



Sialoglyco 2010

Kongresshotel Potsdam, Potsdam, Germany
August 21 – 26, 2010

Program

Saturday, August 21st, 2010

14:00 - 17:00 **Registration and poster mounting**

17:00 - 17:15 **Welcome**
Rita Gerardy-Schahn, Germany

Plenary Lectures

Chair: **Rita Gerardy-Schahn, Germany**

17:15 - 18:00 **Ajit Varki, USA**
Uniquely human evolution of sialic acid genetics and biology

18:00 - 18:45 **Mark von Itzstein, Australia**
Essential sialic acid recognition events in the lifecycle of clinically-significant viruses - Drug discovery opportunities

18:45 - 19:30 **Melitta Schachner, Germany**
Functional role of PSA in regeneration after injury and identification of novel binding partner for PSA

19:30 - 22:30 **Welcome reception**

Sunday, August 22nd, 2010

Sialoglycobiology I-1

Chair: **Werner Reutter, Germany**

08:30 - 09:00 **Marjan Huizing, USA**
Characterization of the glomerulopathy in the Gne M712T knock-in mouse and its rescue by N-acetylmannosamine



- 09:00 - 09:30** **May Christine V. Malicdan, Japan**
Preclinical trial in GNE associated myopathy
- 09:30 - 10:00** **Kevin Yarema, USA**
Control of cell fate through sialic acid engineering
- 10:00 - 10:20** **Anja Münster-Kühnel, Germany**
Selective hyposialylation of single proteins in CMP-sialic acid synthetase mutant mice entails kidney failure
- 10:20 - 11:00** **Coffee break**

Sialoglycobiology I-2

Chair: **Johannes Frederik Gerardus Vliegthart, The Netherlands**

- 11:00 - 11:30** **Jamey Marth, USA**
Sialylation in masking ligands of the Ashwell-Morell receptor
- 11:30 - 12:00** **Nathalie CJ Strynadka, Canada**
Structural and mechanistic analysis of sialyltransferases in bacteria and eukaryotes
- 12:00 - 12:20** **Rüdiger Horstkorte, Germany**
Beyond glycosylation: sialic acid precursors act as neuroprotective molecules and are involved in differentiation of PC12 cells
- 12:20 - 12:40** **Vladislav Panin, USA**
Role of sialylation in Drosophila nervous system
- 12:40 - 13:00** **Tadashi Suzuki, Japan**
Role of autophagy in the catabolism of sialylated N-glycans
- 13:00 - 14:00** **Lunch break**
- 14:00 - 15:00** ***Oral poster presentations – A***
Chair: Sandro Sonnino, Italy
- 15:00 - 16:00** ***Poster viewing***
(Refreshments)



Sialoglycobiology I-3

Chair: Guido Tettamanti, Italy (invited)

16:00 - 16:30 Eugenio Monti, Italy

New research developments in vertebrate sialidases

16:30 - 17:00 Andrew Bennet, Canada

Transition state analysis of sialidase-catalyzed reactions: An aid to drug design

17:00 - 17:30 Alessandra d'Azzo, USA

Role of mammalian neuraminidase 1 (NEU1) in lysosomal exocytosis

17:30 - 18:00 Su-Chen Li, USA

Cloning and expression of oyster alpha-KDOase

Monday, August 23rd, 2010

Sialoglycochemistry 1

Chair: Richard R. Schmidt, Germany

08:30 - 09:00 Peter Seeberger, Germany

Automated synthesis and glycan arrays containing sialic acid

09:00 - 09:30 Yasuhiro Kajihara, Japan

Chemical synthesis of erythropoietin analogues having complex type sialyloligosaccharides

09:30 - 10:00 Hai Yu, USA

Efficient chemoenzymatic synthesis of complex sialylated glycans

10:00 - 10:20 David Schwarzer, Germany

Endosialidases - From Bacteriophage-derived Tailspike Proteins to PolySia Research Tools - A Short Summary

10:20 - 11:00 Coffee break



Sialoglycochemistry 2

Chair: Rudolf Geyer, Germany

11:00 - 11:30 Carlo Unverzagt, Germany

Semisynthesis of glycoproteins following a multidisciplinary approach

11:30 - 12:00 Beat Ernst, Switzerland

From carbohydrate leads to glycomimetics, exemplified by MAG antagonists

12:00 - 12:30 Reinhard Brossmer, Germany

Unexpected siglec ligands of high potential

12:30 - 13:00 Taeko Miyagi, Japan

Sialidase NEU4 attenuates E-selectin derived signalling in colon cancer cells

13:00 - 14:00 Lunch break

14:00 - 15:00 *Oral poster presentations – B*

Chair: Yu-Teh Li, USA

15:00 - 16:00 *Poster viewing*

(Refreshments)

Sialoglycochemistry 3

Chair: Jasna Peter-Katalinic, Germany

16:00 - 16:30 Jun Hirabayashi, Japan

Further advancement in lectin microarray: how many lectins are necessary for cell typing?

16:30 - 17:00 Makoto Kiso, Japan

Novel gangliosides synthesis toward applications in Medicinal Chemistry and Cell Biology

17:00 - 17:20 Yann Guérardel, France

Sialylation in marine chordates

17:20 - 17:40 Ola Blixt, Denmark

A high-throughput O-glycopeptide discovery platform for seromic profiling

17:40 - 18:00 Sebastian Galuska, Germany

NCAM and SynCAM: Two polysialylated glycoproteins in murine brain



Tuesday, August 24th, 2010

Systems-Sialoglycobiology 1

Chair: Jukka Finne, Finland

08:30 - 09:00 Elisabeth Bock, Denmark
Structure and function of NCAM

09:00 - 09:30 Ken Kitajima, Japan
Sia usage: How does the cell express particular sialic acid species?

09:30 - 09:50 Nissi Varki, USA
Biomedical differences between human and "Great Apes": Potential roles for uniquely-human aspects of sialic acid biology

09:50 - 10:10 Martina Mühlenhoff, Germany
The synaptic cell adhesion molecule SynCAM 1: A novel polysialic acid carrier expressed exclusively by an enigmatic glia cell population

10:10 - 10:30 Chihiro Sato, Japan
BDNF- and Dopamine-Retaining Functions of PolySia-NCAM and Their Impairment Induced by Mutations of ST8Sia II/STX Found in Schizophrenia Patients

10:30 - 11:00 Coffee break

Systems-Sialoglycobiology 2

Chair: Roland Schauer, Germany

11:00 - 11:30 Herbert Hildebrandt, Germany
Pathological brain development of polysialyltransferase-deficient mice

11:30 - 12:00 Karen Colley, USA
Mechanisms of NCAM polysialylation

12:00 - 12:30 Alexander Dityatev, Italy
The roles of NCAM and PolySia in synaptic plasticity and its age-dependent decline

12:30 - 13:00 Ronald L. Schnaar, USA
Sialoglycans in axon survival and axon regeneration



13:00 - 13:20 **Kirsten Haastert, Germany**
Incorporation of polysialic acid into tissue engineered nerve grafts: effects on peripheral nerve regeneration

13:20 - 14:20 **Lunch**

Wednesday, August 25th, 2010

Sialoglycobiology II-1

Chair: **Reinhard Brossmer, Germany**

08:30 - 09:00 **Paul Crocker, United Kingdom**
Siglecs in modulation of innate immune responses

09:00 - 09:30 **James Paulson, USA**
Modulation of immune cell functions with sialoside ligands of siglecs

09:30 - 10:00 **Soerge Kelm, Germany**
Interactions involving Siglecs, sialic acids and trypanosomes

10:00 - 10:20 **Chitra Mandal, India**
Modulation of sialic acid regulating enzymes crucially drives the fate of leukemic cells and their correlation with disease status in leukemia

10:20 - 11:00 **Coffee break**

Sialoglycobiology II-2

Chair: **Salvatore J. Turco, USA**

11:00 - 11:30 **Penelope Drake, USA**
Polysialic acid expression and participation in murine hematopoietic development and immune responses

11:30 - 12:00 **Nicolai Bovin, Russia**
Natural antibodies against sialoglycans

12:00 - 12:20 **Alan Cross, USA**
Role of Sialidase Activity in Innate Immune Responses: Desialylation of the beta 2 integrin and ICAM-1 enhances their binding interaction



- 12:20 - 12:40** **Miguel A. Vega, Spain**
Polysialylated neuropilin-2 controls human dendritic cell migration
- 12:40 - 13:00** **Martin Frank, Germany**
Sialo-glycoinformatics: generating new insights based on experimental data
- 13:00 - 14:00** **Lunch break**
- 14:00 - 15:00** **Oral poster presentations – C**
Chair: Jean-Claude Michalski, France
- 15:00 - 16:00** **Poster viewing**
(Refreshments)

Sialoglycobiology II-3

Chair: **Rita Gerardy-Schahn, Germany**

- 16:00 - 16:30** **Philippe Delannoy, France**
Effects of the expression of the GD3 synthase in breast cancer cells
- 16:30 - 17:00** **Joy Burchell, United Kingdom**
The Yin and Yang of sialylation of O-linked glycans in breast cancer
- 17:00 - 17:20** **Leena Valmu, Finland**
Analysis and modification of cell surface sialic acids in order to improve stem cell therapy
- 17:20 - 17:40** **Lara Mahal, USA**
Analyzing the dynamic glycome
- 17:40 - 18:00** **Anne Harduin-Lepers, France**
Insights into evolutionary history of animal sialyltransferases
- 19:00 - 23:30** **Conference dinner**
Banquet lecture: Roland Schauer, Germany



Thursday, August 26th, 2010

Sialoglycoviropology 1

Chair: Hans-Dieter Klenk, Germany

08:30 - 09:00 John J Skehel, United Kingdom
Sialic acid recognition by Influenza Viruses

09:00 - 09:30 Mikhail Matrosovich, Germany
Receptor specificity, host range and pathogenicity of influenza viruses

09:30 - 10:00 Georg Herrler, Germany
Importance of sialic acids for influenza and coronaviruses: cell tropism, interspecies transmission and pathogenesis

10:00 - 10:30 Yasuo Suzuki, Japan
Mechanism of host range mutation of influenza viruses

10:30 - 11:00 Coffee break

Sialoglycoviropology 2

Chair: Johannis P. Kamerling, The Netherlands

11:00 - 11:30 Raoul J. De Groot, The Netherlands
A viral gateway to sialoglycobiology; structure, function and practical applications of nidovirus hemagglutinin-esterases

11:30 - 12:00 Takashi Suzuki, Japan
Enzymatic characterization of pandemic influenza virus NAs

12:00 - 12:20 Robert de Vries, The Netherlands
Swine and new pandemic human H1 differ dramatically in their α 2-6 sialic acid receptor binding properties: identification of the responsible residues

12:20 - 12:40 Chi-Hui Liang, Taiwan
Differentiation of influenza virus subtypes by naked eyes: a new method for glycan array detection

12:40 - 13:00 John Nicholls, Hong Kong
An update of inhibition of influenza infection by sialidase treatment

13:00 - 14:00 Lunch break



Sialoglycovirology 3

- Chair:** Warren W. Wakarchuk, Canada
- 14:00 - 14:30** Niklas Arnberg, Sweden
Sialic acid-containing glycans as receptors for ocular adenoviruses - implications for tropism and treatment
- 14:30 - 14:50** Helen Blanchard, Australia
Rotavirus recognition of sialic acid containing cell surface carbohydrates
- 14:50 - 15:10** Thomas Haselhorst, Australia
Sialic acid dependence in rotavirus host cell invasion
- 15:10 - 15:40** Garry Taylor, United Kingdom
Blocking receptor recognition in influenza & parainfluenza
- 15:40** Closing remarks and Farewell