

39<sup>th</sup>

# TECHNOLOGY DAYS

FROM MOLECULE TO TABLET



## PROGRAMME

Faculty of Pharmacy, Comenius University Bratislava  
7<sup>th</sup> – 8<sup>th</sup> september 2023

## 1<sup>ST</sup> DAY

(MMM-Multimedia room, 1<sup>st</sup> floor)

9:00 – 9:10

### Introductory word

Ján Klimas, Dean of Faculty of Pharmacy Comenius University Bratislava, SK

## 1<sup>ST</sup> SESSION

### NANOPARTICULATE SYSTEMS IN DRUG DELIVERY

Chairmen: Andrej Kováčik & Veronika Mikušová

9:10 – 9:40

### Functionalized gold nanoparticles as a promising tool for biomedical use: synthesis, properties, applications

Martin Pisárčik (*Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Chemical Theory of Drugs, Bratislava, SK*)

9:45 – 10:00

### Corticosteroid-loaded PLGA nanospheres for macrophages targeting: A tool for inflammatory management

<sup>1</sup>Barbora Boltnarová, <sup>1</sup>Ondřej Holas, <sup>2</sup>Petr Pávek (<sup>1</sup>*Charles University in Prague, Faculty of Pharmacy, Dpt. of Pharmaceutical Technology, Hradec Králové, CZ*; <sup>2</sup>*Charles University in Prague, Faculty of Pharmacy, Dpt. of Pharmacology and Toxicology, Hradec Králové, CZ*)

10:05 – 10:20

### Delivery of anticancer drugs using nanoparticles based on chitosan and its derivatives

<sup>1</sup>Jarmila Ferková, <sup>1</sup>Veronika Mikušová, <sup>2</sup>Peter Mikuš (<sup>1</sup>*Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Galenic Pharmacy, Bratislava, SK*; <sup>2</sup>*Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Pharmaceutical Analysis and Nuclear Pharmacy, Bratislava, SK*)

10:25 – 10:40

### Thermosensitive *in situ* gel with biosynthesized silver nanoparticles shows antibacterial activity

<sup>1</sup>Ludmila Balážová, <sup>1</sup>Tomáš Wolaschka, <sup>2,2</sup>Simona Rohallová, <sup>3</sup>Nina Daneu, <sup>4</sup>Martin Stahorský, <sup>5</sup>Aneta Salayová, <sup>6</sup>Ludmila Tkáčiková, <sup>1</sup>Lenka Kozubová, <sup>1</sup>Jarmila Eftimová (<sup>1</sup>*University of Veterinary Medicine and Pharmacy in Košice, Dpt. of Pharmaceutical Technology, Pharmacognosy and Botany, Košice, SK*; <sup>2</sup>*Masaryk University, Faculty of Pharmacy, Dpt. of*

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Pharmaceutical Technology, Brno, CZ; <sup>3</sup>Jozef Stefan Institute, Advanced Materials Dpt., Ljubljana, SI; <sup>4</sup>Slovak Academy of Sciences, Institute of Geotechnics, Dpt. of Mechanochemistry, Košice, SK; <sup>5</sup>University of Veterinary Medicine and Pharmacy in Košice, Institute of Pharmaceutical Chemistry, Dpt. of Chemistry, Biochemistry and Biophysics, Košice, SK; <sup>6</sup>University of Veterinary Medicine and Pharmacy in Košice, Dpt. of Microbiology and Immunology, Košice, SK)

10:45 – 11:15

### COFFEE BREAK

11:15 – 11:45

### Exogenous antioxidants as potential therapeutic agents when carried by nanoparticle delivery systems

<sup>1</sup>Michael Kenneth Lawson, <sup>2</sup>Peter Vavrinc, <sup>3</sup>Mohammad Fakhermanesh, <sup>4</sup>Ali Jafarsalehi (<sup>1</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Galenic Pharmacy, Bratislava, SK; <sup>2</sup> Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Pharmacology and Toxicology, Bratislava, SK)

11:50 – 12:05

### Hyaluronic acid grafted with ceramide NP as promising macromolecules for skin application

<sup>1,2</sup>Martin Juhaščík, <sup>3</sup>Gloria Huerta-Ángeles, <sup>4</sup>Kateřina Štarmanová, <sup>5</sup>Ondřej Štrympl, <sup>2</sup>Andrea Exnerová, <sup>2</sup>Kristina Nešporová, <sup>3</sup>Andrej Kováčik (<sup>1</sup>Charles University in Prague, Faculty of Pharmacy in Hradec Králové, Dpt. of Pharmaceutical Technology, Hradec Králové, CZ; <sup>2</sup>Contipro a.s., Dolní Dobrouč, CZ; <sup>3</sup>Czech Academy of Sciences, Institute of Macromolecular Chemistry, Prague, CZ)

12:10 – 12:40

### Titanate nanotubes as potential platforms for drug delivery

Tamás Sovány, Ranim Saker, Géza Regdon jr. (University of Szeged, Faculty of Pharmacy, Institute of Pharmaceutical Technology and Regulatory Affairs, Szeged, H)

12:45 – 13:40

### LUNCH BREAK

PARTNERS

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2<sup>ND</sup> SESSION

QUALITY BY DESIGN

Chaimen: Zdeňka Šklubalová & Veronika Šimunková

13:40 – 13:55

**Alternative delivery routes of monoclonal antibodies**

<sup>1,2,3</sup>Juraj Piešťanský, <sup>3,4,5</sup>Branislav Kovačech, <sup>3</sup>Petra Majerová, <sup>3</sup>Andrej Kováč (<sup>1</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Galenic Pharmacy, Bratislava, SK; <sup>2</sup>Comenius University Bratislava, Faculty of Pharmacy, Toxicological and Antidoping Center, Bratislava, SK; <sup>3</sup>Slovak Academy of Sciences, Institute of Neuroimmunology, Bratislava, SK; <sup>4</sup>AXON COVIDAX a. s., Bratislava, SK; <sup>5</sup>AXON Neuroscience R&D Services SE, Bratislava, SK)

14:00 – 14:33

**Pharmaceutical technology and bio-cybernetics**

Zuzana Vitková, Martin Dodek, Eva Miklovičová, Jarmila Pavlovičová, Anton Vitko (Slovak University of Technology, Faculty of Electrical Engineering and Information Technology, Bio-cybernetic group of the Institute of Robotic and Cybernetics, Bratislava, SK)

14:35 – 15:05

**Pulmonary delivery of solid particles and their preparation with a focus on spray drying technology**

Hana Hořavová, Andrea Pešťalová (Masaryk University, Faculty of Pharmacy, Dpt. of Pharmaceutical Technology, Brno, CZ)

15:10 – 15:25

**Formulation options for mucoadhesive dosage forms for use in the oral cavity**

<sup>1</sup>Veronika Šimunková, <sup>2</sup>Eduard Tichý, <sup>1</sup>Miroslava Špaglová, <sup>1</sup>Miroslava Potůčková (<sup>1</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Galenic Pharmacy, Bratislava, SK; Hameln rds s.r.o., Modra, SK)

15:30 – 16:00

**In vitro release testing of non-oral complex dosage forms**

Samir Haddouchi (SOTAX Pharma Services, Orleans, FR)

16:05 – 16:35

COFFEE BREAK

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16:35 – 18:05

**POSTER SESSION** (1<sup>st</sup> floor – Dpt. of Galenic Pharmacy)

19:00 – 21:00

**SOCIAL EVENT** (1<sup>st</sup> floor – MMM)

## 2<sup>ND</sup> DAY

2<sup>ND</sup> SESSION - CONTINUE

**Chairmen: Peter Mikuš & Ivan Malík**

9:00 – 9:15

**Brief insight into chemistry, metabolic stability, and advances in improving the bioavailability of several stilbenoids**

Dominika Nádaská, Ivan Malík (*Comenius University Bratislava, Faculty of Pharmacy, Dpt. of Pharmaceutical Chemistry, Bratislava, SK*)

9:20 – 9:35

**Innovative inkjet printing technologies for tailor-made pharmaceuticals**

Dagmar Blaháčková, Jan Elbl, Jan Gajdziok (*Masaryk University, Faculty of Pharmacy, Dpt. Pharmaceutical Technology, Brno, CZ*)

9:40 – 9:55

**The influence of wet granulation parameters on the compaction behavior and tablet strength of a hydralazine powder mixture**

Oliver Macho, Ľudmila Grabrišová (*Slovak University of Technology, Faculty of Mechanical Engineering, Institute of Process Engineering, Bratislava, SK*)

10:00 – 10:15

**Production technologies: plasma derived and biologic products**

Marián Bendík (*Takeda, Orth.a.d. Donau, AT*)

10:20 – 10:35

**Nitrosamine impurities in the production of solid dosage form – factors affecting their formation**

<sup>1</sup>Katarína Bruchatá, <sup>1</sup>Martin Krupa, <sup>1,2</sup>Anna Jurčová (<sup>1</sup>*Saneca Pharmaceuticals, a.s., Dpt. of Quality, Hlohovec, SK*; <sup>2</sup>*University of Ss. Cyril and Methodius, Trnava, SK*)

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10:40 – 11:10

COFFEE BREAK

### 3<sup>RD</sup> SESSION – APPLICATIONS IN PHARMACY AND MEDICINE

Chairmen: Margaréta Šubová & Miroslava Špaglová

11:10 – 11:40

**Clinical perspectives of pharmaceutical compounding in public pharmacy**

Ondrej Sukeľ (*Slovak Chamber of Pharmacists, Bratislava, SK*)

11:44 – 12:15

**The role of hospital pharmacist in the parenteral administration of medicines**

Kristína Lajtmanová (*National Institute of Cardiovascular Diseases, Bratislava, SK*)

12:20 – 12:45

**Medical devices in parenteral and enteral administration of drugs and nutrition**

Kristína Szmicseková (*National Institute of Cardiovascular Diseases, Bratislava, SK*)

12:50 – 13:50

LUNCH BREAK

### 4<sup>TH</sup> SESSION

EVALUATION OF DRUGS AND MEDICAL DEVICES

Chairmen: Margaréta Šubová & Miroslava Špaglová

13:50 – 14:20

**Quality assessment of active pharmaceutical substances, excipients, and individually prepared medicines in pharmacies according to the regulations in force in the Slovak Republic**

Miroslava Sýkorová, Katarína Birošíková (*Comenius University Bratislava, Faculty of Pharmacy, Dpt. of Pharmaceutical Chemistry, Bratislava, SK*)

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14:25 – 14:40

**Optimization of the microscopic method of observation of the oleogel structure**

<sup>1</sup>Jozef Zima, <sup>1,2</sup>Eva Nováková, <sup>1</sup>Veronika Mikušová, <sup>1,2</sup>Miroslava Šupolíková (<sup>1</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. of Galenic Pharmacy, Bratislava, SK; <sup>2</sup>Comenius University Bratislava, Faculty of Natural Sciences, Dpt. Microbiology and Virology, Bratislava, SK)

14:45 – 15:00

**Measuring devices in the process of pharmaceutical development and quality management**

Jan Hrouzek (*Hermes labsystems, s.r.o., Bratislava, SR*)

15:05 – 15:20

**Company presentation**

Iva Martinčová (*Sotax Pharmaceutical Testing s.r.o., Praha, CZ*)

15:25 – 15:35

**The Conclusion of 39<sup>th</sup> Technology Days**

Veronika Mikušová (*Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Galenic Pharmacy, Bratislava, SK*)

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## POSTER SESSION

### TD Po1 Microemulsions as the potential delivery system for nimodipine

Mária Čuchorová, Miroslava Špaglová, Martina Papadakos (Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Galenic Pharmacy, Bratislava, SK)

### TD Po2 Quality control of herbal tea containing Melissa leaf

<sup>1</sup>Daniel Krchňák, <sup>2</sup>Miroslava Špaglová, <sup>2</sup>Margaréta Šubová, <sup>3</sup>Szilvia Czigle (<sup>1</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Galenic Pharmacy, Bratislava, SK; <sup>2</sup>Slovak Medical University, Faculty of Medicine, Institute of Pharmacy, Bratislava, SK; <sup>3</sup>Comenius University Bratislava, Faculty of Pharmacy, Department of Pharmacognosy and Botany, Bratislava, SK)

### TD Po3 Possibilities of plant drugs incorporation into the tablets

<sup>1</sup>Slavomír Kurhajec, <sup>2</sup>Aleš Franc, <sup>2</sup>Tomáš Wolaschka, <sup>2</sup>Simona Rohalová (<sup>1</sup>University of Veterinary Medicine and Pharmacy in Košice, Dpt. of Pharmaceutical Technology, Pharmacognosy and Botany, Košice, SK; <sup>2</sup>Masaryk University, Faculty of Pharmacy, Dpt. of Pharmaceutical Technology, Brno, CZ)

### TD Po4 In vitro barrier models for drug screening

<sup>1</sup>Petra Majerová, <sup>1,2</sup>Andrej Kováč (<sup>1</sup>Slovak Academy of Sciences, Institute of Neuroimmunology, Bratislava, SK; <sup>2</sup>University of Veterinary Medicine and Pharmacy, Dpt. of Pharmacology and Toxicology, Košice, SK)

### TD Po5 Determination of catecholamines in drugs

<sup>1,2</sup>Michaela Garlík Matušková, <sup>1,2</sup>Peter Mikuš, <sup>2,3,4</sup>Juraj Piešťanský (<sup>1</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. of Pharmaceutical Analysis and Nuclear Pharmacy, Bratislava, SK; <sup>2</sup>Comenius University Bratislava, Faculty of Pharmacy, Toxicological and Antidoping Center, Bratislava, SK; <sup>3</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. of Galenic Pharmacy, Bratislava, SK; <sup>4</sup>Slovak Academy of Sciences, Institute of Neuroimmunology, Bratislava, SK)

### TD Po6 Evaluation of properties of dexamethasone eye drops

<sup>1</sup>Desana Matušová, <sup>2</sup>Paulína Gluštiková, <sup>1</sup>Miroslava Špaglová, <sup>1</sup>Daniel Krchňák (<sup>1</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. of Galenic Pharmacy, Bratislava, SK; <sup>2</sup>Pharmacy Košická, Bratislava, SK)

### TD Po7 Influence of chitosan lyophilisates preparation procedure on liberation of ibuprofen

<sup>1</sup>Veronika Mikušová, <sup>1</sup>Jarmila Ferková, <sup>2</sup>Dominika Žigrayová, <sup>2</sup>Michal Hanko, <sup>2,3</sup>Peter Mikuš (<sup>1</sup>Comenius University, Faculty of Pharmacy, Dpt. of Galenic Pharmacy, Bratislava, SK; <sup>2</sup>Comenius University, Faculty of Pharmacy, Dpt. of Pharmaceutical Analysis and Nuclear Pharmacy, Bratislava, SK; <sup>3</sup>Comenius University, Faculty of Pharmacy, Toxicological and Antidoping Center, Bratislava, SK)

### TD Po8 Spheroids as 3D cell models for testing of drugs

<sup>1,2,3</sup>Eva Nováková, <sup>2</sup>Veronika Mikušová, <sup>1,2</sup>Miroslava Šupolíkova (<sup>1</sup>Comenius University Bratislava, Faculty of Natural Sciences, Dpt. of Microbiology and Virology, Bratislava, SK; <sup>2</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. of Galenic Pharmacy, Bratislava, SK; <sup>3</sup>Slovak Academy of Sciences, Biomedical Research Center, Institute of Virology, Bratislava, SK)

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### TD P09 A multiple unit abuse deterrent dosage forms based on sodium alginate

<sup>1</sup>Martina Papadakos, <sup>2</sup>Miroslava Špaglová, <sup>3</sup>Mária Čuchorová, <sup>2</sup>Michal Hanko (<sup>1</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Galenic Pharmacy, Bratislava, SK; <sup>2</sup>Comenius University, Faculty of Pharmacy, Dpt. of Pharmaceutical Analysis and Nuclear Pharmacy, Bratislava, SK)

### TD P10 Incident reporting of specific medical devices in recent years in Slovakia

<sup>1</sup>Miroslava Potůčková, <sup>2</sup>Katarína Poláková, <sup>2</sup>Darina Kaminská (<sup>1</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. of Galenic Pharmacy, Bratislava, SK; <sup>2</sup>State Institute for Drug Control, Bratislava, SK)

### TD P11 Evaluation of in situ gels intended for oromucosal delivery

<sup>1,2</sup>Simona Rohalová, <sup>3</sup>Tomáš Wolaschka, <sup>3</sup>Katarína Paulovičová, <sup>4</sup>Jana Tóthová, <sup>2</sup>Jan Gajdziok (<sup>1</sup>University of Veterinary Medicine and Pharmacy in Košice, Dpt. of Pharmaceutical Technology, Pharmacognosy and Botany, Košice, SK; <sup>2</sup>Masaryk University, Faculty of Pharmacy, Dpt. of Pharmaceutical Technology, Brno, CZ; <sup>3</sup>Slovak Academy of Sciences, Institute of Experimental Physics, Košice, SK; <sup>4</sup>Technical University of Košice, Dpt. of Physics, Faculty of Electrical Engineering and Informatics, Košice, SK)

### TD P12 Glycerol laurate tablets: effect of the excipients and granule size on the tablet quality

Miroslava Špaglová, Martina Papadakos, Mária Čuchorová, Daniel Krchňák, Veronika Šimunková, Desana Matušová (Comenius University Bratislava, Faculty of Pharmacy, Dpt. Of Galenic Pharmacy, Bratislava, SK)

### TD P13 Refining analytical techniques for structural characterization of keyhole limpet hemocyanin (KHL)

<sup>1,2</sup>Ondrej Štefánik, <sup>3,4</sup>Juraj Piešťanský, <sup>1,2</sup>Peter Mikuš, <sup>4</sup>Petra Majerová, <sup>4</sup>Andrej Kováč (<sup>1</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. of Pharmaceutical Analysis and Nuclear Pharmacy, Bratislava, SK; <sup>2</sup>Comenius University Bratislava, Faculty of Pharmacy, Toxicologic and Antidoping Centre, Bratislava, SK; <sup>3</sup>Comenius University Bratislava, Faculty of Pharmacy, Dpt. of Galenic Pharmacy, Bratislava, SK; <sup>4</sup>Slovak Academy of Sciences, Institute of Neuroimmunology, Bratislava, SK)

### TD P14 Mechanical and dissolution properties of tablets prepared from spray-dried materials differing in particle size

<sup>1</sup>Thao Tranová, <sup>2</sup>Petr Koukal, <sup>3</sup>Vojtěch Klimša, <sup>4</sup>Jan Loskot, <sup>1</sup>Jitka Mužiková (Charles University in Prague, Dpt. of Pharmaceutical Technology, Hradec Králové, CZ; <sup>2</sup>Zentiva k.s., Prague, CZ; <sup>3</sup>University of Chemistry and Technology in Prague, Dpt. of Chemical Engineering, Prague, CZ; <sup>4</sup>University of Hradec Králové, Faculty of Science, Dpt. of Physics, Hradec Králové, CZ)

### TD P15 Improving of meloxicam dissolution rate by spray drying from ethanolic solution

<sup>1</sup>Tereza Vaňilová, <sup>1</sup>Zdenka Šklubalová, <sup>1</sup>Petra Svačinová, <sup>2</sup>Karl Wagner (<sup>1</sup>Charles University in Prague, Faculty of Pharmacy in Hradec Králové, Dpt. of Pharmaceutical Technology, Hradec Králové, CZ; <sup>2</sup>University of Bonn, Dpt. of Pharmaceutical Technology and Biopharmaceutics, Bonn, DE)

### TD P16 Pilot formulation study of pH-sensitive gels

Tomáš Wolaschka, Simona Rohalová, Ivana Želinská, Ludmila Balážová, Miriam Bačkorová, Slavomír Kurhajec (University of Veterinary Medicine and Pharmacy in Košice, Dpt. of Pharmaceutical Technology, Pharmacognosy and Botany, Košice, SK)

PARTNERS

MEDIA PARTNER





## Organization team:

PharmDr. Veronika Mikušová, PhD.

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PharmDr. Jarmila Ferková

Daniel Krchňák, DiS

Mgr. Martina Papadacos, PhD.

PharmDr. Dominika Žigayová