S10 Hemorheological Studies in Clinical Medicine Gabor Keszmarky, Hungary Norbert Nemeth, Hungary	F3 Free Communications Luis Mendes, Portugal Pedro, Portugal Pedro, Portugal	
12:00 - 12:45	L8 The Optimum Hemostatic Walter Reinhart, Switzerland				
12:45 - 14:00		<i>Lunch-Break</i>			
14:00 - 14:45	L9 Potentialities of Laser, Trapping and Manipulation of Blood Cells in Hemorheologic Research Alexander Priezhev, Russia				
14:45 - 16:30	S11 Red Blood Cell Nitric Oxide and Red Blood Cell Rheology Michael Simmonds, Australia Philippe Comtes, France	S12 German Society for Clinical Microcirculation and Hemorheology Session: Clinical Microcirculation Christian Lehmann, Canada Lukas Prantl, Germany		F4 Free Communications Claudia, Portugal Nadia Antonova, Bulgaria	F5 Free Communications Pedro Marques, Portugal Gerard B. Nash, United Kingdom
16:30 - 17:00					
19:30 - 22:30					Joint Meeting ISCH & ISB and ESCHM
<i>Conference Dinner</i>					

8 JUNE WEDNESDAY	AMPHITHEATRE 58	AMPHITHEATRE 52	AMPHITHEATRE 57	ROOM 6 (IFA building)	FOYER
09:30 - 10:15	L10 Endothelial Phenotypes, Shear Rate and Dyslipidemia: A Continuum to Atherosclerosis Pedro Marques Silva, Portugal				
10:15 - 10:30					
10:30 - 12:15	S13 Microcirculation, Hemorheological Profile and Inflammation in Metabolic Diseases Carliota Salidamia, Portugal Antonio Colantoni, Italy				
12:15 - 13:00	L11 Atherosclerosis: challenges in understanding the pathogenesis through a mathematical modelling approach Adelia Sequeira, Portugal				
13:00 - 14:00					
14:00 - 14:45	L12 Endothelial cell dynamics in vessel regression Claudio Azeias Franco, Portugal				
14:45 - 15:45	S15 ISCH/ISB Joint Symposium The microvascular behaviour of circulating cells Sehyun Shin, Korea Herbert H. Lipowski, United States of America				
15:45 - 16:15					
16:15 - 17:00	L13 Regulation of endothelial Recruitment of leukocytes by the local environment Gerard B. Nash, United Kingdom				F6 Free Communications Claudio Azeias Franco, Portugal
17:00 - 17:15					
Closing remarks					

- 16:00 - 16:30** **Opening Ceremony** **Amphitheatre 52, floor 0**
- **Maria Carlota Saldanha**
Chairman of the 18th ESCHM Conference
 - **José Braz Nogueira**
Co-chairman of the 18th ESCHM Conference
 - **Mamede Alves de Carvalho**
Sub-Diretor of Faculty of Medicine, University of Lisbon
 - **Carlos Neves Martins**
President of the Administration Board of Centro Hospitalar Lisboa Norte
 - **Maria do Carmo Fonseca**
President of Centro Académico e Medicina de Lisboa
- 16:30 - 17:15** **Fahraeus Award Ceremony** **Amphitheatre 52, floor 0**
- Tommaso Gori, Germany
- Methods in Hemorheology and Clinical Applications**
Nadia Antonova¹ (1Dept. Biomechanics, Institute of mechanics to the Bulgarian Academy of Sciences)
- 17:15 - 18:00** **S1) Symposium Trends and Advances** **Amphitheatre 52, floor 0**
in Clinical Hemorheology - a tribune to Oguz Baskurt
- Chairperson(s): **Jean-Frédéric Brun**, France
- Seminal contributions of Oguz Baskurt to hemorheology - a personal view**
Brun JF¹ (1INSERM U1046)
- Red blood cell aggregation - does it matter in the microcirculation?**
W. H. Reinhart¹, N.Z. Piety², S.S. Shevkopylas² (1Kantonsspital Graubünden, Switzerland;
2Department of Biomedical Engineering, University of Houston)
- 18:00 - 18:15** *Coffee-Break* **Foyer, floor 0**
- 18:15 - 18:45** **L1) Plenary Lecture Biological Evaluation** **Amphitheatre 52, floor 0**
of polymer-based Biomaterials
- Friedrich Jung¹, Anne Krüger-Genge¹, Steffen Braune¹, Nan Ma¹,
Andreas Lendlein² (1Institute of Biomaterial Science and Berlin-Brandenburg Centre for Regenerative
Therapies (BCRT), Helmholtz Zentrum Geesthacht, Kantstrasse 55, 14513 Teltow, Germany; 2Institute of Biomaterial
Science and Berlin-Brandenburg Centre for Regenerative Therapies (BCRT), Helmholtz Zentrum Geesthacht, Kantstrasse
55, 14513 Teltow, Germany; Institute of Chemistry, University of Potsdam, Potsdam, Germany)
- 18:45 - 19:15** **Oguz Baskurt Travel Award** **Amphitheatre 52, floor 0**
Tommaso Gori, Germany
- Musical Performance**
- 19:15 - 20:00** **Welcome Reception** **Foyer, floor 0**

- 08:30 - 17:00** **Exhibition** **Foyer, floor -1**
- 08:30 - 09:15** **L2) Plenary Lecture Relationship between viscosity and endothelium function** **Amphitheatre 58, floor -1**
- Tommaso Gori¹ (*1University of Siena, Italy; Universitätsmedizin der J. Gutenberg Universität, Germany*)
- 09:15 - 10:00** **L3) Plenary Lecture Evidence-based hemorheology. Does it exist? Applying evidence from clinical studies to the individual patient** **Amphitheatre 58, floor -1**
- António Vaz Carneiro¹ (*1Center for Evidence Based Medicine, University of Lisbon School of Medicine; Cochrane Portugal*)
- 10:00 - 10:30** *Coffee-Break* **Foyer, floor -1**
- 10:30 - 12:00** **S2) Symposium Vascular Wall Microenvironments - Impact on Vessel Function** **Amphitheatre 58, floor -1**
- Chairperson(s): **Gerald Meininger**, United States of America
- Extracellular Matrix Structure in Small Arteries: Significance of Postnatal Structural Development to Vessel Function**
Michael A Hill¹; Zahra Nourian²; Kwangseok Hong¹; I-Lin, Ho²; Luis Martinez-Lemus³; Philip S. Clifford³; Gerald A. Meininger¹ (*1University of Missouri; Dalton Cardiovascular Research Center; Department of Medical Pharmacology & Physiology, University of Missouri; 2University of Missouri; Dalton Cardiovascular Research Center; 3College of Applied Health Sciences, University of Illinois at Chicago*)
- Dynamic Vascular Smooth Muscle Cell Behavior Evident in Cell-Extracellular Matrix and Cell-Cell Interactions**
Gerald Meininger¹, Zhe Sun¹, Huang Huang¹, Michael Hill¹ (*1University of Missouri*)
- Cell-cell coupling and microvascular function**
Kim Dora¹, Christopher Garland² (*1University of Oxford; 2University of Oxford*)
- Novel targets in treating the microcirculation in obesity**
David W. Stepp¹ (*1Medical College of Georgia*)

10:30 - 12:00 S3) Symposium Disorders of Erythrocyte: Amphitheatre 52, floor 0
Its Genetic Variation and Cardiovascular Risk
 Chairperson(s): **Manuel Bicho**, Portugal | **Paula Faustino**, Portugal

A Novel Role for Protein Disulfide Isomerase on the Hematological Complications of Sickle Cell Disease

Alicia Rivera¹, Brian Mozeleski², **Jose R. Romero**² (1Boston Children's Hospital and Department of Pathology, Harvard Medical School, Boston, USA; 2Brigham and Women's Hospital, and Harvard Medical School, Boston, Massachusetts, USA)

Hemorheological alterations in sickle cell anemia and their clinical consequences – the role of genetic modulators

Marisa Silva¹, Sofia Vargas¹, Andreia Coelho¹, Alexandra Dias², Teresa Ferreira², Anabela Morais³, Raquel Maia⁴, Paula Kjällerström⁴, João Lavinha⁵, Paula Faustino⁶ (1Departamento de Genética Humana, Instituto Nacional de Saúde Dr. Ricardo Jorge, Lisboa; 2Núcleo de Hematologia - Departamento de Pediatria, Hospital Prof. Doutor Fernando Fonseca, Amadora; 3Departamento de Pediatria, Hospital de Santa Maria, CHLN, Lisboa; 4Unidade de Hematologia, Hospital de Dona Estefânia, CHLO, Lisboa; 5Departamento de Genética Humana, Instituto Nacional de Saúde Dr. Ricardo Jorge; BiolSI; Lisboa; 6Departamento de Genética Humana, Instituto Nacional de Saúde Dr. Ricardo Jorge; ISAMB; Lisboa)

Sickle cell disease a model of cardiovascular risk and new therapeutic targets

Manuel Bicho¹ (1Genetics Laboratory and Environmental Institute of Health, FMUL)

10:30 - 12:00 F1) Free Communications Amphitheatre 57, floor -1
 Chairperson(s): **Jorge Lima**, Portugal | **Jean-Frédéric Brun**, France

10:30 OC1
Hematocrit and hematocrit viscosity ratio during exercise in athletes: even closer to predicted optimal values?
Brun JF¹, Varlet-Marie E², Raynaud de Mauverger E¹ (1INSERM U1046; 2Faculty of Pharmacy)

10:40 OC2
Moderate Exercise Training Blunts Inflammation in Severe Transgenic Sickle Cell Mice
 Emmanuelle CHARRIN¹, Solomon OFORI-ACQUAH², John DUBE³, Philippe CONNES¹, Vincent PIALOUX¹, **Cyril MARTIN**¹ (1Interuniversity Laboratory of Human Movement Biology, University Claude Bernard Lyon 1; 2Vascular Medicine Institute, University of Pittsburgh PA; 3Division of Endocrinology and Metabolism, University of Pittsburgh, Pittsburgh, PA)

10:50 OC3
Comparative assessment of methods high-frequency ultrasound Doppler and laser Doppler flowmetry in the study of microcirculation during load test
 H. Lenasi¹, N. Potočnik¹, M. Girina², **M. Skedina**³, N. Petrishchev⁴ (1Institute of Physiology, Medical Faculty, University of Ljubljana, Slovenia; 2SPMinimaxLtd, St. Petersburg, Russian Federation; 3State Scientific Center of the RF Institute of Biomedical Problems RAS, Moscow, Russian Federation; 4Saint-Petersburg I.P. Pavlov State Medical University, St. Petersburg, Russian Federation)

- 11:00** **OC4**
Hemorheological effects of recombinant human erythropoietin therapy in normal rats
Sandra Ribeiro¹, Patrícia Garrido², João Fernandes³, Petronila Rocha-Pereira⁴, Elísio Costa¹, Luís Belo¹, Flávio Reis³, Alice Santos-Silva¹ (*1UCIBIO-REQUIMTE, Laboratory of Biochemistry-Faculty of Pharmacy, University of Porto; 2Pharmacology & Experimental Therapeutics-IBILI, Faculty of Medicine, University of Coimbra; 3Pharmacology & Experimental Therapeutics-IBILI, CNC-IBILI Research Unit, University of Coimbra; 4Health Sciences Research Centre-Faculty of Health Sciences, University of Beira Interior*)
- 11:10** **OC5**
Effects of exercise training and age on optimal hematocrit/viscosity ratio and hematocrit
Brun JF¹, Manetta J², Varlet Marie E³, Raynaud de Mauverger E³
(*1INSERM U1046; 2CERAMM; 3Faculty of Pharmacy*)
- 11:20** **OC6**
Influences of two high intensity interval exercise protocols on hemorheological variables in overweight men
Sajad Ahmadizad¹, Mohsen Hadian¹, Maryam Eslami¹ (*1Faculty of Sport Sciences, Shahid Beheshti University, Tehran, Iran*)
- 11:30** **OC7**
How do red blood cell properties contribute to the exercise performance in camels (*Camelus dromedarius*)?
Roland Auer¹, Andreas Gleiss², Ursula Windberger³ (*1Leibniz Institute on Aging, Jena; 2Center for Medical Statistics, Informatics, and Intelligent Systems, Medical University of Vienna; 3Department for Biomedical Research, Medical University of Vienna*)
- 11:40** **OC8**
Platelet activation and function in response to high intensity interval exercise and moderate continuous exercise in CABG patients
Sajad Ahmadizad¹, Akbar Nouri-Habashi¹, Hiwa Rahmani¹, Majid Maleki², Nasim Naderi², Sara Lotfian² (*1Faculty of Sports Sciences, Shahid Beheshti University, Tehran, Iran; 2Shaheed Rajaei Cardiovascular, Medical and Research Center, Tehran, Iran*)
- 11:50** **OC9**
Examination of exercise induced limb ischemia in peripheral artery disease from a hemorheological point of view
David Kovacs¹, Beata Csiszar¹, Katalin Biro¹, Katalin Koltai¹, Dora Praksch¹, Kinga Totsimon¹, Dora Endrei¹, Kalman Toth¹, Gabor Kesmarky¹
(*11st Department of Medicine, Medical School, University of Pecs*)

- 10:30 - 12:00** **S4) Symposium Inflammation: affecting hemorheology and vasomotor regulation** **Room 6 (IFA), floor 0**
Chairperson(s): **Ines Drenjančević**, Croatia | **Eliete Bouskela**, Brazil
- Platelet aggregation inhibition: Hemorheological aspects**
Katalin Koltai¹, Gergely Feher², Barbara Sandor¹, Tamas Habon¹, Gabor Kesmarky¹, Kalman Toth¹ (1Department of Medicine, Medical School, University of Pécs; 2Hospital of Szigetvár, Department of Neurology)
- Inflammation-induced microvascular dysfunction in obesity - a translational approach**
Luiz Guilherme Kraemer de Aguiar¹, Nivaldo Ribeiro Villela¹, Priscila Alves Maranhão¹, Beatriz Costa da Silva Boa¹, Maria das Graças Coelho de Souza¹, **Eliete Bouskela**¹ (1State University of Rio de Janeiro, Brazil)
- Inflammatory edema propagated via the kallikrein-kinin system fuels intracardiac parasitism in experimental Chagas disease**
Erik Svensjö¹ (1Institute of Biophysics Carlos Chagas Filho, Federal University of Rio de Janeiro)
- Impact of diet on microvascular function and proinflammatory metabolites of arachidonic acid**
Ines Drenjancevic¹ (1Faculty of Medicine University of Osijek, Croatia)
- 12:00 - 12:45** **L4) Plenary Lecture Autodigestion in Inflammation: Digestive Enzymes on the Prowl** **Amphitheatre 58, floor -1**
Geert Schmid Schoenbein¹ (1UCSD)
- 12:45 - 14:00** *Lunch-Break* **Foyer, floor -1**
- 12:45 - 14:00** **ESCHM Council Meeting** **Room 6 (IFA), floor 0**
- 14:00 - 14:45** **L5) Plenary Lecture The history of the theory of the circulation of the blood** **Amphitheatre 58, floor -1**
Mike Rampling¹ (1MW Rampling: Bioengineering Department, Imperial College, South Kensington, London SW7 2AZ)

14:45 - 16:00 **S5) Symposium Hemorheological and Microvascular Manifestations of Solid Nonmyeloid Malignancies** **Amphitheatre 58, floor -1**
Chairperson(s): **Irina Tikhomirov**, Russia

Interrelation of blood coagulation and hemorheology in cancer

Irina Tikhomirova¹, Elena Petrochenko¹, Yulia Malysheva¹, Mihail Ryabov², Nikolay Kislov² (1Yaroslavl State Pedagogical University; 2Yaroslavl Regional Cancer Hospital)

Surgery effect on hemorheological profiles in patients with colon cancer

Yulia Malysheva¹, Irina Tikhomirova¹, Mihail Ryabov², Nikolay Kislov²
(1Yaroslavl State Pedagogical University; 2Yaroslavl Regional Cancer Hospital)

Hemorheological profile change after chemotherapy: insight into the microrheological change mechanisms

Muravyov Alexei¹, Tikhomirova I.A.¹, Muravyov A.V.¹ (1State Pedagogical University)

Role of hemorheological factors in the control of microcirculation in anemic patients with solid cancer

Kislov Nikolay¹, Muravyov Alexei¹, Tikhomirova Irina¹, Peganova Ekaterina¹, Petrochenko Elena¹ (1State Pedagogical University)

OC47

Hemangiomas in infancy – therapeutic options

Peter Ruef¹ (1Childrens Hospital Heilbronn, SLK-Kliniken GmbH)

14:45 - 16:00 **S6) Symposium Hemorheological Alterations in Hematological Diseases** **Amphitheatre 52, floor 0**

Chairperson(s): **Gregorio Caimi**, Italy | **Carlota Saldanha**, Portugal

Hemorheological behavior in sickle cell disease pediatric patients

Riccardo Morandi¹, Giovanni Palazzi², Marco Ballestri³, Francesco Fontana³, Marco Maioli⁴, Monica Cellini², Carmen Cano², Ilaria Mariotti², Bruno Calabretta⁵, Lorenzo Iughetti², Gianni Cappelli¹, Donatella Venturelli¹ (1Transfusion Medicine Department; 2Department of Mother and Child; 3Department of Surgical, Medical and Dental Department of Morphological Sciences, University Hospital; 4Department of Physics Informatics and Mathematical Sciences, University of Modena and Reggio Emilia; 5Department of Cancer Biology and Kimmel Cancer Center, Thomas Jefferson University, Philadelphia)

Hemorheological profiles in thalassemia: a new approach for the study of complications

Patrizia Caprari¹, Carlotta Bozzi¹, Roberta Risoluti², Stefano Materazzi², Laura Maffei³, Francesco Sorrentino³ (1Department of Haematology, Oncology and Molecular Medicine, Istituto Superiore di Sanità, Rome, Italy; 2Department of Chemistry, Sapienza - University of Rome, Rome, Italy; 3UOS DH - Thalassemia, S. Eugenio Hospital, Rome, Italy)

Hemorheological pattern in disorders of plasma composition

Gregorio Caimi¹, Rosalia Lo Presti¹ (1University of Palermo, Italy)

- 14:45 - 16:00 F2) Free Communications** **Amphitheatre 57, floor -1**
Chairperson(s): **Carlos Moreira**, Portugal | **Alice Santos Silva**, Portugal
- 14:45 OC10**
Effects of RAGE blockade on inflammation, oxidative stress and nitric oxide bioavailability in transgenic sickle mice
Emmanuelle CHARRIN¹, Camille FAES¹, Philippe Connes¹, Vincent Pialoux¹, Cyril Martin¹ (*1Interuniversity Laboratory of Human Movement Biology, University Claude Bernard Lyon 1*)
- 14:55 OC11**
Erythrocyte Nitric Oxide in Patients with Glaucoma – ex vivo study
Rita Esteves¹, Pedro Teixeira¹, Patrícia Napoleão¹, Carlos Neves², Carlota Saldanha¹ (*1Instituto de Bioquímica, Instituto de Medicina Molecular, Faculdade de Medicina, UL; 2FMUL Professor, ISAMB, CECU Coordenator, ALM Clinical Director*)
- 15:05 OC12**
Soluble CD40 ligand Profiles in Patients with Septic Shock
Patrícia Napoleão¹, Ekaterina Potapova², Sara Moleirinho², Carlota Saldanha², António Messias² (*1Instituto de Medicina Molecular; 2Instituto de Bioquímica, Faculdade de Medicina da Universidade de Lisboa*)
- 15:15 OC13**
Inflammatory and hematological disturbances associated with resistance to recombinant human erythropoietin therapy in CKD anemia in a rat model
Sandra Ribeiro¹, Patrícia Garrido², João Fernandes³, Helena Vala⁴, Petronila Rocha-Pereira⁵, Elísio Costa¹, Luís Belo¹, Flávio Reis³, Alice Santos-Silva¹ (*1UCIBIO-REQUIMTE, Laboratory of Biochemistry-Faculty of Pharmacy, University of Porto; 2Pharmacology & Experimental Therapeutics-IBILI, Faculty of Medicine, University of Coimbra; 3Pharmacology & Experimental Therapeutics-IBILI, CNC.IBILI Research Unit, University of Coimbra; 4CITAB, CI&DETS-Agrarian School of Viseu, Polytechnic Institute of Viseu; 5Health Sciences Research Centre-Faculty of Health Sciences, University of Beira Interior*)
- 15:25 OC14**
Rheologic behavior of blood in some myeloproliferative neoplasms
Eugene Roitman¹, Irina Kolesnikova², Natalia Kozlova³, Igor Davydkin³ (*1Pirogov Russian National Research Medical University; 2FSCC on Pediatric Hematology, Oncology and Immunology; 3Samara State Medical Universit*)
- 15:35 OC15**
Actual vs optimal fetal hematocrit measured with punctures of cord blood in utero: relationship with umbilical artery resistance
Brun JF¹, Varlet-Marie E², Raynaud de Mauverger E¹ (*1INSERM U1046; 2Faculty of Pharmacy*)

- 15:45** **OC16**
Effect of Oxidized LDL on Erythrocyte Nitric Oxide Metabolism
Patrícia Napoleão¹, Teresa Freitas², Carlota Saldanha² (1Instituto de Medicina Molecular; 2Instituto de Bioquímica, Faculdade de Medicina da Universidade de Lisboa)
- 14:45 - 16:00** **S7) Symposium Studying the Microcirculatory Room 6 (IFA), floor 0**
Effects of Exercise in Clinical Populations
Chairperson(s): **Markos Klonizakis**, United Kingdom |
Helena Lenasi, Slovenia
- Exploring the role of exercise in conjunction with compression therapy in patients with venous ulcers: initial observations on a feasibility study**
Markos Klonizakis¹, Garry Tew², Sue Kesterton¹, Emma McIntosh¹, Anil Gumber¹, Jonathan Michaels³, Helen Crank¹ (1Sheffield Hallam University; 2University of Northumbria; 3University of Sheffield)
- Assessing the evidence: exploring the effects of exercise in diabetic microcirculation**
Helena Lenasi¹ (1Institute of Physiology, Medical Faculty, University of Ljubljana, Slovenia)
- 16:00 - 16:30** *Coffee-Break* **Foyer, floor -1**
- 16:30 - 17:15** **L6) Plenary Lecture Hemorheological Amphitheatre 58, floor -1**
Parameters in Different Forms of Coronary Heart Disease
- K. Toth¹, A. Toth², B. Sandor², J. Papp², Zs. Marton², P. Kenyeres², T. Alexy³, G. Kesmarky², I. Juricskay², H.J. Meiselman⁴ (1University of Pecs, Hungary; University of Southern California, Los Angeles, USA; 2University of Pecs, Hungary; 3University of Pecs, Hungary; University of Southern California, USA; Emory University, USA; 4University of Southern California, Los Angeles, USA)
- 17:15 - 18:00** **Clinical Hemorheology and Microcirculation Amphitheatre 57, floor -1**
Editorial Board Meeting
- 17:15 - 18:00** **Poster Session Foyer, floor -1**
Chairperson(s): **Eliete Bouskela**, Brazil | **Ângelo Calado**, Portugal |
Flávio Reis, Portugal
- PO1**
Short-term and repeated shear stress exposure below the classic haemolytic threshold impairs red blood cell deformability and induces haemolysis
Jarod Horobin¹, Surendran Sabapathy², Michael Simmonds² (1School of Allied Health Sciences, Griffith University, Queensland, Australia; 2Menzies Health Institute Queensland, Griffith University, Queensland, Australia)
- PO2**
Analysis of fluctuating blood flow data using the methods of nonlinear dynamics and Allan variance
Basarab Mikhail¹, Konnova Natalia¹, Basarab Dmitriy², Matsievsky Dmitriy³ (1Bauman Moscow State Technical University; 2St.loasaf's Belgorod Regional Hospital; 3Scientific Research Institute on General Pathology and Pathophysiology)

PO3

Shear-induced platelet adherence and activation in a dynamic multiwell-plate system

Johan Bäckemo-Johansson¹, Steffen Braune¹, Markus Reinhaller², Friedrich Jung¹, Andreas Lendlein³ (1Institute of Biomaterial Science and Berlin-Brandenburg Centre for Regenerative Therapies (BCRT), Helmholtz Zentrum Geesthacht, Kantstrasse 55, 14513 Teltow, Germany; 2Institute of Biomaterial Science and Berlin-Brandenburg Centre for Regenerative Therapies (BCRT), Helmholtz Zentrum Geesthacht, Kantstrasse 55, 14513 Teltow, Germany; Department of Cardiology, Medical Clinic II, Charité University Medicine, Campus Benjamin; 3Institute of Biomaterial Science and Berlin-Brandenburg Centre for Regenerative Therapies (BCRT), Helmholtz Zentrum Geesthacht, Kantstrasse 55, 14513 Teltow, Germany; Institute of Chemistry, University of Potsdam, Potsdam, Germany)

PO4

Force spectroscopy on red blood cells of different species: a comparative approach

Dina Baier¹, Torsten Mueller², Ursula Windberger³ (1Department Biomedical Research, Medical University Vienna, Austria; 2JPK Instruments AG, Berlin, Germany; 3Department Biomedical Research, Medical University Vienna)

PO5

Chronobiological investigations of micro-rheological parameters in male and female outbred rats: age-related, gender and seasonal differences

Viktoria Sogor¹, Bence Tanczos¹, Adam Deak¹, Norbert Nemeth¹ (1Department of Operative Techniques & Surgical Research, Faculty of Medicine, University of Debrecen)

PO6

Rheopheresis in vascular diseases

Melinda Vass¹, Ágnes Diószegi¹, Norbert Németh², Viktória Sogor², Sándor Baráth³, László Módis⁴, Pál Soltész¹ (1Department of Internal Medicine, Division of Angiology, Medical University of Debrecen; 2Department of Operative Techniques and Surgical Research, Medical University of Debrecen; 3Department of Laboratory Medicine, Medical University of Debrecen; 4Department of Ophthalmology, Medical University of Debrecen)

PO7

Segmental Bioelectrical Impedance Analysis (SBIA) and blood rheology: reducing the gap between in vivo and in vitro?

Varlet-Marie E¹, Raynaud de Mauverger E², Brun JF² (1Faculty of Pharmacy; 2INSERM U1046)

PO8

Red blood cells interaction in interchanging media

Kisung Lee¹, Christian Wagner², Alexander Priezzhev³, Igor Meglinski⁴ (1University of Oulu, Finland and Lomonosov Moscow State University, Russia; 2Saarland University, Germany; 3Lomonosov Moscow State University, Russia; 4University of Oulu, Finland)

PO9

New potentialities of digital optical capillaroscopy for early diagnostics of arterial hypertension and type 2 diabetes mellitus

Yu.I. Gurfinkel¹, M.L. Sasonko¹, O.V. Suchkova¹, A.V. Priezzhev² (1Research Clinical Center of JSC "Russian Railways", Moscow, Russia; 2Physics Department and International Laser Center of Lomonosov Moscow State University, Russia)

PO10

A comparative study of 337 and 532 nm laser irradiation on thrombi formation in vivo

Petrishchev N.N.¹, Mikhailova I.A.¹, Panchenko A.V.² (1Pavlov First Saint Petersburg State Medical University; 2North-West Federal Medical Research Centre)

PO11

Assessment of scalp microvascular function

Young de Graaf¹, Richard Draijer¹, Karen Darling², Robert Velthuisen³, Dagmar Fuchs¹
(1Unilever R&D Vlaardingen, The Netherlands; 2Unilever R&D Port Sunlight; 3Unilever R&D Trumbull)

PO12

Comparison of peripheral vascular resistance based on macro- and microcirculatory responses with Poiseuille's law

Kashima Mitsunobu¹, Yokokawa Kazuhiro¹, Yamakoshi Ken-ichi², Shibata Masahiro¹ (1Shibaura Institute of Technology; 2Shouwa University School of Medicine)

PO13

Effects of repeated whole-body cryotherapy on rheological properties of blood in trained and untrained older men

Kubica Jadwiga¹, Szymura Jadwiga¹, Wiecek Magdalena¹, Maciejczyk Maciej¹, Szygula Zbigniew¹, Wisniowski Zdzislaw² (1University of Physical Education; 2Jagiellonian University Medical College)

PO14

Effect of magnesium supplementation on erythrocyte aggregation in NOS inhibition-induced hypertension model

Melike Cengiz¹, Pinar Ulker¹, Murat Uyuklu², Nazmi Yaras¹, Nur Özen¹, Mutay Aslan¹, Filiz Basrali¹ (1Akdemik University; 2Bezmi'alem Vakif University)

PO15

Sickle Cell Anemia - NO related genetic modifiers of hematological and biochemical parameters

Laura Aguiar¹, Andreia Matos¹, Ângela Gil¹, Conceição Afonso¹, Lígia Braga², João Lavinha³, Paula Kjollerstrom², Paula Faustino³, Manuel Bicho¹, Ângela Inácio⁴ (1Laboratório de Genética, Faculdade de Medicina da Universidade de Lisboa; 2Unidade de Hematologia do Hospital de Dona Estefânia; 3Departamento de Genética Humana, Instituto Nacional de Saúde Doutor Ricardo Jorge; 4Instituto de Investigação Científica Bento da Rocha Cabral)

PO16

Correlation between fibrinogen levels and thromboelastometry in liver transplantation

Maria Manuel Campos¹, Volodymyr Pishchanskyy¹, Maria Helena Alves¹, Maria José Marques¹, Ana Fernandes¹, Maria Elisabete Ribeiro¹, Teresa Araújo¹
(1Department of Immunohemotherapy (Head: D. Espírito Santo) – Hospital Curry Cabral, CHLC, EP)

PO17

Impact of the red-vine-leaf extract AS195 on nitric oxide bioavailability in diabetes patients and its potential role in the wound healing process

Birgit Bölck¹, Daniel Bizjak¹, Christian Brinkmann¹, Klara Brixius¹, Wilhelm Bloch¹, Marijke Grau¹ (1Institute of Cardiovascular Research and Sports Medicine German Sport University Cologne)

PO18

Cannabinoid 2 receptor inhibition reverses immunosuppression following acute CNS injury in miceIlan Burkovskiy¹, Juan Zhou¹, Christian Lehmann¹ (1Dalhousie University)

PO19

Von Willebrand factor – a potential link between microcirculation and the heartVintila Ana-Maria¹, Tudorica Cezar Cornel², Vintila Vlad-Damian³, Dumitrescu Silviu⁴ (1Carol Davila University of Medicine and Pharmacy, Coltea Clinical Hospital, Bucharest; 2Coltea Clinical Hospital, Bucharest; 3Carol Davila University of Medicine and Pharmacy, University Emergency Hospital, Bucharest; 4Titu Maiorescu University of Medicine and Pharmacy, Army Center for Cardiovascular Diseases)

PO20

Regulation of Red Blood Cell Deformability Through Adenylate Cyclase - Cyclic AMP PathwayOzlem Yalcin¹, Elif Ugurel¹, Philippe Connes², Buse Eglenen¹, Gokce Yavas¹, Mine Turkey¹ (1Koc University, School of Medicine, Istanbul, Turkey; 2Claude Bernard University Lyon 1, Villeurbanne, France)

PO21

Effect of tempol in vivo on flow-induced dilation in vitro in middle cerebral arteries of healthy sprague-dawley ratsAnita Cosic¹, Sanela Unfirer¹, Ivana Jukic¹, Ana Stupin¹, Ines Drenjancevic¹ (1Faculty of Medicine Osijek, University Josip Juraj Strossmayer Osijek)

PO22

Blood rheology in women with recurrent/late abortion while receiving intravenous ImmunoglobulinRoland Csorba¹, Peter Darago², Olga Schelkonov³, Georg-Friedrich von Tempelhoff³ (1Dept.Ob/Gyn, City Hospital Aschaffenburg; 2Dept.Ob/Gyn, Faculty of Medicine, University of Debrecen; 3Dept.Ob/Gyn, Vincent Hospital, Hanau)

PO23

Osmotic deformability (Osmoscan) tests in Continuous Ambulatory Peritoneal dialysis (CAPD) patients at the end stage renal failureNesrin Zeynep Ertan¹, Ozlem Yalcin², Mukaddes Sinan¹, Semra Bozfakioglu³ (1Istanbul University, Istanbul Faculty of Medicine, Department of Physiology, Capa, Istanbul, Turkey; 2Koc University, School of Medicine, Department of Physiology, Sariyer, Istanbul, Turkey; 3Istanbul University, Istanbul Faculty of Medicine, Department of Nephrology, Capa, Istanbul, Turkey)

PO24

Alterations of Erythrocyte Rheology in Patients with Severe Chronic Kidney Disease: Effect of Peritoneal Dialysis and Oxidative StressElif Ugurel¹, Nesrin Zeynep Ertan², Mukaddes Sinan², Semra Bozfakioglu², Ozlem Yalcin¹ (1Koc University; 2Istanbul University)

PO25

The impact of some manoeuvres on postocclusive reactive hyperaemia in the cutaneous microcirculationDamjana Srednik¹ (1Medical Faculty, University of Ljubljana, Slovenia)

PO26

Comparing the lower limb vascular response to a passive leg raising test by Laser Doppler Flowmetry and Photoplethysmography

Henrique Silva¹, Clemente Rocha¹,

Luís Monteiro Rodrigues¹ (1Universidade Lusófona, School of Health Sc & Technologies, CBIOS)

PO27

Can leukocyte antisedimentation rate (LAR) predict septic complications and critical care mortality early in polytrauma and burn victims?

Martin Rozanovic¹, Csaba Csontos¹, Lajos Bogár¹, Lívia Szélig¹, Tímea Bocskai¹,

Patrícia Kovács¹, Marianna Matancic², Attila Miseta³, Csaba Loibl¹ (1University of Pécs, Clinical Center, Department of Anaesthesia and Critical Care; 2University of Pécs, Clinical Center; 1st Department of Internal Medicine; 3University of Pécs, Clinical Center, Department of Laboratory Medicine)

PO28

Insulin effect on erythrocyte NO metabolism in patients with sepsis

Inês Oliveira¹, Patrícia Napoleão¹, António Messias², Carlota Saldanha¹ (1Instituto de Bioquímica,

Instituto de Medicina Molecular, Faculdade de Medicina, UL; 2Unidade de Cuidados Intensivos Hospital Beatriz Ângelo)

PO29

Erythrocyte deformability tests by filtrometry, slit-flow and rotational ektacytometry in splenectomy, spleen resection or spleen autotransplantation

Iren Miko¹, Viktoria Sogor¹, Ferenc Kiss¹, Eniko Toth¹, Katalin Peto¹, Andrea Furka², Istvan Furka¹, Laszlo Toth³, Jozsef Varga⁴, Krisztian Szigeti⁵, Norbert Nemeth¹ (1Department of Operative

Techniques & Surgical Research, Faculty of Medicine, University of Debrecen; 2Division of Radiotherapy, Department of Clinical Oncology, Faculty of Medicine, University of Debrecen; 3Department of Pathology, Faculty of Medicine, University of Debrecen; 4Department of Nuclear Medicine, Faculty of Medicine, University of Debrecen; 5Department of Biophysics and Radiation Biology, Faculty of Medicine, Semmelweis University)

PO30

Erythrocyte mechanical stability changes in splenectomy and related to various spleen-preserving operation types in a long-term follow-up animal study

Iren Miko¹, Viktoria Sogor¹, Eniko Toth¹, Ferenc Kiss¹, Istvan Furka¹, Andrea Furka²,

Katalin Peto¹, Norbert Nemeth¹ (1Department of Operative Techniques & Surgical Research, Faculty of Medicine, University of Debrecen; 2Division of Radiotherapy, Department of Clinical Oncology, Faculty of Medicine, University of Debrecen)

PO31

The role of micro-rheological investigations in musculo-cutaneous and adipocutaneous flap ischemia-reperfusion follow-up studies

Zsuzsanna Magyar¹, Abel Molnar¹, Robert Tamas², Zoltan Klarik¹, Norbert Nemeth¹

(1Department of Operative Techniques & Surgical Research, Faculty of Medicine, University of Debrecen; 2Department of Plastic and Burn Surgery, Medical Centre of Hungarian Defense Forces)

PO32

Effects of cannabinoid receptors and gpr55 modulation in experimental sepsisHyewon Yang¹, Juan Zhou¹, Andrew W. Stadnyk¹, Christian Lehmann¹ (1Dalhousie University)

PO33

Erythrocyte deformability – a partner of the inflammatory responseAna Santos Silva-Herdade¹, Giulia Andolina², Caterina Faggio², Carlota Saldanha¹

(1IMMLisboa, Faculdade de Medicina de Lisboa; 2Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina)

PO34

Duox1-derived H2O2 modulates Cxcl8 expression and neutrophil recruitment via JNK/c-JUN/AP-1 signaling and chromatin modificationsSofia de Oliveira¹, Pierre Boudinot², Ángelo Calado¹, Victoriano Mulero³ (1Instituto de Medicina

Molecular, Faculdade de Medicina, Universidade de Lisboa, Portugal; 2Virology and Molecular Immunology, National Institute of Agronomic Research, France, 3Faculty of Biology, University of Murcia / Biomedical Research Institute of Murcia, Spain)

PO50

Geometry of microwells modulate IL-6 secretion of human adipose derived mesenchymal stem cells via ROCK signaling pathwayZhengdong Li¹, Xun Xu¹, Weiwei Wang¹, Karl Kratz¹, Nan Ma¹, Andreas Lendlein¹

(1Helmholtz-Zentrum Geesthacht, Institute of Biomaterial Science and BCRT)

PO35

Upper and lower body interval exercise induce similar changes in the main determinants of blood fluidity in overweight individualsSajad Ahmadizad¹, Zahra Amraei¹,Minoo Bassami² (1Faculty of Sports Sciences, Shahid Beheshti University, Tehran, Iran; 2Faculty of Sports Sciences, Allameh

Tabataba'i University, Tehran, Iran)

PO36

Effects of 12 weeks trans-resveratrol supplementation and endurance training on responses of platelet indices to exhaustive exercise in male ratsSajad Ahmadizad¹, Tayebeh Zarekar¹, Minoo Bassami² (1Faculty of Sports Sciences, Shahid Beheshti University,

Tehran, Iran; 2Faculty of Sports Sciences, Allameh Tabataba'i University, Tehran, Iran)

PO37

Comparison of selected rheological and biochemical parameters of blood at the end of one winter swimming season and at the beginning of anotherTeległów A.¹, Marchewka J.¹, Marchewka A.¹, Głodzik J.¹ (1University School of Physical Education)

PO39

Rise in RBC aggregability and concomitant decrease in blood pressure 10 days after injection of the long acting erythropoietin analogue MIRCERAVarlet-Marie E¹, Joré C¹, Brun JF²

(1Faculty of Pharmacy; 2INSERM U1046)

PO40**The AlaxoStent: Improvement of NO-induced microrheological parameters and oxygen uptake during exercise?**

Daniel A. Bizjak¹, Peter Schams², Joachim Latsch², Wilhelm Bloch¹, Marijke Grau¹ (1German Sport University Cologne, Department of Molecular and Cellular Sports Medicine; 2German Sport University Cologne, Institute of Cardiology and Sports Medicine)

PO41**Plasma aldosterone levels in patients with resistant hypertension**

Vintila Ana-Maria¹, Vintila Vlad-Damian², Florentiu Ariel³, Tudorica Steluta⁴, Tudorica Cezar Corne⁵ (1Carol Davila University of Medicine and Pharmacy, Coltea Clinical Hospital, Bucharest; 2Carol Davila University of Medicine and Pharmacy, University Emergency Hospital, Bucharest; 3N. Paulescu Institute of Diabetes, 4C.M.I. Tudorica Steluta, 5Coltea Clinical Hospital, Bucharest)

PO42**Increased arterial stiffness and depressed systolic myocardial longitudinal velocities - which comes first in type 2 diabetic patients?**

Vintila Vlad-Damian¹, Vintila Ana-Maria², Tudorica Cezar Corne², Vinereanu Dragos¹ (1Carol Davila University of Medicine and Pharmacy, Emergency University Hospital Bucharest; 2Carol Davila University of Medicine and Pharmacy, Coltea Clinical Hospital Bucharest)

PO43**The assessment of diabetes complications in people with uncontrolled type 2 diabetes**

Cornel Cezar Tudorica¹, Ariel Florentiu¹, Ana Maria Vintila¹, Vlad Vintila¹, Steluta Tudorica¹, Adriana Gurghean¹ (1Bucharest, Romania)

PO44**Study of microcirculatory impairment in type 2 diabetic patients with symptoms of peripheral neuropathy**

Agnes Dioszegi¹, Melinda Vass², Anna Flasko³, Ferenc Mechler⁴, Miklos Kaplar⁵, Pal Soltész¹ (1University of Debrecen Clinical Center Department of Internal Medicine, Division of Angiology; 2University of Debrecen Clinical Center, Department of Internal Medicine, Division of Angiology; 3University of Debrecen Clinical Center Division of Angiology; 4University of Debrecen Clinical Center, Department of Neurology; 5University of Debrecen Clinical Center Department of Internal Medicine, D. of Metabolic Disorders)

PO45**Micro and macro vascular complications of type I and II diabetes in Bulgaria**

Miglena Doneva¹, Maria Kamusheva¹, Guenka Petrova¹ (1Medical University of Sofia, Faculty of Pharmacy)

PO46**The assessment of previous risk factors and major comorbidities in people with type 2 diabetes**

Cornel Cezar Tudorica¹, Ariel Florentiu¹, Ana Maria Vintila¹, Vlad Vintila¹, Steluta Tudorica¹, Adriana Gurghean¹ (1Bucharest, Romania)

PO47**The significance of capillary density to insulin sensitivity in skeletal muscle**

Anna Kaufmann Lindqvist¹, Lezel Indal¹, Lasse Gliemann¹, Birgitte Hoier¹, Stefan Mortensen², Ulrik Winning Jepsen², Gregers Munch², Eftychia Kontou¹, Ylva Hellsten¹, Thorbjörn Åkerström¹ (1University of Copenhagen, Department of Nutrition, Exercise and Sports; 2University of Copenhagen, The Centre of Inflammation and Metabolism)

PO48**First attempt at estimating rheological and haemostatic factors in hypertension from among the Bulgarian population**

Stoeff S.¹, Jovtchev S.¹, Bechev B.¹, Trifonova N.², Buteva I.², Dikov I.³, Vretenarska M.⁴, Mladenova A.⁵ (1Dept Medical Physics and Biophysics, Medical University of Sofia, BULGARIA; 2Dept Biology, Medical University of Sofia, BULGARIA; 3Dept Obstetrics and Gynecology, Medical University of Sofia, BULGARIA; 4Dept Nephrology, Medical University of Sofia, BULGARIA; 5Dept Clinical Laboratory and Immunology, Medical University of Sofia, Bulgaria)

PO49**Electrical and rheological properties of blood in patients with type 2 diabetes mellitus**

Vasilka Paskova¹, Nadia Antonova¹, Nino Chaushev², Irena Velcheva², Ivan Ivanova¹ (1Institute of Mechanics, BAS, Bulgaria, 2University Hospital of Neurology and Psychiatry "St. Naum", MU Sofia, Bulgaria)

09:00 - 17:00 Exhibition**Foyer, floor -1****09:00 - 09:45 L7) Plenary Lecture Apocalypse Now? Challenge of Arterial Disease in the First Quarter of the Century****Amphitheatre 58, floor -1**

José Fernandes e Fernandes¹ (Director of the University Clinic of Vascular Surgery of HSM-CHLN, EPE, Cathedric Professor of Surgery at FMUL)

09:45 - 10:15 Coffee-Break**Foyer, floor -1**

10:15 - 12:00 S8) 4th International MiDAS Microcirculation Meeting: Microcirculation as target in clinical medicine **Amphitheatre 58, floor -1**
Chairperson(s): **Vladimir Cerny**, Czech Republic | **Christian Lehmann**, Canada | **Dragan Pavlovic**, France

Microcirculation in septic shock – a feasible target?

Vladimir Cerny¹ (1Dept. of Research and Development, University Hospital Hradec Kralove, Czech Republic)

Is a Perfused Boundary Region right parameter for endothelial glycocalyx description?

David Astapenko¹, Vladimir Cerny² (1University Hospital Hradec Kralove, Czech Republic; 2University Hospital Usti nad Labem, Czech Republic)

Microcirculation of the eye – non-invasive window to the microcirculation in acute and chronic disease

Christian Lehmann¹, Thomas Toguri², Nipun Arora³, Juan Zhou¹, Mel Kelly²

(1Department of Anesthesia, Dalhousie University, Halifax, Canada; 2Department of Pharmacology, Dalhousie University, Halifax, Canada; 3Department of Microbiology and Immunology, Dalhousie University, Halifax, Canada)

Microcirculatory studies in pregnant women - a useful tool for early detection of pregnancy-related complications?

Ronald B. George¹ *(1IWK Health Centre/Dalhousie University)*

Microcirculatory studies in developing countries – first results of the MicroScreen study

Nivin Sharawi¹ *(1Cairo University)*

OC48**Evaluation of organ perfusion with contrast enhanced ultrasound after operative or endovascular treatment of visceral artery aneurysms**

Wilma Schierling¹, Piotr M Kasprzak¹, René Müller-Wille²,

Walter Wohlgemuth², Ernst M Jung², Reinhard Kopp¹, Karin Pfister¹

(1Universitätsklinikum Regensburg, Abteilung für Gefäßchirurgie; 2Universitätsklinikum Regensburg, Institut für Röntgendiagnostik)

10:15 - 12:00

S9) German Society for Clinical Microcirculation **Amphitheatre 52, floor 0 and Hemorheology Symposium**

Chairperson(s): **Tommaso Gori**, Germany | **Steffen Braune**, Germany

Effect of radiographic contrast media on renal perfusion: first results

P. Lamby¹, F. Jung², S. Graf¹, L. Schellenberg³, J. Falter¹, L. Prantl,

R.P. Franke⁴, E.M. Jung⁵ *(1Department of Plastic and Reconstructive Surgery, University Medical Center, Regensburg, Germany; 2Institute for Clinical Hemostasiology and Transfusion Medicine University of Saarland, Germany; 3Department of Anesthesiology, University of Regensburg, Regensburg, Germany; 4Central*

Institute for Biomedical Engineering, Department of Biomaterials, University of Ulm, Ulm, Germany; 5Department of Radiology, University Hospital Regensburg, Regensburg, Germany)

The influence of different rewetting procedures on the thrombogenicity of nanoporous poly(ether imide) microparticles

Steffen Braune¹; Johan Bäckemo-Johansson¹; Karl Kratz¹; Friedrich Jung¹;

Andreas Lendlein² *(1Institute of Biomaterial Science and Berlin-Brandenburg Centre for Regenerative Therapies (BCRT), Helmholtz Zentrum Geesthacht, Kantstrasse 55, 14513 Teltow, Germany; 2Institute of Biomaterial*

Science and Berlin-Brandenburg Centre for Regenerative Therapies (BCRT), Helmholtz Zentrum Geesthacht,

Kantstrasse 55, 14513 Teltow, Germany; Institute of Chemistry, University of Potsdam, Potsdam, Germany)

Cellular interactions during vascularization of human three-dimensional skin constructs

Sabine Kaessmeyer¹; Maneenoch Khiao-In¹; Sarah Hedtrich²;
Leonie Wallmeyer²; Ken Richardson³; Johanna Plendl¹ (1Free University of Berlin, Dept. of
Veterinary Medicine, Institute of Veterinary Anatomy, Germany; 2Free University of Berlin, Dept. of Biology, Chemistry
Pharmacy, Institute for Pharmacy, Germany; 3Murdoch University, College of Veterinary Medicine, Australia)

Blood rheology during normal pregnancy – results of a single center investigation

v. Tempelhoff G.-F¹; Schelkunov O.¹; Niesigk B.²; Demirhan A.¹; Csorba R.²;
Tsikouras P.³

(1Department of Gynecology and Obstetrics, St. Vinzenz Hospital Hanau; 2Department of Obstetrics and Gynecology,
City Hospital of Aschaffenburg; 3Democritus University of Thrace, Department of Obstetrics and Gynecology)

Cell layer formation and shear-resistance of human endothelial cells on LDI-crosslinked gelatin-based hydrogels with tailorable elastic properties

Christian Schulz¹; Radovan Vukicevic¹; Anne Krueger-Genge¹; Axel T. Neffe¹;
Andreas Lendlein²; Friedrich Jung¹(1Institute of Biomaterial Science and Berlin-Brandenburg
Centre for Regenerative Therapies (BCRT), Helmholtz Zentrum Geesthacht, Kantstrasse 55, 14513 Teltow, Germany;
2Institute of Biomaterial Science and Berlin-Brandenburg Centre for Regenerative Therapies (BCRT), Helmholtz
Zentrum Geesthacht, Kantstrasse 55, 14513 Teltow, Germany; Institute of Chemistry, University of Potsdam, Potsdam,
Germany)

Blood-derived angiogenic cells (BDACs) resemble a hematopoietic pericyte population and are a promising candidate for therapeutic angiogenesis

Anna Block¹; Yingting Wang²; Maria Koch³; Friedrich Jung⁴;
Kishore Bhakoo⁵; Michael Raghunath⁶ (1Helmholtz-Zentrum Geesthacht, Institute of Biomaterial
Science; BSRT-Charité; 2National University of Singapore, NUS Graduate School for Integrative Sciences and
Engineering(NGS); 3Technical University Dresden, Center for Regenerative Therapies Dresden (CRTD);
4Helmholtz-Zentrum Geesthacht, Institute of Biomaterial Science; 5Biomedical Sciences Institute, Singapore Biomedicine
Consortium (SBIC); 6National University of Singapore, Department of Biomedical Engineering, Department of
Biochemistry)

OC35**Dendritic cell responses towards clinically used polydimethylsiloxane and polytetrafluoroethylene**

Toralf Roch¹, Karl Kratz¹, Nan Ma², Andreas Lendlein³ (1Helmholtz-Zentrum Geesthacht,
Institute of Biomaterial Science and BCRT, Helmholtz Virtual Institute; 2Helmholtz-Zentrum Geesthacht, Institute of
Biomaterial Science and BCRT, Freie Universität Berlin; 3Helmholtz-Zentrum Geesthacht, Institute of Biomaterial
Science and BCRT, University of Potsdam)

10:15 - 12:00

**S10) Symposium Hemorheological Studies
in Clinical Medicine****Amphitheatre 57, floor -1**Chairperson(s): **Gabor Kesmarmy**, Hungary | **Norbert Nemeth**, Hungary**Hemorheological disturbances in chronic carotid artery stenosis**Kinga Totsimon¹, Alexandra Nagy², Barbara Sandor¹, Katalin Biro¹,
Arpad Csatho², Laszlo Szapary³, Csenge Lovig³, Peter Csecsei³, Kalman
Toth¹, Zsolt Marton¹, Peter Kenyeres¹*(1 1st Department of Medicine, Medical School, University of Pecs, Hungary; 2Department of Behavioral Sciences,
University of Pecs, Medical School, Hungary; 3Department of Neurology, University of Pecs, Medical School,
Hungary)***Ambulatory and home-based exercise training program in female
patients with high cardiovascular risk**Dora Praksch¹, David Kovacs¹, Barbara Sandor¹, Kinga Totsimon¹,
Bela Mezey¹, Peter Petrovics¹, Marta Wilhelm², Gabor Kesmarmy¹, Kalman
Toth¹, Eszter Szabados¹ *(11st Department of Medicine, Medical School, University of Pecs; 2Institute of
Sport Science and Physical Education, Faculty of Sciences, University of Pecs)***The hemorheological effects of cardiovascular rehabilitation training
program in ischemic heart disease – an analysis of prospective studies**Andras Toth¹, Kinga Totsimon², Barbara Sandor², Zsolt Marton²,
Gabor Kesmarmy², Eszter Szabados², Daniel Kehl³, Istvan Juricskay²,
Kalman Toth², Laszlo Czopf² *(1 1st Department of Medicine, Department of Radiology; Medical
School, University of Pecs; 2 1st Department of Medicine, Medical School, University of Pecs; 3Institute of Economics
and Econometrics, Faculty of Business and Economics, University of Pecs)***Hemorheological factors can be informative in comparing treatment
possibilities of abdominal compartment syndrome**Norbert Nemeth¹, Katalin Peto¹, Adam Deak¹, Viktoria Sogor¹,
Gabor Varga¹, Klaudia Balog², Adrienn Csiszko², Zsolt Szentkereszty²
*(1Department of Operative Techniques & Surgical Research, Faculty of Medicine, University of Debrecen; 2Institute of
Surgery, Faculty of Medicine, University of Debrecen)***Hemorheological and angiological differences in diabetic patients with
and without intermittent claudication**Gabor Kesmarmy¹, Katalin Biro¹, Beata Csiszar¹, David Kovacs¹,
Barbara Sandor¹, Kinga Totsimon¹, Dora Praksch¹, Katalin Koltai¹, Dora
Endrei¹, Kalman Toth¹ *(1 1st Department of Medicine, Medical School, University of Pecs, Hungary)***The rate of complete and partial venous recanalisation by optimal and
non optimal oral anticoagulant therap**S.I. Bernát¹, L. Rókusz¹ *(1Medical Centre, Hungarian Defence Forces, Dept. Internal Medicine-Angiology,
Budapest, Hungary)*

- 10:15 - 12:00** **F3) Free Communication** **Room 6 (IFA), floor 0**
Chairperson(s): **Luis Mendes Pedro**, Portugal | **Flávio Reis**, Portugal
- 10:15** **OC17**
Correlation between blood rheological properties and red blood cell indices (MCH, MCV, MCHC) in healthy women
Georg-Friedrich von Tempelhoff¹, Olga Schelkunov¹, Attila Demirhan¹, Panagiotis Tsikouras², Werner Rath³, Eva Velten⁴, Eszter Maka⁵, Roland Csorba⁴ (*1Department of Obstetrics and Gynecology, St. Vinzenz Hospital, Hanau, Germany; 2Department of Obstetrics and Gynecology, Democritus University of Thrace, Alexandroupolis, Greece; 3Department of Obstetrics and Gynecology, RWTH University of Aachen, Germany; 4Department of Obstetrics and Gynecology, City Hospital of Aschaffenburg, Aschaffenburg, Germany; 5Department of Obstetrics and Gynecology, University of Debrecen, Hungary*)
- 10:25** **OC18**
Comparison of the different normobaric hypoxic conditions on blood viscosity and hif 1-A levels
Sami Aydogan¹, Sacide Yildiz¹, Erdem Başaran¹ (*1Erciyes University, Medical Faculty, Department of Physiology, Kayseri, Turkey*)
- 10:35** **OC19**
Duration-magnitude interactions in red blood cell damage: defining the sub-haemolytic threshold
Michael J. Simmonds¹, Herbert J. Meiselman² (*1Menzies Health Institute Queensland; 2University of Southern California*)
- 10:45** **OC20**
Beneficial postoperative micro-rheological effects of intraoperative administration of NSAID in patient underwent lower extremity operations
Bela Turchanyi¹, Csaba Körei¹, Viktoria Sogor², Norbert Nemeth² (*1Department of Traumatology and Hand Surgery, University of Debrecen, Hungary; 2Dept of Op. Techniques and Surg. Res, Fac. of Med, Debrecen Univ. Hungary*)
- 10:55** **OC22**
The Role of Pericytes for Angiogenesis in Skeletal Muscle Tissue
Birgitte Hoier¹, Ylva Hellsten¹ (*1Department of Nutrition, Exercise and Sports (NEXS), University of Copenhagen, Copenhagen, Denmark*)
- 11:05** **OC23**
« Optimal » vs actual hematocrit in obesity and overweight
Brun JE¹, Fédou C¹, Varlet Marie E², Raynaud de Mauverger E¹ (*1INSERM U1046; 2Faculty of Pharmacy*)

- 11:15** **OC24**
A new look on blood shear thinning
L. Lanotte¹, J. Mauer¹, S. Mendez¹, D. Fedosov¹, J.-M. Fromental¹,
V. Claveria¹, F. Nicoud¹, G. Gommer¹, M. Abkarian¹ (1Centre de Biochimie Structurale,
Laboratoire Charles Coulomb, Université de Montpellier)
- 11:25** **OC36**
Genetic factor effect on blood rheology in children with sickle cell anemia
Céline Renoux¹, Philippe JOLY¹, Camille FAES², Yves Bertrand³,
Nathalie Garnier³, Daniella Cuzzubo³, Kamila Kebaïli³, Cécile Renard³,
Arthur Dony³, Giovanna Cannas⁴, Cyril Martin², Vincent Pialoux²,
Philippe Connes² (1UF Pathologie Moléculaire du globule rouge - Hôpital Edouard Herriot - Hospices civils
de Lyon; 2Laboratoire LIBM, Equipe "Biologie vasculaire et du globule rouge", Université de Lyon; 3Institut
d'hématologie et d'oncologie pédiatrique (IHOP) - Hospices civils de Lyon; 4Clinique de médecine ambulatoire/hématologie -
Hôpital Edouard Herriot, LYON)
- 11:35** **OC50**
**Platelet-rich Plasma affects Vitality, Differentiation and Gene Expression
of Adipose-derived Stem Cells in vitro**
Prantl L¹ (1Center of Plastic-, Hand- and Reconstructive Surgery, University of Regensburg, Germany)
- 11:45** **OC52**
Transcranial Optical Imaging of Blood Microcirculation
Vyacheslav Kalchenko¹; Guillaume Molodij¹; Yuri Kuznetsov¹; David Israeli²;
Igor Meglinski³; Alon Harmelin¹
(1Weizmann Institute of Science, Rehovot, Israel, 2Kaplan Hospital, Rehovot affiliated with the Hebrew University of
Jerusalem; 3Oulu University, Oulu, Finland)
- 12:00 - 12:45** **L8) Plenary Lecture The Optimum Hematocrit** **Amphitheatre 58, floor -1**
Walter H. Reinhart¹ (1Kantonsspital Graubünden, CH-7000 Chur, Switzerland)
- 12:45 - 14:00** *Lunch-Break* **Foyer, floor -1**
- 14:00 - 14:45** **L9) Plenary Lecture Potentialities of Laser
Trapping and Manipulation of Blood Cells
in Hemorheologic Research** **Amphitheatre 58, floor -1**
Alexander Priezzhev¹, Kisung Lee² (1Lomonosov Moscow State University, Russia; 2University of
Oulu, Finland, and Lomonosov Moscow State University, Russia)
- 14:45 - 16:30** **S11) Symposium Red Blood Cell Nitric Oxide** **Amphitheatre 58, floor -1**
and Red Blood Cell Rheology
Chairperson(s): **Michael Simmonds**, Australia | **Philippe Connes**, France
Physiological role of erythrocyte nitric oxide
Carlota Saldanha¹ (1IMMF/MUL)
**RBC-NOS dependent NO production during RBC aging in healthy
volunteers and type 2 diabetic patients**
Marijke Grau¹, Daniel A. Bizjak¹, Sabrina Bischof¹, Klara Brixius¹,
Wilhelm Bloch¹, Christian Brinkmann¹ (1German Sport University Cologne)

Interactions between oxidative stress and RBC-NOS

Michael J. Simmonds¹, Lennart Kuck¹, Daniel A. Bizjak², Wilhelm Bloch²,
Marijke Grau² (1Menzies Health Institute Queensland; 2German Sport University Cologne)

RBC-NOS and RBC deformability in sickle cell disease

Philippe Connes¹, Anaïs Mozar², Bianca Collins³, Marie-Dominique
Hardy-Dessources², Marc Romana², Nathalie Lemonne⁴, Wilhelm Bloch³,
Marijke Grau³ (1Laboratoire LIBM, Equipe "Biologie Vasculaire et du Globule Rouge", Université Claude
Bernard Lyon; 2UMR Inserm U1134, Université des Antilles et de la Guyane, Pointe-à-Pitre, Guadeloupe, France;
3Institute of Cardiovascular Research and Sports Medicine, Cologne, Germany; 4Unité Transversale de la
Drépanocytose, Pointe-à-Pitre, Guadeloupe)

Red blood cell nitric oxide and sickle cell anemia - potential and pitfalls

Iris Xu¹, Honglei Liu¹, Thomas D. Coates¹, John C. Wood¹, Pinar Ulker²,
Henry J. Forman³, Jon A. Detterich¹ (1Children's Hospital Los Angeles; 2Akdeniz University;
3University of Southern California)

OC49**Nitric oxide generated by red blood cells following exposure to shear stress dilates isolated small mesenteric arteries underhypoxic conditions**

Pinar Ulker¹, Filiz Gunduz¹, Herbert J. Meiselman² (1Akdeniz University; 2Department of
Physiology and Biophysics, Keck School of Medicine, University of Southern California)

14:45 - 16:30

**S12) German Society for Clinical
Microcirculation and Hemorheology****Amphitheatre 52, floor 0****Symposium Session: Clinical Microcirculation**

Chairperson(s): **Christian Lehmann**, Canada | **Lukas Prantl**, Germany

**Microcirculation of vascular malformations using contrast-enhanced
ultrasound (CEUS) and time intensity curve (TIC) analyses**

Wiesinger, I.¹, Stroszczynski, C.¹, Jung, EM.¹ (1Institute of Radiology, University Medical
Center, Regensburg)

**Shear wave elastography of the testis in the healthy man – comparison
of standard values using ARFI and VTIQ techniques**

Marcon J.¹, Trottmann M¹, Rübenthaler J¹, D'Anastasi M¹, Becker AJ¹,
Stief CG¹, Reiser MF¹, Clevert DA¹ (1LMU Munich University Hospital)

**Differences of standard values of Supersonic shear imaging and ARFI
technique – in-vivo study of testicular tissue**

Marcon J.¹, Trottmann M¹, Rübenthaler J¹, D'Anastasi M¹, Becker AJ¹,
Stief CG¹, Reiser MF¹, Clevert DA¹ (1LMU Munich University Hospital)

Possibilities of contrast- enhanced ultrasound (CEUS) after percutaneous treatments of malignant liver lesions with perfusion software

Wiesinger, I.¹, Stroszczynski, C.¹, Jung, EM.¹ (1Institute of Radiology, University Medical Center, Regensburg)

Characterization of Benign Periablational Enhancement Following Multipolar Radiofrequency Ablation Using Perfusion CT in an In-Vivo Porcine Liver Model

Janis Lucas Vahldiek¹; Stefan F Thieme¹; Ole Gemeinhardt¹; Franz Poch¹; Bernhard Hiebl¹; Kai S Lehmann¹; Stefan Markus Niehues¹ (1Charité Campus Benjamin Franklin, Germany)

Intravital microscopy to study pancreatic inflammation in type 1 diabetes

Christian Lehmann; Juan Zhou¹; Anna Sczcesniak²; Mel Kelly²; Barna Tugwell³; Nicholas Fisher⁴ (1Department of Anesthesia, Dalhousie University, Halifax, Canada; 2Department of Pharmacology, Dalhousie University, Halifax, Canada; 3Department of Medicine, Dalhousie University, Halifax, Canada; 4Department of Biology, Dalhousie University, Halifax, Canada)

14:45 - 16:30 **F4) Free Communications**

Amphitheatre 57, floor -1

Chairperson(s): **Cláudio Areias Franco**, Portugal | **Nadia Antonova**, Bulgaria

14:45

OC25

New insights into erythrocyte membrane structure and dynamics: the viscoelastic profile

Patrizia Caprari¹, Carlotta Bozzi¹, Roberta Risoluti², Stefano Materazzi², Sara Massimi², Loretta Diana¹

(1Dept. of Haematology, Oncology and Molecular Medicine, Istituto Superiore di Sanità, Rome, Italy; 2Department of Chemistry, "Sapienza" - University of Rome, Italy)

14:55

OC26

Small amplitude oscillation (SAOS) technique to characterize blood of species with different RBC aggregability

Ursula Windberger¹, Johann Huber², René van den Hoven³

(1Department Biomedical Research, Medical University Vienna; 2University Clinic for Ruminants, Veterinary University Vienna, Austria; 3Clinical Unit of Equine Internal Medicine, Veterinary University Vienna, Austria)

15:05

OC27

An image analysis-based technique for locally characterising erythrocyte aggregation in microfluidic applications

Efstathios Kaliviotis¹, Joseph Sherwood², Stavroula Balabani³

(1Cyprus University of Technology; 2Imperial College London; 3University College London)

- 15:15** **OC28**
Comparative study of the influence of glucose on red blood cell aggregation
Alicja Szołna-Chodór¹, Maciej Bosek¹, Bronisław Grzegorzewski¹,
 Nadia Antonova²
(1Department of Biophysics, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University, Bydgoszcz; 2Institute of Mechanics, Bulgarian Academy of Science, Sofia, Bulgaria)
- 15:25** **OC29**
Characterization of red blood cells aggregation in microfluidics environment
 Rym Mehri¹, Catherine Mavriplis¹, Marianne Fenech¹ *(1University of Ottawa)*
- 15:35** **OC30**
Visualized erythrocyte's collapsing and fragmentation in high shear flow
Nobuo Watanabe¹, Takahiro Shimada¹, Masaya Hakozaiki¹
(1Shibaura Institute of Technology)
- 15:45** **OC31**
Blood rheological status during pregnancy
Mantskava Maia¹, Momtselidze Nana¹ *(1Beritashvili Center of Experimental Biomedicine)*
- 15:55** **OC32**
Biphasic responses of RBC function following repeat exposures to short duration, supraphysiological, subhaemolytic shear stress
Antony P. McNamee¹, Jarod T. Horobin¹, Geoff Tansley¹,
 Surendran Sabapathy², Michael J. Simmonds²
(1Griffith University; 2Menzies Health Institute Queensland)
- 16:05** **OC33**
The elasticity of blood
Francois Caton¹, Etienne Ghiringhelli¹, Benoît Polack²
(1Laboratoire Rhéologie et Procédés, Université de Grenoble; 2Hematologie Department, Centre Hospitalier Universitaire de Grenoble)
- 16:15** **OC34**
Erythrocyte interactions – comparison of the aggregation power of polymer molecules used in medicine – not only size does matter
Jovtchev, S.¹, Alexandrov, S.¹, Hristova-Avakumova, N.¹, Miteva, S.¹;
 Traikov, L.¹, Gerasimova, D.¹, Stoeff, S.¹
(1Department Medical Physics and Biophysics, Medical University of Sofia, Bulgaria)
- 16:25** **OC51**
Outcome after autologous fat transplantation for correction of congenital Breast asymmetry
Vanessa Brebant¹; H.-M. Jung²; Lukas Prantl²
(1Center of Plastic-, Hand- and Reconstructive Surgery, University of Regensburg- Caritas Hospital; 2Center of Plastic-, Hand- and Reconstructive Surgery, University of Regensburg, Germany)

- 14:45 - 16:30** **F5 - Free Communications** **Room 6 IFA, floor 0**
Chairperson(s): **Pedro Marques da Silva**, Portugal |
Gerard B. Nash, United Kingdom
- 14:45** **OC37**
Non-adsorbing macromolecules induce adhesion of diabetic red blood cells to the endothelium
Rani Kaliyaperumal¹, Deng Xiopeng¹, Herbert J Meiselman², Song Hao³, Rinkoo Dalan⁴, Melvin Khee Shing Leow⁴, Björn Neu⁵ (1Nanyang Technological University, Singapore; 2University of Southern California, USA; 3Tianjin University, China; 4Tan Tock Seng Hospital, Singapore; 5Rhin-Waal University of Applied Sciences)
- 14:55** **OC38**
An Ex Vivo study of Nitric Oxide efflux from Human Erythrocytes in Both Gender
Catarina Duarte¹, Patrícia Napoleão¹, Teresa Freitas¹, Carlota Saldanha¹ (1Instituto de Bioquímica, Instituto de Medicina Molecular, Faculdade de Medicina, UL)
- 15:05** **OC39**
Clot Quality that it formed in vitro and ex vivo by stored Platelets
Irina Kolesnikova¹, Eugene Roitman² (1FSCC on Pediatric Hematology, Oncology and Immunology; 2Pirogov Russian National Research Medical University)
- 15:15** **OC40**
Cluster of red blood cells in microcapillary flow: hydrodynamic versus macromolecule induced interaction
Viviana Clavería¹, Othmane Aouane², Marine Thiebaud³, Manouk Abkarian⁴, Gwennou Coupier³, Chaouqi Misbah³, Thomas John⁵, Christian Wagner⁶ (1Saarland University, Germany/CBS-Centre de Biochimie Structurale, France; 2Saarland University, Germany/Université Grenoble Alpes, France; 3Université Grenoble Alpes, France; 4CBS-Centre de Biochimie Structurale, CNRS UMR 5048, France; 5Saarland University, France; 6Saarland University, Germany)
- 15:25** **OC41**
Comparative study between microvascular tone regulation and rheological properties of blood in patients with type 2 diabetes mellitus
Nadia Antonova¹, Kirill Tsiberkin², Vasilka Paskova¹, Sergey Podtaev³, Irena Velcheva⁴, Nino Chaushev⁴ (1Dept. Biomechanics, Institute of Mechanics to the Bulgarian Academy of Sciences; 2Perm State University, Perm, Institute of Continuous Media Mechanics UB RAS, Perm, Russia; 3Institute of Continuous Media Mechanics UB RAS, Perm, Russi; 4University Hospital of Neurology and Psychiatry, Sofia, Bulgaria)
- 16:30 - 17:00** **Joint Meeting ISCH & ISB and ESCHM** **Amphitheatre 57. floor -1**
- 19:30 - 22:30** **Conference Dinner** **Museu da Cerveja
(Praça do Comércio,
downtown)**

- 09:30 - 16:15** Exhibition **Foyer, floor -1**
- 09:30 - 10:15** L10) Plenary Lecture Endothelial Phenotypes, Shear Rate and Dyslipidemia: A Continuum to Atherosclerosis **Amphitheatre 58, floor -1**
Pedro Marques Silva¹ (1Consultant of Internal Medicine, Specialist in Clinical Pharmacology; Medicine 4, Centro Hospital de Lisboa Central and NOVA Medical School, Lisbon)
- 10:15 - 10:30** Coffee-Break **Foyer, floor -1**
- 10:30 - 12:15** S13) Symposium Microcirculation, Hemorheological Profile and Inflammation in Metabolic Diseases **Amphitheatre 58, floor -1**
Chairperson(s): **Carlota Saldanha**, Portugal | **Antonio Colantuoni**, Italy
- Oscillations in cutaneous blood flow in hyperglycemic obese patients**
T. Mastantuono¹, G. Nasti¹, M. Di Maro¹, N. Starita¹, L. Battiloro¹, M. Chiurazzi¹, M. Cesarelli², G. D'Addio³, L. Iuppariello², D. Lapi¹, A. Colantuoni¹ (1Dpt of Clinical Medicine and Surgery, "Federico II" University Medical School, Naples, Italy; 2Dpt of Biomedical, Electronics and TLC Engineering, University of Naples, Federico II, Naples, Italy; 3IRCCS S. Maugeri Foundation, Telese, Benevento, Italy)
- Blood viscosity in subjects with normoglycemia and prediabetes**
Agostino Gnasso¹ (1Dipartimento di Medicina Sperimentale e Clinica "G. Salvatore", "Magna Græcia" University, Italy)
- Metabolic syndrome: inflammation and hemorheology**
Rosalia Lo Presti¹, Eugenia Hopps¹, Gregorio Caimi¹ (1University of Palermo, Italy)

10:30 - 12:15 S14) Korea-Russia Joint Symposium: **Amphitheatre 57, floor -1**
Critical Shear Stress of RBC aggregation and disaggregation
 Chairperson(s): **Alexander Priezzhev**, Russia | **Sehyun Shin**, South Korea

Study of platelet-activation and -aggregation with stirrer-induced shear generation

Hoyoon Lee¹, Jung Hun Kim², GyeHyu Kim¹, Sehyun Shin¹ (1Korea University; 2Rheomeditech. Inc.)

Can Critical shear stress (CSS) be an all-round player?: Correlation with yield stress and RBC deformability

Byoung Kwon Lee¹, Minhee Cho¹, Sehyun Shin², Dongwhan Lee³ (1Yonsei University Medical College, Gangnam Severance Hospital; 2Korea University, Department of Mechanical Engineering; 3Chonbuk University, Department of Mechanical Design and Engineering)

Characterization of shear stress preventing red blood cells aggregation at the individual cell level and in whole blood samples

Alexander Priezzhev¹, Kisung Lee², Vladislav Ustinov¹, Sehyun Shin³, Igor Meglinski⁴ (1Lomonosov Moscow State University, Russia; 2University of Oulu, Finland and Lomonosov Moscow State University, Russia; 3Korea University, Korea; 4University of Oulu, Finland)

Effect of platelet activation on disaggregating shear stress in red blood cells aggregation

Seawhan Choi¹, Hoyoon Lee¹, GyeHyu Kim¹, Sehyun Shin¹ (1Korea University)

12:15 - 13:00 L11) Plenary Lecture Atherosclerosis: challenges **Amphitheatre 58, floor -1**
in understanding the pathogenesis through a mathematical modeling approach

Adélia Sequeira¹ (1Department of Mathematics and CEMAT, Instituto Superior Técnico, University of Lisbon, Portugal)

13:00 - 14:00 Lunch-Break **Foyer, floor -1**

14:00 - 14:45 L12) Plenary Lecture Endothelial cell dynamics **Amphitheatre 58, floor -1**
in vessel regression

Cláudio A. Franco¹, Joana Carvalho¹, Catarina Fonseca¹, Miguel Bernabeu² (1Instituto de Medicina Molecular, Faculdade de Medicina Universidade de Lisboa, Lisbon, Portugal; 2Centre for Medical Informatics, Usher Institute, The University of Edinburgh, Edinburgh, United Kingdom)

14:45 - 15:45 **S15) ISCH/ISB Joint Symposium:** **Amphitheatre 58, floor -1**
“The microvascular behaviour of circulating cells”
 Chairperson(s): **Sehyun Shin**, Korea | **Herbert H. Lipowski**, United States of America

**Adhesive behaviour of mesenchymal stem cells from flowing blood:
 implications for intravenous therapy**

Lozan Sherif¹, Asma Alanazi², Hafsa Munir¹, Helen M. McGettrick¹,
 Steve P. Watson¹, **Gerard B. Nash¹** (*1Institute of Cardiovascular Sciences, University of Birmingham, Birmingham, UK; 2King Saud bin Abdulaziz University for Health Sciences, Riyadh, KSA*)

Red blood cell rheology and vascular dysfunction in sickle cell disease

Philippe Connes¹, Marc Romana², Abdelnaby Khalyfa³, Keyne Charlot²,
 Marie-Dominique Hardy-Dessources², Nathalie Lemonne⁴, David Gozal³
 (*1Laboratoire LIBM, Equipe “Biologie Vasculaire et du Globule Rouge”, Université Claude Bernard Lyon; 2UMR Inserm U1134, Université des Antilles et de la Guyane, Pointe-à-Pitre, Guadeloupe, France; 3Section of Pediatric Sleep Medicine, Pritzker School of Medicine, Chicago, USA; 4Unité Transversale de la Drépanocytose, Pointe-à-Pitre, Guadeloupe*)

**The microvascular behaviour of malaria- and babesia-infected red blood
 cells – same pathophysiological endpoint but different molecular
 mechanisms**

Brian M. Cooke¹ (*1Department of Microbiology, Monash University, Victoria 3800, Australia*)

**Inhibition of Shedding of the Endothelial Glycocalyx and Leukocyte
 Adhesion with Low Molecular Weight Heparin**

Herbert H Lipowsky¹, Anne Lescanic¹, Rachna Shah¹ (*1Penn State University*)

14:45 - 15:45 **F6) Free Communications** **Amphitheatre 57, floor -1**
 Chairperson(s): **Mesquita Bastos**, Portugal | **Cláudio Areias Franco**, Portugal

14:45 **OC42**
Theory and practice of coronary blood flow visualization in open heart surgery
Basarab Dmitriy¹, Matsievsky Dmitriy², Basarab Mikhail³, Konnova Natalia³
 (*1St.Ioasaf’s Belgorod Regional Hospital, Belgorod, Russia; 2Research Institute on General Pathology and Pathophysiology, Moscow, Russia; 3Bauman Moscow State Technical University, Moscow, Russia*)

14:55 **OC43**
**Erythrocyte membrane skeleton structure and membrane permeability for
 oxygen in patients with essential arterial hypertension**
Maria Fornal¹, Magdalena Kaczmarek², Franz H. Messerli³, Jozef Korecki²,
 Tomasz Grodzicki¹, Kvetoslava Burda² (*1Jagiellonian University, Collegium Medicum, Krakow, Poland; 2AGH University of Science and Technology, Krakow, Poland; 3Division of Cardiology, Columbia University College of Physicians and Surgeons, New York, USA*)

SCIENTIFIC SUPPORT



SUPPORT



EXHIBITORS



A. MENARINI PORTUGAL

