

# GLYCO 21

Vienna, Austria  
August 21-26, 2011



## 21<sup>st</sup> International Symposium on Glycoconjugates

### PROGRAMME



University of Natural Resources  
and Life Sciences, Vienna

BMWF<sup>a</sup>

Bundesministerium für Wissenschaft und Forschung



universität  
wien

University of Vienna



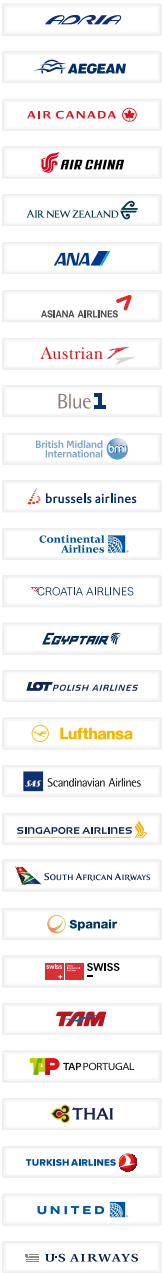
# YOU'VE ONLY JUST ARRIVED & ALREADY WE'RE THINKING OF YOUR NEXT TRIP

As the official airline network for Glyco XXI, we'd like to thank you for choosing the Star Alliance™ network and hope that all goes really well for you here today.

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So the next time you want to concentrate all your energies on your conference, we hope you'll decide to leave the travel arrangements to us.



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## PREFACE

We have the great pleasure to welcome you all to Vienna to the 21<sup>st</sup> International Symposium on Glycoconjugates ("Glyco 21"; August 21<sup>st</sup> – 26<sup>th</sup>, 2011).

This series of conferences, now held under the auspices of the International Glycoconjugate Organisation, was initiated in 1964 by the late Roger JEANLOZ; starting with Glyco 2 (1973), they are held biannual, with a geographical distribution that brought this Symposium to all corners of the world.

The International Glycoconjugate Organisation (IGO) is constituted of National Representatives (presently 27 countries), Past Presidents and co-opted Members. Alongside the lectures and poster presentations on the basic symposium themes (Biosynthesis & Metabolism of Glycoconjugates, Carbohydrates & Disease, Cell Biology, Development & Differentiation, Glyco(bio)technology, Infection & Immunity, Physiology & Signalling, Structural & Chemical Glycobiology and Glycomics), a new element of this year's 21<sup>st</sup> Symposium are the eight workshops, supported by the Euroglycoscience Forum, with the following focuses:

- Mass spectrometry
- Glycolandscape Engineering
- Crystallography and modelling
- Glycoimmunology
- Methods for glycolipid analysis
- Prokaryotic protein glycosylation
- Glycobioinformatics
- Glycoproteomics

Furthermore, the Company of Biologists has kindly extended its support to the Young Glycobiologists' Symposium, which is another new feature. Especially this session indicates that Glyco 21 pays particular attention to the involvement of the younger generations of scientists. The availability of travel grants to younger scientists, thanks to AGRANA-Group and the European Science Foundation, is also a reflection of this commitment. We also thank the Company of Biologists and the European Science Foundation for sponsoring three of the plenary lectures, as well as the Society for Glycobiology for the organisation of a Guest Session focussing on the role of O-linked GlcNAc.

As is the tradition, the abstracts of all plenary and keynote lectures, oral and poster presentations (just over four hundred of them) appear in a special issue of the Glycoconjugate Journal. The Scientific Programme Committee has-

sought to reach the right mix of both familiar and perhaps not so familiar names and topics – and hope that everyone will learn something new during the course of the conference.

Associated also with the conference are a number of other events including a second Austria/Japan joint workshop on Comparative and Developmental Glycobiology, a meeting of the Glycoconjugate Journal editorial board, a meeting of the Euroglycoscience Forum executive and a progress meeting of the EU-funded Euroglycanarrays Initial Training Network.

Very sadly, we have to pay a final tribute to three giants of our glycoscience community:

Prof. Dr. Jean MONTREUIL (Université des Sciences et Technologies de Lille, Lille, France) who passed away in 2010; Prof. Dr. Nathan SHARON (Weizmann Institute of Science, Rehovot, Israel), and Prof. Dr. Saul ROSEMAN (The Johns Hopkins University, Baltimore, USA); Nathan and Saul have died recently. All three will be remembered throughout our Symposium.

At this Symposium, two outstanding scientists will be specifically honoured:

- Prof. Dr. Jeffrey ESKO, (University of California, San Diego, USA), who will receive this year's IGO Award for his exceptional contributions to our understanding of proteoglycan and glycosaminoglycan biosynthesis and function.
- Prof. Dr. Harry SCHACHTER (Hospital for Sick Children and University of Toronto, Canada), for his tremendous achievements, especially to the biosynthesis of glycoprotein glycans and their role in physiology and development. A special distinction will be presented to Harry by the Austrian Government.

The organisers of Glyco 21 hope that you will enjoy both the scientific and social aspects of the programme.

**Leopold März**  
**Erika Staudacher**  
**Iain Wilson**  
**Paul Messner**

University of Natural Resources and Life Sciences (Universität für Bodenkultur)  
 Vienna, Austria

## COMMITTEES

The International Glycoconjugate Organisation

Gerald W. Hart, *President*  
 Leopold März, *President-elect*  
 Paul Gleeson, *Immediate Past-president*  
 Sandro Sonnino, *Secretary*  
 Thierry Hennet, *Treasurer*

National Representatives

Pedro Bonay (Spain)  
*to replace* Angelo Reglero  
 Nicolai Bovin Бовин Никола (Russia)  
 Jin Won Cho 조진원 (Korea)  
 Henrik Clausen (Denmark)  
 Anne Dell (UK)  
 Jukka Finne (Finland)  
 Paul Gleeson (Australia)  
 Jianxin Gu 顾建新 (China)  
 Gerald Hart (USA)  
 Thierry Hennet (Switzerland)  
 Jim Jamieson (Canada)  
 Gordan Lauc (Croatia)  
 Hakon Leffler (Sweden)

Jean-Claude Michalski (France)  
 Werner Reutter (Germany)  
 Sandro Sonnino (Italy)  
 Avadhesha Surolia (India)  
 Ken Kitajima 北島 健 (Japan)  
 Maciej Ugorski (Poland)  
 Johannes F.G. Vliegenthart  
 (The Netherlands)  
 Iain Wilson (Austria)  
*to replace* Leopold März  
 Albert M. Wu 吳 明道 (Taiwan)  
 Lode Wyns (Belgium)  
 Yehiel Zick (Israel)

Past International Conferences on Glycoconjugates

Eugene. A. Davidson (USA)	Jean Montreuil (France)
Alan B. Foster (UK)	Jürgen Roth (Switzerland)
Paul Gleeson (Australia)	Harry Schachter (Canada)
Mary Catherine Glick (USA)	Roland Schauer (Germany)
Colin Hughes (UK)	Nathan Sharon (Israel)
Roger W. Jeanloz (USA)	Avadhesha Surolia (India)
Akira Kobata 木幡 陽 (Japan)	Guido Tettamanti (Italy)
Jerzy Koscielak (Poland)	Johannes F.G. Vliegenthart (The Netherlands)
	Tamio Yamakawa 山川 民夫 (Japan)

Organising Committee

**Co-chairs:** Erika Staudacher (BOKU Vienna)  
 Leopold März (BOKU Vienna)

Günter Allmaier (Austria)  
 Lothar Brecker (Austria)  
 Josef Glössl (Austria)  
 Hanspeter Kählig (Austria)  
 Paul Kosma (Austria)  
 Lukas Mach (Austria)  
 Paul Messner (Austria)  
 Walther Schmid (Austria)  
 Igor Tvaroška (Slovakia)  
 Reinhard Vlasak (Austria)  
 Iain Wilson (Austria)

Scientific Programme Committee

**Co-chairs:** Iain Wilson (BOKU Vienna)  
 Paul Messner (BOKU Vienna)

Günter Allmaier (Austria)  
 Reginald Bittner (Austria)  
 Paul Kosma (Austria)  
 Eva Stöger (Austria)  
 Graham Warren (Austria)  
 John Hanover (USA; nominated by the Society for Glycobiology)  
 Kelly ten Hagen (USA; nominated by the Society for Glycobiology)

**supported in abstract selection by**

Michael Duchêne (Austria)  
 Catherine Merry (UK)  
 Tadashi Suzuki 鈴木 匡 (Japan)



## AWARD & TRIBUTES

### International Glycoconjugate Organisation Award 2011

#### Professor Jeffrey ESKO



Jeffrey D. ESKO, Ph.D., M.D. (h.c.) is a Professor of Cellular and Molecular Medicine (cmm.ucsd.edu) and Co-Director of the Glycobiology Research and Training Center (grtc.ucsd.edu) at the University of California, San Diego. Dr. Esko received his Ph.D. in Biochemistry at the University of Wisconsin in Madison. After an independent fellowship at the Molecular Biology Institute at the University of California, Los Angeles, he moved to the University of Alabama at Birmingham and then to Department of Cellular and Molecular Medicine at the University of California, San Diego in 1996 to help build a program in Glycobiology.

Work in his laboratory focuses on the structure, biosynthesis, and function of proteoglycans. This includes structural studies of heparan sulphate by mass spectrometry, application of genome-wide methods to identify genes involved in heparan sulphate assembly and lysosomal turnover, analysis of guanidinylated glycosides that act as molecular transporters, studies of proteoglycans in lipoprotein metabolism, and analysis of proteoglycans in modulating vascular permeability (eskolab.ucsd.edu). His work is supported by grants from the National Institutes of Health and the private sector.

Dr. Esko has served on the numerous editorial boards and scientific boards and is currently on the board for Journal of Cell Biology and as an Associate Editor for Glycobiology. He was past President of the Society for Glycobiology, past Director of the Biomedical Sciences Graduate Program at UCSD (biomedsci.ucsd.edu), and he co-founded Zacharon Pharmaceuticals, Inc

(www.zacharon.com). His work has been recognized by the Karl Meyer Award, the highest honor from the Society for Glycobiology, a MERIT Award from the National Institutes of Health, and an honorary degree from the University of Uppsala. In 2011, he is the recipient of the International Glycoconjugate Organisation Award.

#### Gerald W. Hart

The Johns Hopkins University,  
School of Medicine,  
Baltimore, USA

#### **Previous recipients of this prize have been:**

- 2009 Markus Aebi (Switzerland)
- 2007 Ajit Varki (USA)
- 2005 Anne Dell (United Kingdom) and Konrad Sandhoff (Germany)
- 2003 Pamela Stanley (USA)
- 2001 Naoyuki Taniguchi (Japan)
- 1999 Michael A.J. Ferguson (United Kingdom)
- 1997 Gerald W. Hart (USA)

#### **Guest of Honour Prof. Dr. Harry SCHACHTER**



The Organizers of Glyco 21 have decided to invite Prof. Dr. Harry SCHACHTER as Guest of Honour to this Conference in Vienna, his place of birth.

On this occasion, Dr. Schachter will be awarded the Cross of Honour for Science and Art by the Republic of Austria. With this order, the Federal Government acknowledges the scientific achievements of a person who has made significant contributions to Science. Since the early eighties, Harry Schachter has continuously supported the development of glycobiological research in Austria, especially at the University of Natural Resources and Life Sciences, Vienna (BOKU).

Harry Schachter was born in Vienna in 1933. As the terror of National Socialism approached and finally took over Austria (the "Anschluss"), the family decided to leave the country and emigrate. Many Austrian Jews, many of them later becoming well-known scientists, artists and writers, suffered a similar fate, an even greater number perished in Concentration Camps. The year 1938 marked the almost complete annihilation of a previously vivid and prospering Jewish community, especially in Vienna.

Having escaped the horrors of the Holocaust, the family spent the years of World War II in Trinidad and then moved to Canada, where Harry received his academic education in Medicine and Biochemistry at the University of Toronto.

During his career, Harry Schachter spent two years with Prof. Saul Roseman at the Johns Hopkins University in Baltimore, USA, received an impressive number of national and international awards, honours and fellowships, among them the Donders Chair at the University of Utrecht, The Netherlands.

At his "home base", the Hospital for Sick Children in Toronto, Harry Schachter has contributed to glycobiology, especially the biochemistry of glycan synthesis for more than forty years. His bibliography is indeed outstanding, and many of us have benefited from Harry Schachter's knowledge, enthusiasm and support.

From his earlier work on the activities of glycosyltransferases in both the N- and O-glycosylation pathways Harry Schachter moved on to define enzyme acceptor specificities to elucidate the biosynthesis of complex N-glycans on cell surface receptors and secreted proteins. Milestones were the purification of GlcNAc-transferases I and II from biological sources and the cloning and expression of the respective genes, which led him to concentrate on their functions in development and disease.

Working with the worm *C. elegans*, Harry Schachter, his group and collaborators generated a triple mutant with the deletion of the three GlcNAc-transferase I genes, an excellent model to learn much about N-glycan synthesis by characterizing the affected glycans and glycoproteins by mass spectrometry (in collaboration with Dr. Vern Reinhold).

In numerous collaborations – it would be unfair to select only a few – Harry Schachter has shown the significance of GlcNAc-transfer deficiencies for physiopathological events.

Some of his many "other" activities include for instance: member of Editorial Boards, Chief Editor of Glycoconjugate Journal, Organiser of Glyco 11, etc. Finally, it should be especially appreciated that many of us have had the opportunity to witness Harry Schachter's talent to present glycobiology as an exciting, complex and wonderful world of challenges.

Leopold März

Department of Chemistry,  
University of Natural Resources and Life Sciences,  
Vienna, Austria

#### **A tribute to Jean MONTREUIL (1920 – 2010)**



Prof. Dr. Jean MONTREUIL, a "Glycomaniac" and pioneer glycobiologist, was an emblematic and charismatic figure of French biochemistry. He passed away on July 16<sup>th</sup>, 2010, just a few weeks short of his 90<sup>th</sup> birthday, at the "Vasile Goldis" Western University of Arad, Romania, where he was organizer of the 16<sup>th</sup> Ecole d'Ete Francophone on "Molecular Pathologies and Pharmacology; Biotechnology." Jean Montreuil was among the early pioneers in the field of carbohydrate chemistry and glycobiology, and one of the fathers of what is now termed "Glycomics." He made seminal contributions to the subject, and created the "Lille Glycobiology School," where he trained a

number of leaders in this field as well as and mentoring a new generation of glycobiology and biochemistry researchers. He was one of the prime organisers of the 2<sup>nd</sup> International Symposium on Glycoconjugates, held in Lille in 1973, and he organised the IX<sup>th</sup> meeting of this series in 1987. He served as President (1977), acted as a Member of the International Glycoconjugate Organization (IGO), and was a member of the International Steering Committee for Carbohydrate Symposia (ICS).

The very first contributions of Jean Montreuil were in the study of human milk glycoproteins, which led to the discovery in 1959 of lactotransferrin (lactoferrin) and milk IgAs in 1960. In 1969 he was one of the first to elucidate the “N-( $\beta$ -aspartyl)-N-acetylglucosaminylamine nature of the glycan-protein bond” in human transferrin, and elucidated the complete primary structure of its glycan. This was followed by the characterization of the glycan in many other glycoproteins. Jean Montreuil proposed that all N-glycans have the same core, to which are attached various branches that he named “antennae” to suggest their mobility and potential physicochemical and biological roles. Jean has always been a kind of “visionnaire”; he was convinced that the “informative” message of glycans was written not only in term of sequence but also supported by their conformation. Since no crystallographic or NMR data concerning glycans was then available, only the building of molecular models, he proposed interconvertible conformations for glycans, and he was the first to coin the terms “Y” and “T” conformations, later called “umbrella” or also “broken wing” conformations. Jean Montreuil was continuously looking for and applying new methodologies for structural characterisation. In the early 1970’s, he established contact with Professor Hans Vliegenthart’s group at the University of Utrecht. This was the beginning of a long adventure whose aim was to analyze glycans by high-field NMR. This collaboration led to the first full characterisation by NMR of the glycosylation pattern of many glycoproteins and oligosaccharides. His last contribution together with Professor Daniela Bratosin from Arad University, Romania, was on aging of red blood cells, leading to a new provocative concept about “red blood cells apoptosis”. Jean Montreuil gives to us a wonderful example of a rich and extremely well-filled scientific life. Jean Montreuil’s influence and scientific contributions will continue to have a lasting impact on current and future scientists. He leaves us a very fascinating legacy.

Jean Michalski

Unité de Glycobiologie Structurale et Fonctionnelle,  
Université des Sciences et Technologies de Lille,  
Villeneuve d’Ascq Cedex, France

### A tribute to Nathan SHARON



Nathan Sharon, Professor Emeritus, The Weizmann Institute of Science, Israel, passed away on June 17, 2011, at the age of 85. Nathan made major contributions to the scientific literature, to the teaching and training of undergraduate and graduate students, and to the often neglected but important area of communicating the importance of science, and of glycobiology in particular, to the lay public and to the politicians who fund our research. The term “giant in his field” tends to be used carelessly at times but in the case of Nathan Sharon, the term is highly deserved! The news of his death led to the sharing among his colleagues not only of their grief at his loss but also of many warm memories. For example, Eve Barak wrote: “Through his warmth and gregariousness (and love of travel), he served as a sort of a world-wide glue for the field. During his active years, he knew everyone and everyone knew him. The “six degrees of separation” did not pertain to glycobiologists, since each glycobiologist was linked to all others at least through Nathan.

Nathan had a distinguished and lengthy (more than 50 years) career. He published over 450 scientific papers and reviews. He received many fellowships to visit other laboratories in North America and Europe indicating the high regard that his peers had for both his scientific contributions and his wise counsel on the future directions of science. For example, Nathan was a Fogarty International Scholar at NIH in Bethesda, USA, in 1977, and was awarded the prestigious Bijvoet Medal of Utrecht University, The Netherlands, in 1989. In 2006, a highly successful International Symposium (“Half a century at the carbohydrate-interface”) was held at the Weizmann Institute in honor of Nathan’s 80th birthday.

In his early years in science, Nathan worked with such giants as Fritz Lipmann, Roger Jeanloz and Daniel Koshland. His work with Jeanloz involved the isolation of an unusual bacterial diamino sugar (2,4-diamino-2,4,6-trideoxy-D-glucose) which he named bacillosamine. Sharon determined the structure of bacillosamine and its mechanism of biosynthesis. Many years later, bacillosamine was shown by others to be covalently attached to Asn or Ser in several glycoproteins from pathogenic bacteria such as *C. jejuni* and *N. meningitidis*. This finding is important because bacillosamine is not made by humans and may therefore be a target for anti-bacterial drugs.

The importance of Nathan's work on lectins, not only to glycobiologists but also to other scientists, is best reflected by the fact that seven of his publications have been selected as Citation Classics. Nathan Sharon was among the 1000 most cited scientists in the period 1965-1978 and was ranked 260th among "Citation Superstars" in the period 1973-1984. These are rare achievements! Nathan has written three books in Hebrew on popular science and five in English on various aspects of glycobiology and general science. His book on "Lectins" (written together with his long-time collaborator Halina Lis) is a classic in the field. A Second Edition was published in English in 2003 and in Japanese in 2006. It is important to note that Nathan played a major role in converting the field of lectins from an unimportant back-water of science in the 1960s to the prominence that the field holds today in many areas of science (e.g., protein purification, plasma membrane structure and function, immunology and cancer). For example, in the early 1970s, Yair Reisner, a post-doctoral fellow in Nathan's laboratory, showed that a lectin from the peanut plant (PNA) can be used to separate mature and immature thymocytes; this became an important immunological tool that was later used by Reisner to carry out bone marrow transplantations in victims of the Chernobyl nuclear reactor disaster and in immunodeficient "bubble children". Sharon also made important contributions to the field of bacterial lectins, their roles in pathogenesis, and the use of sugars in anti-adhesion therapy of microbial diseases. For his long-lasting contributions to the understanding of glycoconjugates and the functions of lectins in biological systems, the Society for Glycobiology awarded Nathan the 2008 Rosalind Kornfeld Award for Lifetime Achievement in Glycobiology.

Nathan was a strong and reliable force in our field of glycobiology. His voice and presence will be greatly missed by all of us!

#### Harry Schachter

Hospital for Sick Children  
Toronto, Ontario, Canada

#### A tribute to Saul ROSEMAN



Saul Roseman, Professor Emeritus, Department of Biology, Johns Hopkins University, Baltimore, passed away on July 2nd, 2011, at the age of 90 years. Saul was an awesome man, in his physical stature, in the power of his language, in the precision and importance of his scientific work and as a human being. Saul published 248 papers and over 30 reviews during his long and distinguished career. Amazingly, he published 15 papers in the ninth decade of his life (from 2001 to 2007) in *J Biol Chem* (7), *Proc Natl Acad Sci USA* (3), *Biochemistry* (2) and other top-ranked journals.

Saul obtained the PhD degree in the Biochemistry Department, University of Wisconsin, in 1948. He was trained in both Biochemistry and Organic Chemistry. In his earlier years, he was a fanatic about the use of crystallization to identify novel substances but he eventually accepted the use of very small amounts of radioactive materials for characterization purposes. Saul spent 5 productive years (1948-53) working with Al Dorfman at the University of Chicago on the structures of hyaluronic acid and chondroitin sulfuric acid and the enzymes that make them and degrade them. Saul then moved to the Rackham Arthritis Research Unit, University of Michigan, Ann Arbor (1953-65). He was appointed as a full Professor in 1960. The Rackham period was a glorious time during which Saul trained many excellent carbohydrate chemists and biochemists. In 1965, Saul moved his laboratory to the Department of Biology, McCollum-Pratt Institute, at the "uptown" campus of the Johns Hopkins University in Baltimore, MD. Saul stayed there for the rest of his life and served as Chairman of the Department of Biology and Director of the McCollum-Pratt Institute (1969-73; 1988-1990).



One of Saul's earlier projects was to study the biosynthesis of protein- and lipid bound glycans. In order to assay the glycosyltransferases that do these jobs, Saul needed radioactive nucleotide sugars. Very few of these reagents were commercially available at that time so Saul had to make them in the laboratory. A collaboration with 1968 Nobel Prize winner HG Khorana (then in Vancouver, BC, Canada) resulted in a very useful general chemical method for the preparation of nucleotide sugars. Saul also devoted his prodigious energy and resources to three other major projects: (1) The role of a bacterial phosphotransferase system (PTS), discovered in Saul's laboratory, that simultaneously phosphorylates and translocates its sugar substrates across the membrane; (2) The role of sugars in cell-cell recognition and specific inter-cellular adhesion, processes that are essential to normal embryonic development and morphogenesis; (3) The metabolism by marine bacteria of chitin, a polymer of N-acetylglucosamine that is one of the most abundant organic substances in nature.

In 2001, Saul wrote a paper for J Biol Chem as part of a series commissioned to celebrate the upcoming centenary of the journal (in 2005). This review is a "must read" for anyone interested in the Past, Present and Future of Glycobiology. As part of the same centennial series, Nicole Kresge, Robert D. Simoni, and Robert L. Hill wrote an article in issue No.1 (2006) of the J Biol Chem entitled: "Hexosamine Metabolism, Sialic Acids, and the Phosphotransferase System: Saul Roseman's Contributions to Glycobiology". The authors pointed out that Saul was the only scientist to have three of his papers selected as Classics. Even more remarkable, according to Simoni, was the fact that each of Roseman's selected papers were on different topics, and from different stages of his career. Saul is quoted as saying: "I am very honored and pleased about the article, more, in fact, than any of the other honors that I have received".

Saul Roseman received many well-deserved honors during his long career: Member of the National Academy of Sciences (1972), Brandeis University's Rosenstiel Award (1974), Canada's Gairdner Foundation International Award (1981), the degree of Doctor of Medicine Honoris causa from Sweden's University of Lund (1984), the Karl Meyer award from the Society of Glycobiology (1993) and many others. On several occasions, Saul Roseman told the writer of this Obituary that he hoped to leave as his legacy an honorable scientific career. Saul, you may rest in peace — you have more than achieved your wish!

#### Harry Schachter

Hospital for Sick Children  
Toronto, Ontario, Canada

## GENERAL INFORMATION

### Symposium Secretariat

#### Local Organising Committee

#### Department of Chemistry

#### University of Natural Resources and Life Sciences, Vienna

Muthgasse 18

1190 Vienna, Austria

Email: [glyco21@boku.ac.at](mailto:glyco21@boku.ac.at)

### Congress Office

#### Mondial Congress & Events

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Fax: +43-1-58804-185

Email: [glyco21@mondial-congress.com](mailto:glyco21@mondial-congress.com)



### Symposium Venue

The 21<sup>st</sup> International Symposium on Glycoconjugates, GLYCO 21, will take place from Sunday, August 21<sup>st</sup> through Friday, August 26<sup>th</sup>, at the University of Vienna, Dr.-Karl-Lueger-Ring 1, 1010 Vienna, Austria.

### Registration Area

The registration and information desk is located in the lobby of the main university building staffed by the Scientific and Congress Secretariat. The Mondial Congress & Events team and the conference hostesses will be pleased to help with all inquiries regarding registration, conference material, and the conference programme.

Please do not hesitate to contact the team members if there is anything they can do to make your stay more enjoyable.

### Registration and information desk on-site

Sunday, August 21 <sup>st</sup> , 2011	13:30 – 19:00
Monday, August 22 <sup>nd</sup> , 2011	08:00 – 17:30
Tuesday, August 23 <sup>rd</sup> , 2011	08:00 – 17:30
Wednesday, August 24 <sup>th</sup> , 2011	08:00 – 12:30
Thursday, August 25 <sup>th</sup> , 2011	08:00 – 17:30
Friday, August 26 <sup>th</sup> , 2011	08:00 – 12:00

Delegates and accompanying persons are kindly requested to register here. The conference material, certificates of attendance, tickets for social events, public transport and booked excursions will be handed out upon registration.

### Badges and Tickets

All participants are kindly requested to wear their name badge at all congress events. The access to the Scientific or Accompanying Persons Programme and social events is restricted to those, who have registered.

Tickets are required for the Symposium Dinner and the Wednesday excursions, and may be purchased as required from the registration desk.

### Registration Fee

#### **On-site registration**

■ Full registrant	EUR 800.-
■ Student registrant	EUR 500.-
■ Accompanying person	EUR 180.-

#### **The fee for scientific registrants includes:**

- Participation in the Scientific Programme
- Conference Material
- Symposium Welcome Reception
- Reception by the Mayor of Vienna
- Concert at Votivkirche
- 6-Day-ticket for public transport in Vienna
- Morning and afternoon coffee and tea
- Lunch (Monday, Tuesday, Thursday, Friday, lunch box on Wednesday)

#### **The fee for accompanying persons includes:**

- Symposium Welcome Reception
- Reception by the Mayor of Vienna
- Concert at Votivkirche
- Half day walking tour: Classical Vienna – a city stroll (August 22<sup>nd</sup>, 2011; meeting point registration desk at 08:45)
- 6-Day ticket for public transport in Vienna
- Opening and closing ceremonies

The registration fees do NOT include the costs for the Wednesday excursion or the Symposium Dinner (Thursday).

All on-site payments should be made in EURO (€) or by credit card (Visa, MasterCard, Diners and AMEX will be accepted).

### Transportation

The ticket for public transport within the city boundaries of Vienna entitles for unlimited travel on subway, tram, bus and train lines for 6 days. The ticket is not valid for the yellow tourist tram line along Ringstrasse. The underground line U2 (purple line) stops at “Schottentor” close to the conference venue. Taking the underground is fast, safe and reliable.

### Access from the Vienna International Airport to Vienna City Centre

**Bus:** At 20-minute intervals, the Vienna Airport Lines depart to the city centre between 05:30 and 24:00 h daily.

Cost approx. one-way ticket EUR 7,-, return ticket EUR 12,-, duration: approx. 30 min.

**Train:** The Schnellbahn leaves at 10–30 min. intervals between 5:00 and 23:00 h daily. Cost approx. EUR 3,60, duration: approx. 30 min.

**CAT:** The High-speed Train runs at 30 min. intervals from 05:38 to 23:08 h daily from airport to train station “Landstrasse/Wien Mitte”.

Cost: one-way ticket EUR 9,-, return ticket EUR 16,-, duration 16 min.

**Taxi:** Taxis are available at the airport.

Cost: approx. EUR 45.-, duration approx. 30 min. to the center of Vienna.

### Lunches and Coffee breaks

Lunches and coffee will be served at the Arcade courtyard (Arkadenhof). Meals will be served from 12:30 through 14:00 h on Monday, Tuesday and Thursday. Lunch boxes will be handed out on Wednesday, on Friday you are invited to a “good bye” lunch starting after the closing ceremony.

### Language

English will be the official language of the Symposium.

### Exhibition

The Symposium exhibition — covering books, scientific and technical equipment — is located in the main lobby of the Main University Building (Seitenaula), next to the registration area. Information material from sponsors and exhibitors can be found in the conference bags.

There will be a special lunchtime lecture by U. Schweiger-Hufnagel (Bruker) on Thursday, August 25<sup>th</sup> from 13:35 to 13:55 h in the Auditorium Maximum (AudiMax).

### Messages

A message board will be available for Symposium participants in the lobby area, next to the registration desks.

### Internet Access

An internet meeting point located in Lecture Room 27 will be available for participants to receive and transmit e-mail messages and to print boarding passes.

Wireless LAN (W-LAN) will be available for all Symposium participants and exhibitors. The log-in code will be made available at the conference venue. Information will be included in the delegate documents.

### Copy / Fax Service

A photocopying and fax service (on a strictly cash basis) will be available at the Conference Secretariat (Business Lounge) from Monday, August 22<sup>nd</sup> to Friday, August 26<sup>th</sup> from 09:00 – 17:00 h.

### Banking

The symposium venue is within walking distance of several banks. Cash dispensers are available at almost every bank and operate 24 hours daily. An ATM cash dispenser is located close to the major lecture theatre (Auditorium maximum).

### Cloak room

You can leave small luggage at the registration desk in the main entrance hall.

### Non-smoking policy

Smoking is not permitted inside the university buildings.

### Insurance and liability

Delegates are advised to arrange health and accident insurance prior to travelling to the symposium. The organisers are not responsible for any personal injury, loss, damage, accident to private property or additional expense incurred as a result of delays or changes in air, rail, sea, road or other services, strikes, sickness, weather or any other cause.

### Lectures

All plenary lectures will be presented in the major Lecture Theatre (Auditorium maximum). Invited and contributed oral presentations will be presented in parallel in the major Lecture Theatre (Auditorium maximum) and Lecture Hall 33. Workshops will take place in the major Lecture Theatre (Auditorium maximum), the small Ceremonial Hall (Kleiner Festsaal) and the Lecture Halls 7 and 30.

The organiser reserves the right to make programme changes if necessary. No full or partial refunds are available in the event of cancellations by speakers or other changes in the main programme.

Programme changes will be posted at the registration desk.

### IGO Board meeting

The IGO Board meeting will take place in the “Elise Richter” Hall (first floor) on Tuesday, August 23<sup>rd</sup> from 16:30 – 18:30 h.

### Glycoconjugate Journal Editorial Board meeting

The Glycoconjugate Journal Editorial Board meeting will take place in Lecture Hall 30 on Monday, August 22<sup>nd</sup> from 12:30 – 14:00 h.

### Preview room (lecture room 29, first floor)

Sunday, August 21 <sup>st</sup> , 2011	13:30 – 19:00
Monday, August 22 <sup>nd</sup> , 2011	08:00 – 17:30
Tuesday, August 23 <sup>rd</sup> , 2011	08:00 – 16:00
Wednesday, August 24 <sup>th</sup> , 2011	08:00 – 12:30
Thursday, August 25 <sup>th</sup> , 2011	08:00 – 16:00
Friday, August 26 <sup>th</sup> , 2011	08:00 – 09:30

All speakers are requested to check-in their presentation (on your CD-ROM or USB-removable drive) at the Preview room, no later than 3 hours before the start of the session during which you will give the presentation. If your session starts early in the morning, please check-in your presentation in the afternoon of the preceding day.

The Preview room is located in Lecture Hall 29. Presentations will be performed using PowerPoint file format on Windows PC (MS Office 2010). Due to time and technical restraints during the sessions, personal laptops cannot be used in the session rooms and connections for Macintosh Notebooks are not available.

Technical personnel will be available in the preview room to assist for uploading your presentation.

- Presentations will be transferred from a server to the session room electronically.
- Speakers are not permitted to take PowerPoint presentations directly to the technical assistant in the session rooms.
- The use of personal laptops for presentation in the session rooms is strictly discouraged.
- Protection of copyright will be guaranteed.

### Posters

Posters will be displayed in the Arcade courtyard in two sessions (time schedule see below). The size of your poster should be **130 cm (height) x 90 cm (width) in portrait format**. Material for poster mounting will be provided.

Presenters can mount posters on **Sunday, August 21<sup>st</sup>, 2011 from 16:00; by the latest, it is requested that posters are mounted on Monday, August 22<sup>nd</sup>, 2011 by 14:00**. Presenters are asked to remove their poster on Thursday, August 25<sup>th</sup>, 2011 after the last poster session until 18:00 at the latest; otherwise the congress staff will dispose of it.

Presenting authors should be available for explanations and discussions. There will be poster prizes for all sections to be presented at the Closing Ceremony on Friday.

### Poster Sessions

Poster Session I: Monday, August 22 <sup>nd</sup> , 2011	15:55 – 17:25
Poster Session II: Thursday, August 25 <sup>th</sup> , 2011	15:55 – 17:25

### Publications

Glycoconjugate Journal Issue 28 (2011) contains the published abstracts.



## EXHIBITION

The Exhibition is located in the main lobby of the Main University Building (Seitenaula), next to the registration area. Information material from sponsors and exhibitors can be found in the conference bags.

Exhibits will be displayed from Monday, August 22<sup>nd</sup>, through Friday, August 26<sup>th</sup>.

## SPONSORS

The Organising Committee for GLYCO 21 gratefully acknowledges the generous financial support given by the following organisations and companies:

## MAIN SPONSORS



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	AUDIMAX	HÖRSAAL 33	HÖRSAAL 7	KLEINER FESTSAAL	HÖRSAAL 30	POSTER AREA ARCADE COURTYARD
15:00 – 15:45	Opening Ceremony					
15:45 – 16:30	IGO-Award Lecture (Plenary Lecture 1) <i>Jeffrey Esko</i>					
16:40 – 17:25	Plenary lecture 2 <i>Ajit Varki</i>					
17:30	Welcome Reception Arcade courtyard					

	AUDIMAX	HÖRSAAL 33	HÖRSAAL 7	KLEINER FESTSAAL	HÖRSAAL 30	POSTER AREA ARCADE COURTYARD
09:00 – 09:35	Plenary lecture 3 <i>Pamela Stanley</i>					
09:40 – 10:50	Carbohydrates and Disease I Parallel session - Jamey Marth & 3 oral presentations	Development & Differentiation I Parallel session - Vlad Panin & 3 oral presentations				
10:50 – 11:20	Coffee Break					
11:20 – 12:30	Carbohydrates and Disease II Parallel session - Thomas Bräulke & 3 oral presentations	Development & Differentiation II Parallel session - Melitta Schachner & 3 oral presentations				
12:30 – 14:00	Lunch Break					
14:00 – 14:35	Plenary lecture 4 <i>Hisashi Nairnatsu</i>				Glycoconjugate Journal Editorial Board Meeting Lunch Buffet	
14:40 – 15:50	Carbohydrates and Disease III Parallel session - Christian Körner & 3 oral presentations	Development & Differentiation III Parallel session - Catherine Merry & 3 oral presentations				
15:55 – 17:25		Coffee Break				Poster Session I
17:25 – 18:00	Plenary lecture 5 <i>Francois Platt</i>					
20:00	Symposium Reception / Vienna City Hall					

	AUDIMAX	HÖRSAAL 33	HÖRSAAL 7	KLEINER FESTSAAL	HÖRSAAL 30	Elise Richter
09:00–09:35	Plenary lecture 6 <i>Maria Yazdanbakhsh</i>					
09:40–10:50	Infection & Immunity I Parallel session - Laurie Comstock & 3 oral presentations	Physiology and Signaling I Parallel session - Christopher West & 3 oral presentations				
10:50–11:20		Coffee Break				
11:20–12:30	Infection & Immunity II Parallel session - Ali Salanti & 3 oral presentations	Physiology and Signaling II Parallel session - Paul Crocker & 3 oral presentations				
12:30–14:00		Lunch Break				
14:00–14:35	Plenary lecture 7 <i>Jane Hewitt</i>					
14:40–15:50	Infection & Immunity III Parallel session - Francoise Routier & 3 oral presentations	O-GlcNAc: New Frontiers Society for Glycobiology Guest Session I				
15:55–16:30	Plenary lecture 8 <i>Taroh Kinoshita</i>					
16:30–16:45		Coffee Break				
16:45–18:25	Euroglycoscience Forum Glycoimmunology Workshop	O-GlcNAc: New Frontiers Society for Glycobiology Guest Session II (until 18:00)	Euroglycoscience Forum Glyco- bioinformatics Workshop (until 18:35)	Eurogly- coscience Forum Glyco- proteomics Workshop	Euroglycoscience Fo- rum Methods in Glycoli- pid Analysis Workshop (until 18:30)	Start: 16:30 IGO Board Meeting
19:00	Concert / Votivkirche Vienna					
afterwards	IGO Board Dinner					

SCIENTIFIC PROGRAMME – WEDNESDAY, AUGUST 24<sup>TH</sup>, 2011

	AUDIMAX	HÖRSAAL 33	HÖRSAAL 7	KLEINER FEST- SAAL	HÖRSAAL 30	POSTER AREA ARCADE COURT- YARD
09:00–09:35	Plenary lecture 9 <i>Jonathan Hodgkin</i>					
09:40–10:40	Euroglycoscience Forum Mass Spectrometry Workshop I	Company of Biologists' Young Glycobiologists' Symposium I (until 11:00)	Euroglycoscience Forum Crystallog- raphy & Modelling Workshop I (until 11:00)	Euroglycoscience Forum Glycolandscape Engineering Workshop I	Euroglycoscience Forum Prokaryotic Protein Glycosylation Workshop I	
10:40–11:20		Coffee Break				
11:20–12:20	Euroglycoscience Forum Mass Spectrometry Workshop II	Company of Biologists' Young Glycobiologists' Symposium II	Euroglycoscience Forum Crystallog- raphy & Modelling Workshop II (until 12:35)	Euroglycoscience Forum Glycolandscape Engineering Workshop II	Euroglycoscience Forum Prokaryotic Protein Glycosyla- tion Workshop II (until 11:50)	
12:20	Excursions or free afternoon					

	AUDIMAX	HÖRSAAL 33	HÖRSAAL 7	KLEINER FESTSAAL	HÖRSAAL 30	POSTER AREA ARCADE COURTYARD
09:00–09:35	Plenary lecture 10 <i>Milos V. Novotny</i>					
09:40–10:50	Structural and Chemical Glycobiology and Glycomics I Parallel session - James Naismith & 3 oral presentations	Biosynthesis and Metabolism of Glycoconjugates I Parallel session - Robert Haltiwanger & 3 oral presentations				
10:50–11:20		Coffee Break				
11:20–12:30	Structural and Chemical Glycobiology and Glycomics II Parallel session - Sabine Flitsch & 3 oral presentations	Biosynthesis and Metabolism of Glycoconjugates II Parallel session - Susan Logan & 3 oral presentations				
12:30–14:00		Lunch Break				
13:35–13:50	Structural and Chemical Glycobiology and Glycomics III Part I, 1 oral presentation					
14:00–14:35	Plenary lecture 11 <i>Chris Whitfield</i>					
14:40–15:50	Structural and Chemical Glycobiology and Glycomics III, Part II, Parallel session - Manfred Wührer & 3 oral presentations	Biosynthesis and Metabolism of Glycoconjugates III, Parallel session - Tadashi Suzuki & 3 oral presentations				
15:55–17:25		Coffee Break				Poster Session II
17:25–18:00	Plenary lecture 12 <i>Chi-Huey Wong</i>					
19:30–23:00		Symposium Banquet / Palais Ferstel				

	AUDIMAX	HÖRSAAL 33	HÖRSAAL 7	KLEINER FESTSAAL	HÖRSAAL 30	POSTER AREA ARCADE COURTYARD
09:00–09:35	Plenary lecture 13 <i>Paul Dupree</i>					
09:40–10:50	Glyco(bio)technology I Parallel session - David Vocadlo & 3 oral presentations	Cell Biology I Parallel session - Jianxin Gu & 3 oral presentations				
10:50–11:20		Coffee Break				
11:20–12:30	Glyco(bio)technology II Parallel session - Katsuhiko Mori & 3 oral presentations	Cell Biology II Parallel session - Maurizio Molinari & 3 oral presentations				
12:35–13:05	Plenary lecture 14 <i>Markus Aebi</i>					
13:10–13:30		Closing Ceremony				
13:30–14:30		Lunch Break				



## DAILY SCIENTIFIC PROGRAMME

## Sunday, August 21, 2011

15:00 – 15:45

AUDIMAX

Opening Ceremony

15:45 – 16:30

AUDIMAX

Chair: G. Hart

**Plenary lecture 001** - Heparan sulfate proteoglycans as receptors and coreceptors  
IGO Award Lecture

Jeffrey Esko

16:40 – 17:25

AUDIMAX

Chair: N. Taniguchi

**Plenary lecture 002** - Biological roles of vertebrate glycans: A look back over the decades

Ajit Varki

17:30

ARCADE COURTYARD

Welcome Reception

## Monday, August 22, 2011

09:00 – 09:35

AUDIMAX

Chair: J. Finne

**Plenary lecture 003** - Regulation of spermatogenesis by complex N-glycans  
Company of Biologists Lecture

H. Huang, F. Batista, Pamela Stanley

09:40 – 10:50 Carbohydrates and Disease I

AUDIMAX

Chair: O. Hindsgaul

09:40 – 09:55 027 - Mechanisms of basement membrane disruptions in congenital muscular dystrophies  
P. Zhang, H. Hu

09:55 – 10:10 028 - Fucosylation of plasma proteins is markedly decreased in maturity-onset diabetes of the young – proof of principle for the integrated genomic/glycomic approach to glyco-biomarker discovery  
G. Thanabalasingham, J. Kattla, J. Huffman, C. Hayward, I. Rudan, M. Novokmet, J. Wilson, A. Wright, H. Campbell, K. Owen, P. Rudd, M. McCarthy, G. Lauc

10:10 – 10:25 029 - Synthesis of glycopeptides to probe glycosylation of alpha-dystroglycan  
M. Weissenborn, N. Laurent, J. Voglmeir, R. Sardzik, A. Green, P. Both, I. Wilson, S. Flitsch

10:25 – 10:50 Keynote lecture 030 - Glycosylation in the pathophysiology of heritable and acquired disease  
J. Marth, P. Grewal, R. Lardone

09:40 – 10:50 Development &amp; Differentiation I

HÖRSAAL 33

Chair: L. Mach

09:40 – 10:05 Keynote lecture 015 - Neural functions of sialylation in Drosophila  
V. Panin, E. Repnikova, K. Koles, M. Nakamura, D. Pandey, R. Islam, M. Zoran

10:05 – 10:20 016 - Disorganization of muscle ultrastructure along with defective motor function and increased apoptosis of myoblasts in Drosophila model for the Walker-Warburg syndrome  
M. Ueyama, Y. Akimoto, T. Ichimiya, R. Ueda, S. Nishihara

10:20 – 10:35 017 - Embryonic lethality of beta-1,4-galactosyltransferase V-deficient mice  
K. Furukawa, T. Kumagai, T. Sato, R. Kanno

10:35 – 10:50 018 - Muscle defects in flies with disrupted Golgi function  
M. Symeonides, E. Emery, M. Stark, A. Middleton, J. Sparrow, D. Ungar

10:50 – 11:20 Coffee break

ARCADE COURTYARD

**11:20–12:30 Carbohydrates and Disease II****AUDIMAX***Chair: S. Basu*

11:20–11:35 031 - Novel therapeutic glycoenzyme resources for lysosomal storage diseases  
K. Itoh, D. Tsuji, K. Matsuoka, S. Nishioka, I. Kawashima, Y. Chiba, Y. Jigami, T. Taki, H. Sakuraba, I. Kobayashi, H. Sezutsu, T. Tamura, H. Machii

11:35–11:50 033 - Identification and visualisation of glycated proteins using phenylboronate acrylamide gel electrophoresis  
M. Pereira Morais, J. Fossey, T. James, J. van den Elsen

11:50–12:05 032 - The GD2 ganglioside induces a proliferative phenotype in MDA-MB-231 breast cancer cells via the constitutive activation of the receptor tyrosine-kinase c-Met  
 A. Cazet, M. Bobowski, J. Lefebvre, Y. Rombouts, A. Steenackers, E. Adrienssens, Y. Guérardel, D. Tulasne, X. Le Bourhis, P. Delannoy

12:05–12:30 Keynote lecture 034 - Roles of mannose 6-phosphorylation in protein trafficking and cell function revealed by mutant mice  
T. Braulke

**11:20–12:30 Development & Differentiation II****HÖRSAAL 33***Chair: K. Kitajima*

11:20–11:45 Keynote lecture 019 - Glycans in nervous system development, regeneration and synaptic plasticity  
M. Schachner

11:45–12:00 020 - Essential roles of gangliosides in the protection of inflammation and neurodegeneration via the regulation of lipid rafts: elucidation by a series of ganglioside-deficient mice  
K. Furukawa, Y. Ohmi, O. Tajima, Y. Ohkawa, Y. Yamauchi, K. Furukawa

12:00–12:15 021 - NGF induced PC12 cell neuritogenesis is promoted by heparanase via p38 MAPK signalling pathway  
 H. Cui, J. Li, K. Ding

12:15–12:30 022 - Polysialic acid chains display attractive fields toward neuroactive molecules  
C. Sato, S. Ono, R. Isomura, M. Hane, M. Sumida, K. Kitajima

**12:30–14:00 Lunch break****ARCADE COURTYARD****12:30–14:00****HÖRSAAL 30**

Glycoconjugate Journal Editorial Board Meeting with Lunch buffet

**14:00–14:35****AUDIMAX***Chair: A. Dell*

**Plenary lecture 004** - Biological function of polylactosamine chains in immune system  
Hisashi Narimatsu

**14:40–15:50 Carbohydrates and Disease III****AUDIMAX***Chair: F. Piller*

14:40–14:55 035 - Bioengineering of  $\alpha$ 2-8 polysialic acid-expressing cancer cells with N-propionyl mannosamine augments their cytotoxicity to human anti-N-propionylated polysialic acid antisera  
H. Jennings, Q. Yang, R. Pon

14:55–15:10 036 - Hypoxia-Induced Sialyl-Tn Antigen Expression Facilitates Tumor Metastasis  
K. Ohtsubo, S. Takamatsu, H. Okuyama, T. Kurosawa, M. Inoue, N. Taniguchi

15:10–15:25 037 - Could Nanodiamonds be a Girl's Best Friend?  
A. Siriwardena, A. Barras, F. Martin, O. Bande, J. Baumann, J. Ghigo, C. Beloin, R. Boukherroub, S. Szunerits

15:25–15:50 Keynote lecture 038 - Defects in the biosynthesis of nucleotide-sugars and their transport into the Golgi  
C. Körner

**14:40–15:50 Development & Differentiation III HÖRSAAL 33***Chair: G. Warren*

- 14:40–15:05 Keynote lecture 023 - Glycosaminoglycans as regulators of stem cell differentiation  
R. Holley, C. Pickford, R. Smith, D. Tillotson, M. Meciej, K. Meade, C. Merry
- 15:05–15:20 024 - Protein O-glycosylation in ECM formation and organogenesis  
K. Ten Hagen, M. Hoffman, E. Tian
- 15:20–15:35 025 - Xylosyltransferases involved in modification of Notch EGF repeats  
M. Sethi, F. Buettner, V. Krylov, H. Takeuchi, N. Nifantiev, R. Haltiwanger, R. Gerardy-Schahn, H. Bakker
- 15:35–15:50 026 - Leukemia inhibitory factor promotes trophoblast migration and invasion via uPA/uPAR-mediated FUT7 expression  
S. Liu, X. Yang, Y. Chen, X. Wang, Q. Yan

**15:55–17:25 Coffee break ARCADE COURTYARD****15:55–17:25 POSTER AREA ARCADE COURTYARD**

Poster Session I

**17:25–18:00 AUDIMAX***Chair: J. Glössl*

**Plenary lecture 005** - Lysosomal disorders: insights into fundamental cell biology  
Frances Platt

**20:00 VIENNA CITY HALL**

Symposium Reception

**Tuesday, August 23, 2011****09:00–09:35 AUDIMAX***Chair: J. Jamieson*

**Plenary lecture 006** - Modulation of the immune system by parasitic helminths: the role that glycans might play  
ESF Lecture  
Maria Yazdanbakhsh, C. Hokke

**09:40–10:50 Infection & Immunity I AUDIMAX***Chair: B. Chatterjee*

- 09:40–09:55 054 - Sialic acid mediated interaction between *Pseudomonas aeruginosa* and neutrophil through siglec-9 reduced innate immune response  
C. Mandal, B. Khatua, K. Bhattacharya
- 09:55–10:10 055 - Complement L-ficolin binds to surface glycans of HCV and HIV and reduces these viral infectivities, and functions as an antiviral opsonin  
X. Zhang
- 10:10–10:25 056 - Soluble lectins and superlectins from opportunistic bacteria  
A. Audfray, O. Sulak, G. Cioci, A. Varrot, M. Wimmerova, A. Imberty
- 10:25–10:50 Keynote lecture 057 - Essential protein O-glycosylation in *Bacteroides* species  
C. Fletcher, M. Coyne, M. Chatzidaki-Livanis, S. Park, P. Azadi, L. Comstock

**09:40–10:50 Physiology and Signaling I HÖRSAAL 33***Chair: W. Reutter*

- 09:40–10:05 Keynote lecture 039 - Environmental control of *Dictyostelium* development is mediated via prolyl hydroxylation and glycosylation of the E3(SCF)ubiquitin ligase subunit Skp1  
C. West, Z. Wang, H. van der Wel, Y. Xu, D. Zhang, J. Johnson, G. Boons, C. Taylor, B. Bendiak

- 10:05–10:20 040 - A glycosphingolipid/caveolin-1 signaling complex inhibits the motility of human ovarian carcinoma cells  
A. Prinetti, G. Illuzzi, T. Cao, S. Prioni, M. Aureli, V. Chigorno, S. Sonnino
- 10:20–10:35 041 -  $\beta$ 1,4-galactosyltransferase V regulates the endothelial differentiation and tumorigenicity of glioma-initiating cells  
J. Jiang, J. Gu
- 10:35–10:50 042 - Role of nucleocytoplasmic lectins in plant cell signaling  
E. Van Damme, A. Delporte, D. Schouppe, J. Van Hove, E. Fouquaert, B. Al Atalah, K. Stefanowicz, N. Lannoo

**10:50–11:20 Coffee break****ARCADE COURTYARD****11:20–12:30 Infection & Immunity II****AUDIMAX***Chair: K. Paschinger*

- 11:20–11:35 058 - Altering our prejudgements: neutral, zwitterionic and negatively-charged N-glycans in parasites and other lower eukaryotes  
I. Wilson, A. Hykollari, B. Schiller, E. Razzazi-Fazeli, D. Leitsch, A. Joachim, J. Walochnik, P. Greenwell, M. Hess, G. Vasta, K. Paschinger
- 11:35–11:50 059 - A novel effector protein in the defense of mushrooms against predators and parasites  
S. Bleuler-Martinez, M. Schubert, A. Butsch, M. Wälti, P. Egloff, K. Stutz, S. Yan, I. Wilson, F. Allain, M. Hengartner, M. Aebi, M. Künzler
- 11:50–12:05 060 - Role of ergosterol dependent and glycosphingolipid enriched detergent resistant membrane microdomains of *Histoplasma capsulatum* in macrophage infection.  
T. Lacerda, L. Tagliari, M. Toledo, A. Straus, H. Takahashi
- 12:05–12:30 Keynote lecture 061 - Structural and functional insight into how *Plasmodium falciparum* infected erythrocytes adhere to chondroitin sulfate A in the human placenta.  
M. Dahlbäck, S. Christoffersen, M. Nielsen, L. Jørgensen, T. Clausen, A. Langkilde, L. Turner, T. Lavstsen, S. Larsen, T. Theander, A. Salanti

**11:20–12:30 Physiology and Signaling II****HÖRSAAL 33***Chair: A. Wu*

- 11:20–11:45 Keynote lecture 043 - Role of myeloid siglecs in bridging innate and adaptive immunity  
P. Crocker
- 11:45–12:00 044 - Shiga toxin receptors in leukocyte-derived cell lines: subcellular distribution of globo-series neutral glycosphingolipids and expression analysis of related glycosyltransferases  
I. Kouzel, J. Betz, M. Bielaszewska, W. Stork, C. Cichon, M. A. Schmidt, H. Karch, J. Mühling
- 12:00–12:15 296 - Hijacking a biosynthetic pathway yields a glycosyltransferase inhibitor within cells  
T. Gloster, W. Zandberg, J. Heinonen, D. Shen, L. Deng, D. Vocadlo
- 12:15–12:30 046 - Galectin-binding to specific glycoforms of serum glycoproteins: mechanisms of selectivity, functional consequences, and relationships to disease.  
M. Carlsson, A. Lepur, E. Salomonsson, B. Kahl-Knutson, C. Cederfur, U. Nilsson, H. Leffler

**12:30–14:00 Lunch break****ARCADE COURTYARD****14:00–14:35****AUDIMAX***Chair: T. Hennet*

**Plenary lecture 007** - The glycobiology of muscular dystrophy  
Jane Hewitt

**14:40–15:50 Infection & Immunity III****AUDIMAX***Chair: P. Bonay*

- 14:40–14:55 062 - Limiting the amounts of Dol-P-Man could be the answer in curing African sleeping sickness.  
T. Smith



14:55–15:10 063 - The envelope glycans of HIV are predominantly oligomannose regardless of production system or viral clade  
C. Bonomelli, K. Doores, D. Dunlop, D. Harvey, R. Dwek, D. Burton, M. Crispin, C. Scanlan

15:10–15:25 064 - Functional fluorinated MUC1-glycopeptide vaccines  
A. Hoffmann-Röder

15:25–15:50 Keynote lecture 065 - Pieces of the fungal galactomannan biosynthesis jigsaw  
 P. Schmalhorst, J. Engel, A. Krüger, F. Routier

#### 14:40–15:50 O-GlcNAc: New Frontiers HÖRSAAL 33

*Co-Chairs: J. Hanover, K. ten Hagen*

14:40–15:05 047 - GlycoEpigenetics: Is the ghost in your genes a sugar?  
J. Hanover, M. Krause, D. Love

15:05–15:30 048 - Extensive crosstalk between O-GlcNAcylation & phosphorylation: A new paradigm for nutrient regulation of signaling, transcription and mechanisms underlying chronic disease.  
G. Hart

15:30–15:40 049 - Spatiotemporal organization of OGT and O-GlcNAcylated proteins in lipid rafts for effective Insulin signalling pathway  
Y. Pérez, F. Foulquier, J. Michalski, T. Lefebvre

15:40–15:50 050 - Roles of O-GlcNAc modification on snail in epithelial-mesenchymal transition  
J. W. Cho, J. Roth, S. Y. Park, J. I. Yook, H. S. Kim

#### 15:55–16:30 AUDIMAX

*Chair: A. Kobata*

**Plenary lecture 008** - Remodeling of GPI anchors in the ER before and after attachment to proteins: mechanisms and functions  
Taroh Kinoshita

#### 16:30–16:45 Coffee break ARCADE COURTYARD

#### 16:45–18:25 Euroglycoscience Forum Glycoimmunology Workshop AUDIMAX

*Chair: P. Crocker*

16:45–17:05 117 - The T cell balance during chronic helminth infections  
M. Yazdanbakhsh

17:05–17:25 118 - Pattern recognition and anti-microbial immunity: The role of C-type lectins  
G. Brown

17:25–17:35 119 - Induction of antigen-specific B cell tolerance through the development of a versatile platform to target siglecs.  
M. Macauley, F. Pfrengle, C. Nycholat, J. Paulson

17:35–17:55 120 - Regulation of B cell activation by inhibitory receptors of the Siglec family  
 J. Jellusova, I. Obermeier, A. Hoffmann, L. Nitschke

17:55–18:05 121 - Targeting C-type lectin receptors with synthetic carbohydrates to modulate immune responses  
 M. Eriksson, M. Maglinao, M. Irgang, P. Seeberger, B. Lepenies

18:05–18:25 122 - Is it possible to correct the anergy of human tumor-infiltrating lymphocytes?  
 G. Wieers, N. Demotte, A. Klyosov, P. van der Bruggen

#### 16:45–18:00 O-GlcNAc: New Frontiers II HÖRSAAL 33

*Co-Chairs: J. Hanover, K. ten Hagen*

16:45–17:10 051 - Dynamic O-GlcNAc glycosylation regulates neuronal gene expression and memory storage  
L. Hsieh-Wilson

17:10–17:35 052 - Protein O-GlcNAcylation: A key mediator of cardiomyocyte function and survival  
J. Chatham

17:35–18:00 053 - Molecular mechanisms of O-GlcNAc signalling  
D. Aalten

**16:45–18:35 Euroglycoscience Forum Glycobioinformatics Workshop HÖRSAAL 7***Co-Chairs: S. Haslam, N. Karlsson*

16:45–17:05 128 - GlycoBioinformatics  
S. Haslam, D. Damerell, A. Dell

17:05–17:25 129 - UniCarb-DB: Functional assignment using epitope substructures  
C. Hayes, M. Campbell, F. Lisacek, W. Struwe, P. Rudd, N. Packer,  
 N. Karlsson

17:25–17:45 130 - Building blocks for a new glycomics knowledgebase  
M. Campbell, C. Hayes, W. Struwe, F. Lisacek, P. Rudd, N. Karlsson,  
 N. Packer

17:45–18:05 131 - GlycoWorkbench / Glyco-Peakfinder: tools for the computer-  
 assisted annotation of mass spectra of glycans  
D. Damerell, S. Haslam, A. Dell

18:05–18:25 132 - GlycoBase and GlycoExtractor: tools for HPLC-based glycan  
 analysis  
W. Struwe, J. O'Rourke, P. Rudd

18:25–18:35 133 - An update on SAGS, the Structural Assessment of  
 Glycosylation Sites database  
A. Petrescu

**16:45–18:25 Euroglycoscience Forum KLEINER FESTSAAL  
Glycoproteomics Workshop***Chair: D. Kolarich*

16:45–17:10 137 - Bioinformatics in glycoproteomics – challenges, frontiers and  
 solutions  
D. Kolarich, E. Rapp, N. Packer

17:10–17:35 134 - ETD -MS and mucin-type O-glycopeptides: getting closer to  
 the holy grail?  
N. Packer, M. Andersen, D. Kolarich, M. Christiansen, P. Jensen,  
 B. Wilkinson, R. Payne

17:35–18:00 135 - How glycopeptides (and peptides) behave on reversed-phase  
 and graphitic carbon columns  
 M. Pabst, J. Grass, J. Stadlmann, F. Altmann

18:00–18:25 136 - Characterisation of O-glycan structures and glycosylation sites  
 of proteins in proteomic samples — J. Nilsson

**16:45–18:30 Euroglycoscience Forum Methods in HÖRSAAL 30  
Glycolipid Analysis Workshop***Chair: A. Zamfir*

16:45–17:15 123 - Glycosphingolipid derivatizations for mass spectrometry and  
 microarray “omics” applications — S. Levery

17:15–17:45 124 - Mass Spectrometry-Based Characterization of Composition  
 and Structure of Gangliosides as Human Brain Biomarkers in Health  
 and Disease — Z. Vukelić, D. Marinčić, A. Serb, A. Zamfir

17:45–18:00 125 - New Approach for glycolipidomics -Molecular scanning of  
 human brain gangliosides by TLC-Blot and MALDI-TOF MS-  
T. Taki, T. Valdes Gonzalez, N. Goto-Inoue, W. Hirano, H. Ishiyama,  
 T. Hayasaka, T. Nishimura, S. Yazawa, M. Setou

18:00–18:15 126 - Complementary triad of thin-layer chromatography,  
 overlay technique and mass spectrometry as a versatile tool for  
 exploring glycosphingolipid-based host-pathogen interaction  
J. Müthing, I. Meisen, M. Mormann, K. Dreisewerd, H. Karch

18:15–18:30 27 - Isomeric analysis of oligomannosidic N-glycans and dolichol  
 linked precursors by PGC-LC-ESI-MS  
J. Grass, M. Pabst, R. Strasser, E. Liebminger, F. Altmann

**16:30 ELISE RICHTER**

IGO Board Meeting

**19:00 VOTIVKIRCHE VIENNA**

Concert

**Afterwards**

IGO Board Dinner

**Wednesday, August 24, 2011****09:00–09:35****AUDIMAX***Chair: M. Ugorski***Plenary lecture 009** - Surface glycosylation in *C. elegans*: impacts on bacterial infection, movement, mating, development and drug sensitivityJonathan Hodgkin, J. Cipollo, M. Gravato-Nobre, D. O'Rourke, F. Partridge, D. Stroud**09:40–10:40 Euroglycoscience Forum Mass Spectrometry Workshop I AUDIMAX***Co-Chairs: G. Allmaier, R. Geyer*09:40–10:00 138 - Molecular weight determination by mass spectrometry - the first step in the characterization of polysaccharides and glycoproteins  
G. Allmaier10:00–10:20 139 - Mass spectrometric analysis of methylated monosaccharides and oligosaccharides  
R. Geyer10:20–10:40 140 - To label or not to label - Is that the question?  
M. Pabst, J. Grass, S. Toegel, A. Thader, L. Neumann, F. Altmann**09:40–11:00 Company of Biologists  
'Young Glycobiologists' Symposium II****HÖRSAAL 33***Co-Chairs: H. Schachter, B. Schiller*09:40–09:52 107 - "Same Same But Different": N-Glycosylation in *Acanthamoeba*  
B. Schiller, S. Kurz, K. Nöbauer, E. Razzazi-Fazeli, J. Walochnik, I. Wilson09:52–10:14 366 - Comparative N-glycomics of *Dictyostelium* strains and species  
A. Hykollari, K. Paschinger, E. Razzazi-Fazeli, I.B.H. Wilson10:14–10:26 218 - Influence of steroid hormones on glycoconjugate distribution of canine endometrial glands in a 3D cell culture system - a lectin histochemical study  
C. Bartel, I. Walter10:26–10:38 110 - Structure determination of bacterial mucus-binding proteins and their functional role in adhesion to host glycans  
S. Etzold, D. MacKenzie, L. Tailford, R. Field, A. Hemmings, N. Juge10:38–11:00 111 - Histone-code regulates brain specific expression of N-acetylglucosaminyltransferase-IX (GnT-IX)  
Y. Kizuka, S. Kitazume, M. Yoshida, N. Taniguchi**09:40–11:00 Euroglycoscience Forum Crystallography & Modelling Workshop I****HÖRSAAL 7***Chair: A. Imberty*09:40–10:10 144 - Leveraging glycan array data with computational carbohydrate grafting to define the 3D structure of an anti-tumor antibody in complex with carbohydrate antigen  
M. Tessier, J. Heimbürg-Molinari, S. Jadey, A. Gulick, K. Rittenhouse-Olson, R. Woods10:10–10:40 145 - The molecular modelling facets of glycoscience  
S. Perez10:40–11:00 146 - Computational modeling on the catalytic cycle of inverting  $\beta$ -1,4-galactosyltransferase-1  
M. Maličká, J. Kóňa, I. Tvaroška**09:40–10:40 Euroglycoscience Forum Glycolandscape Engineering Workshop I****KLEINER FESTSAAL***Co-Chairs: S. Flitsch, N. Bovin*09:40–10:00 156 - Towards cell glycolandscape  
S. Henry, E. Korchagina, A. Tuzikov, A. Formanovsky, I. Popova, N. Bovin10:00–10:20 157 - Switchable glycomimetics: Conformational control of bacterial adhesion  
T. Lindhorst10:20–10:40 158 - Target-selective photodegradation of oligosaccharides by designed small organic molecules  
K. Toshima

**09:40–10:40 Euroglycoscience Forum Prokaryotic Protein Glycosylation Workshop I HÖRSAAL 30**

*Co-Chairs: P. Messner, C. Schäffer*

09:40–09:45 Introductory Comments  
P. Messner, C. Schäffer

09:45–10:05 151 - Neisseria species as a model system for bacterial O-linked protein glycosylation  
B. Børud, R. Viburiene, F. E. Aas, Vik, M. Hartley, W. Egge-Jacobsen, B. Imperiali, M. Koomey

10:05–10:25 152 - Elucidation of the N-glycosylation pathway in the crenarchaea  
B. Meyer, S. Albers

10:25–10:40 153 - Prokaryotic Glycoprotein Database (PRO GPDB): A database of experimentally characterized glycoproteins of prokaryotic origin.  
A. Rao, A. Bhat

**10:40–11:20 Coffee break ARCADE COURTYARD**
**11:20–12:20 Euroglycoscience Forum Mass Spectrometry Workshop II AUDIMAX**

*Co-Chairs: G. Allmaier, R. Geyer*

11:20–11:40 141 - Selective enrichment of sialylated glycopeptides from biological samples for quantitative glycoproteomics.  
G. Palmisano, S. Lendal, P. Højrup, M. Larsen

11:40–12:00 142 - Glycoproteins: MS analysis of O-linked glycans  
N. Karlsson

12:00–12:20 143 - Glycoproteins: MS analysis of N-linked glycans  
M. Wührer

**11:20–12:20 Company of Biologists 'Young Glycobiologists' Symposium II HÖRSAAL 33**

*Co-Chairs: H. Schachter, B. Schiller*

11:20–11:32 112 - Biototoxicity of the fungal chimerolectin MOA  
T. Wohlschlager, A. Butsch, K. Zurfluh, S. Vonesch, U. Auf dem Keller,  
P. Gehrig, S. Bleuler-Martinez, M. Hengartner, M. Aebi, M. Künzler

11:32–11:44 113 - Incidence of O-GlcNAcylation on  $\beta$ -catenin oncogenic properties: O-GlcNAcylated  $\beta$ -catenin, a novel marker of early colorectal cancer?  
S. Olivier, A. Mir, I. El Yazidi, J. Michalski, T. Lefebvre

11:44–11:56 114 - Applications of High-Throughput HPLC based N-Glycan Analysis for Biomarker Screening in Large Cohorts of Patients  
B. Adamczyk, J. Kattla, P. Rudd

11:56–12:08 115 - Sweet protection: innate immunity conferred by salivary sugar antigens?  
A. Everest Dass, D. Kolarich, M. Andersen, H. Nevalainen, N. Packer

12:08–12:20 116 - Introduction of tetra-antennary N-glycans in Nicotiana benthamiana plants  
B. Nagels, E. Van Damme, N. Callewaert, K. Weterings

**11:20–12:35 Euroglycoscience Forum Crystallography & Modelling Workshop II HÖRSAAL 7**

*Chair: A. Imberty*

11:20–11:50 147 - Advices to determine and refine X-ray structures of protein-glycan complexes and glycoproteins  
A. Varrot

11:50–12:05 148 - Computational studies of carbohydrate-antibody interactions using docking, site-mapping and conformational filters  
P. Ramsland, M. Agostino, E. Yuriev



12:05–12:20 149 - A weak affinity dynamic microarray for glycan profiling: modeling and preliminary experimentation of a high-throughput tool for screening and profiling glycoproteins  
N. Reuel, J. Ahn, J. Kim, J. Zhang, A. Boghossian, M. Strano

12:20–12:35 150 - Establishment of the principles of flax rhamnogalacturonan I three-dimensional organization by computer modeling  
A. Petrova, P. Mikshina, T. Gorshkova

**11:20–12:20 Euroglycoscience Forum Glycolandscape KLEINER FESTSAAL Engineering Workshop II**

*Co-Chairs: S. Flitsch, N. Bovin*

11:20–11:40 159 - Enhanced potencies of multivalent carbohydrates on microarrays and magnetic nanoparticles  
R. Pieters

11:40–12:00 160 - Synthetic Glycocluster – Tuning avidity and selectivity by topology  
M. Lahmann

12:00–12:20 161 - Cholesterol masking of plasma membrane glycosphingolipids  
C. Lingwood, A. Novak, B. Binnington

**11:20–11:50 Euroglycoscience Forum Prokaryotic Protein Glycosylation Workshop II HÖRSAAL 30**

*Co-Chairs: P. Messner, C. Schäffer*

11:20–11:35 154 - Glycoproteomic analysis of O-linked glycans from the oral pathogen, *Tannerella forsythia*  
M. Pabst, G. Posch, L. Brecker, P. Messner, C. Schäffer, F. Altmann

11:35–11:50 155 - The outer membrane vesicle glycoproteome of the periodontopathogen *Tannerella forsythia*  
V. Friedrich, G. Posch, G. Sekot, Z. Megson, M. Pabst, F. Altmann, P. Messner, C. Schäffer

**12:20**

Excursions or free afternoon

**Thursday, August 25, 2011**

**09:00–09:35**

**AUDIMAX**

*Chair: J.-C. Michalski*

**Plenary lecture 010** - Analytical glycobiology at high sensitivity: a decade of progress (Jean Montreuil Lecture)  
Milos V. Novotny

**09:40–10:50 Structural and Chemical Glycobiology and Glycomics I AUDIMAX**

*Chair: I. Tvaroška*

09:40–09:55 078 - The role of oligosaccharides in protein-protein interactions  
B. Meyer, J. Dojahn, B. Hünnefeld, S. Meyer, A. Neffe, W. Scherres, J. Tost, K. Wallach, D. Wilhelm, M. Hollinger

09:55–10:10 079 - NanoLC-MS/MS methods for O-glycome analysis  
G. Zauner, C. Koeleman, A. Deelder, M. Wührer

10:10–10:25 080 - The major glycosylphosphatidylinositol- (GPI)- linked surface antigen of the protozoan parasite *Entamoeba histolytica*  
M. Binder, I. Wilson, H. Melzer, A. Marinets, N. Guillén, M. Duchêne

10:25–10:50 Keynote lecture 081 - The role of the membrane protein Wzi in capsule assembly  
J. Naismith, S. Bushell, C. Whitfield

**09:40–10:50 Biosynthesis and Metabolism of Glycoconjugates I HÖRSAAL 33**

*Chair: I. Brockhausen*

09:40–10:05 Keynote lecture 066 - Glycosylation of thrombospondin type 1 repeats  
R. Haltiwanger, E. Al-Shareffi, C. Leonhard-Melief, S. Singh, D. Vasudevan, B. Holdener

10:05–10:20 067 - A new enzyme, glucan pathway and anti-TB target  
K. Syson, C. Stevenson, D. Lawson, R. Kalscheuer, W. Jacobs, S. Bornemann

10:20–10:35 068 - Emerging roles for N-glycan de-mannosylation in plants  
S. Hüttner, E. Liebminger, R. Strasser

10:35–10:50 069 - Structure-function studies of galactolipid synthases  
C. Breton, J. Rocha, G. Pesce, M. Audry, A. Thomas, M. Block,  
E. Marechal

**10:50–11:20 Coffee break ARCADE COURTYARD**

**11:20–12:30 Structural and Chemical Glycobiology and Glycomics II AUDIMAX**

Chair: P. Kosma

11:20–11:35 082 - A novel technique for constructing oligosaccharide microarrays  
S. Komba, T. Terauchi, S. Watanabe

11:35–11:50 083 - Characteristics of the CFG printed glycan microarray v5.0:  
final glue-grant funded  
N. Razi, R. McBride, W. Peng, J. Pranskevich, J. Rangarajan, J. Paulson

11:50–12:05 084 - A novel class of glycosyltransferase inhibitors  
G. Wagner

12:05–12:30 Keynote lecture 085 - Glycoarrays on gold surfaces  
S. Flitsch

**11:20–12:30 Biosynthesis and Metabolism of Glycoconjugates II HÖRSAAL 33**

Chair: Y. Ma

11:20–11:45 Keynote lecture 070 - Prokaryotic flagellar glycoconjugates –  
structural diversity and novel biosynthetic pathways  
S. Logan

11:45–12:00 071 - The glycosylation in Nucleo-Cytoplasmic Large DNA Viruses  
(NCLDV).  
M. Tonetti, M. Parakkottil Chothi, C. Abergel, J. Van Etten

12:00–12:15 072 - Metabolism of sialic acid (Sia) in protochordates: Structural  
elements for the Sia recognition and intracellular localization of the  
CMP-Sia synthetases (CSSs)  
A. Fujita, C. Sato, Y. Yasukawa, H. Sawada, K. Kubokawa,  
Y. Guérardel, K. Kitajima

12:15–12:30 073 – Sialic acid biosynthesis in *Aliivibrio salmonicida*  
M. Gurung, I. Ræder, B. Altermark, I. Leiros, M. Okvist, A. Smalås

**12:30–14:00 Lunch break ARCADE COURTYARD**

**13:35–13:50 Structural and Chemical Glycobiology and Glycomics III Part I AUDIMAX**

Chair: H. Geyer

086 – In-depth characterization of glycoproteins by ZIC-HILIC  
enrichment, mass spectrometry and glyco-bioinformatics  
A. Resemann, A. Asperger, A. Schneider, U. Schweiger-Hufnagel, D. Suckau

**14:00–14:35 AUDIMAX**

Chair: O. Holst

**Plenary lecture 421** (replacing 011) – “Glyco”-ABC transporters for the export of  
bacterial glycans  
Chris Whitfield

**14:40–15:50 Structural and Chemical Glycobiology and Glycomics III Part II AUDIMAX**

Chair: H. Geyer

14:40–14:55 087 - Systems glycobiology: from genome to glycome An integrated  
strategy for identifying and screening potential clinical markers  
P. Rudd, R. Saldova, J. Kattla, B. Adamczyk, M. Doherty

14:55–15:10 088 - High-throughput glycosylation pattern analysis of glycoproteins  
utilizing a multiplexing capillary-DNA-sequencer  
E. Rapp, R. Hennig, M. Borowiak, R. Kottler, U. Reichl

15:10–15:25 089 - Rhamnogalacturonan II exhibits a diversity based on monosac  
charide exchanges, undescribed methylation and methylesterifications  
M. Pabst, R. Fischl, L. Brecker, F. Altmann, R. Léonard

15:25–15:50 Keynote lecture 090 - High-throughput glycosylation profiling for  
clinical glycomics of autoimmune and alloimmune diseases  
M. Wuhrer, M. Selman, L. R. Ruhaak, E. Lonardi, G. Zauner, C. Balog,  
A. Deelder

**14:40–15:50 Biosynthesis and Metabolism of Glycoconjugates III HÖRSAAL 33***Chair: Y. Kimura*

14:40–15:05 Keynote lecture 074 - A novel metabolic pathway for N-linked glycans  
T. Suzuki

15:05–15:20 075 - Metabolic glycoengineering through the mammalian GalNAc salvage pathway.  
S. Pouilly, V. Bourgeaux, F. Piller, V. Piller

15:20–15:35 076 - Genetic analysis of de novo and salvage pathways for the nucleotide sugar UDP-glucuronic acid  
R. Tenhaken, C. Geserick, S. Endres, R. Reboul, A. Pieslinger

15:35–15:50 077 - C-terminus glycans with critical role in the maturation of a secretory glycoprotein  
S. Petrescu, M. Marin, S. Ghenea, A. Petrescu

**15:55–17:25 Coffee break****ARCADE COURTYARD****15:55–17:25****POSTER AREA ARCADE COURTYARD**

Poster Session II

**17:25–18:00****AUDIMAX***Chair: H. Vliegthart***Plenary lecture 012** - Carbohydrate chemistry and drug discoveryChi-Huey Wong**19:30–23:00****PALAIS FERSTEL**

Symposium Banquet

**Friday, August 26, 2011****09:00–09:35****AUDIMAX***Chair: E. Stöger***Plenary lecture 013** - Enzymes of the Golgi apparatus involved in plant cell wall synthesis

ESF Lecture

Paul Dupree**09:40–10:50 Glyco(bio)technology I****AUDIMAX***Chair: N. Reichardt*

09:40–09:55 099 - Biofunctionalization of biomaterial surfaces with glycan structures and human galectins  
C. Römer, C. Rech, L. Elling

09:55–10:10 100 - The nuclear import of nanoparticles by displaying glycoside cluster on the surface  
S. Sekiguchi, K. Niikura, S. Yoshimura, K. Ijio

10:10–10:25 101 - Photo-click immobilization on polymeric surfaces – Versatile chemistry for the preparation of carbohydrate arrays  
O. Norberg, L. Deng, T. Aastrup, O. Ramstrom

10:25–10:50 Keynote lecture 102 - Understanding and controlling O-GlcNAc processing enzymes in vitro and in vivo.  
D. Vocadlo, T. Gloster, J. Heinonen, M. Macauley, X. Shan, D. Shen, A. Yadav, S. Yuzwa, W. Zandberg

**09:40–10:50 Cell Biology I****HÖRSAAL 33***Chair: C. Reis*

09:40–10:05 Keynote lecture 091 - LOX-1 functions as a common receptor for Hsp60, Hsp70, and Hsp90 and facilitates cross-presentation of apoptotic cell-associated antigens  
J. Gu

10:05–10:20 092 - Suppression of alpha-mannosidase (Man2C1) gene expression by siRNA induces mitochondria-dependent apoptosis in HeLa cells  
L. Wang, T. Suzuki

10:20–10:35 093 - Structural remodeling of GPI-anchored proteins is critical for their sorting to ER-exit sites by p24 family proteins  
M. Fujita, Y. Maeda, T. Kinoshita

10:35–10:50 094 - The interactions of the *Pseudomonas aeruginosa* lectin LecA with the glycosphingolipid Gb3 result in membrane invagination and cellular uptake of the bacterium  
S. Abounit, T. Eierhoff, G. Rydell, A. Audfray, S. de Bentzmann, L. Johannes, G. Larson, A. Imberty, W. Römer

**10:50–11:20 Coffee break**

**ARCADE COURTYARD**

**11:20–12:30 Glyco(bio)technology II**

**AUDIMAX**

*Chair: J. Costa*

11:20–11:35 103 - Mushroom glycoengineering for the production of therapeutic glycoproteins  
E. Berends, K. Schmidt, L. Lugones, H. Wosten, D. Bosch

11:35–11:50 104 - Humanization of the plant N-glycosylation pathway for the production of therapeutically relevant proteins  
A. Castilho, P. Gattinger, M. Pabst, J. Grass, R. Kunert, R. Strasser, F. Altmann, H. Steinkellner

11:50–12:05 105 - Insect cells for antibody production: evaluation of an efficient alternative  
D. Palmberger, D. Rendić, P. Tauber, F. Krammer, I. Wilson, R. Grabherr

12:05–12:30 Keynote lecture 106 - Antibody engineering for developing next-generation therapeutic antibody; The importance of controlling post-translational modifications and its homogeneity as drugs  
K. Mori, M. Satoh

**11:20–12:30 Cell Biology II**

**HÖRSAAL 33**

*Chair: J. Roth*

11:20–11:45 Keynote lecture 095 - Role of N-linked oligosaccharides in protein quality control and in maintenance of endoplasmic reticulum homeostasis  
M. Molinari

11:45–12:00 096 - Defining the molecular machinery involved in the retrograde transport of Shiga toxin from endosomes-to- the Golgi  
Z. Z. Lieu, F. Houghton, C. Chia, P. Gleeson

12:00–12:15 097 - Galactan of flax phloem fibers is associated with specific protein  
N. Mokshina, N. Ibragimova, V. Salnikov, T. Gorshkova

12:15–12:30 098 - Golgi Endomannosidase Mediates a Novel Route for Endoplasmic-Reticulum Associated Degradation  
N. Kukushkin, D. Alonzi, R. Dwek, T. Butters

**12:35–13:05**

**AUDIMAX**

*Chair: I. Wilson*

**Plenary lecture 014** - Principles of N-linked protein glycosylation  
Markus Aebi

**13:10–13:30**

**AUDIMAX**

Closing Ceremony

**13:30–14:30 Lunch**

**ARCADE COURTYARD**

## POSTER SESSIONS POSTER AREA ARCADE COURTYARD

15:55 – 17:25 POSTER SESSION I - Monday, August 22, 2011

- 162 - Elevated O-GlcNAc modification of proteins in diabetic kidney  
Y. Akimoto, Y. Miura, T. Toda, M. Wolfert, L. Wells, G. Boons, G. Hart, T. Endo, H. Kawakami
- 163 - Crystallization and preliminary X-ray diffraction analysis of alpha mannosidase LM408 cloned from *D. melanogaster*  
I. Nemčovičová, M. Nemčovič, S. Šesták, M. Pišková, I. Wilson, J. Mucha
- 164 - Prognostic role of heparan sulphate 3-O sulphotransferase 3A1 (HS3ST3A1) in breast cancer: an immunohistochemistry approach  
J. Y. Low
- 165 - Prognostic value of heparan sulfate expression in gastric carcinoma  
S. L. Lo, A. A. Thike, S. Y. Tan, T. K. H. Lim, I. B. H. Tan, S. P. Choo, P. H. Tan, B. H. Bay, G. W. C. Yip
- 166 - hybrid gangliosides for the detection of anti-ganglioside complex antibodies  
L. Mauri, R. Casellato, M. G. Ciampa, K. Kaida, M. Motoyama, S. Kusunoki, S. Sonnino
- 167 - What is real target of galectin-3?  
N. Miyanishi, A. Hoshino, N. Nishi, S. Nakakita, J. Hirabayashi, S. Kamitori
- 168 - Clinical Evaluation of Sialyl-Tn Antigen Level on CA125 Core Protein in Patients with Endometriosis and Ovarian Cancer  
K. Akita, S. Yoshida, Y. Ikehara, S. Shirakawa, M. Toda, M. Inoue, J. Kitawaki, H. Nakanishi, H. Narimatsu, H. Nakada
- 169 - Expression of N-acetylglucosaminyltransferase IVa Regulates Invasion of Mouse Hepatocarcinoma Cells in vitro  
J. Fan, J. He, S. Wang, Y. Guo, Y. Dang, S. Yu, J. Zhang
- 170 - TNFalpha, IL-6 and IL-8 control sialyl Lewis x and 6-sulfo sialyl Lewis x epitopes biosynthesis in human bronchial explants and in A549 lung cancer cells.  
F. Colomb, P. Delannoy, A. Harduin-Lepers, J. Lafitte, M. Krzewinski-Recchi, S. Groux-Degroote

171 - Glycan biomarkers in gastric lesions: tissue and serum characterization  
C. Gomes, M. L. Silva, J. Pinto-de-Sousa, H. Santos-Sousa, T. Schwientek, L. David, C. Reis, H. Osório

172 - Release of alkaline phosphatase caused by PIGV mutations in patients with Hyperphosphatasia-Mental Retardation syndrome (HPMR), a recently found second inherited GPI anchor deficiency.  
Y. Murakami, P. Krawitz, P. Robinson, S. Mundlos, Y. Maeda, T. Kinoshita

173 - Conjugate vaccine against *Clostridium difficile*  
E. Cappelletti, M. R. Romano, O. Cakici, R. Adamo, F. Berti, D. Proietti, M. Tontini, B. Brogioni, V. Pinto, G. Costantini, E. Swennen, J. Ganeshapillai, M. A. Monteiro, P. Costantino, M. Scarselli

174 - Identification of important biological Glycoepitopes of Lubricin in Synovial Fluid  
L. Ali, C. Jin, N. Karlsson

175 - Determination of glycosyltransferase genes involved in the biosynthesis of Sda and sLex epitopes in normal and cancer gastrointestinal cell lines.  
M. Krzewinski-Recchi, S. Sebda, S. Groux-Degroote, P. Delannoy, F. Dall'Olio, A. Harduin-Lepers

176 - Binding affinities of Yariv reagents to lectin PA-IL from *Pseudomonas aeruginosa*  
A. Audfray, A. Imberty, B. Classen

177 - New sugar marker attached to PSA for prostate cancer  
K. Fukushima, T. Satoh, S. Baba, K. Yamashita

178 - Correlation between low salivary sulfotransferase activities and clinical parameters in Sjögren's syndrome patients.  
I. Castro, I. Brockhausen, S. Aguilera, C. Alliende, A. F. G. Quest, U. Mandel, C. Molina, C. Leyton, M. J. Gonzalez

179 - withdrawn

180 - Plasma membrane-associated sialidase (NEU3) regulates progression of prostate cancer through modulation of androgen receptor signaling  
S. Kawamura, I. Sato, T. Wada, K. Yamaguchi, S. Moriya, T. Miyagi

181 - Transcriptional regulation of FUT4 in breast cancer epithelial cells  
X. Yang, S. Liu, X. Wang, Q. Yan

182 - Glycobiology of human gastrointestinal mucins in pathophysiological conditions  
J. Michalski, Y. Rossez, C. Robbe-Masselot

183 - withdrawn

184 - High throughput isolation and glycosylation analysis of IgG – variability and heritability of the IgG glycome in two isolated human populations  
M. Pučić, A. Knezević, J. Vidič, B. Adamczyk, O. Polašek, M. Novokmet, O. Gornik, S. Šupraha-Goret, M. Wormald, I. Redžić, H. Campbell, A. Wright, N. Hastie, J. Wilson, I. Rudan, M. Wuhrer, P. Rudd, D. Josić, G. Lauc

185 - withdrawn

186 - Metal Ion Dysregulation in Lysosomal Storage Diseases  
C. Chen, A. Speak, D. Smith, M. Jeyakumar, E. Garman, F. Platt

187 - Suggestion of the existence of endogenous sialidase on a cell surface of the mouse thymus analyzed by FACS  
S. Kijimoto-Ochiai, T. Matsumoto-Mizuno, M. Fujii, T. Koda

188 - Extremely low expression of cytosolic sialidase in human tissues and its possible involvement in cell survival of a human cancer cell line  
K. Koseki, K. Hata, T. Wada, K. Yamaguchi, K. Takahashi, S. Moriya, T. Miyagi

189 - JM403 antigen GlcA-GlcNH<sub>3</sub><sup>+</sup> on heparan sulfate glycosaminoglycan may be involved in cell proliferation and apoptosis  
A. Yusa, M. Fujii, H. Utsunomiya, K. Tanaka, R. Kannagi, K. Oda, M. Kyogashima

190 - Biological roles of chondroitin sulphate in cutaneous wound healing  
G. Yip, A. Koh, Y. Wong, J. Lu, S. Moochhala, B. Bay

191 - Analysis of carbohydrate specificity of C-type lectin receptors as antigen-uptake receptors using neoglycolipids-coated liposomes  
Y. Kawachi, A. Hakamata, C. Kato, N. Kojima

192 - Lectins and enzymes: universal intramolecular cooperation in organisms  
M. Lakhtin, V. Lakhtin, V. Aleshkin

193 - Galectin-8 as a novel lectin modulating cancer metastasis  
Y. Vinik, Y. Levy, Y. Zick

194 - CLEC-2 is a highly conservative C-type lectin-like receptor of Dectin-1 cluster and the expression is regulated by different mechanisms in evolution  
J. Xie, L. Wang, J. Gu

195 - Neoglycolipids as a tool for study of cellular ligands of galectins  
E. Rapoport, O. Vokhmyanina, E. Korchagina, I. Ryzhov, I. Mikhalev, N. Bovin

196 - Protective effect of gangliosides and heme oxygenase in obstructive cholestasis  
V. Smid, T. Petr, J. Smidova, H. Hulkova, L. Vitek, F. Smid, L. Muchova

197 - Immunohistochemical Detection of Glycolipids in Various Tissues of Rat  
H. Kawakami

198 - Convergence and enhancement of the growth and adhesion signals by ganglioside GD3 in human melanomas.  
K. Furukawa, Y. Ohkawa, M. Kanbe, M. Miyata, C. Takahashi, O. Tajima, K. Hamamura, K. Furukawa

199 - The role of UDP-galactose:ceramide galactosyltransferase (UGT8), new molecular marker of breast cancer malignancy and lung metastasis, in tumor progression  
T. Owczarek, P. Dzięgiel, M. Ugorski

200 - withdrawn

201 - A novel mannose-6-phosphate receptor homology (MRH) domain containing protein is involved in plant ER-associated degradation of proteins  
S. Hüttner, C. Veit, R. Strasser

202 - The human lysosomal cysteine proteinase cathepsin O is N- and O-glycosylated  
M. Aufy, A. Porodko, J. Stadlmann, L. Mach

203 - The two N-glycans of murine Cellular Repressor of E1A-stimulated Genes (CREG) are both engaged in lysosomal sorting of the protein  
P. Schähs, A. Schönbacher, V. Steinschauer, A. Porodko, J. Stadlmann, L. Mach



204 - Glycosylation enzyme sorting in the Golgi – a job for more than one tethering factor  
V. Miller, L. Briggs, I. Watson, T. Kudlyk, P. Sharma, V. Lupashin, D. Ungar

205 - Changes in N-Glycosylation and Migration of A549 Human Lung Carcinoma Cells by Knockdown of Transcription Factor Sp1  
T. Sato, K. Furukawa

206 - Expression of MUC1 in human and murine mammary carcinoma cells change their glycosylation profile and carbohydrate-dependent adhesive properties  
A. Solatycka, T. Owczarek, B. Puła, L. Wojciech, M. Podhorska-Okołów, P. Dzięgiel, M. Ugorski

207 - The role of N-glycosylation on *Paracoccidioides brasiliensis* biological process and yeast-host cells interaction  
F. Almeida, F. Carvalho, V. Mariano, A. Alegre, R. Silva, E. Hanna, M. Roque-Barreira

208 - Purification and characterization of CD24, one of major poly-N-acetyl-lactosamine-carrying glycoproteins, in PC12 cells.  
S. Fukui, M. Kawahara

209 - Protein kinase C regulate morphology of microglia derived from Sandhoff disease model mice  
D. Tsuji, M. Toyoshima, K. Itoh

210 - Effects of C-mannosylated TSR-derived peptides on TGF- $\beta$  signaling in kidney-derived NRK-49F fibroblasts  
Y. Ihara, M. Ikezaki, Y. Inai, I. Matsui, E. Muroi, S. Manabe, Y. Ito

211 - The O-GlcNAcylation Profile of Delta-Lactoferrin, a Transcription Factor That Regulates Cell Cycle Progression and Apoptosis is Modified During The Cell Cycle Progression  
S. Pina-Canseco, S. Hardivillé, L. Drougat, A. Vercoutter, E. Hoedt, C. Mariller, A. Pierce

212 - Effects of microRNAs on fucosyltransferase 8 expression in hepatocarcinoma cells  
C. Bernardi, U. Soffientini, M. Tonetti

213 - Role of N-Glycosylation in the modulation of E-cadherin functions in cancer  
S. Pinho, R. Seruca, N. Taniguchi, F. Gärtner, C. Reis

214 - Localization of arabinogalactan-proteins (AGPs) in *Echinacea purpurea* by immunofluorescence  
E. M. Goellner, A. Bossy, J. Gramann, W. Blaschek, B. Classen

215 - The shedding of CLEC-2 is a regulated process and dependent on N-glycosylation  
L. Zhou, J. Xie, J. Xu, J. Gu

216 - Polysaccharides as the causative agents of tension in gelatinous cell wall of plant fibers  
T. Gorshkova, P. Mikshina, S. Chemiksova

217 - Widespread Expressions of T Cell Receptor-like Proteins in Cancer Cells  
G. Lee, M. Zhu, B. Ge, S. Potzold

218 - Influence of steroid hormones on glycoconjugate distribution of canine endometrial glands in a 3D cell culture system - a lectin histochemical study  
C. Bartel, I. Walter

219 - withdrawn

220 - N-glycosylation is critical for the stability and insulin-mediated translocation of GLUT4 glucose transporter in HeLa cells  
Y. Haga, K. Ishii, T. Suzuki

221 - Biochemical characterization of AMOR, the female factor activating the pollen tube to react to the attractant LUREs  
A. Mizukami, R. Shimizu, T. Kotake, Y. Tsumuraya, N. Sasaki, H. Mori, T. Higashiyama

222 - Mass spectrometric profiling of N-glycans from *Caenorhabditis elegans* mutant embryos  
H. Geyer, M. Schmidt, M. Müller, R. Schnabel, R. Geyer

223 - The Biological Roles of a putative Polypeptide GalNAc-transferase / WB-SCR17  
Y. Nakayama, N. Nakamura, A. Kurosaka

224 - The highly glycosylated seminal plasma protein WGA16, a potential decapacitation factor, may specifically bind to sperm membrane microdomain through lectinic activity.

E. Garenaux, T. Kanazawa, K. Hori, C. Sato, K. Kitajima

225 - Isolation and characterization of a novel heavily glycosylated protein, WGA-gp, from pig sperm membrane microdomain

T. Kanazawa, E. Garenaux, W. Kasekarn, K. Hori, T. Tsuchiyama, H. Yasue, C. Sato, K. Kitajima

226 - withdrawn

227 - Characterization of two developmentally-significant *Xenopus* peptide:N-acetylgalactosaminyltransferases

J. Voglmeir, N. Laurent, M. Oelgeschläger, S. Flitsch, I. Wilson

228 -  $\beta$ 3GnT2 poly-N-acetyllactosamine (PLN) oligosaccharides are essential for proper adenylyl cyclase 3 (AC3) enzymatic function and localization in olfactory neurons

G. Schwarting, T. Henion

229 - Sulfated glycan inhibits tumor cell growth by targeting BMP2/BMP receptors

Y. Wang, X. Chen, K. Ding

230 - withdrawn

231 - Rhamnosidase of *Penicillium commune*

L. Varbanets, N. Borzova, O. Gudzenko

232 - Site-specific mutants of -galactosidase from *Kluyveromyces lactis*

A. Lampio, O. Turunen

233 - Study of synergistic activity for enzymatic chitin degradation

Y. Nakagawa, S. Tochigi, M. Kudo, K. Totani

234 - Lipopolysaccharides of *Rahnella aquatilis*

L. Varbanets, L. Skoklyuk

235 - Novel binding specificities of *Ricinus communis* agglutinin (RCA120) and *Erythrina cristagalli* lectin (ECL)

G. Yu, Y. Wang, B. Yang, X. Zhao, Z. Han, Y. Hu, W. Chai

236 - A robotics platform for automated high-throughput glycan analysis of the serum glycome

M. Doherty, N. McLoughlin, J. Bones, P. Rudd

237 - Development of a multiple enzyme-processing method and high-resolution HILIC UPLC glycoprofiling of a CHO cell-expressed complex glycoprotein.

T. Baginski, M. Alvarez, O. Borisov, C. Quan

238 - Towards biosimilar monoclonal antibodies: Batch-to-batch profiling using mass spectrometry and N-glycan mapping

N. Grammel, S. Kandzia, E. Grabenhorst, H. Conradt

239 - Chemoenzymatic Synthesis of Tetraantennary Bisected Core Fucosylated N-glycan Derivatives: printed on the CFG glycan microarray

M. Niemietz, N. Razi, R. McBride, J. Paulson, C. Unverzagt

240 - Strict binding specificity for core ( $\alpha$  1-6) fucosylated N-glycans and biological activity of small-sized lectins from the red alga *Hypnea japonica*

K. Hori, M. Hirayama, S. Okuyama, K. Matsubara, S. Nakamura-Tsuruta, H. Tateno, J. Hirabayashi

241 - The cherry on the cake: Expression of sialylated human Erythropoietin in plants

J. Jez, A. Castilho, J. Stadlmann, J. Grass, B. Antes, K. Vorauer-Uhl, R. Strasser, F. Altmann, H. Steinkellner

242 - Generation of glyco-engineered rice (*Oryza sativa*) for the production of recombinant glycoproteins lacking plant-specific immunogenic N-glycans

Y. Shin, M. Seo, M. Yang, T. Kwon

243 - Functional Characterization of a Peptide:N-Glycanase identified from Yeast *Yarrowia lipolytica*

K. J. Lee, J. Y. Kil, O. Kwon, K. Ko, D. Oh

244 - Fluorescent Probes of *Aspergillus oryzae* Lectin Fused with Fluorescent Proteins Are Internalized into Intracellular Compartments via Endocytosis

J. Mun, K. J. Lee, Y. J. Kim, M. S. Sung, O. Kwon, D. Oh

245 - In silico analysis of Completely Sequenced Microbial Genomes Reveals the Ubiquity of N-linked Glycosylation in Prokaryotes

M. Kumar, P. Balaji

246 - Single-Molecule Force Spectroscopy for Studying Kinetics of Enzymatic Elongations of glycoconjugate

T. Mori

247 - Novel anti-HIV-1 mechanism of pseudoproteoglycan, conjugate of unsulfated glycans with poly-L-lysine, is different from that of sulfated polysaccharides

F. Kano, K. Nakamura, H. Hoshino, T. Otsuki, A. Oue, N. Shimizu, T. Nakamura, H. Sakagami, H. Ogawa

248 - Sulfated polysaccharides of *Delesseria sanguinea*: Pharmacological activity and quality in dependence on the isolation procedure

J. Grimm, N. Grünewald, S. Alban

249 - Characterization and quantification of the N-glycosylation of marketed recombinant therapeutic glycoprotein products

S. Kandzia, E. Grabenhorst, N. Grammel, H. Conradt

250 - Biochemical characterization of Csav-ST3Gal I/II, a sialyltransferase from the sea squirt *Ciona savignyi*

S. Kim, E. H. Kim, D. Oh, H. A. Kang, Y. Lee, O. Kwon

251 - Primary structure, carbohydrate-binding specificity and antiviral activity of the novel lectin from the green alga *Boodlea coacta*

M. Hirayama, Y. Sato, K. Morimoto, N. Yamamoto, K. Imamura, K. Hori

252 - Solubility enhancement of insoluble drugs by the complexation with sinorhizobial oligosaccharides

J. M. Choi, C. Kwon, H. Kim, S. Jung

253 - Stereoisomeric separation of some flavanones using alpha-cyclosophoro-octadecaoses as a chiral additive in capillary electrophoresis

C. Kwon, D. Jeong, S. Jung

254 - Enzymatic Conversion into GalNAc from GlcNAc

K. Inoue, M. Nishimoto, M. Kitaoka

255 - Synthesis of N-acetyl neuraminic acid (Neu5Ac) by Neu5Ac aldolase protein aggregates.

M. Garcia-Garcia, A. Sola-Carvajal, G. Sanchez-Carron, S. Jimenez-Garcia, A. Sanchez-Ferrer, F. García-Carmona

256 - A new N-Acyl-D-Glucosamine 2-epimerase from *Bacteroides ovatus* with potential biotechnological use.

A. Sola-Carvajal, M. Garcia-Garcia, G. Sanchez-Carron, S. Jimenez-Garcia, F. García-Carmona, A. Sanchez-Ferrer

257 - Chemiluminescent visualization and quantification of the complement glycoprotein C4 containing systems in patient whole sera separated with isoelectric focusing in polyacrylamide gel and electroblotted: sialidase- and peroxidase-based new approaches

M. Lakhtin, V. Lakhtin, L. Kozlov

258 - Porcine submaxillary mucin self interactions and their interaction with soybean agglutinin studied at the single molecular pair level

M. Sletmoen, K. E. Haugstad, C. F. Brewer, T. Damm, T. Gerken, B. Stokke

259 - Medicinal Materials for Diagnostic Imaging and Curing Tumors: Syntheses and Evaluation of Sugar-Ball-Dendritic MRI Contrast Agents and Phospha Sugars

M. Yamashita, N. Ozaki, M. Yamada, M. Yamaoka, M. Sugiyama, M. Fujie, J. Yamashita, T. Niimi, K. Asai, T. Suyama, K. Ogawa, K. Srinivasulu, R. Makita, Y. Takehara, H. Sakahara, S. Laurent, C. Burtea, R. Muller, S. Nakamura, K. Ohnishi

260 - Modulation of the expression of *Helicobacter pylori* glycan receptors in gastric mucosa

A. Magalhaes, R. Marcos-Pinto, A. Nairn, R. Ferreira, C. Gomes, C. Figueiredo, M. Dinis-Ribeiro, F. Carneiro, K. Moremen, T. Borén, L. David, C. Reis

261 - Fucose-containing bacterial capsule in bacterial virulence

J. Wu

262 - New pH dependent lectin from bioluminescent bacterium *Photobacterium*

P. Rozumova, M. Wimmerova

263 - Burkholderia cenocepacia lectins – similar, however different potential virulence factors

L. Malinowska, O. Sulak, P. Kosma, A. Imberty, M. Wimmerova

264 - Uptake of oligomannose-coated liposomes by mouse peritoneal macrophages promote a differentiation of the cells into dendritic cells

C. Kato, M. Igarashi, M. Ishii, N. Kojima

265 - Differential responses of NKT cells against different types of alpha-GalCer-containing liposomes  
M. Ishii, N. Kojima

266 - Glycosylation patterns of Immunoglobulin G following group B Neisseria meningitidis vaccination of human volunteers using LC-MS-ESI Orbitrap  
A. Vestrheim, W. Egge-Jacobsen, A. Moen, T. Michaelsen

267 - Modulation of the biological function of a synthetic carbohydrate antigen related to Streptococcus pneumoniae infections  
F. Compostella, S. Fallarini, F. Ronchetti

268 - Design, Preparation and Preliminary Evaluation of Glycoconjugate Vaccines Active Against Anthrax  
C. Grandjean, O. Milhomme, F. Djedaïni-Pilard

269 - Characterisation of Pathogen Associated Molecular Patterns isolated from the causative agents of bovine mastitis  
K. Duda, O. Neiwert, H. Seyfert, U. Dobrindt, S. Engelmann, O. Holst

270 - Reishi Polysaccharides-induced Antibodies Recognize Tumor- Associated Carbohydrate Epitopes  
C. Wu, C. Liang, W. Yang, H. Hsu, C. Wong

271 - Analysis of Chicken Intestinal Mucin O-glycans by LC-MS: Potential Inhibitory Elements for Campylobacter jejuni Infection.  
W. Struwe, M. Campbell, C. Hayes, N. Karlsson, P. Rudd

272 - Characterization of a novel glucosyltransferase WbdN from Escherichia coli serotype O157  
Y. Gao, S. Strum, B. Liu, J. Schutzbach, T. N. Druzhinina, N. S. Utkina, V. I. Torgov, W. A. Szarek, L. Wang, I. Brockhausen

273 - Cloning, Expression and Characterisation of Glycosyltransferases from the Mosquito Anopheles gambiae  
S. Kurz, R. Dinglasan, I. Wilson

274 - Human synovial lubricin has L-selectin ligand activity and associates with neutrophils  
C. Jin, A. Ekwall, J. Bylund, L. Bjorkamn, M. Bokarewa, N. Karlsson

275 - Human Intelectin interactions with protozoan parasites.  
P. Bonay, L. Rangel, M. Rubio, L. Corvo, M. Soto, S. Tsuji

276 - Modulation of Leishmania GPIs Synthesis by Myriocin. Parasite Growth, Morphology, and (Glyco)lipid Expression  
E. Castro, H. Takahashi, A. Straus

277 - Human GII.4 norovirus VLP induces membrane invaginations on giant unilamellar vesicles containing secretor gene dependent  $\alpha$ 1,2-fucosylated glycosphingolipids  
G. Rydell, L. Svensson, G. Larson, W. Römer, L. Johannes

278 - Impact of Influenza A virus hemagglutinin N-glycosylation on immunogenicity  
J. Hütter, J. Rödig, U. Reichl, P. Seeberger, E. Rapp, B. Lepenies

279 - Towards a new synthetic carbohydrate-vaccine candidate based on gold glyconanoparticles  
F. Chiodo, D. Safari, M. Marradi, H. A. Dekker, Y. Shan, R. Adamo, S. Oscarson, G. T. Rijkers, M. Lahmann, J. P. Kamerling, H. Snippe, S. Penadés

280 - Development Strategies of Bacterial Polysaccharide Glycoconjugate Vaccines  
R. Kensinger

281 - Characterization of a recombinant soluble form of the  $\beta$ -glucan binding domain of the human complement receptor type 3 (CR3).  
F. Piller, V. Piller

282 - Clec11a – C-type lectin family member in pathogen recognition  
J. Kuballa, C. Wagener, K. Umnus, U. Reddy, P. Nollau

283 - Body fluids: sweet protection against infection?  
N. Packer, L. Kautto, J. Grinyer, T. Nguyen-Khuong, W. Cheah, A. Dass, M. Andersen, M. Willcox, D. Kolarich

284 - Glycomics of human breast milk: an antimicrobial defence mechanism  
D. Kolarich, P. Jensen, W. Cheah, J. Grinyer, N. Packer

285 - Activation of monohexosylceramide synthesis under heat stress contributes to down-regulate the intracellular ceramide level as a ceramide scavenger and modified more complex sphingoglycolipids metabolism

Y. Niimura, K. Nagai, T. Moue, N. Takahashi

286 - Sulfoglycolipid synthesis in mammalian renal cells is regulated under osmotic stress by the osmolarity of medium via MAPK signaling pathway

Y. Niimura, K. Nagai, T. Moue, N. Takahashi

287 - Anti-proliferative activity of fucoidans from a brown seaweed (*Laminaria angustata* var. *longissima*) in U937 cells

T. Yogi, S. Kitajima, J. Shimabukuro, T. Konishi, M. Tako

288 - *Silurus asotus* lectin induces dormant status in Burkitt's lymphoma Raji cells

K. Nitta, T. Tatsuta, S. Sugawara, M. Hosono

289 - MUC1 mediated signaling through ligation with Siglec 9

H. Nakada, S. Tanida, K. Akita, M. Toda, M. Inoue

290 - Lectin-related degradation of glycoproteins in the nucleus and cytoplasm of plant cells

N. Lannoo, K. Stefanowicz, E. Van Damme

291 - Annexin A5 regulates blood coagulation via its carbohydrate recognition domains.

S. Takaya, S. Nambu, R. Takeda, K. Kojima-Aikawa

292 - Role of N-glycosylation for the activity of the *Arabidopsis thaliana* endo-1,4-beta-glucanase KORRIGAN1

J. Grass, E. Liebminger, F. Altmann, L. Mach, R. Strasser

293 - Molecular mechanisms for the growth disorders in GM3-only mice

O. Tajima, Y. Fujita, Y. Oumi, Y. Ohkawa, K. Furukawa, K. Furukawa

294 - Physiopathological function of GM3 ganglioside

J. Inokuchi

295 - Platelet is involved in B-CLL progression through CLEC-2/CD74 interaction

Y. Ruan, J. Gu

296 - Hijacking a biosynthetic pathway yields a glycosyltransferase inhibitor within cells

T. Gloster, W. Zandberg, J. Heinonen, D. Shen, L. Deng, D. Vocadlo

#### 15:55–17:25 POSTER SESSION II - Thursday, August 25, 2011

029 - Synthesis of Glycopeptides to Probe Glycosylation of Alpha-Dystroglycan

M.J. Weissenborn

049 - Spatiotemporal Organization of OGT and O-GlcNAcylated Proteins in Lipid Rafts for Effective Insulin Signalling Pathway

Y. Pérez

050 - Roles of O-GlcNAc modification on Snail in Epithelial-Mesenchymal Transition

J.W. Cho

119 - Induction of Antigen-Specific B cell Tolerance through the Development of a Versatile Platform to Target Siglecs

M.S. Macauley, F. Pfrengle, C. Nycholat, J.C. Paulson

121 - Targeting C-type lectin receptors with synthetic carbohydrates to modulate immune responses

M. Eriksson, M. Maglinao, M. Irgang, P.H. Seeberger, B. Lepenies

125 - New Approach for Glycolipidomics -Molecular Scanning of Human Brain Gangliosides by TLC-Blot and MALDI-TOF MS-

T. Taki, T. Valdes Gonzalez, N. Goto-Inoue, W. Hirano, H. Ishiyama, T. Hayasaka, T. Nishimura, S. Yazawa, M. Setou

126 - Complementary triad of thin-layer chromatography, overlay technique and mass spectrometry as a versatile tool for exploring glycosphingolipid-based host-pathogen interaction

J. Müthing, I. Meisen, M. Mormann, K. Dreisewerd, H. Karch

127 - Isomeric analysis of oligomannosidic N-glycans and dolichol-linked precursors by PGC-LC-ESI-MS

J. Grass, M. Pabst, R. Strasser, E. Liebminger, F. Altmann

133 - An update on SAGS, the Structural Assessment of Glycosylation Sites Database

A. Petrescu

148 - Computational studies of carbohydrate-antibody interactions using docking, site-mapping and conformational filters

P.A. Ramsland, M. Agostino, E. Yuriev

149 - A Weak Affinity Dynamic Microarray for Glycan Profiling: modeling and preliminary experimentation of a high-throughput tool for screening and profiling glycoproteins

N.F. Reuel, J.-H. Ahn, J.-H. Kim, J. Zhang, A.A. Boghossian, M.S. Strano

150 - Establishment of the principles of flax rhamnogalacturonan I three-dimensional organization by computer modeling

A. Petrova, P. Mikshina, T. Gorshkova

153 - Prokaryotic Glycoprotein Database (PRO GPDB): A database of experimentally characterized glycoproteins of prokaryotic origin.

A. Rao, A.H. Bhat

154 - Glycoproteomic analysis of O-linked glycans from the oral pathogen, *Tannerella forsythia*

M. Pabst, G. Posch, L. Brecker, P. Messner, C. Schäffer, F. Altmann

155 - The outer membrane vesicle glycoproteome of the periodontopathogen *Tannerella forsythia*

V. Friedrich

297 - Sugar nucleotide analysis by ESI-MSMS using porous graphitic carbon

M. Pabst, J. Grass, R. Léonard, F. Altmann

298 - Computational analysis and comparison of glycosphingolipids among invertebrates with newly constructed wiki-based LipidBank database

E. Yasugi, M. Arita, K. Nakamura, M. Nishijima

299 - Selective Modulation of Glycosphingolipid Metabolism by Soluble Glycosphingolipid Analogues

M. Kamani, M. Mylvaganam, B. Binnington, B. Rigat, C. Lingwood

300 - Chondroitin 4-O-sulfotransferase-1 regulates the chain length of chondroitin sulfate in cooperation with chondroitin N-acetylgalactosaminyltransferase-2

T. Izumikawa, Y. Okuura, T. Koike, N. Sakoda, H. Kitagawa

301 - Distinct roles of  $\beta$ 1,3-N-acetylglucosaminyltransferases and carbohydrate 6-O sulfotransferases on corneal keratan sulfate production

T. Akama, M. Fukuda, M. Fukuda, T. Nakamura

302 - Functional enzyme complex of Beta-1, 4-galactosyltransferase-II and GlcAT-P in HNK-1 biosynthesis

S. Oka, Y. Kizuka, N. Nakagawa, T. Yoshihara, M. Asano, T. Kouno

303 - Purification and characterization of plant  $\beta$ -Xylosidase involved in turnover of plant complex-type N-glycans

D. Yokouchi, N. Ono, K. Nakamura, Y. Kimura

304 - Molecular characterization and expression analysis of  $\alpha$ -Fucosidase from tomato (*Solanum lycopersicum*)

M. Fujishige, N. Ono, K. Nakamura, R. Nakano, Y. Kimura

305 - New families of TIM-barrel type hypothetical glycoside hydrolases

D. Naumoff

306 - Changes of Substrate Specificity of Plant ENGase (Endo-Os) by Site-directed Mutagenesis

N. Okamoto, M. Maeda, M. Kimura, Y. Kimura

307 - The substrate recognition by human sialidase NEU2: a molecular modelling and site-directed mutagenesis approach.

A. Mozzi, P. Mazzacuva, G. Zampella, P. Fusi, E. Monti

308 - Double mutants as tools for elucidating N-glycosylation pathways in *Caenorhabditis elegans*

S. Yan, K. Paschinger, S. Martinez, V. Jantsch, I. Wilson

309 - Characterisation of the Class I  $\alpha$ 1,2-Mannosidases of *Caenorhabditis elegans*

I. Wilson

310 - Hunting an  $\alpha$ -1,6-fucosyltransferase from the slug *Arion lusitanicus*

C. Lucini, C. Taus, R. Grabherr, E. Staudacher



311 - An extraordinary N-glycan modifying enzyme in the animal kingdom, the  $\beta$ 1,2-xylosyltransferase from gastropods

C. Taus, C. Lucini, R. Grabherr, E. Staudacher

312 - A vertebrate-specific Y subfamily of UDP-N-acetyl- $\alpha$ -D-galactosamine: polypeptide N-acetylgalactosaminyltransferases

J. Wang, X. Li, T. Kubota, H. Narimatsu, Y. Zhang

313 - Insights into evolutionary history of animal  $\beta$ -galactoside  $\alpha$ 2,6-sialyltransferases that explain ubiquitous expression of st6gal1 gene in Amniotes

A. Harduin-Lepers, J. Petit, M. Gérard, P. Delannoy, R. Oriol, D. Petit

314 - N-glycosyltransferase Complexes Rather than Enzyme Monomers Are Responsible for the Processing and Terminal Maturation of N-Glycans in the Golgi of Live Cells

A. Hassinen, F. Pujol, A. Mettovaara, S. Kellokumpu

315 - Alg14 organizes the formation of a multi-glycosyltransferase complex required for initiation of lipid-linked oligosaccharide biosynthesis

X. Gao, J. Lu

316 - Arabidopsis thaliana ALG10 is required for efficient N-glycosylation and leaf development

A. Farid, M. Pabst, F. Altmann, J. Glössl, R. Strasser

317 - O-glycosylation pathways in human corneal and conjunctival cells

I. Brockhausen, P. Argueso

318 - Involvement of Rot1 in protein N- and O-glycosylation in Saccharomyces cerevisiae

M. Pasikowska, G. Palamarczyk, L. Lehle

319 - The effect of MSMEG\_6402 gene disruption on the cell wall and morphology of Mycobacterium smegmatis

T. Jiang, L. He, S. Zang, Y. Ma, X. Zhao, C. Zhang, Y. Xin

320 - Elucidation of the N-glycosylation pathway in the thermoacidophilic archaeon Sulfolobus acidocaldarius

B. Meyer, S. Albers, E. Peyfoon, A. Dell

321 - Overexpression of M. tuberculosis GlcNAc-1-phosphate transferase in E. coli ER2566

L. Xu, Y. Jin, Y. Xin, Y. Ma

322 - Chemoselective Synthesis of Artificial Glycoproteins for Multivalent Lectin Binding Studies

L. Artner, L. Merkel, J. Dervedde, C. Weise, N. Budisa, C. Hackenberger

323 - Functional and structural characterization of a flavonoid glucoside 1,6-glucosyltransferase from Catharanthus rosues

H. Mizukami, S. Masada-Atsumi, K. Terasaka

324 - Effect of grazing time and feeding in the concentration of sialic acid and hexose in bovine milk

S. Asakuma, Y. Ueda, F. Akiyama, Y. Uemura, T. Urashima

325 - Identification of key functional residues in the active site of human  $\beta$ 1,4-galactosyltransferase 7: a major enzyme in glycosaminoglycan synthesis pathway

I. Talhaoui, C. Bui, R. Oriol, G. Mulliert, S. Gulberti, P. Netter, M. W. H. Coughtrie, M. Ouzzine, S. Fournel-Gigleux

326 - Involvement of Golgi localised nucleotide sugar transporters in Aspergillus fumigatus galactomannan biosynthesis

J. Engel, P. Schmalhorst, A. Krüger, F. Routier

327 - Analysis of in vitro activities of human ER  $\alpha$ -1,2 mannosidase I on denatured glycoproteins

J. Aikawa, I. Matsuo, Y. Ito

328 - Characterization of PNGase-independent pathways for free-oligosaccharide formation and processing in mammalian cells

Y. Harada, T. Suzuki

329 - Post-Translational Regulation of Glycolipid-Glycosyltransferase Expressions in Apoptotic Breast and Colon Carcinoma Cells

S. Basu, R. Ma, E. Hopp, M. Basu, S. Banerjee, J. Moskal

330 - Extensive incorporation and recycling of environmental glycoprotein-conjugated sialic acids by tumor cells: proposed mechanism based on new findings obtained by chemical analysis

S. Inoue, C. Sato, K. Kitajima

331 - Newly-identified Receptors for Pancreatic  $\alpha$ -Amylase Control Blood Glucose Concentration via Carbohydrate-specific Interactions

K. Date, N. Kawasaki, N. Hashii, S. Itoh, N. Le, Y. Hirano, H. Ogawa

332 - O-glycan profiling for rat gastric mucins by MALDI-TOF/MS and HPLC

Y. Goso, D. Tsubokawa, K. Ishihara

333 - Top-down and Bottom-up Approaches to Understanding Glycan Processing in the ER

K. Totani, S. Iwamoto, M. Ioyama, H. Matsushima, Y. Ito

334 - The ER glycan processing profile correlate with type II diabetes

S. Iwamoto, Y. Ito, K. Totani, I. Matsuo

335 - Structural analysis of the Duffy atypical chemokine receptor N-linked oligosaccharide chains

M. Grodecka, E. Cosgrave, W. Struwe, K. Wasniowska, P. Rudd

336 - Structures and biosynthesis of the N- and O-glycans of recombinant human oviduct-specific glycoprotein expressed in human embryonic kidney cells (HEK293)

F. Kan, X. Yang, S. Tao, R. Orlando, I. Brockhausen

337 - Drug-resistance inhibits expression of alpha2-6 sialylation on cell membrane glycoproteins

M. Nakano, F. Ota, K. Nakajima, N. Taniguchi, M. Kavallaris, N. Packer

338 - ZIC-HILIC chromatography and ESI-QToF mass spectrometry for the compositional analysis and structural elucidation of complex heparin oligosaccharide mixtures

L. Witt, S. Kirsch, S. Ohlig, U. Pickhinke, K. Grobe, J. Peter-Katalinic, M. Mormann

339 - N-glycosylation of the SKOV3 ovarian carcinoma cell line: cellular and secreted glycoproteins and secreted exosomes

J. Costa, C. Escrevente, E. Machado, S. Kandzia, R. Carilho, P. Altevogt, H. Conradt

340 - Glycosylation profile of integrin alpha3beta1 subunits in human melanoma cells at different stages of progression

P. Link-Lenczowski, T. Butters, A. Litynska

341 - Novel O-linked glycans containing 6'sulfo-Gal/GalNAc of MUC1 secreted from human breast cancer YMBS cells

K. Yamashita, A. Seko, T. Ohkura, H. Ideo, K. Fukushima

342 - Cell Surface Glycan Analysis Platform

J. Rabinä, I. Ritamo, S. Natunen, H. Peltoniemi, L. Valmu

343 - Combined preparative sodium deoxycholate polyacrylamide slab gel electrophoresis, reverse staining and passive elution techniques: Applicability to the separation and biochemical analysis of intact bacterial lipopolysaccharide species by using mass spectrometry and in vitro bioactivity assays

E. Pupo, B. Lindner, A. Schromm, H. Brade

344 - High-Throughput Characterization of the Human Milk Oligosaccharide Composition Utilizing a Multiplexing Capillary DNA Sequencer

R. Kottler, R. Hennig, M. Mank, B. Stahl, U. Reichl, E. Rapp

345 - A Software Tool for Automated High-Throughput Processing of CGE-LIF Based Glycoanalysis Data, Generated by a Multiplexing Capillary DNA Sequencer

R. Hennig, U. Reichl, E. Rapp

346 - High-Throughput CGE-LIF Based Analysis of APTS-labeled N-Glycans, Utilizing a Multiplex Capillary DNA Sequencer

R. Hennig, M. Borowiak, L. R. Ruhaak, M. Wuhrer, E. Rapp

347 - Tailored methods for CGE-LIF based multiplexed high-throughput glycoanalysis with respect to sample characteristics

M. Borowiak, R. Hennig, R. Kottler, U. Reichl, E. Rapp

348 - Trypsin is not enough - Glycoproteomic analysis of recombinantly expressed proteins by mass spectrometric approaches

J. Grass, M. Pabst, L. Neumann, M. Chang, F. Altmann

349 - Comparing Sialic Acid Determination in Glycoproteins: Two Liquid Chromatography Methods

D. Hurum, J. Rohrer

350 - Fast Sialic Acid Determination of Glycoproteins by High Performance Anion Exchange – Pulsed Amperometric Detection  
D. Hurum, J. Rohrer

351 - Total glycomics as cellular/tissue descriptors  
N. Fujitani, K. Araki, Y. Takegawa, J. Furukawa, H. Sugiyama, H. Sakai, M. Ito, Y. Shinohara

352 - Structural elucidation of the glycosylation of *Francisella tularensis* immunoreactive proteins using a nanoLC-ESI-FT-ICR mass spectrometer  
L. Balonova, B. Mann, L. Hernychova, Z. Bilkova, M. Novotny, J. Stulik

353 - Robustness testing of the high throughput HPLC-based analysis of plasma N-glycans  
M. Novokmet, O. Gornik, G. Lauc

354 - Multiplex labelling with aniline and 2-aminobenzamide enable parallel chromatography analyses of different N-glycan samples  
A. Knezević, J. Bones, S. Krešimir Kračun, O. Gornik, P. Rudd, G. Lauc

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J. Bauer, H. Osborn

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J. Hoffman, S. Eller, K. Chen, O. Blixt, J. Paulson, C. Unverzagt

357 - Fucosyltransferases as Synthetic Tools: Matching Substrate and Enzyme with the Help of N-glycan arrays.  
S. Serna, S. Yan, I. Wilson, M. Martin-Lomas, N. Reichardt

358 - N-glycosylated Glycoproteins characterized by Mass Spectrometry – an Integrated Software Approach  
U. Schweiger-Hufnagel, A. Asperger, A. Resemann, D. Suckau

359 - A bioinformatics tool for the prediction of changes in glycosylation of cells after exposure to various stress conditions.  
A. Lalik, R. Jaksik, J. Rzeszowska-Wolny

360 - The use of a novel epitope library for the annotation of glycan structures  
C. Hayes, M. Campbell, N. Packer, N. Karlsson

361 - Structural features and immunological activity of N-glycans of seaweed glycoproteins  
T. Yoshiie, M. Maeda, M. Kimura, Y. Kimura

362 - Gastropod glycan elucidation with focus on rare sugar constituents  
H. Stepan, M. Pabst, S. Frank, H. Geyer, R. Geyer, E. Staudacher

363 - Comparative biochemical analysis of planarian N-glycans  
S. Natsuka, S. Nakakita, W. Sumiyoshi

364 - Presence of galactosylated core fucose on N-glycans in the planaria *Dugesia japonica*  
K. Paschinger, E. Razzazi-Fazeli, K. Furukawa, I. Wilson

365 - Analysis of N-glycans of the Eastern Oyster (*Crassostrea virginica*)  
K. Paschinger, S. Kurz, E. Razzazi-Fazeli, G. Vasta, I. Wilson

366 - Comparative N-glycomics of *Dictyostelium* strains and species  
A. Hykollari, K. Paschinger, E. Razzazi-Fazeli, I. Wilson

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C. Feasley, J. Johnson, C. West

368 - Chemical characterization of the oligosaccharides in Bactrian camel (*Camelus bactrianus*) milk and colostrum  
T. Urashima, K. Fukuda, K. Ganzorig

369 - Heparan and Chondroitin Sulfates from Earthworms (*Eisenia andrei*)  
Y. Park, A. Im, J. Sim, Z. Zhang, Z. Liu, R. Linhardt, Y. S. Kim

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Y. Nakano, M. Kanagawa, Y. Yamaguchi, K. Kojima-Aikawa

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H. Ideo, T. Nonaka, A. Seko, K. Yamashita

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 K. Tanaka, M. Yamada, R. Kannagi, T. Aoyama, A. Hara, M. Kyogashima

375 - Fucosylated monosialogangliosides with polyglycosylceramide cores are preferential receptors of human H3N2 influenza A viruses Victoria/3/75 and Hiroshima/52/2005  
I. Meisen, T. Dzudzek, C. Erhardt, S. Ludwig, M. Mormann, H. Karch, J. Muthing

376 - Sequence determination by negative-ion electrospray tandem mass spectrometry of monosialylated ganglio-oligosaccharides  
W. Chai, Y. Zhang, S. Sonnino, B. Mulloy, T. Feizi

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Y. Itoh, K. Yamagishi, K. Ikeda, T. Suzuki, H. Tokiwa

378 - First principles calculations of influenza neuraminidase mutants and anti-influenza drugs using ab initio fragment molecular orbital method  
M. Sakai, K. Yamagishi, Y. Suzuki, H. Tokiwa

379 - Theoretical study on catalytic reactivity of the M344H mutant of inverting  $\beta$ -1,4-galactosyltransferase-1.  
M. Maličká, J. Kóňa, I. Tvaroška

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E. Yuriev, M. Agostino, P. Ramsland

381 - Characterisation of arabinogalactan-proteins isolated from suspension cultures of *Pelargonium sidoides* DC  
S. Duchow, W. Blaschek, B. Classen

382 - Heterogeneity of exopolysaccharides from cyanobacteria of the genus *Synechocystis*  
D. Flamm, W. Blaschek

383 - Size-exclusion chromatographic study of the molecular-weight distribution of exopolysaccharides dextran, pullulan, and their metal(II)-complexes  
Z. Mitic

384 - Identification of glycosylated sites of polysaccharide-protein conjugate vaccines  
G. Costantini, D. Proietti, V. Pinto, P. Costantino, F. Berti

385 - Crystallization Experiments of Selected Components from the S-Layer Glycosylation Pathway of *Paenibacillus alvei* CCM 2051T  
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387 - Synthesis of biologically active glycoconjugates of genistein  
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388 - Sialylglycopeptide-conjugated beads bind recombinant human influenza A virus hemagglutinin  
S. Sugahara, T. Shirai, M. Mizuno, K. Osumi

389 - Synthesis of  $\alpha$ -1-thioglycosides – derivatives of D-glucose, D-galactose, 2-deoxy-D-glucose and 2-deoxy-D-galactose and their use in synthesis of glycosyltransferases natural substrates analogues  
R. Komor, G. Pastuch, A. Sobania, W. Szeja

390 - Sugar derivatives of quinoline or isoquinoline: synthesis and potential spectrum of biological activities  
R. Komor, W. Kowalczyk, R. Musioł, G. Pastuch, J. Polański, M. Serda, W. Szeja

391 - Synthesis of novel sugar diamino acids  
M. Thillakan, A. Katsifis, D. Skropeta

392 - Detection of N-acetylgalactosamine-containing glycosylphosphatidylinositol molecules in mammalian cells using an azide-labeled sugar analog

S. Vainauskas, L. Cortes, C. Taron

393 - 2-DG: Is it a 2-Deoxy-D-glucose or 2-deoxy-D-mannose? Inhibition of N-glycosylation in glioblastoma-derived cancer stem cells

W. Priebe, M. Emmett, X. Wang, I. Fokt, S. Skora, Y. Ji, A. Marshall, C. Conrad

394 - Efficient and Stereoselective Synthesis of Alpha-(2,9) Oligosialic Acids Up to Dodecamer by Using Convergent Block Synthetic Strategy

K. Chu, C. Wu

395 - withdrawn

396 - Synthesis of Mycobacterial Phosphatidylinositol Mannosides

S. Hung

397 - Synthesis of Glycopeptide Standards - Molecular Tools for Quantitative Glycoproteomics

J. Yu, U. Westerlind

398 - Streamline One-Pot Protection of Carbohydrates Using Free Sugars

C. Wang

399 - 3-Fluoro-1-hydroxyacetone Phosphate (FHAP) – A Novel Donor Substrate in Rabbit Muscle Aldolase-Catalyzed Aldol Reactions

M. Fischer, H. Kählig, W. Schmid

400 - Pseudaminic and Legionaminic Acid: Synthesis of Sialic Acid Analogues

C. Schmölzer, W. Schmid

401 - Synthesis of neoglycoconjugates containing 4-amino-4-deoxy-L-arabinose (Ara4N) ligands of Burkholderia cepacia and Proteus mirabilis R45 inner core lipopolysaccharides

M. Blaukopf, B. Müller, P. Kosma

402 - Synthetic Francisella lipid A – based neoglycoconjugate

D. Baum, P. Kosma, A. Zamyatina

403 - Synthesis of Mucin Tandem Repeat Glycopeptides - Molecular Tools to Study Microbe Binding Preferences

C. Pett, U. Westerlind

404 - Muc1:  $\alpha/\beta$ -Hybrid glycopeptides as potential anti-cancer vaccines

F. Karch, A. Hoffmann-Röder

405 - Synthesis of mucin type photoluminescent nanoprobe

D. Benito, A. T. Tran, M. C. Galan

406 - UniCarbKB: Building Glycoinformatic Solutions for Glycomics Research

M. Campbell, C. Hayes, W. Struwe, F. Lisacek, P. Rudd, N. Karlsson, N. Packer

407 - withdrawn

408 - Glycoanalysis of Carbohydrate-associated Epitope(s) Recognized by RP215 Monoclonal Antibody

G. Lee, P. Azadi

409 - Integration of LC, MS and NMR for a sensitive and Fast Characterization of Oligosaccharides from Glycoproteins

B. Meyer, M. Fellenberg, H. Behnken

410 - Serum alpha 1-acid glycoprotein is a marker for the differential diagnosis of hepatitis B patients

B. Chatterjee, G. Mandal, H. Yagi, K. Kato

411 - Determination of the fine structure of oat arabinogalactan-protein and its ability to bind to human leucocytes

E. M. Goellner, B. Classen, W. Blaschek

412 - Oligosaccharide from Ganoderma lucidum polysaccharide: immune response in human peripheral blood mononuclear cell

F. Yang, C. Tsai, Z. Huang, C. Chen, Y. Yang, K. Hua, J. Li, S. Chen, S. Wu

413 - Bis(monoacylglycerol)phosphate: Direct Determination of the Diglycerophosphate Backbone Configuration

P. Greimel, H. H. Tan, A. Makino, T. Kobayashi

414 - Why do side chains of flax fiber rhamnogalacturonan I have lower mobility than the backbone?

P. Mikshina, A. Shashkov, T. Gorshkova

415 - Selective mild acid hydrolysis of a novel fucan from sea cucumber: preparation and structure analysis of the oligosaccharides using ESI-MS and NMR, as well as antithrombotic activity

S. Chen, X. Ye, C. Xue, G. Li, J. Wang, L. Yin, G. Yu, W. Chai

416 - Identification and characterization of extracellular  $\beta$ -glucosidase from *Ustilago esculenta*

M. Nakajima, T. Yamashita, T. Takeda

417 - Tyrosine glycosylation and sialylation of Amyloid-beta peptides in human cerebrospinal fluid

A. Halim, G. Brinkmalm, U. Rüetschi, A. Westman-Brinkmalm, E. Portelius, H. Zetterberg, K. Blennow, G. Larson, J. Nilsson

418 - Elimination of sialic acid residue from tetrasialylated N-glycan by human  $\alpha$ -2,6-sialyltransferase I

Y. Chiba, Y. Takahashi, Y. Jigami, H. Narimatsu

419 - Japan Consortium for Glycobiology and Glycotechnology DataBase (JCGGDB)

T. Shikanai, Y. Suzuki, N. Fujita, M. Maeda, H. Wen, H. Kaji, H. Narimatsu

420 - High-resolution crystal structure of N-acetylmannosamine kinase: Insights about substrate specificity, activity and inhibitor modelling

L. Duc Nguyen, J. Martinez, S. Hinderlich, W. Reutter, H. Fan, W. Saenger, S. Moniot

## SOCIAL PROGRAMME

### Welcome reception (included in registration fee)

*Sunday, August 21<sup>st</sup>, 2011, University of Vienna, Arcade courtyard (Arkadenhof)*

Time: 17:30 – 19:30

Enjoy good food and the Ensemble Wild while talking to old and new glyco-friends. Don't miss this memorable and promising start-up event for the Symposium.

### Welcome coffee for accompanying persons (included in registration fee)

*Sunday, August 21<sup>st</sup>, 2011, University of Vienna, Lecture Hall 30*

Time: 16:40 – 17:30

Enjoy a coffee and Viennese pastry while meeting other accompanying persons and getting some information about Vienna, cultural programme, excursions and sightseeing tours.

### Symposium Reception (included in registration fee)

*Monday, August 22<sup>nd</sup>, 2011, Vienna City Hall, Rathausplatz 1*

Entrance: Lichtenfelsgasse

Time: 20:00

The registered participants and accompanying persons are invited for a light buffet dinner to the Festival Hall.

### Concert (included in registration fee)

*Tuesday, August 23<sup>rd</sup>, 2011, Votivkirche Vienna*

Time: 19:00

Enjoy a classical organ concert with works from the German Baroque and French Romanticism periods and from contemporary American composers.



Rathaus  
© WienTourismus/F 3



Votivkirche  
© www.votivkirche.at



**The organist:** Professor Thomas Rosenau is Chair of Wood, Pulp and Fibre Chemistry who graduated as concert organist at the Liszt School of Music in Weimar, Germany, and won 1<sup>st</sup> Youth Price (Organ) at the International J.S. Bach Contest, Leipzig, in 1989.



**The Instrument:** The historic Walcker organ. Since the foundation of the church, a main organ has been placed on the balcony above the main entrance. The organ was erected by the famous German organ builder E. F. Walcker, Ludwigsburg, having 61 stops on three manuals and pedal, cone chest with fully mechanic tracker action and 3762 pipes. A peculiarity is the Barker's lever on the first manual, a system of pneumatic valves (invented by the American craftsman Charles Spackman Barker, 1804 – 1879) that reduces the stiffness of the keys. The Walcker organ in Votivkirche is today the only pipe organ of its type and size which is fully preserved in its original state, and is therefore regarded as one of the most important historic monuments in the art of pipe organ building worldwide.

### Symposium Banquet at Palais Ferstel

(not included in the registration fee, contribution EUR 80.-)

Thursday, August 25<sup>th</sup>, 2011, Palais Ferstel, Strauchgasse 4, 1010 Vienna  
Time: 19:30 – 23:00



The young architect Heinrich von Ferstel created the Palais Ferstel between 1856 and 1860 while he was captivated by the impressions of a long visit to Italy. The unique combination of Venetian-Florentine Trecento architecture with classic ashlar masonry has rendered this building one of Vienna's grandest and most interesting examples of Wilhelminian-style architecture. At the time of its opening in 1860, the Palais Ferstel was the newest design in Vienna. The stylish rooms and the glass-covered yard not only briefly housed the Vienna Stock Exchange and the Austro-Hungarian National Bank but also provided a

suitable ambience for the famous Cafe Central which became the hub of Europe's intellectual elite towards the end of the 19<sup>th</sup> Century.

## EXCURSIONS & OPTIONAL TOURS

### Beautiful Danube Valley – "Wachau"

Wednesday, August 24<sup>th</sup>, 2011

Time: 13:00



**Melk Abbey / Wachau Valley Lower Austria**

Foto: Augustin Baumgartner, Graz

In the course of this tour you will be acquainted with the beauties of the Wachau valley, so full of historical sites and legendary tales. The Danube river winds along pleasant little villages and steep vineyards. Old castles tell the story of the former importance of this trade and traffic route, castles like the ruin of Dürnstein, where, so the story goes, Richard the Lionheart was kept prisoner. The tour also includes a visit to the magnificent Benedictine Abbey of Melk, one of the finest examples of Baroque architecture in Austria and often referred to as the "cradle of Austria". We will finish our excursion by enjoying a typical dinner at a traditional wine tavern, "Heuriger", incl. wine testing, before coming back to Vienna.

**Duration:** ~ 8 hours

**Meeting Point:** 12:50 at the Registration Area of the University

**Price:** 75,00 EUR per person

(incl. bus, guide, entrance fee and guided visit Abbey of Melk, dinner, incl. a selected number of drinks)

### Tales from the Vienna Woods

Wednesday, August 24<sup>th</sup>, 2011

Time: 13:00

Get acquainted with some of the most interesting sights in the southern part of the Vienna Woods. The tour takes you to Heiligenkreuz, the Cistercian monastery founded in 1133, which is also the final resting place of the Babenberg family.



**Monastery Heiligenkreuz**

© www.stift-heiligenkreuz.at

Heiligenkreuz is today also home to “the most unlikely popstars of 2008”, since the monks stormed the global pop charts this year with their album “Chant”. You will also visit the former Mayerling hunting lodge (visit of memorial chapel), where Crown Prince Rudolph together with Baroness Vetsera died tragically in 1889.

Through beautiful landscape we continue back to Baden, a town famous for operetta performances and its thermal springs. After a guided tour through the picturesque city, we will finish our excursion by enjoying a typical dinner at a wine tavern, “Heuriger”, in the traditional city of Gumpoldskirchen before coming back to Vienna.

**Duration:** 8 hours

**Meeting Point:** 12:50 at the Registration Area of the University

**Price:** 65.- EUR per person

(incl. bus, guide, entrance fee for Stift Heiligenkreuz and Mayerling, dinner at a Heuriger, incl. a selected number of drinks)

### Classical Vienna – a City Stroll

**Monday, August 22<sup>nd</sup>, 2011**

Time: 09:00

The tour starts at the University of Vienna, the oldest university in the German-speaking world and one of the largest in Central Europe. This walking tour will take you through the narrow, beautiful streets of Vienna’s city centre with all its secrets and stories. You will pass by the most beautiful Palais and churches, like St. Stephan’s Cathedral, Vienna’s most famous sight. The tour ends at the Hofburg Imperial Palace, the former winter-residence of the Habsburg Family. After the tour, be our guest and enjoy a traditional Viennese cake and coffee.



**Hofburg Palace, Vienna, Michael's Gate**  
© Austrian National Tourist Office/Mayer

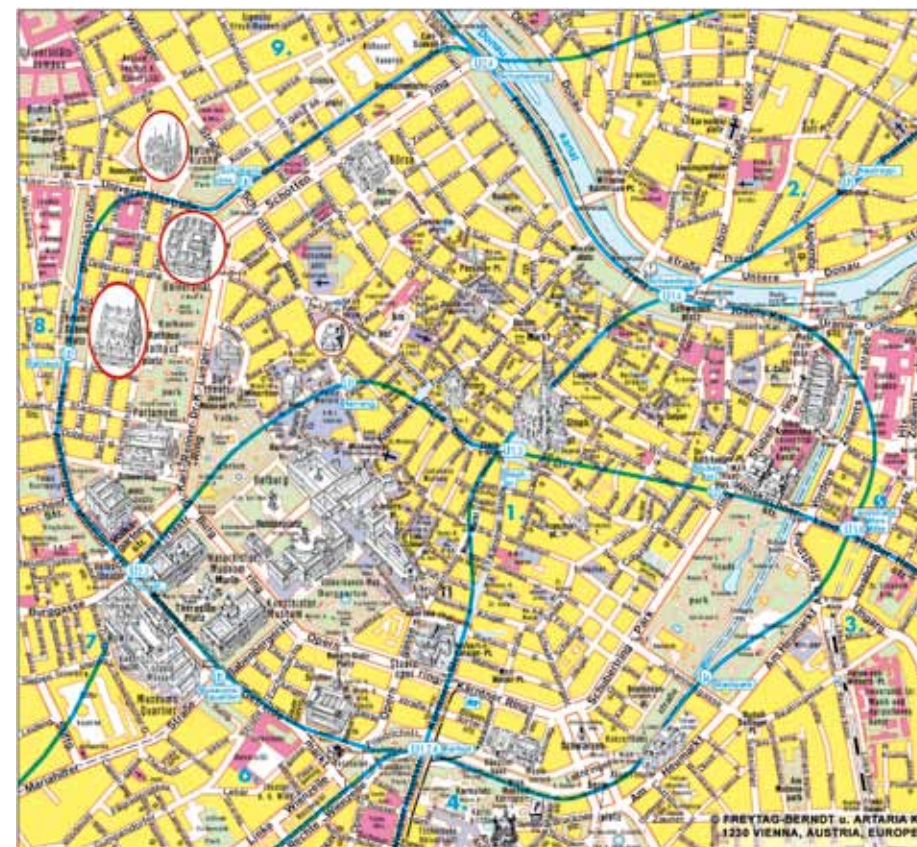
**Duration:** 3 hours

**Meeting Point:** 08:45 at the Registration Area of the University

**Included in the Accompanying Person's Registration Fee**

**Price for regular participants:** 22.- EUR per person

(incl. English-speaking guide, coffee and cake)



**Venue:**  
University of Vienna



**Concert:**  
Votivkirche Vienna

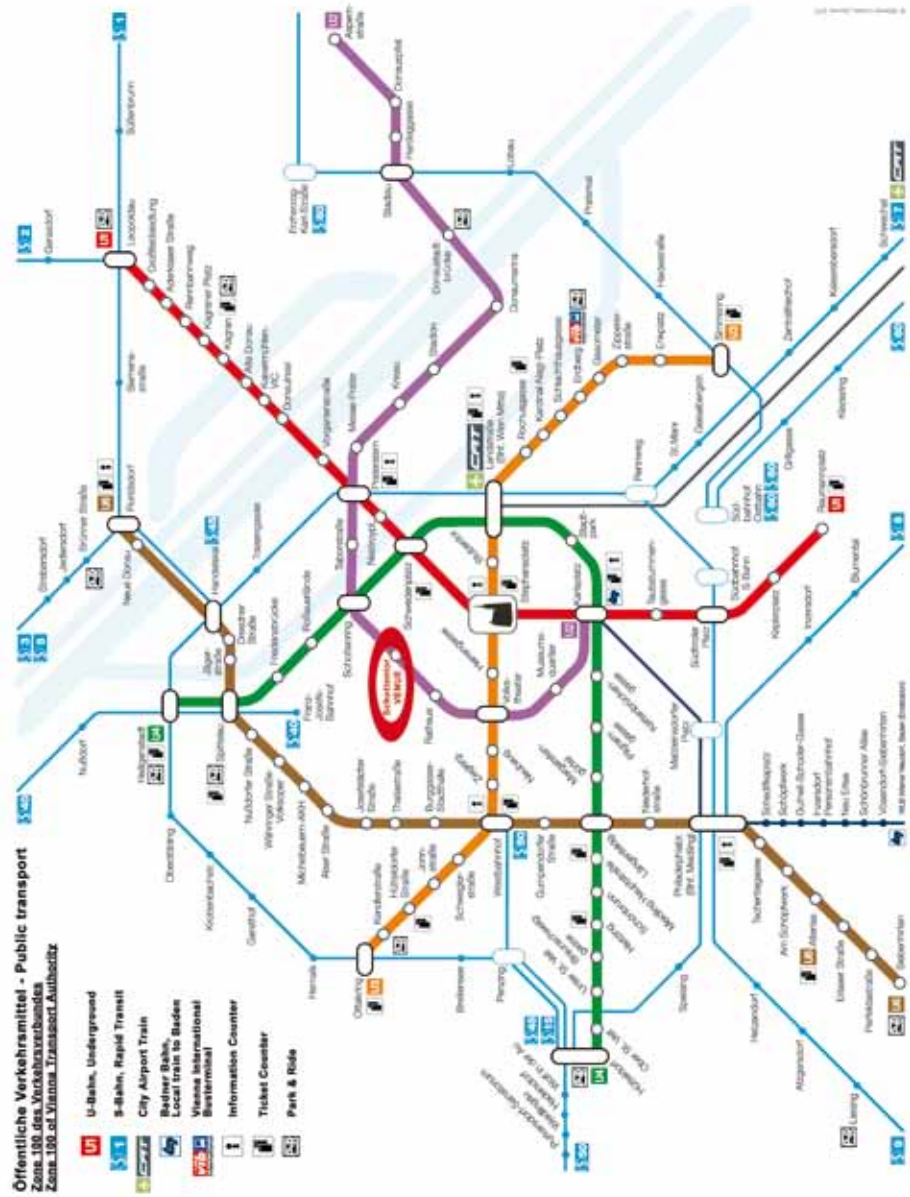


**Reception:**  
Vienna City Hall

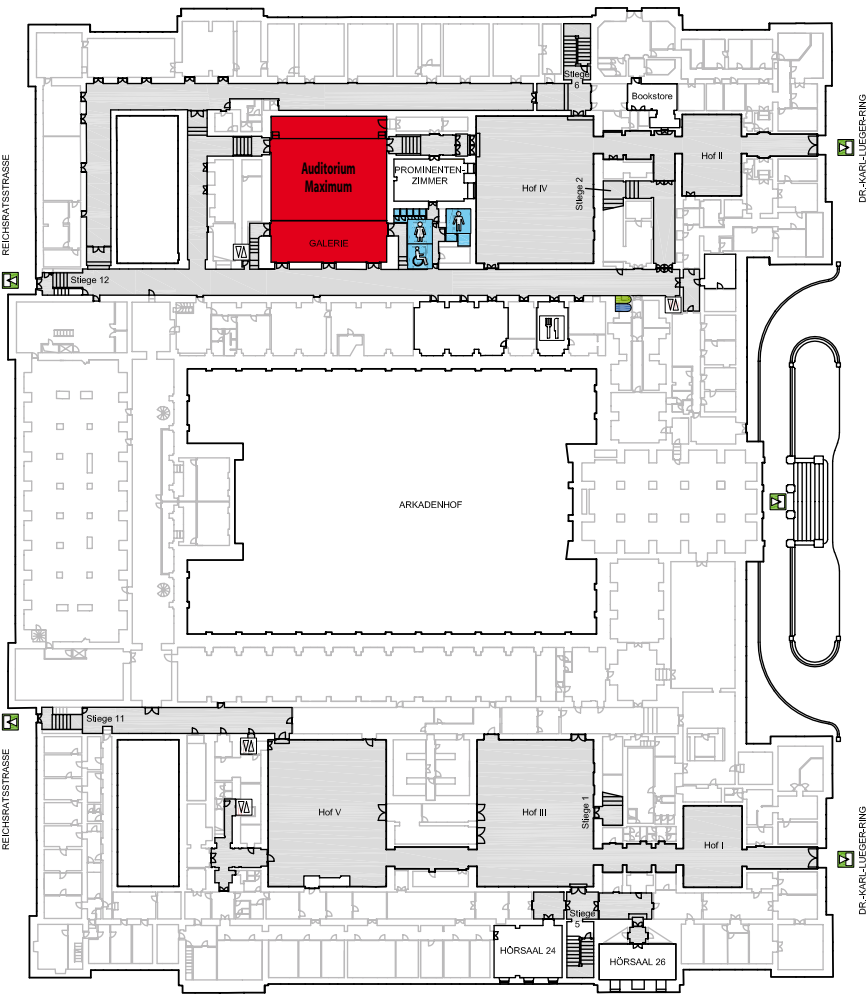


**Banquet:**  
Palais Ferstel





FLOOR PLANS - BASEMENT - TIEFPARTERRE

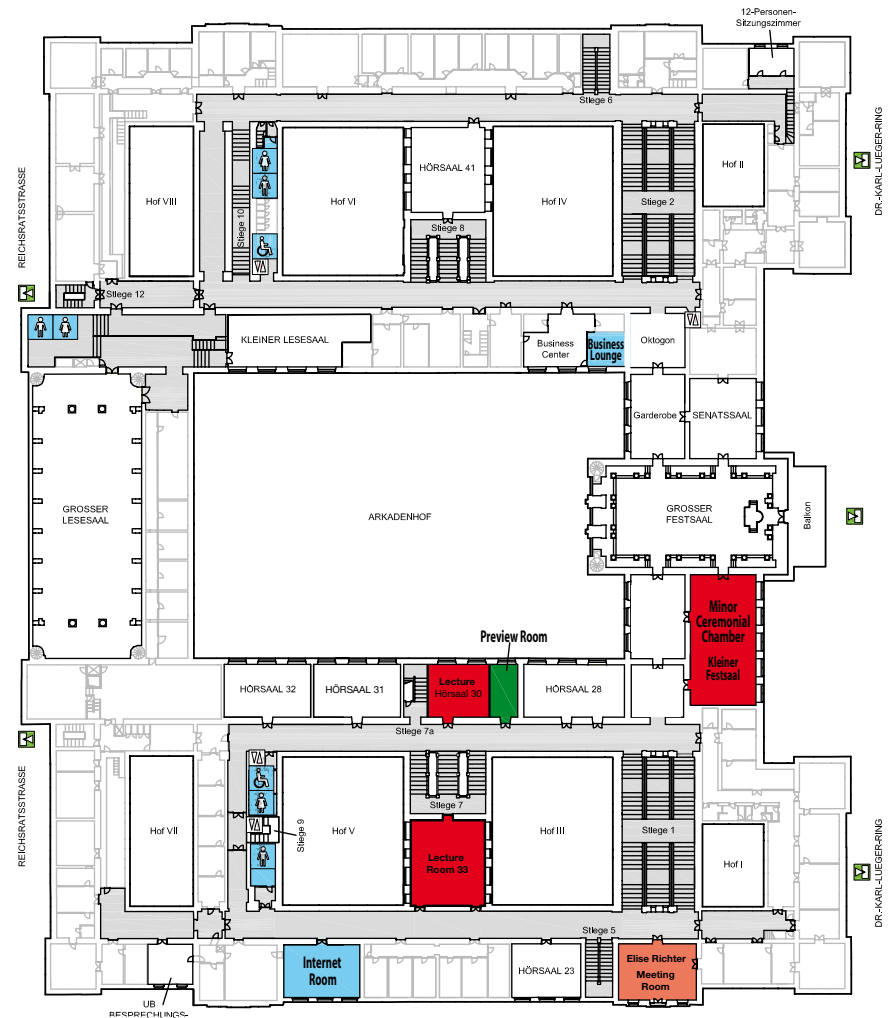


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- Exit Ausgang
- Ladies WC Damen
- Lecture Room Vortragsaal
- Poster Area Poster
- Meeting Room Besprechungszimmer
- Elevator Aufzug
- Men WC Herren
- Preview Room Medienannahme
- Internet Café Internet Café
- Food & Beverages Gastronomie
- Disabled Behinderten WC
- Exhibition Area Ausstellung
- Registration Area Registration
- ATM/Cash Dispenser Bankomat
- Information Desk Portier
- Common Area Gang
- Lunches and Coffee breaks

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| <b>Exit</b><br>Ausgang                    | <b>Elevator</b><br>Aufzug   | <b>Food &amp; Beverages</b><br>Gastronomie | <b>ATM/Cash Dispenser</b><br>Bankomat |
| <b>Ladies</b><br>WC Damen                 | <b>Men</b><br>WC Herren   | <b>Disabled</b><br>Behinderten WC          | <b>Information Desk</b><br>Portier    |
| <b>Lecture Room</b><br>Vortragssaal       | <b>Preview Room</b><br>Medienannahme                                    | <b>Exhibition Area</b><br>Ausstellung      | <b>Common Area</b><br>Gang            |
| <b>Poster Area</b><br>Poster              | <b>Internet Room</b><br>Internet Room                                   | <b>Registration Area</b><br>Registration   | <b>Lunches and Coffee breaks</b>      |
| <b>Meeting Room</b><br>Besprechungszimmer | © Universität Wien – Öffentlichkeitsarbeit und Veranstaltungsmanagement |  |                                       |









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