

UK-Russia Workshop

Extracellular vesicles-mechanisms of biogenesis and roles in disease pathogenesis

1–5, March 2015



Funded by

Russian Foundation of Basic Research and British Council

Organizing committee

Co-chairs:

Prof. Vsevolod Tkachuk

Dr. Alexander Kapustin

Prof. Vladimir Shirinsky

Prof. Ian Sargent

Prof. Yelena Parfyonova

Prof. Caterine Shanahan

Igor Isaakov

Venue

Lomonosov Moscow State University

3rd floor, Medical Centre

Address: Lomonosovsky prospect, 27, b.10

<http://www.msu.ru/info/map/med.html>

Day 1. 1st of March, Sunday

Arrival

Day 2. 2nd of March, Monday

9.00–14.00 Registration

9.30–9.45 Welcome talk. Prof. V. Tkachuk

Session 1. Extracellular vesicles in cardiovascular pathologies

Chairs: Dr. S. Davidson, Prof. Y. Parfyonova

9.45–10.15 Prof C. Shanahan
The role of EV in biomineralization

10.15–10.45 S. Davidson
Extracellular vesicles in CVD and cardioprotection

10.45–11.15 Prof M. Heck
Invadolysin – an odyssey from chromosomes
to lipid droplets to serum protease

11.15–11.30 L. Ayers
Link between microvesicles and cardiac stress

11.30–12.00 Morning tea

12.00–12.20 X. Li
Inflammasome and sterile inflammation

12.20–12.40 A. Kapustin
Role of cytoskeleton in exosomes secretion

12.40–12.55 E. Ferrer
Transportation of TCTP via exosomes contributes to the
pathology of pulmonary arterial hypertension

12.55–13.05 M. Balatskaya

Identification of glycosyl phosphatidylinositol-anchored protein T-cadherin on human platelet-derived extracellular vesicles

13.05–13.15 I. Bogachev

Exosomes and microvesicles in plasma during experimental endothelial dysfunction

13.15–14.00 Lunch

Session 2. Extracellular vesicles in oncology

Chair: Prof. D. Zorov

14.00–14.20 V. Aushev

Studying extracellular vesicles produced by tumor cells in vitro and in vivo

14.20–14.40 S. Tamkovich

Cell-surface-bound exosomes in blood of healthy females and breast cancer patients: features of circulation and diagnostic potential

14.40–15.00 N. Yunusova

Exosomes, proteases and proteins associated with cellular motility in ovarian cancer metastasis

16.00 Visiting the Red Square: The Kremlin Armoury

Day 3. 3rd of March, Tuesday

Session 3. Extracellular vesicles in tissue regeneration.

Chairs: Prof. V. Tkachuk, Dr. S. Skaalure

9.30–10.00 N. Iraci

Extracellular vesicles secreted by neural stem cells as a novel mechanism of cell-to-cell communication

10.00–10.30 Prof. V. Shirinsky

TBC

10.30–11.00 Prof D. Zorov

**Mitochondria in intercellular communication:
to kill, to heal and to rejuvenate**

11.00–11.20 S. Skaalure

**Extracellular vesicles as tools for effective drug
delivery and directing cellular differentiation**

11.20–11.40 N. Kalinina

Extracellular vesicles and paracrine activity of mesenchymal stromal cells

11.40–12.10 Morning tea

Session 4. Extracellular vesicles in immunology and pathogens

Chairs: Prof. V. Shirinsky, Dr. L. Smyth

12.10–12.40 L. Smyth

Activating and suppressive effects of exosomes in immune response

12.40–13.05 R. E. Crossland

Role of exosomes in graft versus host disease

13.05–13.20 I. Kudryakova

**The study of biogenesis features of outer membrane
vesicles produced by *Lysobacter* sp. XL1**

13.20–13.35 D. Ross

**Two types of extracellular vesicles released by Gram-
negative and Gram-positive bacteria**

13.35–14.15 Lunch

Session 5. Extracellular vesicles in systemic disorders and nephrology

Chairs: Dr. R. Dragovic, Dr. Tannia Gracia Bustos

14.15–14.45 R. Dragovic

Phenotyping EV in normal pregnancy and pre-eclampsia

14.45–15.05 W. Oosthuyzen/E. Morrison
Extracellular vesicle signalling in the kidney

15.05–15.25 T. Gracia Bustos
Study of the functionality of urinary exosomes

15.25–15.45 N. Abbasian
**Hyperphosphataemia signalling and pro-coagulant
microparticle release in human vascular endothelial cells**

16.30 Visiting Lomonosov MSU Main building museum

Day 4. 4th of March, Wednesday

Session 6. Modern technologies to study extracellular vesicles

Chairs: Dr. S. Bertazzo, Dr. I. C. Pintre

9.30–10.00 S. Bertazzo
**Bio-medical physical science: Novel approaches to
detect microparticles in biological samples**

10.00–10.20 E. Khomyakova
**Exosomes isolation: how to improve the resolution of the vesicles
by size. Rate zonal centrifugation vs. differential centrifugation**

10.20–10.50 D. Ter-Ovanesyan
Characterization of the RNA repertoire in extracellular vesicles

10.50–11.10 V. Burdakov
**Isolation and proteomic analysis of exosomes
secreted by human cells in vitro**

11.10–11.40 Morning tea

11.40–12.00 E. Evtushenko
**Nanoparticle Tracking Analysis: theory, applications
for exosomes research & tips and tricks**

12.00–12.20 I. C. Pintre
Magnetic nanoparticles for drug delivery, smart biomaterials and other applications

12.20–12.40 J. Welsh
Flow cytometry detection of extracellular vesicles: limitations and advances

12.40–12.50 K. Zotov
Cell invitation and photodynamic quality mixed micelles of lipophilic derivatives of natural chlorins with phospholipids in MCF-7

12.50–13.40 Lunch

Session 7. Early career development

Chairs: Prof. M. Heck, Dr D. Akhaev

13.40–14.10 Prof. M. Heck
Journey from postdoc to professor

14.10–14.40 Prof. V. Tkachuk
Science career in Russia

14.40–15.10 C. Shanahan
Women in Science and UK Careers

15.10–15.30 British Council representative
Collaboration funding opportunities

15.30–15.50 D. Akhaev
Start ups in Russia

16.30 Conference Dinner

Day 5. 5th of March, Thursday

Satellite event

Departure

Dr. Nima Abbasian

Post Doctoral Research Associate
University of Leicester
Leicester, UK
na174@le.ac.uk

Dr. Irina Alchinova

Leading researcher
Institute of general pathology and pathophysiology
Moscow, Russia
alchinovairina@yandex.ru

Dr. Vassiliy Aushev

Senior scientist
N.N. Blokhin Russian Cancer Research Center
Moscow, Russia
vaushev@gmail.com

Mrs. Maria Balatskaya

Research scientist
Lomonosov Moscow State University
Moscow, Russia
mozgovaya.mariya@gmail.com

Dr. Maxim Belenikin

Leading researcher
Pirogov Russian National Medical University
Moscow, Russia
genetics.npcmpd@gmail.com

Dr. Sergio Bertazzo

Junior Research Fellow,
Imperial College London
London, UK
sbertazzo@gmail.com

Ms. Polina Bobyleva

PhD student
Institute of Biomedical Problems
Moscow, Russia
blastoblast@gmail.com

Mr. Ilya Bogachev

PhD Student
Belgorod National Research University
Belgorod, Russia
Bogachev91@yandex.com

Dr. Vladimir Burdakov

Junior scientist
Petersburg Nuclear Physics Institute
St. Petersburg, Russia
Burdakov_vs@mail.ru

Dr. Elena Khomyakova

Senior scientist
Research Institute of Physical Chemical Medicine
Moscow, Russia
Khomya@yahoo.com

Dr. Rachel Crossland

Research Associate
Newcastle University
Newcastle upon Tyne, UK
rachel.crossland@newcastle.ac.uk

Dr. Sean Davidson

Senior Research Fellow
Hatter Cardiovascular Institute, UCL
London, UK
s.davidson@ucl.ac.uk

Dr. Rebecca Dragovic

Departmental Flow Cytometer Operator/Postdoctoral Researcher.
John Radcliffe Hospital
Oxford, UK

Dr. Elisabet Ferrer

Research Associate
Addenbrooke's Hospital
Cambridge, CB20QQ, UK
ef323@medschl.cam.ac.uk

Ms. Alina Gordeeva

Research fellow
Institute of cellular biophysics
Pushchino, Russia
gordeeva1310@yandex.ru

Dr. Alexandra Gornostaeva

Research fellow
Institute of Biomedical Problems
Moscow, Russia
hindlll@yandex.ru

Dr. Tannia Gracia Busto

Research Associate
Cambridge Institute for Medical Research
University of Cambridge,
Cambridge, UK
trg28@cam.ac.uk

Mr. Oleg Gradov

Junior research fellow
INEPCP RAS
Zhukovsky, Russia
o.v.gradov@gmail.com

Prof. Margarete MS Heck

Professor of Cell Biology and Genetics
Director, School of Clinical Sciences Postgraduate Studies
University of Edinburgh
Queen's Medical Research Institute
Centre for Cardiovascular Science
Edinburgh, UK
margarete.heck@ed.ac.uk

Dr. Nunzio Iraci

Research Associate
University of Cambridge
Cambridge, UK
ni238@cam.ac.uk
<http://www.pluchinolab.org>

Dr. Natalia Kalinina

Leading research fellow
Lomonosov Moscow State University
Moscow, Russia
n_i_kalinina@mail.ru

Dr. Alexander Kapustin

Senior Research Associate
King's College London
London, UK
Alexander.kapustin@kcl.ac.uk

Ms. Irina Kudryakova

Junior research fellow
Pushchino, Russia
G.K. Skryabin Institute of biochemistry and physiology of microorganisms
kudryakovairina@yandex.ru

Dr. Xuan Li

Research Fellow
University of Cambridge
Cambridge UK
xl315@cam.ac.uk

Ms. Yulia Malysheva

PhD student
Yaroslavl State Pedagogical University named after K. D. Ushinsky
Yaroslavl, Russia
yulichkina@mail.ru

Dr. Alina Martynova

Associate professor
Pacific State Medical University
Vladivostok, Russia
clinmicro@yandex.ru

Dr. Elena Maslova

Moscow, Russia
Institute of Biomedical Problems
Research fellow
evmaslova@mail.ru

Dr. Arif Mekhtiev

Moscow, Russia
Institute of biomedical chemistry
Senior research fellow
marif@yandex.ru

Dr. Emma Morrison

Clinical Research Fellow
QMRI/University of Edinburgh
Edinburgh, UK
e.e.morrison@sms.ed.ac.uk

Ms. Wilna Oosthuyzen

PhD Student
University of Edinburgh
Edinburgh, UK
wilna.oosthuyzen@gmail.com

Dr. Anna Oslyakova

Head of laboratory
Yaroslavl, Russia
Yaroslavl State Pedagogical University named after K. D. Ushinsky
a.oslyakova@yandex.ru

Prof. Yelena Parfyonova

Head of laboratory
Cardiology Research Complex
Moscow, Russia
yeparfyon@cardio.ru

Dr. Nikolay Petrov

Research Fellow
Institute of Cytology
St. Petersburg, Russia
mickola@inbox.ru

Dr. Inmaculada C. Pintre

Marie Curie Postdoctoral researcher,
University of Manchester
Manchester, UK
inmaculada.pintre@manchester.ac.uk

Ms. Daria Ross

PhD student

Pushchino, Russia

G.K. Skryabin Institute of biochemistry and physiology of microorganisms

D_ross@ibpm.pushchino.ru

Prof. Ian Sargent

Professor of Reproductive Science

John Radcliffe Hospital

Oxford, UK

ian.sargent@obs-gyn.ox.ac.uk

Prof. Catherine Shanahan

Professor of Cell Signalling at King's College London

James Black Centre,

London, UK

cathy.shanahan@kcl.ac.uk

Prof. Vladimir Shirinsky

Moscow, Russia

Cardiology Research Complex

Director of Experimental Cardiology Insitute

shirinsky@cardio.ru

Dr. Stacey Skaalure

Postdoctoral Researcher

Imperial College London,

London, UK

s.skaalure@imperial.ac.uk

Dr. Lisa Ayers

Clinical Scientist

Oxford University

Oxford, UK

lisa.ayers@nhs.net

Dr. Lesley Smyth

Research Fellow

MRC Centre For Transplantation

London, UK

lesley.smyth@kcl.ac.uk

Dr. Svetlana Tamkovich

Associate professor
Institute of chemical biology and fundamental medicine
Novosibirsk, Russia
s.tamk@niboch.nsc.ru

Dr. Elena Tchevkina

Senior researcher
N.N. Blokhin Russian Cancer Research Center
Moscow, Russia
tchevkina@mail.ru

Mr. Dima Ter-Ovanesyan

PhD student
Wyss Institute CSLB 528/9B
Boston, USA
dterovanesyan@fas.harvard.edu

Dr. Irina Tikhomirova

Head of the department
Yaroslavl State Pedagogical University named after K. D. Ushinsky
Yaroslavl, Russia
tikhom-irina@yandex.ru

Prof. Vsevolod Tkachuk

Moscow, Russia
Lomonosov Moscow State University
Dean of Faculty of Medicine
tkachuk@fbm.msu.ru

Dr. Ekaterina Trifonova

Senior research fellow
Lomonosov Moscow State University
Moscow, Russia
trifonova@mail.bio.msu.ru

Dr. Olga Udartseva

Research fellow
Institute of Biomedical Problems
Moscow, Russia
Olja_udartseva@rambler.ru

Dr. Vladimir Vakhrushev

Senior research fellow
V.N. Orekhovich Institute of biomedical chemistry
Moscow, Russia
vakhrunya@gmail.com

Dr. Anastasia Volkova

Research fellow
Pushchino, Russia
Institute of cellular biophysics
Agvolkova33@gmail.com

Mr. Joshua Welsh

PhD Student
Institute of Developmental Science, Southampton General Hospital
Southampton, UK
jw10g13@soton.ac.uk

Dr. Natalia Yunusova

Leading research fellow
Tomsk Cancer Research Institute
Tomsk, Russia
BochkarevaNV@oncology.tomsk.ru

Prof. Dmitry Zorov

Head of laboratory
Lomonosov Moscow State University
Moscow, Russia

Dr. Konstantin Zotov

Senior research fellow
Institute of biomedical chemistry
Moscow, Russia
Kirill.V.Zotov@gmail.com

