Institute of Chemistry
Slovak Academy of Sciences

Proceedings of the

15th Bratislava Symposium on Saccharides

Smolenice Castle, Slovakia
June 20 – 24, 2022

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15th Bratislava Symposium on Saccharides

Organized by the Institute of Chemistry of the Slovak Academy of Sciences, Bratislava

Edited by: Jaroslav Katrlík, Marek Baráth
Revised by: Karin Kollárová

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Editorial

It gives me a great pleasure to welcome you to the 15th Bratislava Symposium on Saccharides (15th BSS) organized after a long five years after the last Symposium. The reason for such a long break, the coronavirus pandemic, is hopefully over, even though the world is facing many new challenges. I firmly believe that also we, scientists, can find common ground and can help mitigate and solve some of these issues.

The Bratislava Symposia on Saccharides have been regularly organized by the Institute of Chemistry, Slovak Academy of Sciences since 1978, and during this time they have established themselves as one of the bases for exchange of new knowledge and ideas in the world of glycosciences which is growing from year to year. Typical friendly atmosphere helps to create and reinforce contacts in the glyco-scientific community. We hope that such set tradition will continue and that participants of the 15th BSS will enjoy both scientific quality and friendly environment of the meeting.

Importance of glycosciences is rapidly increasing at all levels, from basic research to commercial applications. All research areas in biology, medicine or pharmacy are in certain point crossing with glycosciences. At the Symposium, recent advances in glyco-research will be presented covering Chemistry & Synthesis of Saccharides, Glycobiology & Glycomics, Glycans & Health, Glycoconjugates & Glycomaterials and Structure & Analyses.

I would like to express my big thanks to all involved, plenary and invited lecturers, oral, flash and poster presenters, other participants, sponsors, organizing committee and all people helping to make the 15th BSS successful.

On the behalf of the Organisation Committee of the 15th BSS I wish you scientifically interesting, fruitful and pleasant week in the Smolenice Castle, the Congress Center of the Slovak Academy of Sciences, located 50 km north-east of Bratislava and 20 km north-west of Trnava, at the foot of Small Carpathian Mountains, the prominent Slovak wine region. We hope you will enjoy the attractive interiors of the castle and beautiful natural surroundings providing an inspirational environment for discussion with colleagues and also relaxation. We highly appreciate that you have chosen to attend the 15th BSS and you are very warm welcome!

Jaroslav Katrlík

Chairman of the 15th BSS

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Symposium program

Monday 20.6.2022

12:00-18:00		Registration in the Smolenice Castle
14:00		Bus departure from Bratislava to Smolenice
18:10-18:20		Opening ceremony *Jaroslav Katrlík, Stanislav Kozmon*
		Section 1 *(Chair: Serge Perez)*
18:20-19:00	PL1	GLYCOSYLTRANSFERASES AS TARGETS FOR THERAPEUTIC INTERVENTION IN VARIOUS DISEASES *Igor Tvaroška*
19:00		Welcome Dinner

Tuesday 21.6.2022

7:30-9:00		Breakfast
		Section 2 *(Chair: Alexei Demchenko)*
9:00-9:40	PL2	LECTINS FROM PATHOGENS: FROM STRUCTURAL GLYCOBIOLOGY TO ANTIADHESIVE STRATEGIES *Anne Imberty*
9:40-10:10	IL1	GLYCONANOMATERIALS AND GALECTINS IN BIOMEDICINE *Pavla Bojarová*
10:10-10:20	FP1	STUDYING THE BINDING OF POLYMERIC GLYCO-NANOPARTICLES AND LECTINS BY MEANS OF FLUORESCENCE CORRELATION SPECTROSCOPY *Tanja Lüdtke, Patricia Perez-Schmidt, Laura Polito, Sergio Moya*
10:20-10:40	OP1	LECTINS FROM INSECT AND HUMAN PATHOGEN *PHOTORHABDUS* SPP. *Michaela Wimmerová, Eva Fujdiarová, Pavel Dobeš, Josef Houser, Marek Korsák, Filip Melicher, Pavel Hyršl*
10:40-11:00		Coffee Break

		Section 3 *(Chair: Marko Anderluh)*
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11:30-12:00	IL3	MICROBIAL MEANS AND METHODS FOR S-LINKED GLYCOSYLATION *Alka Rao, Yogita Sharma, Shimona Ahlawat*
12:00-12:20	OP2	DEVELOPMENT OF DIVALENT LECA LIGANDS AS ANTIVIRULENCE AGENTS AGAINST *PSEUDOMONAS AERUGINOSA* *Eva Zahorska, Sakonwan Kuhaudomlarp, Francesca Rosato, Kai Stober, Saverio Minervini, Sultaan Yousa, Martin Lepsik, Joscha Meiers, Dirk Hauck, Emilie Gillon, Thorsten Kinsinger, Katharina Rox, Anna K. H. Hirsch, Winfried Römer, Anne Imberty, Alexander Titz*
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14:00-14:40	PL3	BOOSTING INSIGHTS ON THE IMMUNOPATHOLOGY OF DISORDERS OF GLYCOSYLATION *Carlota Pascoal, Pedro Granjo, Marek Nemčovič, Zuzana Pakanová, Rebeka Kodríková, Ján Mucha, Zelia Silva, Ricardo Lagoa, Vanessa dos Reis Ferreira, Paula A. Videira*
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14:50-15:20	IL4	INHIBITION OF O-GLCNAC TRANSFERASE - THE CELL'S METABOLIC GAUGE THAT ALTERS ITS FATE *Marko Anderluh, Elena M. Loi, Matjaž Weiss, Cyril Ballsolier, Tihomir Tomašič, Martina Gobec, Roland Pieters*
15:20-15:40	OP4	MUCIN O-GLYCANS: SYNTHESIS AND ATTENUATION OF *CANDIDA ALBICANS* VIRULENCE *Rachel Hevey*

15:40-16:00	OP5	THE PLACENTAL MUCIN-LIKE CD24 INTERACTS WITH SIGLEC-10 AND IS DOWN REGULATED IN PREECLAMPSIA: *IN-VITRO* AND *IN-VIVO* STUDIES *Marei Sammar, Hamutal Meiri, Daniel Vaiman*
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Wednesday 22.6.2022

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11:50-12:20	IL7	GLYCOSIDASES AS A SYNTETIC TOOL IN BIOCATALYSIS *Vladimír Mastihuba*
12:20-12:30	FP5	EFFECT OF HEMICELLULOSES ON STRUCTURE AND MECHANICAL PROPERTIES OF BACTERIAL CELLULOSE-BASED COMPOSITES *Vadym Chibrikov, Piotr Mariusz Pieczywek, Justyna Cybulska, Artur Zdunek*
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Thursday 23.6.2022

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15:20-15:40	OP18	STEREOSELECTIVE SYNTHESIS OF 1,2-*CIS*-α-THIOGLYCOSIDES BY TWO SEQUENTIAL PHOTOINITIATED THIOL-ENE ADDITIONS *Viktor Kelemen, Nóra Debreczeni, Miklós Bege, Anikó Borbás*
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Friday 24.6.2022

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10:30-10:35		Closing Ceremony *Jaroslav Katrlík*
10:45-11:45		Lunch
12:00		Bus departure to Bratislava (Expected arrival to Bratislava at 13:30 h)

List of participants

Aguedo, Juvissan	Slovak Academy of Sciences	Bratislava, Slovakia
Altmann, Friedrich	University of Natural Resources and Life Sciences	Vienna, Austria
Anderluh, Marko	University of Ljublana	Ljublana, Slovenia
Baráth, Marek	Slovak Academy of Sciences	Bratislava, Slovakia
Beránek, Jan	University of Chemistry and Technology	Prague, Czech Republic
Biely, Peter	Slovak Academy of Sciences	Bratislava, Slovakia
Blahutová, Jana	Slovak Academy of Sciences	Bratislava, Slovakia
Blšáková, Anna	Slovak Academy of Sciences	Bratislava, Slovakia
Bojarová, Pavla	Czech Academy of Sciences	Prague, Czech Republic
Brennan, Patrick	Colorado State University	Colorado, USA
Bučko, Marek	Slovak Academy of Sciences	Bratislava, Slovakia
Chibrikov, Vadim	Polish Academy of Sciences	Lublin, Poland
Contreras-Esqiuvel, Juan Carlos	Slovak Academy of Sciences	Bratislava, Slovakia
Cvečko, Matej	Slovak Academy of Sciences	Bratislava, Slovakia
Černáková, Lucia	Slovak Academy of Sciences	Bratislava, Slovakia
Čížová, Alžbeta	Slovak Academy of Sciences	Bratislava, Slovakia
Demchenko, Alexei	Saint Louis University	St. Louis, USA
Fabianová, Viktória	Comenius University	Bratislava, Slovakia
Farkaš, Vladimír	Slovak Academy of Sciences	Bratislava, Slovakia
Forbak, Martin	Comenius University	Bratislava, Slovakia

Galicová, Tatiana	Czech Academy of Sciences	Brno, Czech Republic
Hačkuličová, Diana	Slovak Academy of Sciences	Bratislava, Slovakia
Haluz, Peter	Slovak Academy of Sciences	Bratislava, Slovakia
Helm, Johannes	University of Natural Resources and Life Sciences	Vienna, Austria
Hevey, Rachel	University of Basel	Basel, Switzerland
Heydari, Abolfazl	Slovak Academy of Sciences	Bratislava, Slovakia
Híreš, Michal	Slovak Academy of Sciences	Bratislava, Slovakia
Hricovíni, Miloš	Slovak Academy of Sciences	Bratislava, Slovakia
Hrončeková, Štefánia	Slovak Academy of Sciences	Bratislava, Slovakia
Hurevich, Mattan	The Hebrew University of Jerusalem	Jerusalem, Israel
Imberty, Anne	University of Grenoble Alps, CNRS	Grenoble, France
Kacsir, István	University of Debrecen	Debrecen, Hungary
Kaczmarska, Adrianna	Polish Academy of Sciences	Lublin, Poland
Kafková, Radka	Comenius University	Bratislava, Slovakia
Kallolimath, Somanath	University of Natural Resources and Life Sciences	Vienna, Austria
Karban, Jindřich	Czech Academy of Sciences	Prague, Czech Republic
Karnišová Potocká, Elena	Slovak Academy of Sciences	Bratislava, Slovakia
Kaszás, Tímea	University of Debrecen	Debrecen, Hungary
Katrlík, Jaroslav	Slovak Academy of Sciences	Bratislava, Slovakia
Kelemen, Viktor	University of Debrecen	Debrecen, Hungary
Kianičková, Kristína	Slovak Academy of Sciences	Bratislava, Slovakia

Kim, Seonghun	Korea Research Institute of Bioscience and Biotechnology	Jeongeup, Korea
Kodríková, Rebeka	Slovak Academy of Sciences	Bratislava, Slovakia
Kollárová, Karin	Slovak Academy of Sciences	Bratislava, Slovakia
Kóňa, Juraj	Slovak Academy of Sciences	Bratislava, Slovakia
Košťálová, Zuzana	Slovak Academy of Sciences	Bratislava, Slovakia
Košútová, Natália	Slovak Academy of Sciences	Bratislava, Slovakia
Kováč, Pavol	National Institutes of Health NIDDK	Bethesda, USA
Kowalczyk, Agnieszka	University of Gdansk	Gdansk, Poland
Kozmon, Stanislav	Slovak Academy of Sciences	Bratislava, Slovakia
Kratz, Eva Maria	Wroclaw Medical University	Wroclaw, Poland
Krchňák, Maroš	Slovak Academy of Sciences	Bratislava, Slovakia
Kubala, Lukáš	St. Anne's University Hospital	Brno, Czech Republic
Kukla, Stanislav	Merck, s.r.o.	Bratislava, Slovakia
Kundalia, Paras H.	Slovak Academy of Sciences	Bratislava, Slovakia
Květoň, Filip	Slovak Academy of Sciences	Bratislava, Slovakia
Lorencová, Lenka	Slovak Academy of Sciences	Bratislava, Slovakia
Lüdtke, Tanja	CIC biomaGUNE	San Sebastian, Spain
Mastihuba, Vladimír	Slovak Academy of Sciences	Bratislava, Slovakia
Mastihubová, Mária	Slovak Academy of Sciences	Bratislava, Slovakia
Mikušová, Katarína	Comenius University	Bratislava, Slovakia
Mocsai, Reka	University of Natural Resources and Life Sciences	Vienna, Austria

Morris, Gordon	University of Huddersfield	Huddersfield, United Kingdom
Mucha, Ján	Slovak Academy of Sciences	Bratislava, Slovakia
Navon, Gil	Tel Aviv University	Tel Aviv, Israel
Nemčovič, Marek	Slovak Academy of Sciences	Bratislava, Slovakia
Osswald, Uwe	University of Natural Resources and Life Sciences	Vienna, Austria
Ostatná, Veronika	Czech Academy of Sciences	Brno, Czech Republic
Pakanová, Zuzana	Slovak Academy of Sciences	Bratislava, Slovakia
Pančík, Filip	Slovak Academy of Sciences	Bratislava, Slovakia
Paschinger, Katharina	University of Natural Resources and Life Sciences	Vienna, Austria
Pasini, Irene	University of Natural Resources and Life Sciences	Vienna, Austria
Pažitná, Lucia	Slovak Academy of Sciences	Bratislava, Slovakia
Perez, Serge	University of Grenoble Alps, CNRS	Grenoble, France
Petruš, Ladislav	Slovak Academy of Sciences	Bratislava, Slovakia
Pieczywek, Piotr Mariusz	Polish Academy of Sciences	Lublin, Poland
Rao, Alka	CSIR-Institute of Microbial Technology	Chandigarh, India
Ruhnau, Johannes	Max-Planck-Institute	Magdeburg, Germany
Sammar, Marei	ORT Braude College	Karmiel, Israel
Savková, Karin	Comenius University	Bratislava, Slovakia

Sinica, Andrej	University of Chemistry and Technology	Prague, Czech Republic
Solkiewicz, Katarzyna	Wroclaw Medical University	Wroclaw, Poland
Stenitzer, David	University of Natural Resources and Life Sciences	Vienna, Austria
Stratilová, Barbora	Slovak Academy of Sciences	Bratislava, Slovakia
Statilová, Eva	Slovak Academy of Sciences	Bratislava, Slovakia
Szpakowska, Nikola	University of Gdansk	Gdansk, Poland
Šípošová, Kristína	Slovak Academy of Sciences	Bratislava, Slovakia
Šuchová, Katarína	Slovak Academy of Sciences	Bratislava, Slovakia
Thoma, Julia	University of Natural Resources and Life Sciences	Vienna, Austria
Topakas, Evangelos	University of Athens	Athens, Greece
Tvarošla, Igor	Slovak Academy of Sciences	Bratislava, Slovakia
Videira, Paula A.	NOVA School of Science and Technology	Lisabon, Portugal
Vráblová, Veronika	Slovak Academy of Sciences	Bratislava, Slovakia
Wenzel, Lisa	Max-Planck-Institute	Magdeburg, Germany
Wilson, Iain	University of Natural Resources and Life Sciences	Vienna, Austria
Wimmerová, Michaela	Masaryk University	Brno, Czech Republic
Woods, Robert J.	University of Georgia	Athens, USA
Yitzchaik, Shlomo	The Hebrew University of Jerusalem	Jerusalem, Israel
Zahorska, Eva	Helmholtz Institute for Pharmaceutical Research	Saarbrücken, Germany

Záhorszká, Monika	Comenius University	Bratislava, Slovakia
Zdunek, Artur	Polish Academy of Sciences	Lublin, Poland
Zemanová, Júlia	Comenius University	Bratislava, Slovakia
Zemkollari, Marilica	University of Natural Resources and Life Sciences	Vienna, Austria

ANALYSIS OF GLYCAN CHANGES IN GESTATIONAL DIABETES MELLITUS

Lucia Pažitná[a], Kristína Kianičková[a], Paras H. Kundalia[a], Zorana Dobrijević[b], Nikola Gligorijević[b], Goran Miljuš[b], Ana Penezić[b], Dragana Robajac[b], Miloš Šunderić[b], Olgica Nedić[b], Vesna Mandić Marković[c,d], Ognjen Radojičić[c,d], Željko Miković[d], Jaroslav Katrlík[a]

[a]*Institute of Chemistry SAS, Dúbravská cesta 9, 845 38 Bratislava, Slovakia,* [b]*Institute for the Application of Nuclear Energy (INEP), University of Belgrade, 11080 Belgrade, Serbia,* [c]*Faculty of Medicine, University of Belgrade, 11000 Belgrade, Serbia,* [d]*Gynecology and Obstetrics Clinic "Narodni front", Belgrade, Serbia*

chemlpaz@savba.sk

One of the main types of diabetes is gestational diabetes mellitus (GDM). The sooner this condition is diagnosed, the sooner it can be treated. Glycan changes appear as possible way how to distinguish diabetes type 1 from type 2 (1). Based on that, we focused on the glycan changes during GDM. We compared serum, plasma, fibrinogen and platelets samples of healthy pregnant women and women with GDM. Samples were analysed using lectin-based microarray method (2). Found differences in glycan composition can play important role for identification of potential biomarkers, which can be useful in research and diagnostics.

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