



DRUG DELIVERY THROUGH THE PHYSIOLOGICAL BARRIERS

Program

International Symposium

24-26 April, 2025

Budapest, Hungary



PÁZMÁNY | ITK



PROJECT
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PROGRAM

24 APRIL 2025

8:00 Registration

9:00 **MATTEK'S EPIDERM SKIN IRRITATION TEST WORKSHOP**

12:00 Sandwich lunch

13:00 SCIENTIFIC PROGRAM

Chair Franciska ERDŐ (Organ-on-a-chip session)

13:00 **György CSEREY** Welcome words

13:10 **Franciska ERDŐ** Introduction

13:20 **Mária DELI** (keynote speech) **ORGAN-ON-CHIP MODELS OF BIOLOGICAL BARRIERS**

14:05 **Ferenc ENDER** **NOVEL ORGAN-ON-A-CHIP DEVICE FOR HIGH THROUGHPUT DRUG CANDIDATE SCREENING**

14:25 **Fruzsina WALTER** **THE ROLE OF LAB-ON-A-CHIP BARRIER MODELS AND BRAIN ORGANIDS IN DRUG TESTING ACROSS THE BLOOD-BRAIN BARRIER**

14:45-15:05 Coffee break

Chair Ildikó Bácskay (Skin barrier session)

15:05 **Franciska ERDŐ** **DRUG DELIVERY THROUGH THE BIOLOGICAL BARRIERS**

15:30 **Dorottya KOCSIS** **DRUG DELIVERY THROUGH THE PSORIATIC EPIDERMAL BARRIER**

15:50 **Gábor SZEDERKÉNYI** **COMPARTMENTAL MODELING AND PARAMETER ESTIMATION OF TRANSDERMAL DELIVERY OF TOPICAL DRUG FORMULATIONS**

16:10 **Kende LÓRINCZ** **TARGETED SKIN BARRIER REPAIR: ENHANCING BARRIER FUNCTION THROUGH VESICLE-ENCAPSULATED CERAMIDE DELIVERY**

17:45-19:15 **Welcome reception and concert**

Wine tasting (Bakáts tér, St. Francis of Assisi Church)

25 APRIL 2025

8:00 Registration

9:00 SCIENTIFIC PROGRAM

Chair Rita AMBRUS (BBB, ocular, inestinal and pulmonar barriers session)

- 9:00 **Winfried NEUHAUS**
(keynote speech) **REFLECTIONS AND STORIES ABOUT THE WORK WITH BLOOD-BRAIN BARRIER IN VITRO MODELS**
- 9:45 **Mangesh BHIDE** **CROSSING OF THE PATHOGENS AND DRUGS ACROSS THE BLOOD BRAIN BARRIER: FEW SIMILARITIES, MORE DISPARITIES**
- 10:10 **Marek PUSKAR** **IN VITRO RECONSTRUCTED 3D MODELS OF HUMAN DUODENUM, JEJUNUM AND ILEUM**
- 10:30 **Heba BANAT** **ENHANCING BIOAVAILABILITY OF A NON-STEROIDAL ANTI-INFLAMMATORY DRUG THROUGH PULMONARY DELIVERY**
- 10:50 **Houssam ABOUD** **DEVELOPMENT OF PRESERVATIVE-FREE NANOFIBROUS OPHTHALMIC INSERTS FOR THE TREATMENT OF BACTERIAL CONJUNCTIVITIS**
- 11:10-11:35 Coffee break

Chair Ildikó CSÓKA (Nasal barrier session)

- 11:35 **Aleksandar SZÉCHENYI** **RATIONAL DESIGN OF NASAL DRUG DELIVERY SYSTEMS**
- 11:55 **Pavle ANDJUS** **IMMUNOGLOBULINS G AS FACTORS AND BIOMARKERS OF AMYOTROPHIC LATERAL SCLEROSIS**
- 12:15 **Bence SIPOS** **UTILIZATION OF VARIOUS GELLING AND MUCOADHESIVE AGENTS FOR NASAL DELIVERY OF POLYMERIC MICELLES**
- 12:35 **Rania AWAD** **POLYMERIC NANOCARRIERS FOR INTRANASAL DELIVERY OF CANNABIDIOL IN NEURODEVELOPMENTAL DISORDERS**
- 12:55-14:00 Sandwich lunch
- 14:00-15:00 POSTER PRESENTATION AND EXHIBITION

Chair Miklós Vecsernyés (Nanopharmaceuticals, transporters)

- 15:00 **Stefan MÜHLEBACH**
(keynote speech) **NANOPHARMACEUTICALS / NON-BIOLOGICAL COMPLEX DRUGS (NBCDS) TO IMPROVE DRUG DELIVERY**
- 15:45 **Miklós VECSEARNYÉS** **NANOPHARMACEUTICALS: NANOTOXICOLOGICAL CONSIDERATIONS, REGULATORY ISSUES**
- 16:10 **Péter TÁTRAI** **TOWARDS OPTIMIZED PREDICTION OF TRANSPORTER-MEDIATED DRUG INTERACTIONS: THE CRL/SOLVO PERSPECTIVE**

18:00-20:00 **Gála dinner**

ÚJBUDA TRÓFEA RESTAURANT / 1117 Budapest, Hauszmann Alajos u. 6/b.

26 APRIL 2025

8:00 Registration

9:00 SCIENTIFIC PROGRAM

Chair Mária DELI (BBB session)

9:00	Thomas BIRNGRUBER	A NEW MODEL TO MONITOR THE TRANSPORT ACROSS THE BLOOD-BRAIN AND BLOOD-TUMOR BARRIER
9:25	Petra MAJEROVA	ANALOG OF KYNURENIC ACID DECREASES TAU PATHOLOGY BY MODULATING ASTROGLIOSIS IN RAT MODEL FOR TAUOPATHY
9:45	Dániel HILLIER	TARGETING THE BRAIN WITH GENE THERAPY VECTORS: EVALUATING THE SAFETY AND EFFICACY OF DELIVERY ROUTES ACROSS PHYSIOLOGICAL BARRIERS
10:05	János ÉLES	BRAIN PENETRATION PREDICTION METRICS IN CNS DRUG DISCOVERY, IN-SILICO MODELL DEVELOPMENT FOR BBB PENETRATION
10:25	Anikó SZECSKÓ	EXAMINATION OF VIRAL PEPH3 PEPTIDE-FUNCTIONALIZED NANOPARTICLES ON A CULTURE MODEL OF THE BLOOD-BRAIN BARRIER

10:45-11:10 Coffee break

Chair Stefan Mühlebach (Innovative formulations session)

11:10	István ANTAL	ADVANCED DRUG DELIVERY SYSTEMS FOR THE IMPROVEMENT OF BIOAVAILABILITY AND PATIENT-CENTRICITY
11:35	Romána ZELKÓ	NANOFIBER-ENCAPSULATED EXTRACELLULAR VESICLES: A NOVEL APPROACH FOR DRUG DELIVERY AND STABILITY ENHANCEMENT
12:00	Miléna LENGYEL	MICROSPHERES AND MICROCAPSULES AS MULTIPARTICULATE DOSAGE FORMS FOR OPTIMIZED DRUG DELIVERY
12:20	Ágnes RUSZNYÁK	THE APPLICATION OF CYCLODEXTRIN POLYMERS IN GENE THERAPY

12:40-13:30 Sandwich lunch

Chair Romána Zerkó (3D printing)

13:30	Petra ARANY	THE EVOLUTION AND RECENT ADVANCES OF 3D-PRINTED DRUG DELIVERY SYSTEMS
13:50	Bálint BASA	FORMULATION OF PATIENT-CENTRIC AND MULTIPARTICULATE DOSAGE FORMS BY 3D PRINTING
14:10		SELECTED STUDENT PRESENTATIONS
14:35		BEST STUDENTS PRESENTATION AWARDS
15:00		CLOSING REMARKS FRANCISKA ERDŐ

POSTERS

1.	Anett MOTZWICKLER-NÉMETH/Rita AMBRUS	PREPARATION AND CHARACTERIZATION OF FREEZE-DRIED γ CD-MOF/IBU COMPLEXES FOR DIFFERENT ADMINISTRATION ROUTES
2.	Zsófia Ilona PISZMAN/Rita AMBRUS	NOVEL EXCIPIENT FORMULATIONS FOR EFFECTIVE LUNG DELIVERY OF NSAIDS
3.	Boglárka SZALAI	THERMORESPONSIVE IN SITU GELS FOR ENHANCED OCULAR DRUG DELIVERY
4.	Luca Éva UHLJAR/Rita AMBRUS	DOUBLE-NEEDLE ELECTROSPINNING OF ORODISPERSIBLE MEMBRANES LOADED WITH DICLOFENAC
5.	Emily REIS	EPIOCULARTM TIME-TO-TOXICITY –A TEST METHOD FOR SUB-CATEGORIZATION OF EYE IRRITANTS
6.	András LAKI	BIOMEMBRANE-ON-A-CHIP DEVICE FOR MONITORING DRUG DIFFUSION
7.	Pálma FEHÉR	DEVELOPMENT OF FORMULATIONS BASED ON SALVIA OFFICINALIS AND INVESTIGATION OF THEIR EFFECTS IN VITRO AND IN VIVO
8.	Bence VÁMOSI, Petra ARANY	THE USE OF HOT-MELT EXTRUSION FOR THE MANUFACTURING OF API CONTAINING FILAMENTS FOR FDM 3D-PRINTING
9.	Kevin JAMES	BLOOD-BRAIN BARRIER TRANSPORT SYSTEM FOR THERAPY AND DIAGNOSIS OF NEURODEGENERATIVE DISEASES
10.	Zuhao CUI	THE HISTONE DEACETYLASE INHIBITOR SUBEROYLANILIDE HYDROXAMIC ACID PROMOTES BLOOD-BRAIN BARRIER PROTECTION DURING REPERFUSION IN A CELL CULTURE MODEL OF ISCHEMIC STROKE
11.	Adrienn NOCHTA-KAZSOKI	DEVELOPMENT OF A MULTIFUNCTIONAL NANOFIBROUS PATCH FOR ORAL APHTAE TREATMENT
12.	Ahmad Sameer Yahia MALKAWI	INVESTIGATION OF NEW CANCER TREATMENT STRATEGIES AND SYNTHESIS OF NOVEL NANO-SIZED MATERIALS FOR CANCER TREATMENT
13.	Ilona GRÓF	INVESTIGATION OF A PENTAPEPTIDE CARRIER ON CULTURE MODELS OF THE BLOOD-BRAIN AND EPITHELIAL BARRIERS
14.	Judit VÍGH	MORPHOLOGICAL AND FUNCTIONAL CHARACTERIZATION OF A NEW HUMAN STEM CELL BASED BLOOD-BRAIN BARRIER AND BRAIN ORGANOID LAB-ON-A-CHIP MODEL
15.	Zsófia KOHOD	STUDY OF VARIOUS NAIL LACQUER FORMING TRANSUNGUAL DRUG DELIVERY SYSTEMS
16.	Zsófia VILIMI	DEVELOPMENT OF CLOTRIMAZOL-CONTAINING EMULGELS FOR THE TREATMENT OF VAGINAL CANDIDIASIS: IN VITRO STUDIES
17.	Nóra SZILVÁSY	MODULATION OF MULTISPECIFIC TRANSPORTERS BY UNCARIA TOMENTOSA EXTRACT AND ITS MAJOR PHYTO-CONSTITUENTS