

**Programme of the  
20th Joint Glycobiology Meeting  
Cologne  
(8-10th November 2009)**

**Sunday, 8th November**

18:00-22:00 Registration-Mounting of posters

20:00-22:00 Get-together dinner (Brauhaus Früh)

**Monday, 9th November**

8:00-8:45 Registration-Mounting of posters

8:45-9:00 Opening of the 20th Joint Meeting (*Maternussaal*):  
**Franz-Georg Hanisch** (Köln, Germany)

**Session 1: *Glycosylation in Cell Biology*** Chairman: **Rita Gerardy-Schahn**  
(Hannover, Germany)

9:00-9:40 Plenary Lecture: **Rebecca P. Hughey** (Pittsburgh, USA)  
**Apical expression of MUC1 in polarized MDCK cells**

9:40-10:00 Romaine Peanne (Lille, France)  
**Differential effects of lobe A and lobe B of the COG complex on the stability of GALT and SIAT**

10:00-10:20 Miriam Wessels (Hannover, Germany)  
**The interaction of vesicular integral-membrane protein (VIP36) with dipeptidyl peptidase IV along the secretory pathway in CHO-lec cells**

10:20-10:40 Yuhsuke Ohmi (Nagoya, Japan)  
**Roles of gangliosides in the regulation of lipid rafts**

10:40-11:10 Coffee break

**Session 2: Glycosylation in Disease**    Chairman: **Irma van Die** (Amsterdam, The Netherlands)

- 11:10-11:30            Loes Kuijk (Amsterdam, The Netherlands)  
**The role of parasite glycans in dendritic cell immunomodulation**
- 11:30-11:50            Benjamin Müller (Bad Oeynhausen, Germany)  
**Identification and characterization of human xylosyltransferase I and II promoters**
- 11:50-12:10            Aurélie Cazet (Lille, France)  
**G<sub>D3</sub> synthase over-expression enhances proliferation and migration of MDA-MB-231 breast cancer cells**
- 12:10-12:30            Takashi Angata (Osaka, Japan)  
**Deletion polymorphism of *SIGLEC14* and its functional implications**
- 12:30-14:00            Lunch

**Session 3: Glycosylation in Disease**    Chairman: **Nico Callewaert** (Ghent, Belgium)

- 14:00-14:40            Plenary lecture: **Naoyuki Taniguchi** (Osaka/RIKEN ASI, Japan)  
**“Glycan cycle” and the role of branched N-glycans in cell surface signaling, biomarker discovery and therapeutics**
- 14:40-15:00            Stephanie Olivier (Lille, France)  
**O-GlcNAcylation: a new element regulating the properties of  $\beta$ -catenin**
- 15:00-15:20            Niels Smit (Leiden, The Netherlands)  
**Identification of antigenic glycans of schistosome larval stages**
- 15:20-15:40            Yannick Rossez (Lille, France)  
**Mucin O-glycans as potential prognosis and recurrence markers of colorectal cancer**
- 15:40-16:40            Poster session 1- Coffee break

**Session 4: *Glycosyltransferases***     Chairman: **Philippe Delannoy** (Lille, France)

- 16:40-17:20            Plenary lecture: **Henrik Clausen** (Copenhagen, Denmark)  
**Control of Mucin-Type *O*-Glycosylation**
- 17:20-17:40            Manuela Rollenhagen and Sebastian Galuska (Hannover/Gießen, Germany)  
**Polysialylation of the synaptic cell adhesion molecule SynCAM 1**
- 17:40-18:00            Yasuhiko Kizuka (RIKEN ASI, Japan)  
**Gene regulation of GnT-IX and its mechanism**
- 18:00-18:20            Isabelle Breloy (Köln, Germany)  
***O*-Mannosylation: Cis regulation of a highly protein-specific glycosylation**
- 18:20-19:20            Business Meeting of the Societies
- 19:30-21:00            Conference dinner

**Tuesday, 10th November**

**Session 5: *Glycotechnology***     Chairman: **Lothar Elling** (Aachen, Germany)

- 8:40-9:20                Plenary Lecture: **Peter Seeberger** (Berlin, Germany)  
**Chemical Glycobiology – Why Now?**
- 9:20-9:40                Dieter Vanderschaeghe (Ghent, Belgium)  
**High-Throughput glycomics on next-generation microfluidics systems**
- 9:40-10:00                Christiane Römer (Aachen, Germany)  
**The human galectin-3 – a potential component of an artificial extracellular matrix for functionalised biomaterial surfaces**
- 10:00-10:20                Bieke Nagels (Ghent, Belgium)  
**Towards multi-antennary *N*-glycans in plant expression systems**

10:20-11:20 Poster session 2-Coffee break

**Session 6: Glycoanalysis** Chairman: **Rudolf Geyer** (Gießen; Germany)

11:20-11:40 Gerhild Zauner (Leiden, The Netherlands)

**Development of methods for *O*-glycome analysis**

11:40-12:00 Yoshiki Yamaguchi (RIKEN ASI, Japan)

**<sup>13</sup>C-detection NMR approach for structural analysis of oligosaccharides and glycoproteins**

12:00-12:20 Alexander R. van der Krol (Wageningen/Utrecht, The Netherlands)

**Analysis of the *Arabidopsis* glycoproteome**

12:20-12:40 Jamal Souady (Münster, Germany)

**Identification and characterization of tumor-associated glycosphingolipids in gastro-intestinal cancers**

12:40-13:00 Marcus Macht (Bruker-Daltonics, Bremen, Germany)

**Mass spectrometric glycan analysis using electron-transfer-dissociation technology**

13:00-13:15 Concluding remarks, 21st Joint Meeting announcement and awards

13:15-14:15 Lunch

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**3<sup>rd</sup> Core-to-Core Satellite Meeting**  
**of the Japanese and German Glycobiology Study Groups**  
(organized by Naoyuki Taniguchi and Franz-Georg Hanisch)

**Tuesday, November 10**

14:15 – 18:45      **Short presentations**

14:15-16:15      Session I

Yoshimi Haga (RIKEN ASI, Japan)

**Establishment of a real-time analytical method for free oligosaccharide transport from the ER to the cytosol**

Wenke Weidemann (Halle, Germany)

**Lessons from GNE-deficient embryonic stem cells: Sialic acid biosynthesis is involved in proliferation and gene expression**

Yauhiro Tonoyama (Kyoto, Japan)

**Functional analyses of  $\beta$ -1,4-galactosyltransferase 2 during medaka (*Oryzias latipes*) gastrulation**

Sandra Müller (Gießen, Germany)

**Increased polysialylation during idiopathic pulmonary fibrosis**

Katsuko Yamashita (Tokyo Tech, Japan)

**Detection of  $\alpha$ 1,2-fucosylated and  $\beta$ -N-acetylgalactosaminylated prostate specific antigen for discrimination of prostate cancer and benign prostate hypertrophy**

Hanieh Razawi (Köln, Germany)

**Membrane recycling and exosomal export of MUC1 correlate with differential O-linked or N-glycosylation**

Toshisuke Kawasaki (RITS, Shiga, Japan)

**A mode of glycan recognition by the serum mannan-binding protein**

Stephanie Reinders (Bonn, Germany)

**Identification of O-GlcNAc-modified proteins of skeletal muscle cells by ESI-mass spectrometry**

Ryosuke Kurashina (Tokyo, Japan)

**Roles of MGL/CD301 in inflammatory bowel diseases: recognition of glycoconjugates on commensal bacteria**

	Koichi Furukawa (Nagoya, Japan) <b>Pivotal roles of gangliosides in the regulation of complement systems</b>
16:15-16:45	Coffee break
16:45-18:45	<u>Session II</u>
	Tadashi Suzuki (RIKEN ASI, Japan) <b>Novel Pathway for <i>N</i>-glycan catabolism in mammalian cells</b>
	Kazuaki Ohtsubo (Osaka, Japan) <b>Pancreatic <math>\beta</math> cell-targeted overexpression of <i>N</i>-acetylglucosaminyl-transferase-IVa ameliorates high-fat diet induced diabetic phenotypes</b>
	Veronique Blanchard (Berlin, Germany) <b>Site-specific <i>N</i>-glycosylation of biologically active L-selectin</b>
	Congxiao Gao (Osaka, Japan) <b>Alpha 1,6 fucosyltransferase heterozygous knockout (KO) mice have increased susceptibility to elastase- and cigarette smoke-induced emphysema models</b>
	Kattinka Eggers (Hannover, Germany) <b>Studies towards understanding functional complex formation between the polysialyltransferase ST8SiaII and the Neural Cell Adhesion Molecule NCAM</b>
	Yukari Fujimoto (Osaka, Japan) <b>Synthesis of parasitic bacterial lipopolysaccharide partial structures for elucidation and regulation of innate immune system</b>
	Christoph Mayer (Konstanz, Germany) <b>The bacterial cell wall recycling metabolism reveals carbohydrate hydrolases with novel mechanisms</b>
	Norihiko Sasaki (Soka, Tokyo, Japan) <b>The role of heparan sulfate in mouse embryonic stem cells</b>
	Eiji Miyoshi (Osaka, Japan) <b>Fucosylation is a promising target for cancer diagnosis and therapy</b>
19:00-open	Dinner

## Posters

### Group 1: Glycosylation in Cell Biology

1.1

Akira Hosomi (RIKEN ASI, Japan)

**The cytoplasmic PNGase-dependent ERAD pathway in *Saccharomyces cerevisiae***

1.2

Kenji Kanekiyo (RIKEN ASI, Japan)

**Aggrecan is a possible physiological substrate for GnT-IX**

1.3

Yuji Kondo (Nagoya, Japan)

**Spatiotemporal regulation of LPS signals by globo-series glycolipids**

1.4

Marie-Estelle Losfeld (Lille, France)

**Involvement of *N*-glycosylation in nucleolin interaction properties**

1.5

Ludivine Drougat (Lille, France)

**Dynamic of *O*-GlcNAcylation is modified during the reentrance of human epithelial cells to cell cycle and is connected with mitogenic signaling pathway**

1.6

Coralie Bernon (Lille, France)

**Overexpression of Man2C1 boosts the ERAD pathway and leads to accumulation of cytosolic oligomannosides**

1.7

Leander Meuris (Ghent, Belgium)

***In vivo* de-*N*-glycosylation of glycoproteins by targeting a eukaryotic endo-*N*-acyetyl glucosaminidase to the secretory pathway of HEK293S GnTI<sup>-/-</sup> cells**

### Group 2 : Glycosylation and Disease

2.1

Kenta Moriwaki (Osaka, Japan)

**Deficiency of GMDS leads to escape from NK cell-mediated tumor surveillance through modulation of TRAIL signaling**

2.2

Rina Takamiya (Osaka, Japan)

**Cigarette smoke extract induces bisecting GlcNAc modification in RAW264.7 murine macrophage**

2.3

Tatsuro Irimura (Tokyo, Japan)

**Cell surface expression of Muc21/epiglycanin triggers non-adherence**

2.4

Raoul de Groot (Utrecht, The Netherlands)

**Structure, function and evolution of nidovirus hemagglutinin-esterases**

2.5

Simon Staubach (Köln, Germany)

**Protein Dysglycosylation as a pathomechanism of chronic cell damage in classical galactosemia**

2.6

Sylvain Julien (London, UK)

**ST3Gal I over expression increases spontaneous tumorigenicity in murine mammary gland**

2.7

Kristof Moonens (Brussels, Belgium)

**Natural glycan array screening to elucidate the F4 fimbrial receptor**

2.8

Irma van Die (Amsterdam, The Netherlands)

**Regulation and expression of galectin-3 in human monocyte-derived dendritic cells**

2.9

Ambara Pradipta (Osaka, Japan)

**Natural Nod1 ligands released from bacteria: Isolation, characterization, and chemical synthesis**

2.10

Kees Bruggink (Leiden, The Netherlands)

**Glycolipid-derived oligosaccharide structures found in galactosialidosis samples indicate alternative glycolipid catabolism**

2.11

Julie Boukaert (Brussels, Belgium)

**Positive selection identifies an *in vivo* role for fimH during urinary tract infection in addition to mannose binding**

2.12

Dirk Lefeber (Nijmegen, The Netherlands)

**Deficiency of Dol-P-Man synthase subunit DPM3 bridges the congenital disorders of glycosylation with the dystroglycanopathies**

2.13

J.H. Matse (Amsterdam, The Netherlands)

**Mucin expression in salivary gland mucoepidermoid carcinoma**

2.14

Moniek Meevissen (Leiden, The Netherlands)

**The *S. mansoni* egg glycoprotein  $\kappa 5$  induces granulomas in a pulmonary mouse model via its GalNAc $\beta$ 1-4GlcNAc-containing *N*-glycans**

2.15

Mariko Taniguchi (Osaka, Japan)

**Residual laminin-binding activity and enhanced dystroglycan glycosylation by LARGE in novel model mice to dystroglycanopathy**

### **Group 3 : Glycan Biosynthesis**

3.1

Hiroto Hirayama (RIKEN ASI, Japan)

**Structural diversity of free oligosaccharides from misfolded glycoproteins in *Saccharomyces cerevisiae***

3.2

Shinji Takamatsu (Osaka, Japan)

**Comprehensive *in vivo* analyses of *N*-acetylglucosaminyltransferase (GnT)-IV**

3.3

Wiebke Schaper (Hannover, Germany)

**Cloning and functional characterization of zebrafish CMP-sialic acid synthetase**

3.4

Christina Roch (Bochum, Germany)

**Differences in acceptor specificities of human xylosyltransferases**

3.5

Florian Knaak (Berlin, Germany)

**Enhancing the degree of sialylation of alpha1-antitrypsin by overexpressing sialuria mutants of UDP-GlcNAc 2-Epimerase / ManAc Kinase (GNE)**

3.6

Renee Ruhaak (Leiden, The Netherlands)

**Decreased levels of bisecting GlcNAc glycoforms of IgG are a marker of familial longevity**

3.7

Takashi J. Fuwa (Tokyo, Japan)

**Identification and characterization of the *Drosophila* core 1 beta 1,3-galactosyltransferase that synthesizes T antigen in the embryonic central nervous system and hemocytes**

3.8

Birgit Absmanner (Regensburg, Germany)

**Biochemical characterization and membrane topology of Alg11 from *Saccharomyces cerevisiae* as an  $\alpha$ 1,2-mannosyltransferase, catalyzing two sequential glycosylation steps in the formation of the lipid-linked core oligosaccharide**

## **Group 4 : Glycotechnology**

4.1

Leonie Engels (Aachen, Germany)

***In vitro* synthesis of UDP-glucuronic acid and the glycan epitope HNK-1 with a highly flexible enzyme- module- system**

4.2

Matthias Kaup (Berlin, Germany)

**Construction of a novel peptide-tag composed of an artificial *N*-glycosylation site**

4.3

Astrid Lusch (Berlin, Germany)

**Development and analysis of alpha 1-antitrypsin neoglycoproteins**

4.4

Claudia Rech (Aachen, Germany)

**Biofunctionalisation of biomaterial surfaces with (poly)-LacNAc and galectins for the formation of an artificial extracellular matrix**

4.5

Kathrin Adamiak (Aachen, Germany)

**Synthesis of branched oligosaccharide-polyether modules for functionalised biomaterial surfaces**

4.6

Ulrika Westerlind (Mainz, Germany)

**Tumor-associated MUC1 tandem repeat glycopeptide vaccines – synthesis and immunological evaluation**

4.7

Christiane Ogorek (Berlin, Germany)

**Characterisation of avian designer cell lines with regard to *N*-glycans of the cell surface and a recombinant antibody**

4.8

Boris Tefsen (Amsterdam, The Netherlands)

**Chemo-enzymatic synthesis of multivalent neoglycoconjugates carrying the helminth glycan antigen LDNF**

4.9

Katharina Wetjen (Aachen, Germany)

**Combined chemoenzymatic synthesis of modified neo-glycoaminoglycans – ways to new glyco-drugs and –materials**

4.10

Shinya Hanashima (RIKEN ASI, Japan)

**Synthesis of the unique starfish ganglioside AG2 pentasaccharide using silylene-oxazolidinone double-locked sialic acid building blocks**

## **Group 5 : Glycoanalysis**

5.1

Kazuki Nakajima (Osaka, Japan)

**Simultaneous determination of nucleotide sugars with ion-pair reversed-phase HPLC and LC-ESI-MS**

5.2

Stefan Risch (Berlin, Germany)

**Investigation of *N*-glycosylation of single glycoproteins from human blood serum**

5.3

Benedikt Schäfer (Gießen, Germany)

**Analysis of the polysialic acid distribution in human brain-tissue**

5.4

Sandra Frank (Gießen, Germany)

**Structural characterization of carbohydrate moieties from adult *schistosoma mansoni* glycosphingolipids**

5.5

Dennis Blank (Gießen, Germany)

**Strategies for mass spectrometric mapping of human milk oligosaccharides**

5.6

Maurice Selman (Leiden, The Netherlands)

**High throughput IgG glycosylation profiling by MALDI-FTICR-MS for clinical glycomics**

5.7

Hiroaki Korekane (Osaka, Japan)

**Antibody-Lectin Enzyme Immunoassay for the Analysis of Fucosylation of alpha-Fetoprotein**

5.8

Kristina Neue (Münster, Germany)

**Structural elucidation of *N*-glycopeptides by combination of thermolysin and ZIC®-HILIC for the direct analysis of glycoproteins by nanoESI Q-ToF mass spectrometry**

5.9

Elena Frisch (Berlin, Germany)

**Optimization of *O*-glycan release using  $\beta$ -elimination and application to the diagnosis of ovarian cancer**

5.10

Xi Liu (Berlin, Germany)

**Site Specificity of alpha-1 antitrypsin expressed in a novel human neuronal cell line using nano LC-MS and MALDI-TOF-MS**

5.11

Mäilys Guillard (Nijmegen, The Netherlands)

**Automated measurement of permethylated serum *N*-glycans by vMALDI-LTQ MS for the identification of glycosylation defects in CDG-patients**

5.12

Werner Conze (Tosoh Biosciences, Stuttgart, Germany)

**Evaluation of different HILIC stationary phases for glycan analysis**

5.13

Stefan Kirsch (Münster, Germany)

**Screening of pancreatic and stomach cancer serum glycosphingolipids: A nano-HPLC/ESI-QTOF MS study**