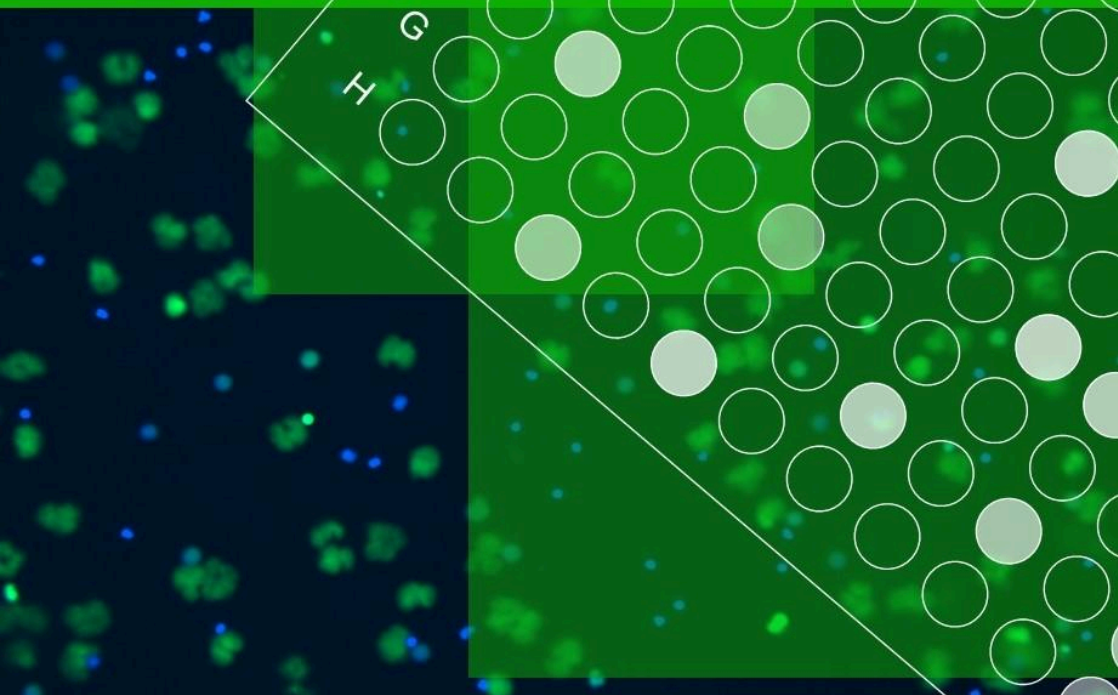
INSTITUTE OF MOLECULAR BIOMEDICINE

Annual report 2023



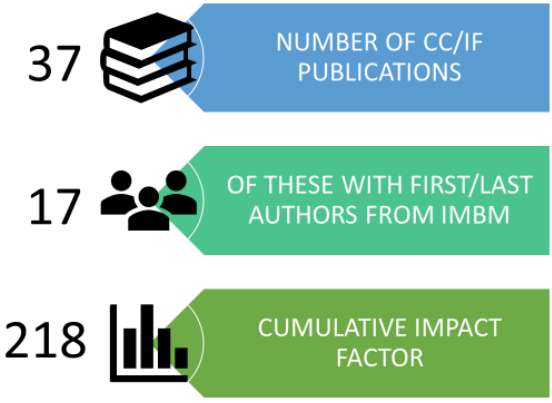
IMBM 2023

1 research institute
14 years
1 professor
6 associate professors
6 postdocs
18 PhD students
20 diploma thesis students
11 bachelor students
1 HORIZON EUROPE grant
6 APVV grants
6 VEGA grants
5 UK grants
37 CC/IF publications

IMBM
INSTITUTE OF MOLECULAR BIOMEDICINE

SCIENTOMETRIC DATA, YEAR 2023

NUMBER OF CC/IF PUBLICATIONS: 37
OF THESE WITH FIRST/LAST AUTHORS FROM IMBM: 17
CUMULATIVE IF: 218



THE YEAR 2023 AT IMBM
THE VIEW OF THE HEAD OF THE INSTITUTE

The year 2023 was, as always, full of events for IMBM. Two of our doctoral students successfully defended their dissertations, while one of them continues as a postdoctoral fellow and laboratory manager. We welcomed three new PhD students. Our colleague Michal Pastorek managed to get the prestigious Horizon Europe international grant, which opens up new horizons for us and moves us closer to the best European scientific workplaces. We published 37 scientific articles that push the boundaries of knowledge in the given fields. Even if indirectly, we thus contribute to the improvement of patients' lives, which is one of our main goals.

We have a new head of the institute. This change is rather evolutionary and does not represent a fundamental turning point in research and teaching direction. The vision for the next few years is to place our workplace in the company of the best and to become kind of reference center for research within our faculty, university and possibly the country.

We also experienced losses. We temporarily parted ways with a long-time colleague and one of our key members and personalities - Ľubomíra Tóthová. Fortunately, our cooperation continues, albeit to a limited extent. However, Michal Behuliak - one of the founding members - left us forever. Without his contribution, our institute would look completely different or would not exist. His legacy lives on in our hearts and laboratories.

IMBM is an exceptional project that combines hard work, decency, creativity and friendship. It is an honor for me to be a part of it. I believe that we will be able to preserve and develop this spirit in the future.

Roman Gardlík

RESEARCHERS AT IMBM

PROFESSORS:

PETER BOOR, prof., MD, PhD
CC/IF publications - 381, SCI citations - 8878, h-index - 56
renal fibrosis, nephropathology, immunopathomechanisms, models of renal diseases, imaging
boor.peter@gmail.com
pboor@ukaachen.de

PETER CELEC, assoc. prof., MD, MSc, Ing, DrSc, MPH
CC/IF publications - 341, SCI citations - 4795, h-index - 37
extracellular DNA, testosterone, salivary biomarkers, sepsis
peter.celec@imbm.sk

JÚLIUS HODOSY, assoc. prof., MD, MSc, PhD, MPH
CC/IF publications - 103, SCI citations - 1771, h-index - 25
sex steroids, oxidative stress, sepsis, sleep apnea syndrome, traumatic brain injury
julius.hodosy@imbm.sk

KATARÍNA ŠEBEKOVÁ, assoc. prof., MD, DrSc
CC/IF publications - 193, SCI citations - 3673, h-index - 34
metabolic syndrome, diabetes mellitus,
advanced glycation end products, clinical biochemistry, pathogenesis of renal diseases
katarina.sebekova@imbm.sk

ROMAN GARDLÍK, assoc.prof., MD, MSc, PhD
CC/IF publications - 86, SCI citations - 1088, h-index - 19
inflammatory bowel disease, animal models,
extracellular DNA, microbiome
roman.gardlik@imbm.sk

ĽUBOMÍRA TÓTHOVÁ, assoc.prof., PhD
CC/IF publications - 108, SCI citations - 1747, h-index - 22
salivary markers, oxidative stress, urinary tract infections,
experimental nephrology , bacteriophages
lubomira.tothova@imbm.sk

BARBORA VLKOVÁ, assoc. prof., MSc, PhD
CC/IF publications - 79, SCI citations - 1099, h-index - 15
extracellular DNA, non-invasive prenatal diagnostics,
neutrophils, pneumonia, sepsis, molecular pathology
barbora.vlkova@imbm.sk

POSTDOCS:

JANKA BÁBÍČKOVÁ, MSc, PhD
CC/IF publications - 49, SCI citations - 874, h-index - 16
phage display, sex steroids, inflammatory bowel disease,
extracellular DNA, experimental nephrology
jana.babickova@gmail.com

MICHAL PASTOREK, MSc, PhD
CC/IF publications - 43, SCI citations - 383, h-index - 13
Neutrophil biology, sterile inflammation, autoimmune diseases
michal.pastorek@imbm.sk

VERONIKA BORBÉLYOVÁ, MSc, PhD
CC/IF publications - 39, SCI citations - 247, h-index - 10
animal models, autism spectrum disorder, metabolic syndrome, rheumatoid arthritis, sex hormones
veronika.borbelyova@imbm.sk

BARBORA KONEČNÁ, MSc, PhD
CC/IF publications - 41, SCI citations - 401, h-index - 11
extracellular DNA, extracellular vesicles,
pregnancy complications, quantitative real-time PCR
barbora.konecna@imbm.sk

EMESE RENCZÉS, MSc, PhD
CC/IF publications - 30, SCI citations - 232, h-index - 9
sex hormones, behavioral phenotyping in rats and mice,
mental disorders, autism
emese.domonkos@imbm.sk

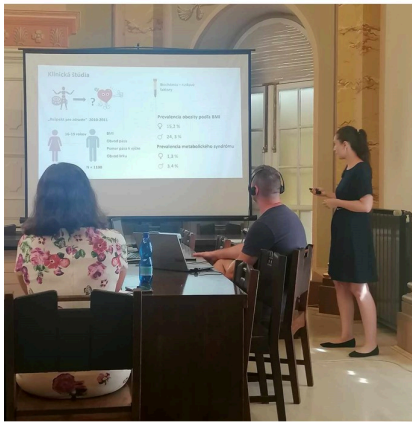
ĽUBICA JANOVIČOVÁ, MSc, PhD
CC/IF publications - 22, SCI citations - 101, h-index - 5
extracellular DNA, DNase activity, sepsis, anemia, animal models
lubica.janovicova@imbm.sk

Students at IMBM

PHD STUDENTS AT IMBM IN 2023:
Katarína Kmeťová, MSc.
Lucia Mihalovičová, MSc.
Alena Potočárová, DVM
Jakub Janko, MSc.
Kristína Macáková, MSc.
Nadja Šupčíková, MSc.
Jakub Szabó, MA.
Monika Janíková, MSc.
Barbora Gromová, MSc.
Kristína Lichá, MSc.
Paulína Belvončíková, MSc.
Emil Bečka, MSc.
Petronela Sušienková, M.A.
Andrej Feješ, MSc.
Nikola Kováčová MSc.
Tomáš Strečanský MSc.
Nikola Tóthová MSc.
Letícia Hudecová MSc.

MASTER STUDENTS AT IMBM IN 2023:
Viktória Godová, BSc.
Karin Gabľasová, BSc.
Anna Purgatová BSc.
Dominika Monika Koritková, BA.
Bernhard Schuh
Tim Gross
Šimon Pethö
Marwin Shir
Zuzana Matulová
Nikola Dudová
Alžbeta Jančovičová, BSc.
Lucia Mosná, BSc.

Alexandra Hladíková BSc.
Ema Cibulová BSc.
Dominika Zabáková BSc.
Karolina Gubišová BSc.
Karolína Kováčová BSc.
Gabriela Forraiová BSc.
Tetiana Pidlypska BSc.
Jázmin Orsolya Takácsová BSc.



BACHELOR STUDENTS AT IMBM IN 2023:
Patrik Hains
Rebecca Horváthová.
Tetiana Pidlypska
Barbora Benčičová
Sára Klimentová
Dominika Kytková
Daniela Ščepková
Katarína Purdjaková
Tomáš Niedl
Monika Jankechová
Nelia Korotushak

PhD STUDENTS WHO SUCCESSFULLY DEFENDED THEIR THESIS IN 2023:
Jakub Janko, MSc.
Lucia Mihalovičová, MSc.

MASTER STUDENTS WHO SUCCESSFULLY DEFENDED THEIR THESES IN 2023:
Šimon Pethö
Karolína Kováčová BSc.
Viktória Godová, BSc.
Karin Gabľasová, BSc.

Anna Purgatová, BSc.
Tomáš Strečanský, BSc.
Dominika Zabáková, BSc.
Ema Cibulová, BSc.
Letícia Hudecová, BSc.
Michaela Kardohelyová, BSc.
Alžbeta Jančovičová, BSc.
Lucia Mosná, BSc.

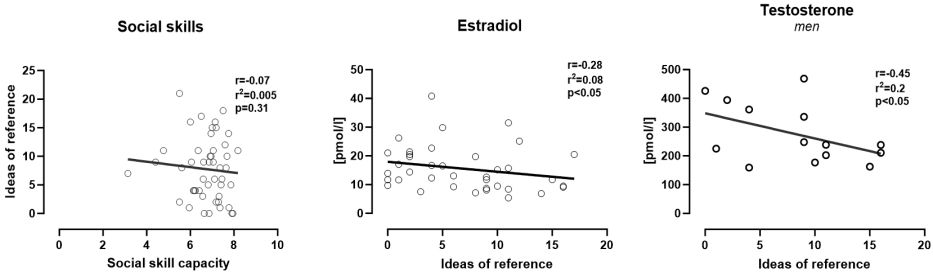
BACHELOR STUDENTS WHO SUCCESSFULLY DEFENDED THEIR THESES IN 2023:
Patrik Hains, BSc.
Tomáš Neidl, BSc.
Katarína Purdjaková, BSc.
Monika Jankechová, BSc.
Daniela Ščepková, BSc.
Dominika Kytková, BSc.
Barbora Benčičová, BSc.
Rebecca Horváthová, BSc.
Tetiana Pidlypska, BSc.
Sára Klimentová, BSc.
Jázmin Orsolya Takácsová, BSc.

OTHER COLLEAGUES:
Secretary: Henrieta Vontorčíková, Eva Cibáková, BSc.
Lab manager: Jakub Janko, MSc., PhD
Laboratory technicians: Ingrid Simonová, Stanislava Sochová, MSc., Mária Moyzesová, Hanna Fedorets, Bibiana Bujačková, MSc., Emma Skybová, M.A., Dominik Peter Hracho, BSc.
Animal technicians: Mária Turoňová, Barnabáš Borbély

STEROID HORMONES AND SOCIAL SKILLS IN CONTEXT OF PARANOIA IN NON-CLINICAL POPULATION

What's new?

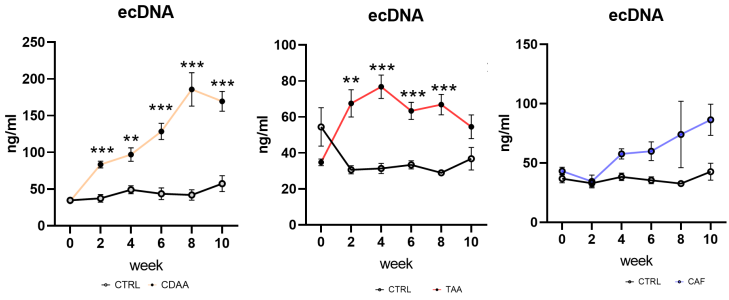
- No connection of non-clinical paranoia and social skill capacity in the general population of young adults.
- Potential protective role of estradiol on non-clinical paranoia in the general population of young adults.
- Lower testosterone concentration was associated with higher non-clinical paranoia in young men.



THE DYNAMICS OF EXTRACELLULAR DNA AND NEUTROPHIL EXTRACELLULAR TRAPS FORMATION IN VARIOUS MOUSE MODELS OF NAFLD/NASH

What's new?

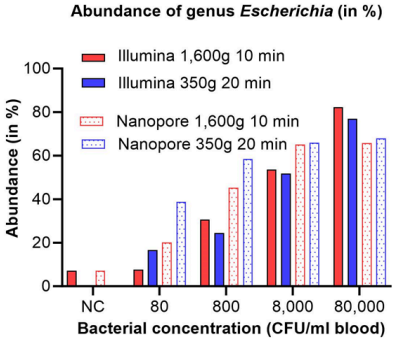
- Three different animal models were applied to analyze the dynamics of ecDNA and NETs: the choline-deficient l-amino acid-defined diet (CDAA), cafeteria diet (CAF), and intraperitoneal administration of thioacetamide with a standard diet (TAA).
- Increased ecDNA concentrations in plasma were detected in CDAA and TAA mice since week 2, but not in CAF mice.
- No differences in NETs formation were seen in any of the models.
- Future research will focus on the origin and the role of ecDNA in NAFLD/NASH.



DETECTION OF BACTERIAL DNA IN WHOLE BLOOD USING SEQUENCING

What's new?

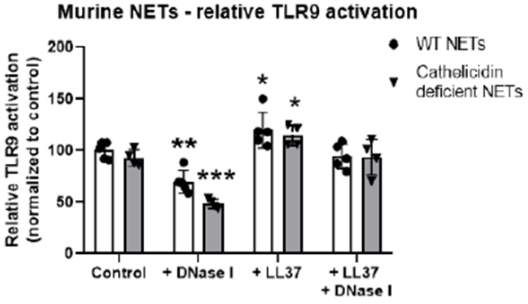
- The gold standard diagnostic method for sepsis is haemocultivation followed by antibiotic susceptibility testing. Its main drawbacks are long sample-to-result time (48-96h) and high rate of false negative results.
- Bacteria have been calculated to have different sedimentation velocity compared to other blood elements. Selective centrifugation followed by nanopore sequencing could be used to rapidly separate bacteria directly from blood.
- We discovered that centrifugation of spiked blood with E.coli at 350xg for 20 minutes leads to isolation of as low as 80 CFU/ml of blood and is an effective and rapid tool for isolating bacteria directly from blood.
- We identified the artificially spiked pathogen in all samples from the lowest concentration 80 CFU/ml. By Nanopore sequencing, we obtained higher abundance of E.coli reads for the lowest bacteria concentrations compared to Illumina sequencing.

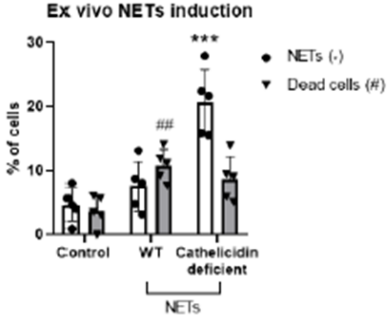


DYNAMICS OF NEUTROPHIL EXTRACELLULAR TRAPS DEGRADATION

What is new?

- We were able to optimize the protocol for the analysis of the antimicrobial activity of neutrophils.
- The natural occurrence of the antimicrobial peptide cathelicidin, specifically its short form LL37, on NETs increases their resistance to degradation by plasmatic DNase I.
- Cathelicidin-deficient NETs have increased sensitivity to degradation by DNase I, but NETs were protected after the addition of LL37.
- NETs activate another inflammatory response through the innate immunity receptor TLR9, and LL37 enhances their immunogenicity.
- The addition of cathelicidin to DNase I treated cathelicidin-deficient NETs rescues their potential to induce TLR9 signaling, further suggesting that the immunogenicity of NETs is linked to their stability.
- Cathelicidin-deficient NETs induced less neutrophil necrosis, but had an increased potency to stimulate further NETs formation *ex vivo*.

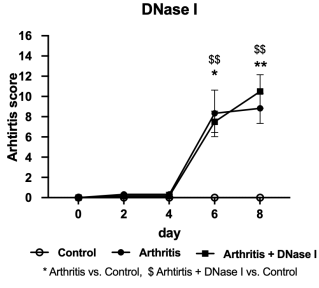


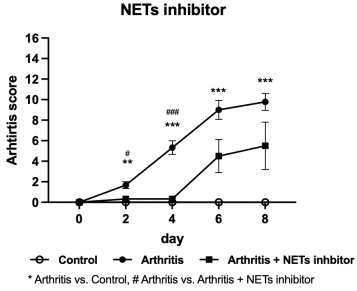


THE ROLE OF NEUTROPHILS IN PATHOGENESIS OF RHEUMATOID ARTHRITIS

What is new?

- We successfully induced collagen antibody-induced arthritis (CAIA) model in mice to study the pathogenesis of rheumatoid arthritis (RA).
- Within the CAIA model we tested two different approaches on how to show/describe the role of neutrophils in the pathogenesis of RA.
- As a treatment we used DNase I, an enzyme digesting the extracellular DNA and CL-amidine and inhibitor of the enzyme responsible for the citrullination.
- Application of DNase I did not show any significant difference in arthritis score between the treated and untreated arthritis group.
- Cl-amidine application did not show only a significant decrease between the treated and untreated arthritis group, but it showed the delay of the onset of the symptoms.
- These findings only encourage our theory regarding the pivotal role of neutrophils in the etiology of RA.

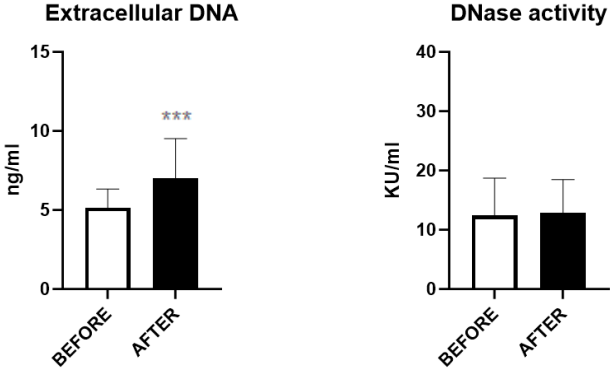




DEOXYRIBONUCLEASE AS A REGULATOR OF EXTRACELLULAR DNA CONCENTRATION AFTER PHYSICAL ACTIVITY

What's new?

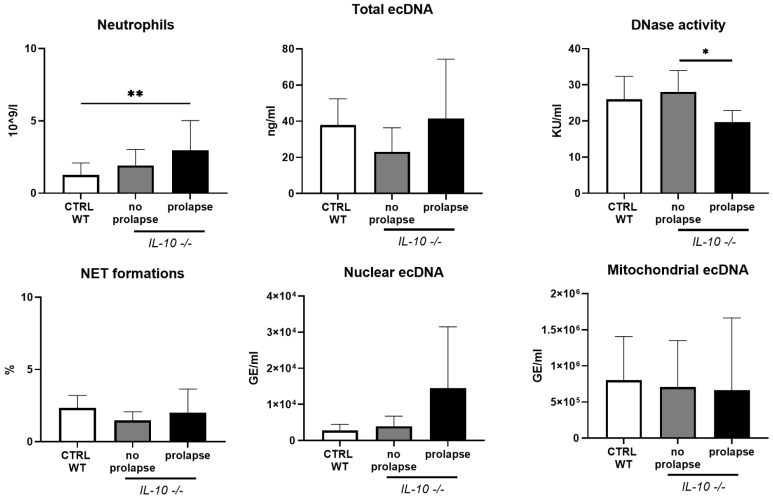
- Physical activity was induced in probands by walking up and down stairs (3x8 floors) and confirmed by increased heart rate >180 bpm.
- The concentration of extracellular DNA in plasma was increased by ~37% 30 minutes after physical activity.
- No significant change in DNase activity was detected 30 minutes after physical activity.
- The correlation between extracellular DNA change and DNase activity was not confirmed.



NEUTROPHILS AND EXTRACELLULAR DNA IN A GENETIC MODEL OF COLITIS

What's new?

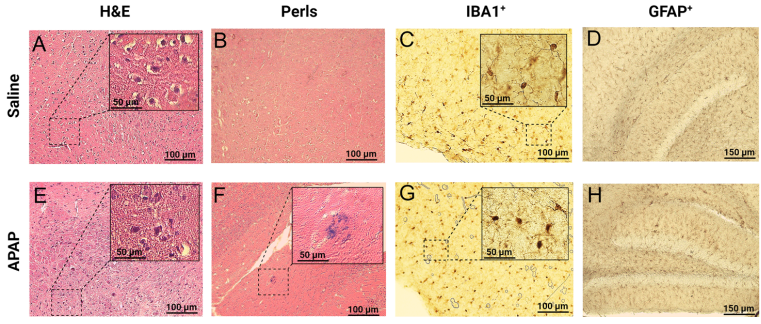
- With the progression of inflammation in IL-10-deficient mice (with prolapse), an increase in circulating neutrophils but not NET formations was observed.
- Total extracellular DNA (ecDNA), nor its nuclear or mitochondrial fractions, were not significantly different between groups.
- DNase activity was lowest in IL-10-deficient mice with prolapse.



LONG-TERM BRAIN CONSEQUENCES OF ACETAMINOPHEN-INDUCED LIVER DAMAGE IN MICE

What's new?

- Long-term brain consequences of hepatic encephalopathy induced by acetaminophen (APAP) overdose are understudied.
- The development of cytotoxic brain edema is suggested short-term, but no cell-swelling is observed 1-month after liver injury.
- The presence of cerebral microhemorrhage, dystrophic microglia and reactive astrocytosis are observed in the diencephalic gray matter and hippocampus 1 month after liver injury.
- Results suggest the involvement of neuroinflammation and blood-brain barrier abnormalities long-term after APAP-induced liver damage.

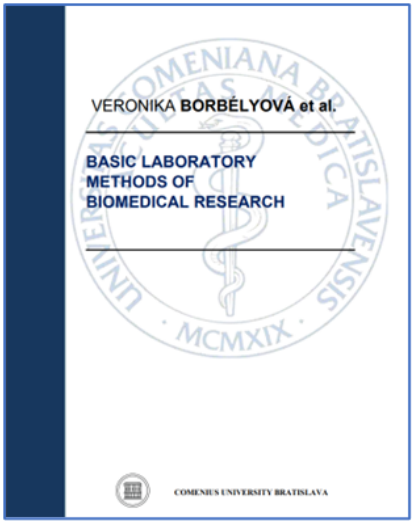


IMBM Summer School of Biomedicine

In 2023, within the IMBM Summer School of Biomedicine, 11 university students obtained the opportunity to learn basic laboratory methods necessary for their future scientific careers in laboratories of IMBM at the Faculty of Medicine and Slovak Academy of Sciences in Bratislava. As university students have minimal opportunity to learn methods of biomedical research through practical courses during their university or high school studies, the importance of summer schools has grown throughout the years.

University students, by participating in our ongoing projects, mastered both theoretical and practical skills of biomedical research while learning how to search and read scientific publications in databases, work with citation managers, plan and perform an experiment and statistical analysis, and interpret data obtained during the IMBM Summer School of Biomedicine.

We assume that participation in the IMBM Summer School of Biomedicine increased the overall readiness of students to successfully complete their university studies, which will subsequently enable them to be better employed in biomedical research. We have published a textbook



(https://www.fmed.uniba.sk/fileadmin/lf/sluzby/akademicka_kniznica/PDF/Elektronicke_knihy_LF_UK/Borbelyova_Basic_Laboratory_Methods_of_Biomedical_Research.pdf), which represents a summary of theoretical knowledge and protocols for individual projects that we worked on during the IMBM Summer School of Biomedicine in recent years.

We gained the interest of Slovak students studying not only in Slovakia but also abroad in various natural sciences and medical fields of study, thus, we are working on the reintegration of Slovak students studying abroad into biomedical research at Slovak scientific institutions and, therefore, on the popularization of science and research in Slovakia as well.

We are happy about the student's interest in spending part of the summer with scientific research at IMBM! Thank you, and we look forward to next year!

Conferences 2023

Participating actively in scientific conferences is a crucial aspect of our work. These conferences provide us with valuable opportunities to present our experimental findings, engage in discussions with experts, and foster new collaborations. In 2023, we enthusiastically participated in the following scientific conferences:

98th PHYSIOLOGICAL DAYS,
7-8/2/2023, Prague, Czech Republic
(Nikola Kováčová, Andrej Feješ, Emil Bečka, Kristína Macáková, Barbora Vlková, Jakub Szabó, Jakub Janko, Petronela Sušienková)

GENETIC CONFERENCE IN MARTIN,
16-17/3/2023, Martin, Slovakia
(Barbora Vlková, Peter Celec)

EUROPEAN PHAGOCYTE WORKSHOP,
29/3/2023-1/4/2023, Budapest, Hungary
(Ľubica Janovičová, Pastorek Michal, Emil Bečka, Jakub Janko)

5th RECOOP INTERNATIONAL STUDENT CONFERENCE,
22/4/2023, Budapest, Hungary
(Tomáš Strečanský)

18TH SCIENTIFIC CONFERENCE OF PHD STUDENTS,
27/4/2023, Bratislava, Slovakia
(Paulína Belvončíková, Nadja Šupčíková, Barbora Gromová, Monika Janková, Jakub Janko, Kristína Macáková, Andrej Feješ, Jakub Szabó)

61ST MEDICAL STUDENTS SCIENTIFIC CONFERENCE,
27/4/2023, Bratislava, Slovakia
(Anna Farkašová, Tim Groß, Bernhard Schuh)

30TH EUROPEAN CONGRESS ON OBESITY,
17-20/5/2023, Dublin, Ireland
(Andrej Feješ, Jakub Szabó)

DIGESTIVE DISEASE WEEK 2023,
18-21/5/2023, Chicago, United States
(Roman Gardlík)

5TH INTERNATIONAL MEETING ON CELL-FREE DNA,
25-26/5/2023 Copenhagen, Denmark
(Barbora Vlková, Peter Celec)

IX. CONFERENCE ON BIOLOGICAL PSYCHIATRY,
8-10/6/2023, Tatranská Lomnica, Slovakia
(Nikola Kováčová, Peter Celec)

VIII. SLOVAK NEUROPSYCHIATRIC CONGRESS,
15-16/6/2023, Tatranská Lomnica, Slovakia
(Petronela Sušienková, Veronika Borbélyová, Jakub Szabó)

COVID-19 LOOKING BACK,
23-24/6/2023, Bratislava, Slovakia
(Monika Janíková, Michal Pastorek)

MINI-CONFERENCE OF MEDICAL NEUROSCIENCE PHD STUDENTS,
29/6/2023, Bratislava, Slovakia
(Jakub Szabó)

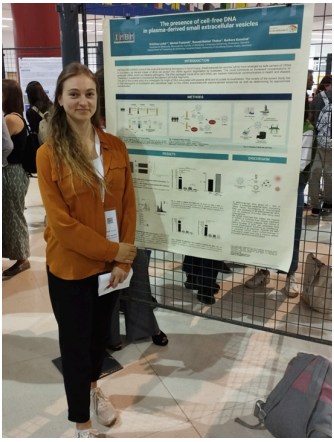
ALZHEIMER'S ASSOCIATION INTERNATIONAL CONFERENCE 2023,
16-20/7/2023, Amsterdam, Netherlands
(Jakub Szabó)

12TH ANNUAL DROBNICA MEMORIAL,
6-7/9/2023, Horná Ves, Slovakia
(Ľubica Janovičová, Monika Janíková)

XIV. SLOVAK PEDIATRIC CONGRESS,
12-14/10/2023, Bratislava, Slovakia
(Roman Gardlík)

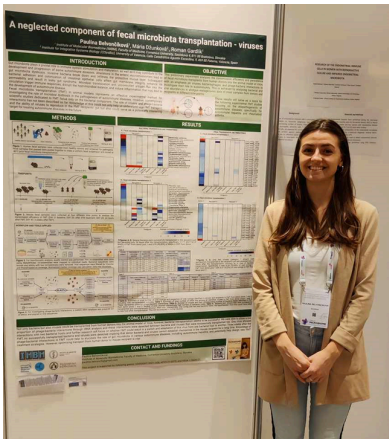
9TH CENTRAL EUROPEAN CONGRESS ON OBESITY,
13-14/10/2023, Prague, Czech Republic
(Andrej Feješ, Katarína Šebeková)

ESGCT 30TH ANNUAL CONGRESS BRUSSELS,
24-27/10/2023, Brussels, Belgium
(Patrik Hains, Ľubica Janovičová)



1ST MOVE SYMPOSIUM,
24-27/10/2023, Malága, Spain
(Kristína Lichá)

4TH INTERNATIONAL WORLD OF MICROBIOME CONFERENCE (WOM),
26-28/10/2023, Sofia, Bulgaria
(Paulína Belvončíková)



8TH INTERNATIONAL CONFERENCE IN CLINICAL METAGENOMICS,
16-17/11/2023 Geneva
(Tomáš Strečanský)

Research stays abroad:

PAULÍNA BELVONČÍKOVÁ, Institute for Integrative Systems Biology (I2SysBio), University of Valencia, Valencia, Spain, September 2022 - June 2023, working on bioinformatic shotgun data analysis of fecal microbiota transplantation samples

NADJA ŠUPČÍKOVÁ, Christian Doppler Laboratory for Molecular Stress Research in Peritoneal Dialysis, Medical University of Vienna, Austria, October 2022 - August 2023, working on the role of ecDNA and EVs in peritoneal dialysis

BARBORA GROMOVÁ, Beth Israel Deaconess Medical Center/Harvard Medical School Boston, MA, USA, Department of Anesthesia, January 2023 - November 2023, working on alternative signalling pathways in purinergic T-cell signalling in gastrointestinal tract autoimmune diseases

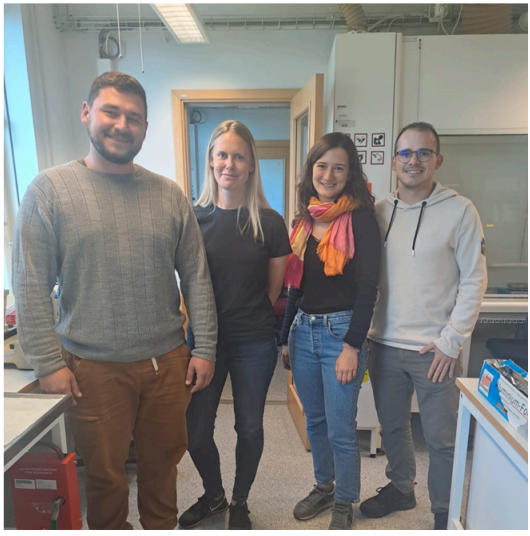
KRISTÍNA LICHÁ, Universitätsklinikum, Essen, Germany, Department of Pediatrics III, March 2023 - March 2024, working on the function of exosomes and extracellular vesicles within the diagnosis and therapy of cancer

JAKUB SZABÓ, NYU & NYU Langone Health, New York, NY, USA, Department of Neurology, – September 2023 - December 2023, focusing on neurobehavioral specifics of physiological aging, immunomodulatory properties of TLR9

agonist, CpG ODN, in treatment of Alzheimer's disease (AD) pathology in a non-human primate model of AD and early biofluid markers of AD.

EMIL BEČKA, Life Sciences Institute, University of Michigan, Ann Arbor, MI, USA, October 2023 - July 2024, working on specifying secreted exosome-associated DNA during neutrophil migration.

ANDREJ FEJEŠ, Institute of Neuroscience and Physiology, Gothenburg University, Gothenburg, Sweden, September 2023- June 2024, focusing on the neurons involved in the action of anti-obesity drug semaglutide in body weight reduction.




WELCOME
TO
MICHELTZOVA
LAB

Teaching at IMBM

IMBM is a research institute, but it is also important to participate in the educational process. Beyond institutional meetings, seminars and courses we prepared the lectures, seminars and practical courses at the Faculty of Medicine and Faculty of Natural Sciences, Comenius University in Bratislava:

FACULTY OF MEDICINE:

Physiology

Pathophysiology

Introduction to Science

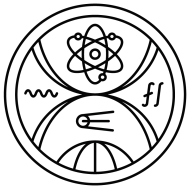
FACULTY OF NATURAL SCIENCES:

Molecular Endocrinology

Basics of Theoretical and Experimental Medicine

Behavioral Genetics

Special Genetics



FACULTY OF MATHEMATICS AND PHYSICS

Laboratory Methods in Biomedicine

Prizes

Kristína Macáková, MSc. - winner at Falling Walls Lab Slovakia 2023 - Breaking the Wall of Rheumatoid Arthritis

Emil Bečka, MSc. - scholarship for a research stay for 10 months at Life Sciences Institute, University of Michigan in Ann Arbor, United States (funded by the National Scholarship Programme of Slovak Republic)

Andrej Feješ, MSc. - scholarship for a research stay for 10 months at the Institute of Neuroscience and Physiology, Gothenburg University, Gothenburg, Sweden (funded by the National Scholarship Programme of Slovak Republic)

Michal Pastorek MSc., PhD. - scholarship for a research stay for 3 months at Harvard Medical School in Boston, United States (funded by the National Scholarship Programme of Slovak Republic)

Science popularization

NextStep Science Conference 2023 - career and networking event focussed on meeting potential employers or organization representatives from the field of natural sciences

Peter Celec – NextStep Science podcast - How in Slovakia we can create excellent conditions for research

Július Hodosy – two articles for Dennik N about how hospital urgent care currently works and what 24 hours look like in the emergency room of the Bratislava Ruzinov University Hospital

Peter Celec – commented on the Nobel Prize for Physiology or Medicine 2023 for Dennik N

Kritína Macáková – an interview for the portal Veda na Dosah, about rheumatoid arthritis

Peter Celec – in the TV show Experiment about Nobel Prize Winners 2023

Kritína Macáková – article for Dennik N about rheumatism

Peter Celec – a guest of the Zuzana Kovačič Hanzelová interview show (Rozhovory ZKH), about Nobel Prize Winners 2023

Peter Celec – Veda na dosah podcast, the potential of gene therapy as a personalized treatment option in the future

Veronika Borbélyová – a lecture at popularization-scientific cycle Vedatour - How mice help people

Grants

HORIZON EUROPE GRANT

HORIZON EUROPE FOR BEATSEP CONSORTIUM TO RESEARCH THE LONG-TERM CONSEQUENCES OF SEPSIS
Michal Pastorek
2023-2028

www.beatsepsis.eu

APVV GRANTS

APVV-18-0366
THE ROLE OF NETOSIS IN THE ETIOPATHOGENESIS OF RHEUMATOID ARTHRITIS
Barbora Vlková
2019-2023

APVV-20-0185 - cooperation
SOCIAL PROCESSES IN AUTISM AND SCHIZOPHRENIA
Michal Hajdúk
2021-2023

APVV-20-0114 - cooperation
SEX-SPECIFIC MICROBIOME AND GENE INTERACTIONS IN THE PATHOGENESIS OF BEHAVIORAL AND GASTROINTESTINAL SYMPTOMS IN THE ANIMAL MODEL OF AUTISM SPECTRUM DISORDER - cooperation
Aleksandra Tomová
2021-2023

APVV-21-0378
THE ROLE OF INFECTIOUS AND STERILE INDUCERS OF NEUTROPHIL EXTRACELLULAR TRAP FORMATION IN SEPSIS
Michal Patorek
2022-2025

APVV-21-0370
THE ROLE OF EXTRACELLULAR DNA AND NEUTROPHIL EXTRACELLULAR TRAPS IN THE PATHOGENESIS OF CHRONIC LIVER DISEASES
Roman Gardlík
2022-2025

APVV-21-0355
CAFETERIA DIET-INDUCED OBESITY IN WILD-TYPE AND RECEPTOR FOR ADVANCED GLYCATION END PRODUCTS (RAGE-/-) KNOCKOUT MICE AND THE EFFECTS OF PERIPHERALLY ADMINISTERED OXYTOCIN
Katarína Šebeková

2022-2025

VEGA GRANTS

VEGA 1/0716/20
CAUSES AND EFFECTS OF NETOSIS IN STERILE INFLAMMATION - FLOW CYTOMETRY ANALYSIS
Michal Pastorek
2020-2023

VEGA 1/0649/21
ELUCIDATION OF THE PATHOGENESIS OF CHRONIC LIVER DISEASES USING THE STUDY OF NEUTROPHIL EXTRACELLULAR TRAPS AND CIRCULATING DNA
Roman Gardlík
2021-2023

VEGA 1/0674/21
A MODEL OF COLITIS FROM THE POINT OF VIEW OF BIOPHYSICS AS A CONTRIBUTION THE UNDERSTANDING OF INFLAMMATORY BOWEL DISEASE
Barbora Konečná
2021-2023

VEGA 1/0742/21
DEOXYRIBONUCLEASE - ROLE IN THE PHYSIOLOGY AND PATHOPHYSIOLOGY OF PREGNANCY
Barbora Vlková
2021-2023

VEGA 1/0657/21
SALIVARY NUCLEIC ACIDS AND THEIR CLINICAL USE
Peter Celec
2021-2023

VEGA 1/0212/22
THE ROLE OF EXTRACELLULAR DNA AND NEUTROPHIL TRACTS IN URINARY TRACT INFECTIONS
Ľubomíra Tóthová
2022-2024

COMENIUS UNIVERSITY GRANTS

UK/27/2023
DESCRIPTION OF NEUTROPHIL SIGNALING PATHWAYS IN THE FORMATION OF NEUTROPHIL EXTRACELLULAR TRAPS
Emil Bečka
2023

UK/279/2023
EFFECT OF "CAFETERIA" DIET ON THE FORMATION OF NEUTROPHIL EXTRACELLULAR TRAPS IN PLASMA AND IN ADIPOSE TISSUE IN AN ANIMAL MODEL OF METABOLIC SYNDROME IN MICE
Andrej Feješ
2023

UK/333/2023
THE ROLE OF NEUTROPHILS EXTRACELLULAR TRAPS IN RHEUMATOID ARTHRITIS
Kristína Macáková
2023

UK/364/2023
CHARACTERIZATION OF EXTRACELLULAR DNA IN THE PATHOGENESIS OF ACUTE LIVER INJURY
Barbora Gromová
2023

UK/428/2023
THE ROLE OF NETOSIS AND EXTRACELLULAR DNA IN THE PATHOGENESIS OF URINARY TRACT INFECTIONS
Nadja Šupčíková
2023

WHERE TO FIND US?

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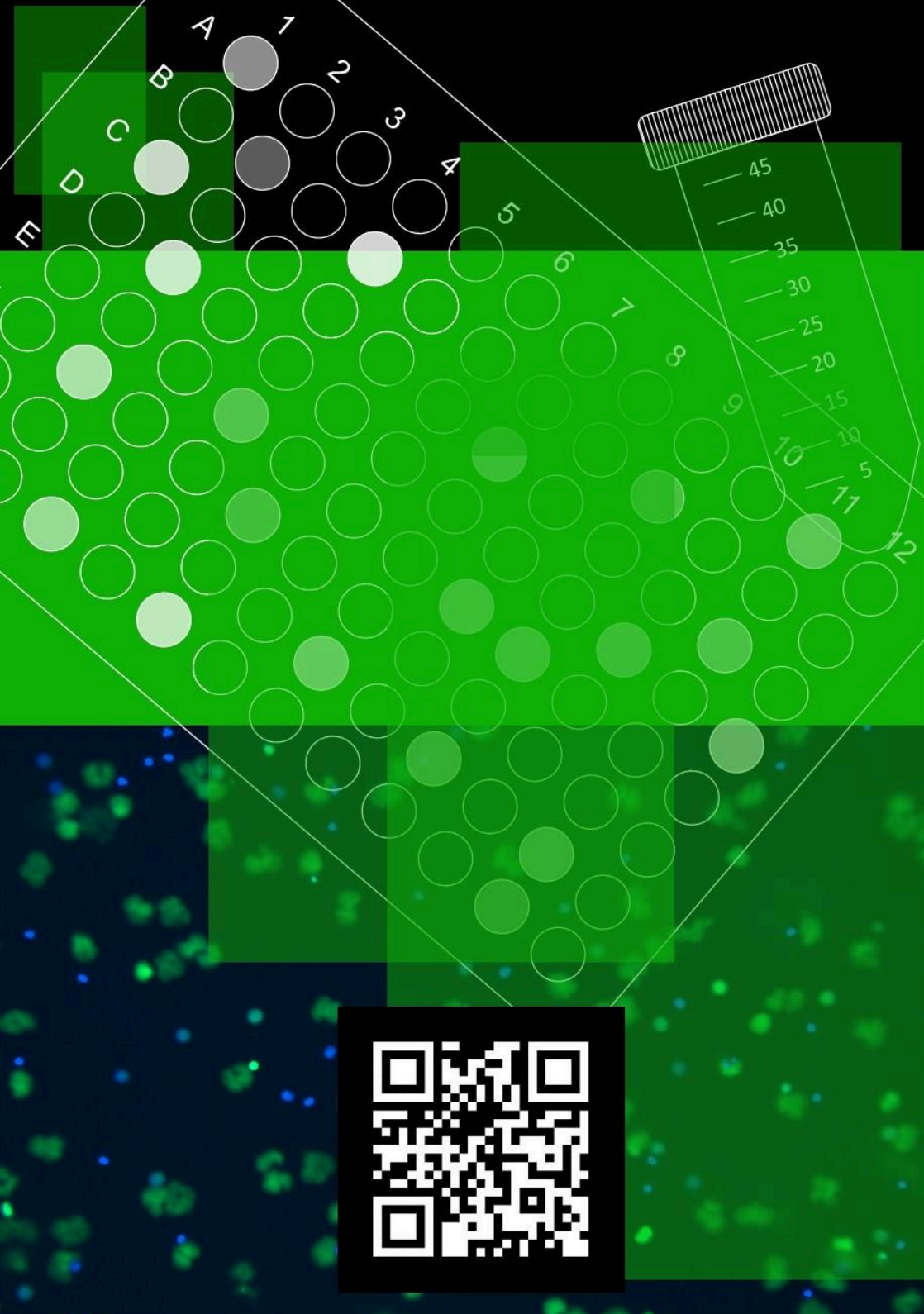
MORE INFORMATION IS AVAILABLE AT THE FACULTY WEB PAGE:
http://www.imbm.sk/

MORE INFO ABOUT US ON OUR FACEBOOK:
https://www.facebook.com/IMBM

MORE INFO ABOUT US ON OUR INSTAGRAM:
https://www.instagram.com/imbm_lf_uk/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