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
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<th>Scientific Programme</th>
<th>Programme Overview</th>
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<th>Daily Programme</th>
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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,

[Signatures]

Professor Maria Carlota Saldanha  
Chairman of the 18th ESCHM Conference

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
Faculty of Medicine, University of Lisbon
(located behind Santa Maria Hospital main building)
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<th>5 JUNE</th>
<th>SUNDAY</th>
<th>AMPHITHEATRE 58</th>
<th>AMPHITHEATRE 52</th>
<th>AMPHITHEATRE 57</th>
<th>ROOM 6 (IFA building)</th>
<th>FOYER, floor 0</th>
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<tr>
<td>16:00 - 16:30</td>
<td>Opening Ceremony</td>
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<tr>
<td>16:30 - 16:45</td>
<td>Fahraeus Award Ceremony</td>
<td>Tommaso Gori, Germany</td>
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<tr>
<td>16:45 - 18:00</td>
<td>S1 Trends and Advances In Clinical Hemorheology - a tribute to Oguz Baskurt</td>
<td>Jean-Frédéric Brun, France</td>
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<td>18:00 - 18:15</td>
<td>Coffee-Break</td>
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<td>18:15 - 18:45</td>
<td>L1 Biological Evaluation of polymer-based Biomaterials</td>
<td>Steffen Braune, Germany</td>
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<tr>
<td>18:45 - 19:15</td>
<td>Oguz Baskurt Travel Award</td>
<td>Tommaso Gori, Germany</td>
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<tr>
<td>19:15 - 20:00</td>
<td>Musical Performance</td>
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<th>6 JUNE</th>
<th>SUNDAY</th>
<th>AMPHITHEATRE 58</th>
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<th>ROOM 6 (IFA)</th>
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<tr>
<td>08:30 - 09:15</td>
<td>L2 Relationship between viscosity and endothelium function</td>
<td>Tommaso Gori, Germany</td>
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<td>09:15 - 10:00</td>
<td>L3 Evidence-based Hemorheology; does it exists?</td>
<td>António Vaz Carmo, Portugal</td>
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<td>10:00 - 10:30</td>
<td>Coffee-Break</td>
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<td>10:30 - 12:00</td>
<td>S2 Vascular Wall Microenvironments - Impact on Vessel Function</td>
<td>Gerald Meininger, United States of America</td>
<td>S3 Disorders of Erythrocyte Its Genetic Variation and Cardiovascular Risk</td>
<td>Manuel Bicho, Portugal</td>
<td>Paula Faustino, Portugal</td>
<td>S4 Inflammation affecting hemorheology and vasomotor regulation</td>
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<tr>
<td>12:00 - 12:45</td>
<td>L4 Autodigestion In Inflammation: Digestive Enzymes on the Prowl</td>
<td>Geert Schmid-Schonbein, Germany</td>
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<tr>
<td>12:45 - 14:00</td>
<td>Lunch-Break</td>
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<td>14:00 - 14:45</td>
<td>L5 The History of the theory of the circulation of the blood</td>
<td>Michael Rampling, United Kingdom</td>
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<tr>
<td>14:45 - 16:00</td>
<td>S5 Hemorheological and Microvascular Manifestations of Solid Nonmyeloid Malignancies</td>
<td>Irina Titomirov, Russia</td>
<td>S6 Hemorheological Alterations In Hematological Diseases</td>
<td>Gregorio Caími, Italy</td>
<td>Carlota Saldanha, Portugal</td>
<td>F2 Free Communications Carlos Moreira, Portugal</td>
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<tr>
<td>16:00 - 16:30</td>
<td>Coffee-Break</td>
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<tr>
<td>16:30 - 17:15</td>
<td>L6 Hemorheological Parameters In Different Forms of Coronary Heart Disease</td>
<td>Kálmán Toth, Hungary</td>
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**EXHIBITION**
- Poster's Display
- Coffee-Break / Lunch-Break

**Clinical Hemorheology and Microcirculation**
- Editorial Board Meeting
- Poster Session
<table>
<thead>
<tr>
<th>Time</th>
<th>Room 6</th>
<th>Room 57</th>
<th>Room 58</th>
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<tr>
<td>7 JUNE</td>
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<td>09:00 - 09:45</td>
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<td>L7 Apocalypse Now? Challenge of Arterial Disease in the First Quarter of the Century</td>
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<td>Fernandes e Fernandes, Portugal</td>
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<tr>
<td>Coffee-Break</td>
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<td>10:15 - 12:00</td>
<td>S8 4th International MIDAS Microcirculation Meeting: &quot;Microcirculation as target in clinical medicine&quot;</td>
<td>S9 German Society for Clinical Microcirculation and Hemorheology Session: Experimental Microcirculation</td>
<td>S10 Hemorheological Studies in Clinical Medicine</td>
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<td>Vladimir Cerný, Czech Republic</td>
<td>Tommaso Gori, Germany</td>
<td>Norbert Nemeth, Hungary</td>
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<td>Christian Lehmann, Canada</td>
<td>Steffen Braune, Germany</td>
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<td>Dragos Pavlovic, France</td>
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<td>12:00 - 12:45</td>
<td>L8 The Optimum Hematocrit</td>
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<td>Walter Reinhart, Switzerland</td>
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<td>12:45 - 14:00</td>
<td>Lunch-Break</td>
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<td>14:00 - 14:45</td>
<td>L9 Potentialities of Laser Trapping and Manipulation of Blood Cells in Hemorheologic Research</td>
<td>S11 Red Blood Cell Nitric Oxide and Red Blood Cell Rheology</td>
<td>F4 Free Communications</td>
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<tr>
<td>Alexander Priezzhev, Russia</td>
<td>Michael Simmonds, Australia</td>
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<td>Pedro Marques Silva, Portugal</td>
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<td>Philippe Connes, France</td>
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<td>Cláudio Areias Franco, Portugal</td>
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<td>14:45 - 16:30</td>
<td>S12 German Society for Clinical Microcirculation and Hemorheology Session: Clinical Microcirculation</td>
<td>F5 Free Communications</td>
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<td>Christian Lehmann, Canada</td>
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<td>Gerard B. Nash, United Kingdom</td>
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<td>Lukas Prantl, Germany</td>
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<td>16:30 - 17:00</td>
<td>Joint Meeting ISCH &amp; ISB and ESCHM</td>
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<td>Coffee-Break</td>
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<td>8 JUNE</td>
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<tr>
<td>09:30 - 10:15</td>
<td>S10 Endothelial Phenotypes, Shear Rate and Dyslipidemia: A Continuum to Atherosclerosis</td>
<td>S11 Microcirculation, Hemorheological Profile and Inflammation in Metabolic Diseases</td>
<td>S14 Korea-Russia Joint Symposium: Critical Shear Stress of RBC aggregation and disaggregation</td>
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<td>Pedro Marques Silva, Portugal</td>
<td>Carlota Saldanha, Portugal</td>
<td>Alexander Priezzhev, Russia</td>
<td>Sehyun Shin, South Korea</td>
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<td>Coffee-Break</td>
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<td>10:30 - 12:15</td>
<td>L10 Atherosclerosis: challenges in understanding the pathogenesis through a mathematical modelling approach</td>
<td>S12 Atherosclerosis: challenges in understanding the pathogenesis through a mathematical modelling approach</td>
<td>S14 Korea-Russia Joint Symposium: Critical Shear Stress of RBC aggregation and disaggregation</td>
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<td>Adélia Sequeira, Portugal</td>
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<td>Lunch-Break</td>
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<td>13:00 - 14:00</td>
<td>S13 ISCH/ISB Joint Symposium</td>
<td>F6 Free Communications</td>
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<td>The microvascular behaviour of circulating cells</td>
<td>Mesquita Bastos, Portugal</td>
<td>Claudio Areias Franco, Portugal</td>
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<td>Herbert H. Lipowski, United States of America</td>
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<td>14:00 - 14:45</td>
<td>L12 Endothelial cell dynamics in vessel regression</td>
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<td>Claudio Areias Franco, Portugal</td>
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<td>16:15 - 17:00</td>
<td>L13 Regulation of endothelial Recruitment of leukocytes by the local environment</td>
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<td>Gerard B. Nash, United Kingdom</td>
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<td>17:00 - 17:15</td>
<td>Closing remarks</td>
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</table>
16:00 - 16:30  **Opening Ceremony**  
- **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  
- **Marla do Carmo Fonseca**  
President of Centro Académico e Medicina de Lisboa  

Amphitheatre 52, floor 0

16:30 - 17:15  **Fahraeus Award Ceremony**  
Tommaso Gori, Germany  
**Methods In Hemorheology and Clinical Applications**  
Nadia Antonova¹ (Dept. Biomechanics, Institute of mechanics to the Bulgarian Academy of Sciences)

Amphitheatre 52, floor 0

17:15 - 18:00  **SYMPOSIUM TRENDS AND ADVANCES IN CLINICAL HEMORHEOLOGY - a tribute to Oguz Baskurt**  
Chairperson(s): **Jean-Frédéric Brun**, France

- **Seminal contributions of Oguz Baskurt to hemorheology - a personal view**  
Brun JF¹ (INSERM U1046)

- **Red blood cell aggregation - does it matter in the microcirculation?**  
W. H. Reinhart¹, N.Z. Piety², S.S. Shevkoplyas² (Kantonsspital Graubünden, Switzerland; Department of Biomedical Engineering, University of Houston)

Amphitheatre 52, floor 0

18:00 - 18:15  **Coffee-Break**  
Foyer, floor 0

18:15 - 18:45  **Plenary Lecture Biological Evaluation of polymer-based Biomaterials**  
Friedrich Jung¹, Anne Krüger-Genge¹, Steffen Braune¹, Nan Ma¹, Andreas Lendlein² (Institute of Biomaterial Science and Berlin-Brandenburg Centre for Regenerative Therapies (BCRT), Helmholtz Zentrum Geesthacht, Kantstrasse 55, 14513 Teltow, Germany; Institute 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)

Amphitheatre 52, floor 0

18:45 - 19:15  **Oguz Baskurt Travel Award**  
Tommaso Gori, Germany

Amphitheatre 52, floor 0

**Musical Performance**

Foyer, floor 0

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 Gori\textsuperscript{1} (1University of Siena, Italy; Universitätsmedizin der J. Gutenberg Universität, Germany)
09:15 - 10:00  L3) Plenary Lecture Evidence-based hemorheology. Does it exists? Applying evidence from clinical studies to the Individual patient  Amphitheatre 58, floor -1
  António Vaz Carneiro\textsuperscript{1} (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): \textbf{Gerald Meininger}, United States of America
  \textbf{Extracellular Matrix Structure in Small Arteries; Significance of Postnatal Structural Development to Vessel Function}
  Michael A Hill\textsuperscript{1}; Zahra Nourian\textsuperscript{2}; Kwangseok Hong\textsuperscript{1}; I-Lin, Ho\textsuperscript{2}; Luis Martinez-Lemus\textsuperscript{1}; Philip S. Clifford\textsuperscript{3}; Gerald A. Meininger\textsuperscript{1} (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)
  \textbf{Dynamic Vascular Smooth Muscle Cell Behavior Evident In Cell-Extracellular Matrix and Cell-Cell Interactions}
  Gerald Meininger\textsuperscript{1}, Zhe Sun\textsuperscript{1}, Huang Huang\textsuperscript{1}, Michael Hill\textsuperscript{1} (1University of Missouri)
  \textbf{Cell-cell coupling and microvascular function}
  \textbf{Novel targets in treating the microcirculation in obesity}
  David W. Stepp\textsuperscript{1} (1Medical College of Georgia)
10:30 - 12:00  S3) Symposium Disorders of Erythrocyte: Its Genetic Variation and Cardiovascular Risk
Chairperson(s): Manuel Bicho, Portugal | Paula Faustino, Portugal

Amphitheatre 52, floor 0

A Novel Role for Protein Disulfide Isomerase on the Hematological Complications of Sickle Cell Disease
Alicia Rivero1, Brian Mozeleski2, Jose R. Romero2 (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 Ferreira1, Anabela Morais3, Raquel Maia4, Paula Kjöllerström4, João Lavinha5, Paula Faustino6 (1Departamento de Genética Humana, Instituto Nacional de Saúde Dr. Ricardo Jorge, Lisboa; 2Núcleo de Hematologia - Departamento de Pedriatria, Hospital Prof. Deutor Fernando Fonseca, Amadora; 3Departamento de Pedriatria, 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, BioISI, 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
Chairperson(s): Jorge Lima, Portugal | Jean-Frédéric Brun, France

Amphitheatre 57, floor -1

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)

OC2 Moderate Exercise Training Blunts Inflammation in Severe Transgenic Sickle Cell Mice
Emmanuelle CHARRIN1, Solomon OFORI-ACQUAH2, John DUBE3, Philippe CONNES1, Vincent PIALOUX1, Cyril MARTIN1 (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)

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. Skedina3, N. Petrishchev4 (1Institute of Physiology, Medical Faculty, University of Ljubljana, Slovenia; 2SPMinimax Ltd, 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 Eslami³  
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 Lotfian³  
¹Faculty of Sports Sciences, Shahid Beheshti University, Tehran, Iran; ²Shaheed Rajaee 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 Csizsar¹, Katalin Biro¹, Katalin Koltai¹, Dora Praksch¹, Kinga Totsimon¹, Dora Endrei¹, Kalman Toth¹, Gabor Kesmarky¹  
¹11st Department of Medicine, Medical School, University of Pecs
10:30 - 12:00 S4) Symposium Inflammation: affecting hemorheology and vasomotor regulation
Chairperson(s): Ines Drenjančević, Croatia | Eliete Bouskela, Brazil

Platelet aggregation inhibition: Hemorheological aspects
Katalin Koltai1, Gergely Feher2, Barbara Sandor1, Tamás Habon1,
Gábor 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 Bouskela1 (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
Geert Schmid Schoenbein1 (UCSD)

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
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 Tikhomirova\textsuperscript{1}, Elena Petrochenko\textsuperscript{1}, Yulia Malysheva\textsuperscript{1}, Mihail Ryabov\textsuperscript{2}, Nikolay Kislov\textsuperscript{2} (1Yaroslavl State Pedagogical University; 2Yaroslavl Regional Cancer Hospital)

Surgery effect on hemorheological profiles in patients with colon cancer
Yulia Malysheva\textsuperscript{1}, Irina Tikhomirova\textsuperscript{1}, Mihail Ryabov\textsuperscript{2}, Nikolay Kislov\textsuperscript{2} (1Yaroslavl State Pedagogical University; 2Yaroslavl Regional Cancer Hospital)

Hemorheological profile change after chemotherapy: insight into the microrheological change mechanisms
Muravyov Alexei\textsuperscript{1}, Tikhomirova I.A.\textsuperscript{1}, Muravyov A.V.\textsuperscript{1} (1State Pedagogical University)

Role of hemorheological factors in the control of microcirculation in anemic patients with solid cancer
Kislov Nikolay\textsuperscript{1}, Muravyov Alexei\textsuperscript{1}, Tikhomirova Irina\textsuperscript{1}, Peganova Ekaterina\textsuperscript{1}, Petrochenko Elena\textsuperscript{1} (1State Pedagogical University)

OC47

Hemangiomas in infancy – therapeutic options
Peter Ruef\textsuperscript{1} (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 Morandi\textsuperscript{1}, Giovanni Palazzi\textsuperscript{2}, Marco Ballestri\textsuperscript{3}, Francesco Fontana\textsuperscript{3}, Marco Maioli\textsuperscript{4}, Monica Cellini\textsuperscript{2}, Carmen Cano\textsuperscript{5}, Ilaria Mariotti\textsuperscript{2}, Bruno Calabretta\textsuperscript{3}, Lorenzo Lugheretti\textsuperscript{2}, Gianni Cappelli\textsuperscript{2}, Donatella Venturelli\textsuperscript{2} (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 Caprari\textsuperscript{1}, Carlotta Bozzi\textsuperscript{1}, Roberta Risoluti\textsuperscript{2}, Stefano Materazzi\textsuperscript{2}, Laura Maffei\textsuperscript{2}, Francesco Sorrentino\textsuperscript{3} (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 Caimi\textsuperscript{1}, Rosalia Lo Presti\textsuperscript{1} (1University of Palermo, Italy)
14:45 - 16:00  F2) Free Communications  
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 (Interuniversity 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 (Instituto 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 (Instituto 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 (UCIBIO-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 (Pirogov Russian National Research Medical University; 2FSCC on Pediatric Hematology, Oncology and Immunology; 3Samara State Medical University)

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 (INSERM U1046; 2Faculty of Pharmacy)
15:45

**OC16**

**Effect of Oxidized LDL on Erythrocyte Nitric Oxide Metabolism**

Patrícia Napoleão¹, Teresa Freitas², Carlota Saldanha² (Instituto de Medicina Molecular; ²Instituto de Bioquímica, Faculdade de Medicina da Universidade de Lisboa)

14:45 - 16:00

**S7) Symposium Studying the Microcirculatory 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 (Institute of Physiology, Medical Faculty, University of Ljubljana, Slovenia)

16:00 - 16:30

**Coffee-Break**

16:30 - 17:15

**L6) Plenary Lecture Hemorheological Parameters In Different Forms of Coronary Heart Disease**

K. Toth¹, A. Toth², B. Sandor², J. Papp², Zs. Marton², P. Kenyeres², T. Alexy³, G. Kesmarky², L. 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 Editorial Board Meeting**

Amphitheatre 57, floor -1

17:15 - 18:00

**Poster Session**

Chairperson(s): Ellete 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.Joasaf’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 Reinthaler2, 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 Benjami; 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 Sógor2, 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 Velthuizen3, 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 Masahiro3 (1Shibaura Institute of Technology; 2Showa 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 Basralı1 (1Akdeniz University; 2Bezmialem 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 Pishchansky1, 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 mice
Ian Burkovskiy¹, Juan Zhou¹, Christian Lehmann¹ (Dalhousie University)

PO19
Von Willebrand factor - a potential link between microcirculation and the heart
Vintila Ana-Maria¹, Tudorica Cezar Cornel², Vintila Vlad-Damian³, Dumitrescu Silviu⁴ (Carol 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 Pathway
Ozlem Yalcin¹, Elif Ugurel¹, Philippe Connes², Buse Eglenen¹, Gokce Yavas¹, Mine Turkay¹ (Koc 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 rats
Anita Cosic¹, Sanela Unfirer¹, Ivana Jukic¹, Ana Stupin¹, Ines Drenjancevic¹ (Faculty of Medicine Osijek, University Josip Juraj Strossmayer Osijek)

PO22
Blood rheology in women with recurrent/late abortion while receiving intravenous Immunoglobulin
Roland Csorba¹, Peter Darago², Olga Schelkonov³, Georg-Friedrich von Tempelhoff³ (Dept.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 failure
Nesrin Zeynep Ertan¹, Ozlem Yalcin¹, Mukaddes Sinan¹, Semra Bozfakioglu³ (Istanbul 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 Stress
Elif Ugurel¹, Nesrin Zeynep Ertan², Mukaddes Sinan², Semra Bozfakioglu², Ozlem Yalcin¹ (Koc University; Istanbul University)

PO25
The Impact of some manoeuvres on postocclusive reactive hyperaemia in the cutaneous microcirculation
Damjana Srednik¹ (Medical 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 antisedimentaton 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, Patricia Napoleão¹, António Messias², Carlota Saldanha¹ (Instituto 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, Viktória Sogor¹, Ferenc Kiss¹, Eniko Toth¹, Katalin Peto¹, Andrea Furka², István 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, Viktória Sogor¹, Eniko Toth¹, Ferenc Kiss¹, István 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 musculocutaneous 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 sepsis  
Hyewon Yang¹, Juan Zhou¹, Andrew W. Stadnyk¹, Christian Lehmann¹ (Dalhousie University)

PO33  Erythrocyte deformability – a partner of the inflammatory response  
Ana Santos Silva-Herdade¹, Giulia Andolinaº, Caterina Faggioº, Carlota Saldanha¹  
(iMMLisboa, 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 modifications  
Sofia de Oliveira¹, Pierre Boudinot², Angelo Calado¹, Victoriano Mulero³ (Instituto 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 signalling pathway  
Zhengdong Li¹, Xin Xu¹, Weiwei Wang¹, Karl Kratz¹, Nan Ma¹, Andreas Lendlein¹  
(Helmholtz-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 individuals  
Sajad Ahmadizad¹, Zahra Amraei¹, Minoo Bassami² (Faculty 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 rats  
Sajad Ahmadizad¹, Tayebeh Zarekar¹, Minoo Bassami² (Faculty 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 another  
Teległów A.¹, Marchewka J.¹, Marchewka A.¹, Głodzik J.¹ (University 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 MIRCERA  
Varlet-Marie E¹, Joré C¹, Brun JF²  
(Faculty 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 Cornel⁵ (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 Cornel², 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 Soltesz¹ (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 Kontoul¹, 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
José Fernandes e Fernandes¹ (Director of the University Clinic of Vascular Surgery of HSM-CHLN, EPE, Cathedratic 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
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 Jung3, Reinhard Kopp1, Karin Pfister1
(1Universitätsklinikum Regensburg, Abteilung für Gefäßchirurgie; 2Universitätsklinikum Regensburg, Institut für Röntgendiagnostik)

Effect of radiographic contrast media on renal perfusion: first results
(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 Lendlein³; Friedrich Jung¹ (¹Institute of Biomaterial Science and Berlin-Brandenburg Centre for Regenerative Therapies (BCRT), Helmholtz Zentrum Geesthacht, Kantstrasse 55, 14513 Teltow, Germany; 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)

Blood-derived angiogenic cells (BDACs) resemble a hematopoietic pericyte population and are a promising candidate for therapeutic angiogenesis
Anna Blocki¹; 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 Bioimaging 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

Chairperson(s): Gabor Kesmarky, 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 Kesmarky1, 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 Kesmarky2, Eszter Szabados2, Daniel Kehl3, Istvan Juricskay2, Kalman Toth2, Laszlo Czop1

(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 Kesmarky1, Katalin Biro1, Beata Csizsar1, 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): Luís 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 Yıldız1, 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


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 JF1, 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. Mendez2, D. Fedosov1, J.-M. Fromental1, V. Claveria1, F. Nicoud1, G. Gompper1, 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 Kebaili3, Cécile Renard3, Arthur Dony3, Giovanna Cannas4, Cyril Martin2, Vincent Pialoux2, Philippe Connes2  
(1UFR Pathologie Moléculaire du globule rouge - Hôpital Edouard Herriot - Hospices civils de Lyon; 2Laboratoire LIBM, Équipe “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 and Red Blood Cell Rheology  
Chairperson(s): Michael Simmonds, Australia | Philippe Connes, France  
Amphitheatre 58, floor -1  
Physiological role of erythrocyte nitric oxide  
Carlota Saldanha1  
(1IMMFMUL)

RBC-NOS dependent NO production during RBC aging In healthy volunteers and type 2 diabetic patients  
Marijke Grau1, Daniel A. Bizjak1, Sabrina Bischof6, 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 under hypoxic conditions
Pinar Ulker1, Filiz Gunduz1, Herbert J. Meiselman2 (1Akdeniz University; 2Department of Physiology and Biophysics, Keck School of Medicine, University of Southern California)
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 (Institute 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 (Charité Campus Benjamin Franklin, Germany)

Intravital microscopy to study pancreatic inflammation in type 1 diabetes
Christian Lehmann1; Juan Zhou1; Anna Szczesniak1; Mel Kelly2; Barna Tugwell3; Nicholas Fisher4 (Department 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 (Dept. 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 (Department 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 (Cyprus 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 Szolna-Chodor, Maciej Bosek, Bronislaw Grzegorzewski, Nadia Antonova
(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 Mehri, Catherine Mavriplis, Marianne Fenech (University of Ottawa)

15:35 OC30
Visualized erythrocyte's collapsing and fragmentation in high shear flow
Nobuo Watanabe, Takahiro Shimada, Masaya Hakozaki
(Ishibaura Institute of Technology)

15:45 OC31
Blood rheological status during pregnancy
Mantskava Maia, Momtselidze Nana (Beritashvili Center of Experimental Biomedicine)

15:55 OC32
Biphasic responses of RBC function following repeat exposures to short duration, supraphysiological, subhaemolytic shear stress
Antony P. McNamee, Jarod T. Horobin, Geoff Tansley, Surendran Sabapathy, Michael J. Simmonds
(1Griffith University; 2Menzies Health Institute Queensland)

16:05 OC33
The elasticity of blood
Francois Caton, Etienne Ghiringhelli, Benoit Polack
(Laboratoire 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
(1Department Medical Physics and Biophysics, Medical University of Sofia, Bulgaria)

16:25 OC35
Outcome after autologous fat transplantation for correction of congenital Breast asymmetry
Vanessa Brebant, H.-M. Jung, Lukas Prantl
(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; ⁵Rhine-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  
¹IFSCC 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 Podtayev³, 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, Russia; 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 (Praca do Comercio, 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 Gracia” 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: 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 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

14:00 - 14:45  L12) Plenary Lecture Endothelial cell dynamics 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: "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 Sherif, Asma Alanazi, Hafsa Munir, Helen M. McGettrick,
Steve P. Watson, Gerard B. Nash (Institute of Cardiovascular Sciences, University of Birmingham, Birmingham, UK; King Saud bin Abdulaziz University for Health Sciences, Riyadh, KSA)

Red blood cell rheology and vascular dysfunction in sickle cell disease
Philippe Connes, Marc Romana, Abdelnaby Khalyfa, Keyne Charlot,
Marie-Dominique Hardy-Dessources, Nathalie Lemonne, David Gozal
(Laboratoire LIBM, Equipe “Biologie Vasculaire et du Globule Rouge”, Université Claude Bernard Lyon; UMR Inserm U1134, Université des Antilles et de la Guyane, Pointe-à-Pitre, Guadeloupe, France; Section of Pediatric Sleep Medicine, Pritzker School of Medicine, Chicago, USA; Unité 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. Cooke (Department of Microbiology, Monash University, Victoria 3800, Australia)

Inhibition of Shedding of the Endothelial Glycocalyx and Leukocyte Adhesion with Low Molecular Weight Heparin
Herbert H Lipowsky, Anne Lescan, Rachna Shah (Penn State University)

14:45 - 15:45  F6) Free Communications
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 Dmitriy, Matsievsky Dmitriy, Basarab Mikhail, Konnova Natalia
(St. Ioasaf’s Belgorod Regional Hospital, Belgorod, Russia; Research Institute on General Pathology and Pathophysiology, Moscow, Russia; Bauman 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 Fornal, Magdalena Kaczmarska, Franz H. Messerli, Jozef Koreck, Tomasz Grodzicki, Kvetoslava Burda (Jagiellonian University, Collegium Medicum, Krakow, Poland; AGH University of Science and Technology, Krakow, Poland; Division of Cardiology, Columbia University College of Physicians and Surgeons, New York, USA)
15:05  OC44  
Relation between increased plasma viscosity and increased the body mass index (BMI) in hypertensive patients  
Carlos Santos Moreira¹, Paula Alcantara¹, Vitor Ramalhinho¹, Carlota Saldanha², J Martins e Silva², J Braz Nogueira¹ (1Cadeira de Medicina I/Faculdade de Medicina de Lisboa, Serviço de Medicina I - CAML; 2Instituto de Medicina Molecular, Faculdade de Medicina - Universidade de Lisboa, Unidade Biologia)  

15:15  OC45  
Role of Red Blood Cells In vascular dysfunction-associated with Alzheimer’s Disease  
Francesco Misiti¹, Cristiana Carelli-Alinovi², Marco Girasole³, Simone Dinarelli⁴ (1University of Cassino and Southern Lazio, Cassino, Italy; 2Biochemistry and Clinical Biochemistry Inst., Catholic University, School of Medicine, Rome; 3Istituto di Struttura della Materia (ISM), CNR, Rome; 4Istituto di Struttura della Materia (ISM), CNR, Rome, Italy)  

15:25  OC46  
Dependence of rheological and biochemical parameters of blood in the group of patients with clinically silent multifocal vascular cerebral lesions  
Piotr Kowal¹, Izabela Siemieniak², Anna Marcinkowska-Gapińska² (1Department of Neurology Karol Marcinkowski University of Medical Sciences in Poznań; 2Rheological Laboratory, Department of Neurology, Karol Marcinkowski University of Medical Sciences)  

15:45 - 16:15  Coffee-Break  
Foyer, floor -1  

16:15 - 17:00  L13) Plenary Lecture Regulation of endothelial recruitment of leukocytes by the local environment  
Amphitheatre 58, floor -1  
Gerard B. Nash (Institute of Cardiovascular Sciences, University of Birmingham, Birmingham B15 2TT, UK)  

17:00 - 17:15  Closing Remarks  
• Marla Carlota Saldanha  
Chairman of the 18th ESCHM Conference  
• José Braz Nogueira  
Co-chairman of the 18th ESCHM Conference  
Amphitheatre 58, floor -1