

BENZON SYMPOSIUM No. 54
**GLYCOSYLATION – OPPORTUNITIES IN DRUG
DEVELOPMENT**

JUNE 11-14, 2007, COPENHAGEN, DENMARK

Organizing committee:

*Ole Hindsgaul (Copenhagen), Henrik Clausen (Copenhagen), Monica M. Palcic
(Copenhagen) and Povl Krosgaard-Larsen (Copenhagen)*

Scientific program - MONDAY, June 11, 2007

Ole HINDSGAUL: Welcome and Opening Comments

OPENING LECTURE

Chair: Ole Hindsgaul

James C. PAULSON: Functional Glycomics

Session I: GLYCOSYLATION AND DRUGS

Chair: Ole Hindsgaul

Mark VON ITZSTEIN: Targeting Carbohydrate-Recognizing Proteins as Drug
Discovery Targets

Stan VAN BOECKEL: Synthetic Heparin: From Fondaparinux and Idraparinux to
a Novel CarboCarrier Technology for Therapeutic Proteins

Vicente VEREZ-BENCOMO: Development of *Haemophilus Influenzae* Type b
Conjugate Vaccines Using a Synthetic Antigen

Stefan OSCARSON: Approaches Towards Glycoconjugate Vaccines Against
Neisseria Meningitidis Based on Synthetic Oligosaccharide Structures (*oral
poster*)

Session II: NEW TARGETS FOR CARBOHYDRATE-BASED DRUGS

Chair: Klaus Bock

Christian R.H. RAETZ: Structure and Inhibition of Enzymes that Assemble
Gram-Negative Endotoxin, a Potent Saccharolipid Activator of Innate Immunity

Beat ERNST: From Carbohydrate Leads to Drugs: Why is it so Difficult?

Hakon LEFFLER: Galectins as Drug Targets in Cancer and Inflammation

Thomas BORÉN: *Helicobacter Pylori* Adhesins and Glycan Receptors

Knud J. JENSEN: Solid-Phase Chemical Tools for Glycomics: Glyochips and
Nanoparticles (*oral poster*)

Shin-Ichiro NISHIMURA: Glycoblotting-Based Clinical Glycomics (*oral poster*)

Posters: SMALL MOLECULES AND NEW TOOLS

Authors present posters Nos. I-1 – I-35.

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Scientific program - TUESDAY, June 12, 2007

Session III: PROTEIN GLYCOSYLATION

Chair: Michael Pierce

Gerald W. HART: O-GlcNAc Cycling on Regulatory Proteins: A Nutrient/Stress Sensor Regulating Transcription, Translation, and Signalling

Pamela STANLEY: Roles for O-Fucose Glycans in Notch Signalling

Reed J. HARRIS: Glycosylation in Biopharmaceuticals

David ZOPF: Modifying Glycans to Improve Performance of Glycoprotein Therapeutics

Ulf LINDAHL: Heparan Sulphate-Protein Interactions: Are They Specific?

Session IV: NEW TOOLS - I

Chair: Monica Palcic

Carolyn R. BERTOZZI: Shedding Light on Glycans

Tillman U. GERNGROSS: The Use of Humanized Yeast to Explore the Glyco-Design Space – A Novel Discovery and Manufacturing Platform for Biotherapeutics

Eric SAMAIN: Synthesis of Complex Oligosaccharides Using Metabolically Engineered Bacteria

Ben DAVIS: Sugar & Enzymes: Exploring and Exploiting Protein-Carbohydrate Interactions

Bernard HENRISSAT: Carbohydrate Active Enzymes

Steffen GOLETZ: A Novel Human Cellular Toolbox for Expression of Glyco-Optimised Fully Human Glycoprotein (*oral poster*)

Posters: GLYCOCONJUGATES AND GLYCOENZYMES

Authors present posters Nos. II-1 – II-34.

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Scientific program - WEDNESDAY, June 13, 2007

Session V: NEW TOOLS - II

Chair: Beat Ernst

Peter H. SEEBERGER: Automated Oligosaccharide Synthesis

Jon S. THORSON: Challenges and Opportunities in Natural Product Glycosylation

Karin M. HOFFMEISTER: Platelet Glycosylation: The "In and Outs" of Platelet Transfusion

Thomas PETERS: Carbohydrate-Virus Interactions by NMR

José A. CREMATA: Differential N-glycosylation of rhEPO in Goat Mammary Gland Cell Expressed in Cell Culture or in the Milk (*oral poster*)

Joseph J. BARCHI, Jr.: Do Carbohydrate Coated Nanoparticles Have Antitumour Therapeutic Potential? (*oral poster*)

Session VI: GLYCOSYLATION IN HEALTH AND DISEASE - 1

Chair: Gerald W. Hart

Hudson FREEZE: Congenital Disorders of Glycosylation: A Look Into the Crystal Ball

Tamao ENDO: Defective Glycosylation in Muscular Dystrophy

Kensuke MIYAKE: Roles for a Novel Molecule PRAT4A in the Subcellular Distribution and Responsiveness of Toll-Like Receptors

Jens C. JENSENIUS: Structural, Functional and Clinical Aspects of the MBL Pathway (Lectin Pathway) of Complement Activation - An Innate Immune Defence System

Rita GERARDY-SCHAHN: The Golgi UDP-Xylose Transport is Essential for the Formation of O-Linked Xyl-Xyl-Glc Epitopes on Epidermal Growth Factor Like Domains (*oral poster*)

Posters: GLYCOSYLATION IN HEALTH AND DISEASE

Authors present posters Nos. III-1 – III-35.

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Scientific program - THURSDAY, June 14, 2007

Session VII: GLYCOSYLATION IN HEALTH AND DISEASE - II

Chair: Pamela Stanley

Jamey D. MARTH: Protein Glycosylation in Cellular Mechanisms of Health and Disease

James DENNIS: Tumour Metabolism and Drug Sensitivity is Dependent on N-Glycan Processing

Paul CROCKER: Siglecs as Modulators of Innate and Adaptive Immune Responses

Michael PIERCE: Attenuation of a Specific Glycosylation Reaction in Breast Carcinoma Cells Inhibits Cell Migration and Invasiveness

Jan HOLGERSSON: Recombinant Mucin-Type Fusion Proteins as Versatile Inhibitors of Protein-Carbohydrate Interactions (*oral poster*)

Kazuyuki SUGAHARA: Neuritogenic Activity and Mechanism of Brain Chondroitin/Dermatan Sulfate Hybrid Chains (*oral poster*)

Session VIII: GLYCOSYLATION IN HEALTH AND DISEASE - III

Chair: Henrik Clausen

Robert J. DESNICK: Enzyme Replacement and Enhancement Therapies for Lysosomal Diseases

Philip LIVINGSTON: Most Carbohydrate Cancer Antigens Can be Made Immunogenic

Joy BURCHELL: Changes in Mucin-type O-Glycosylation in Cancer

Rikard HOLMDAHL: Carbohydrates and T-cell Immunity

CLOSING LECTURE

Chair: Henrik Clausen

Ronald L. SCHNAAR: Glycans in Nervous System Stability and Axon Regeneration

Henrik Clausen: Closing Comments