

**Department of Chemical Drugs, Faculty of Pharmacy UPVS Brno
Czech Pharmaceutical Society of Czech Medical Association of J. E.
Purkyně**

Slovak Pharmaceutical Society

47th Conference SYNTHESIS AND ANALYSIS OF DRUGS

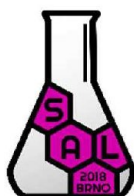


12th September – 14th September 2018

Faculty of Pharmacy

University of Veterinary and Pharmaceutical Sciences Brno

Palackého tř. 1946/1, 612 42 Brno, Czech Republic



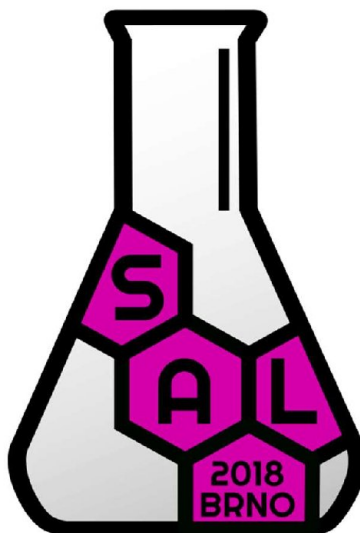
Book of Abstracts

SAL 2018 BRNO

12th September – 14th September 2018

Brno, Czech Republic

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Dear colleagues and friends,

it is a pleasure to welcome You all participating in the **47th conference Synthesis and Analysis of Drugs (Syntéza a Analýza Léčiv)** here in **Brno** (Czech Republic).

This conference is almost for 50 years traditional Czech-Slovak meeting for sharing current topics and knowledge in the different fields of pharmacy, covering especially synthesis and analysis of drugs, not only for scientists from universities and other scientific institution but also for people from pharma industry and other companies, open and visited also by participants from other european and non-european countries. It is a platform for supporting and promoting cooperation between scientists. Especially young scientists and PhD students with their presentation are always the important part of the participants.

The **47th conference Synthesis and Analysis of Drugs** is part of the celebration of the **100th anniversary** of the establishment of the **University of Veterinary and Pharmaceutical Sciences Brno**.

We hope that the conference will be nice opportunity to meet your colleagues again and visit Brno.

Best regards,

Assoc. Prof. Radka Opatřilová

Guarantor of the event

SAL 2018 Brno

Scientific committee

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Dr. Tereza Padrtová

Department of Chemical Drugs

Faculty of Pharmacy

University of Veterinary and Pharmaceutical Sciences Brno

Palackého tř. 1946/1

612 42 Brno

Czech Republic

e-mail: sal2018@vfu.cz

VENUE

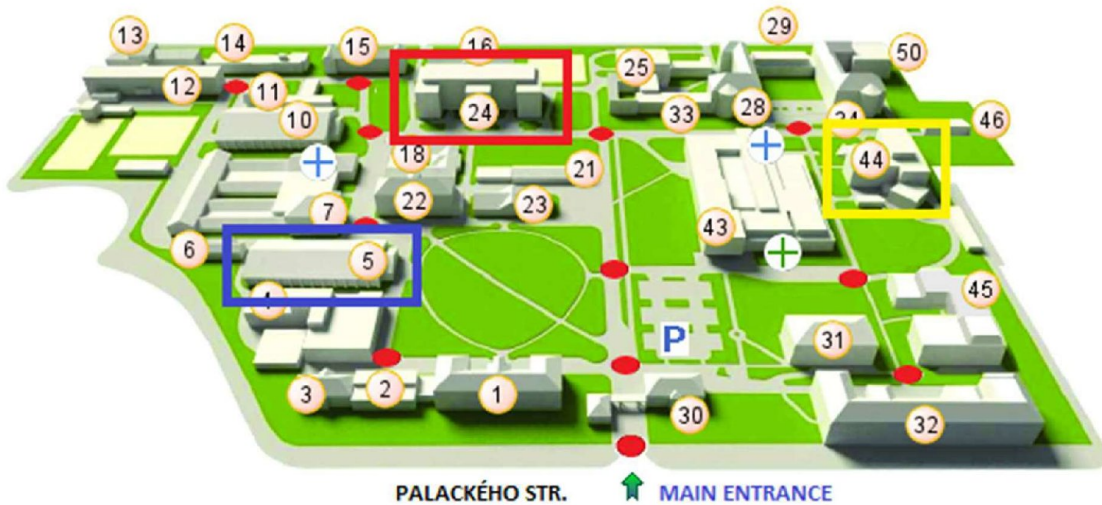
University of Veterinary and Pharmaceutical Sciences Brno

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612 42 Brno

Czech Republic

- **Registration, scientific programme & conference banquet: building no. 24 (Study and information centre), red frame**
- **Western horseride show: building no. 5 (Riding hall), blue frame**
- **Alternative programme for pharmacist (Czech): building no. 44 (Faculty of Pharmacy I), yellow frame**



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CONFERENCE PROGRAMME

Wednesday, 12th September

arrival, registration of participants (12.00 - 17.00), poster set up time - right after the registration

14.15 - 14.30 **OPENING OF THE CONFERENCE**, practical information (building no. 24)

Block of lectures I. Chairs: prof. Martin Doležal, assoc. prof. Oldřich Farsa

14.30 - 15.15 **PL-01 DRUG REPURPOSING IN TUBERCULOSIS TREATMENT**

Doležal M. (Charles University, Hradec Králové, CZ)

15.15 - 15.30 **L-06 HEMATOPOIETIC FACTORS ARE NOT ONLY PROTEINS**

Farsa O. (University of Veterinary and Pharmaceutical Sciences Brno, CZ)

15.30 - 15.45 **L-02 G-QUADRUPLEXES IN p53 CANCER BIOLOGY AND AS TARGETS OF DRUGS**

Brázdová M. (University of Veterinary and Pharmaceutical Sciences Brno, CZ)

15.45 - 16.00 **L-04 SYNTHESIS OF MULTIVALENT CARBOHYDRATES AND INVESTIGATION OF THEIR INTERACTION WITH BACTERICIDAL LECTINS**

Csávás M. (University of Debrecen, HU)

16.00 - 16.30 **COFFEE BREAK**

Block of lectures II. Chairs: assoc. prof. Ivan Malík, Dr. Marta Kučerová

16.30 - 17.00 **PL-03 SYNTHESIS, PHYSICOCHEMICAL PROPERTIES AND *IN VITRO* ANTIMYCOBACTERIAL ACTIVITY OF HYBRID ORIGINAL MOLECULES CONTAINING 4-CHLOROPHENYLCARBAMOYLOXY AND *N*-ARYLPIPERAZINE FRAGMENTS**

Malík I. (Comenius University in Bratislava, SK)

17.00 - 17.15 **L-11 SYNTHESIS OF NOVEL ACETYLCHOLINESTERASE INHIBITORS**

Kroutil A. (University of Veterinary and Pharmaceutical Sciences Brno, CZ)

17.15 - 17.45 **L-12 INHIBITION OF ALDOSE REDUCTASE IN THE TREATMENT OF LONG-TERM COMPLICATIONS ASSOCIATED WITH DIABETES MELLITUS**

Kučerová M. (Charles University, Hradec Králové, CZ)

18.00 **WELCOME DRINK**

Thursday, 13th September

registration (8. 30 - 11. 00), poster set up time - right after the registration

Block of lectures III. Chairs: prof. Janez Košmrlj, assoc. prof. Radka Opatřilová

09.00 - 09.45	PL-07 RECENT ADVANCES IN THE SONOGASHIRA REACTION Košmrlj J. (University of Ljubljana, SL)
09.45 - 10.15	L-07 DEAD ENDS AND DETOURS IN PREPARATION OF A PHARMACEUTICALLY IMPORTANT 2-(CYCLOBUTEN-1-YL)-1H-INDOLE SCAFFOLD Gazvoda M. (University of Ljubljana, SL)
10.15 - 10.30	L-09 SUPRAMOLECULAR COMPLEXES OF PLATINUM(IV) AND RUTHENIUM(III) METALLODRUGS WITH MACROCYCLIC CARRIERS Chyba J. (CEITEC Masaryk University, Brno, CZ)
10.30 - 11.00	COFFEE BREAK
<i>Block of lectures IV. Chairs: prof. Jaroslaw Polanski, assoc. prof. Jiří Pazourek</i>	
11.00 - 11.45	PL-04 BIG DATA AND SCORING LIGAND EFFICIENCY: A STORY OF INTUITION, MISINTERPRETATION AND SERENDIPITY Polański J. (University of Silesia in Katowice, PL)
11.45 - 12.15	L-13 MONITORING OF MUTAROTATION AND DETERMINATION OF GLUCOSAMINE BY HYDROPHILIC INTERACTION LIQUID CHROMATOGRAPHY WITH EVAPORATIVE LIGHT-SCATTERING DETECTOR Pazourek J. (University of Veterinary and Pharmaceutical Sciences Brno, CZ)
12.15 - 12.30	L-14 ANCIENT APPLE AS SOURCE OF VALUABLE COMPOUNDS FOR THE PRODUCTION OF NEW NUTRACEUTICAL INGREDIENTS Sut S. (University of Padova, IT)
12.30 - 14.30	LUNCH BREAK
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15.00 - 15.30	L-05 BERBERINE: PHARMACOKINETIC AND TISSUE DISTRIBUTION IN MICE AFTER ORAL ADMINISTRATION WITH NATURAL DEEP EUTECTIC SOLVENT Dall'Acqua S. (University of Padova, IT)
15.30 - 15.45	L-01 STRUCTURAL DIVERSITY AND PHARMACOLOGICAL ACTIVITY OF AMARYLLIDACEAE ALKALOIDS FROM <i>NARCISSUS</i> CV. CARLTON Al Mamun A. (Charles University, Hradec Králové, CZ)
15.45 - 16.00	L-03 AMARYLLIDACEAE ALKALOIDS AS POTENTIAL DRUGS IN DISEASES OF AFFLUENCE TREATMENT Breiterová K. (Charles University, Hradec Králové, CZ)
16.00 - 16.15	L-08 AMARYLLIDACEAE ALKALOIDS AS POTENT GSK 3 β INHIBITORS Hulcová D. (Charles University, Hradec Králové, CZ)
16.15 - 16.30	L-10 AMARYLLIDACEAE ALKALOIDS FROM <i>ZEPHYRANTHES CITRINA</i> AND THEIR BIOLOGICAL ACTIVITY Kohelová E. (Charles University, Hradec Králové, CZ)
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19.00	CONFERENCE BANQUET with BEER TASTING (building no. 24)

Thursday, 13th September – ALTERNATIVE PROGRAMME (in CZECH, building no. 44)

15.00 – 15.50	NOVÁ A NOVĚJŠÍ ANTIDIABETIKA V SOUČASNÉ LÉČBĚ Kotlová H. (Veterinární a farmaceutická univerzita Brno, CZ)
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16.05 – 17.50	DIABETES V HISTORICKÝCH SOUVISLOSTECH A SOUČASNOST Blechová, R. (Veterinární a farmaceutická univerzita Brno, CZ)
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BIOLOGICAL ACTIVITY OF HEMP (*Cannabis sativa* L.) ETHANOL EXTRACT

D. PRVULOVIĆ¹, S. GVOZDENAC², B. KIPROVSKI², J. OVUKA², D. LATKOVIĆ¹

¹University of Novi Sad, Faculty of Agriculture, Department of Field and Vegetable Crops, Trg Dositeja Obradovića 8, 21000 Novi Sad, Serbia

²Institute of Field and Vegetable Crops, Department for Industrial Crops, Maksima Gorkog 30, 21000 Novi Sad, Serbia

Cultivation and use of industrial hemp (*Cannabis sativa* L.) predates written history. Industrial hemp is a fast growing, annual herb with a multitude of uses covering a range of products derived from seed or fiber.

The aim of this work was to determine the effects of ethanol extract of industrial hemp on life history parameters (mean developmental duration - MDD, number of emerged adults, female fecundity) of Indian meal moth - IMM (*Plodia interpunctella* Hübner), mortality of IMM larvae and adults and allelopathic effect on germination energy and seed germination of sunflower and soybean).

The 2% ethanol extract of industrial hemp (cultivar Helena) was prepared with 1 g of air-dried plant material extracted with 50 ml of 70% ethanol solution during 24 h. Total phenolic, flavonoid and tannin content was determined with standard spectrophotometric methods. Antioxidant capacity of hemp ethanol extract was determined by several different tests (DPPH, ABTS, FRAP). In bioassays, the extract was applied at 0.5, 1 and 2 % concentrations.

Insecticidal activity of extracts on IMM larvae (L₃) was assessed in a "No-choice test", by placing 10 L₃ per replicate into jars with sunflower seeds treated with hemp ethanol extract. Mortality was recorded after 24, 48, 72 h and 7 days of exposure. Life history parameters were monitored weekly until the adult emergence began, and then assays were checked every 24 h. Newly emerged unmated adults from were immediately paired to obtain fecundity. MDD was calculated, as the average time (in days), from the start of the experiment to each adult emergence. Mortality of adults was also recorded depending on the seed treatment.

Allelopathic effect was assessed according to changes in germination energy and seed germination of sunflower and soybean. Tests were carried out according to a standard filter paper method. TR results of this study indicate that industrial hemp extract had different effect on *Plodia interpunctella* larvae and adults. The highest mortality of larvae was caused by the highest concentration of hemp extract, and it ranged from 35% after 24 h of exposure, up to 80% after 7 days of exposure. Mortality of adults, on the other hand was not influenced by the applied extract. However, all tested concentrations of the extract had significant effect on emergence of the adults, fecundity and MDD, by inhibiting these life history parameters.

Treatment with ethanol extract of industrial hemp in concentration of 2% had positive effects on germination and germination energy of sunflower and soybean seeds.

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BOOK OF ABSTRACT

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