



28th Austrian Carbohydrate Workshop

Vienna, 13.2.2025-14.2.2025

Ilse-Wallentin Haus @ BOKU Wien, Peter-Jordan Straße 82, 1190 Wien

Thursday, February 13th, 2025

11:45-12:30 Arrival

12:30-12:40 Welcome address

12:40-14:20 Session 1

Towards the Synthesis of UDP-Apiofuranose

Irene Pasini, Uwe Osswald, Fabian Pfrengle
BOKU University, Institute of Organic Chemistry

Synthesis of oligosaccharides related to plant rhamnogalacturonan-II

Uwe Osswald, Katharina Obleser, Fabian Pfrengle
BOKU University, Institute of Organic Chemistry

New Insights into the N-glycomes of *Dictyostelium* species

Alba Hykollari¹, Daniel Malzl, Chunsheng Jin, Carina Eschenbach¹, Kristína Kianičková, Iain B. H. Wilson², and Katharina Paschinger²

¹ Veterinärmedizinische Universität Wien

² BOKU University, Institute of Biochemistry

Identification of a novel carbohydrate kinase network

Haschemi, Arvand
Medical University of Vienna, Department of Laboratory Medicine

Process Chemistry at Thermo Fisher Scientific in Linz

Manuel Gintner, Thermo Fisher Scientific

14:20-14:50 Coffee Break sponsored by



ThermoFisher
SCIENTIFIC

14:50-16:10 Session 2

Bicyclic Nojirimycin Derivatives as Potential α -Glucosidase Inhibitors

Patrick Weber, Katharina Janmaat, Jeroen Codée, Herman Overkleeft
Leiden University

Green flocculants in action: Unlocking and understanding the power of cationized polysaccharides for water purification

Pierre Carmona, Simon Leonhartsberger, Bernhard Seidl, Karl-Juergen Mann, Martin Kozich, Irina Sulaeva, Christian Stanetty, Marko Mihovilovic
TU Wien, Institute of applied synthetic chemistry

Decoding a novel Glycan ligand-receptor pair in plant immunity

Du-Hwa Lee, Colin Ruprecht, Fabian Pfrengle
BOKU University, Institute of Organic Chemistry

Exploring the biocatalytic potential of a newly identified class III cellobiose dehydrogenase from *Fusarium solani*

Angela Giorgianni, Florian Csarman, and Roland Ludwig
BOKU University, Institute of Food Technology

16:10-16:40 Coffee Break and Photo Session **sponsored by**



16:40-18:20 Session 3

Computational Study of Secondary Cell Wall Glycopolymers

Peter Poliak¹, Markus Blaukopf³, Paul Kosma³, Chris Oostenbrink¹, Christina Schäffer²

¹BOKU University, Institute of Molecular Modeling and Simulation

²BOKU University, Institute of Biochemistry

³BOKU University, Institute of Organic Chemistry

Chemical Modification of Chitosan: A Versatile Strategy for Developing Bioactive Thin Films and Bulk Materials

T. Dorn, W. Festl, K. Stana-Kleinschek, A. Luttenberger, H. Prasch, F. Schmutz, E. Spari, T. Steindorfer, M. Thonhofer, R. Kargl*, T.M. Wrodnigg

TU Graz, Institute of Chemistry and Technology of Biobased Systems

Ligand Directed Protein Profiling: Probe Design, Inhibition Profiles, and Covalent Labeling of Glycoside Hydrolases

H. Prasch, D. Babic¹, P. Bojarova², A. Culum¹, T. Dorn¹, W. Festl¹, V. Kren², A. Luttenberger, B. Nidetzky³, F. Schmutz, M. Söllinger, E. Spari¹, M. Steinbrugger, T. Steindorfer¹, M. Thonhofer¹, P. Weber, A. Winkler⁴ T.M. Wrodnigg¹

¹TU Graz, Institute of Chemistry and Technology of Biobased Systems

²Institute of Microbiology of the Czech Academy of Sciences

³TU Graz, Institute of Biotechnology and Biochemical Engineering

⁴TU Graz, Institute of Biochemistry)

Identifying Glycosylation-Related Biomarkers for severity stratification in Chronic Fatigue Syndrome

Davide Ret¹, Gianluigi Sabatino, Daniel García de Otazo Hernández, Alessio Gentile, Alexandra Ioannou, Selina Keppler, Eva Untersmayr²

¹TU Wien, Institute of applied synthetic chemistry

²Medical University of Vienna

Synthesis of β -1,3-Xylan Oligosaccharides by Automated Glycan Assembly

Nitish Verma, Uwe Osswald, and Fabian Pfrengle

BOKU University, Institute of Organic Chemistry

18:20-18:30 Beer Break



18:30-19:15 Plenary lecture Prof. Sabine Flitsch

Application of enzymes in carbohydrate synthesis

Sabine Flitsch

University of Manchester

19:15 Poster Session and Social gathering

 Friday, February 14th, 2025 

09:00-09:45 Plenary lecture Dr. Marthe Walvoort

Bacterial polysaccharides in health and disease

Marthe Walvoort,

University of Groningen, Stratingh Institute for Chemistry

09:45-10:00 Short Coffee break

10:00-11:20 Session 4

NMR spectroscopy reveals a simplified arabinogalactan structure from a natural source

Mario Schubert

FU-Berlin

Synthesis of an unusual RG-II Side Chain B Tetrasaccharide

Katharina Obleser, Fabian Pfrengle

BOKU University, Institute of Organic Chemistry

Zwitterionic PE and PC insect glycan for Dipterian glycan array

Alessandro Monti¹, Vangala Madhuri¹, Lena Nuschy², Alla Zamyatina¹, Ian Wilson²

¹BOKU University, Institute of Organic Chemistry

²BOKU University, Institute of Biochemistry

Glycoengineering of nematode antigens using insect cells: a promising approach for producing bioactive vaccine antigens of parasitic worms

Isabella Adduci¹, Floriana Sajovitz-Grohmann, Licha Wortha, Zuzanna Dutkiewicz, Hugo Weidinger, Anja Joachim, Thomas Wittek, Dirk Werling, Iain BH Wilson², Katharina Lichtmannsperger¹, Shi Yan²

¹University of Veterinary Medicine Vienna, Centre of Pathobiology

²BOKU University, Institute of Biochemistry

11:20-11:50 The last coffee break -sponsored by



11:50-13:10 Session 5

Chemical synthesis of Mannan and Galactomannan Oligosaccharide derived from the plant cell wall

Nivedya Ayinikkattuparambil Unmesh, Fabian Pfrengle
BOKU University, Institute of Organic Chemistry

Synthesis of new carbohydrate-based ligands for the lectin CLEC-2

Sara Capellato, Fabian Pfrengle
BOKU University, Institute of Organic Chemistry

Chemical synthesis of RG1 fragments

Remya Kumbappilliyil rajan, Fabian Pfrengle
BOKU University, Institute of Organic Chemistry

Biosynthesis of pyruvylated bacterial cell wall glycopolymers – a joint overview

C. Stefanovic¹, M.Bruckner⁴, M.S.G. Legg, N. Mateyko, J.J. Ender, T. Kuvak, C. Oostenbrink², C. Schäffer¹, S.V. Evans³, F.F Hager-Mair¹

¹BOKU University, Institute of Biochemistry

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³University of Victoria

⁴BOKU University, Institute of Organic Chemistry

13:10-13:30 Discussion about network activities

13:30 Closing remarks

Poster Session

Active Site Engineering of Bifidobacterial β -galactosidase for improved N-acetyllactosamine Production

Konlarat Phirom-on¹, Dietmar Haltrich¹, Chris Oostenbrink², Thu-Ha Nguyen¹

¹BOKU University, Institute of Food Technology

²BOKU University, Institute of Molecular Modeling and Simulation

Towards new antibiotics; targeting legionella through the ubiquitin ADP-ribosylation system

Halana C. Vlaming, Bjorn R. van Doodewaerd, Angeliki Moutsopoulos, Vito Pol, Paul P. Geurink, Gerbrand J. van der Heden van Noort.

Leiden University Medical Centre (LUMC)

Automated Synthesis of Oligosaccharides related to Alginate

Matthias Posch, Fabian Pfrengle

BOKU University, Institute of Organic Chemistry

Amazing transgalactosylation and how to achieve it

Anja Kostelac, Thu-Ha Nyugen

BOKU University, Institute of Food Technology

Fluorescent sialic acid quantification: Finding the right light

Daniel Garcia de Otazo Hernandez, Iris Lisa Seltenhammer, Gianluigi Sabatino, Alexandra Ioannou, Eva Untersmayr, Davide Ret

TU Wien, Institute of applied synthetic chemistry

A Synthetic Building Block Concept Towards Small Molecule Probes Targeting Glycoside Hydrolases

H. Prasch¹, D. Babic¹, A. Culum¹, T. Dorn¹, W. Festl¹, A. Luttenberger¹, B. Nidetzky², F. Schmutz, M. Söllinger, E. Spari¹, M. Steinbrugger¹, T. Steindorfer¹, M. Thonhofer¹, P. Weber¹, A. Winkler³, T.M. Wrodnigg¹

¹TU Graz, Institute of Chemistry and Technology of Biobased Systems

²TU Graz, Institute of Biotechnology and Biochemical Engineering

³TU Graz, Institute of Biochemistry

From Glycopyranoside-Monosylates to C-2 Branched Glycofuranosides: Scope, Limitations and Synthetic Opportunities

Luttenberger, A. Culum, T. Dorn, W. Festl, H. Prasch, F. Schmutz, E. Spari, T. Steindorfer, M. Thonhofer, P. Weber, A.E. Stütz, T.M. Wrodnigg

TU Graz, Institute of Chemistry and Technology of Biobased Systems

Challenges and Unexpected Outcomes in the Synthesis of Alkyne-Functionalized manno-C-Glycosides

W. Festl, T. Dorn, A. Luttenberger, H. Prasch, F. Schmutz, E. Spari, T. Steindorfer, M. Thonhofer, T.M. Wrodnigg

TU Graz, Institute of Chemistry and Technology of Biobased Systems

N-Glycan profiles of cells cultured with diverse monosaccharide treatments

Gianluigi Sabatino¹, Iris Seltenhammer, Daniel García de Otazo Hernández, Alessio Gentile, Arvand Haschemi², Eva Untersmayr, Davide Ret¹

¹TU Wien, Institute of applied synthetic chemistry

²Medical University of Vienna, Department of Laboratory Medicine

Expression of plant galactosyltransferases in HEK 293 cells

Syed Saad Jan, Colin Ruprecht

BOKU University, Institute of Organic Chemistry

Identification of Plant Rhamnosyltransferases involved in Plant Cell Wall Biosynthesis

Said Durakovic, Colin Ruprecht

BOKU University, Institute of Organic Chemistry

Beads that bind: functional supports for n-glycan analysis

Iris Seltenhammer, Gianluigi Sabatino, Daniel García de Otazo Hernández, Selina Keppler, Eva Untersmayr, Davide Ret

TU Wien, Institute of applied synthetic chemistry

Chemical Synthesis of Carrageenan Oligosaccharides Using Automated Glycan Assembly

Brock Byers, Fabian Pfrengle

BOKU University, Institute of Organic Chemistry

Heparanase inhibitors as anti-cancer medicines

Gijs Ruijgrok, Kasper Oorschot, Vincent Lit, Zachary Armstrong, Casper de Boer, Valentina Borlandelli, Jeroen Codée, Gideon Davies, Hermen Overkleeft, Liang Wu

S-Layer Structure of Oral *Tannerella serpentiformis*

Stephanie Walcher¹, Dietmar Pum¹, Andreas Breitwiesner¹, Chris Oostenbrink¹, Alexandre Bonvin², Christina Schäffer¹

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