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 Vliegenthart, 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 sialyoligosaccharides

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

Sialoglycovirology 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

Sialoglycovirology 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 α2-6 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