

8th Carbohydrate Bioengineering Meeting

PROGRAM OF EVENTS

(All Events will be held at the Hotel continental Terme and Congress Center)

Sunday 10th May 2009

- 15:00 to 17:00 **Registrations** Hotel Continental Terme
(Hall of Congress Centre)
- 17.00 to 17.30 **Opening Ceremony of CBM8** (Sala Pithecusa)
Chairperson: Marco Moracci
- 17.30 to 18.30 **Opening lecture**

Prof. Bernard Henrissat

CNRS, Universités Aix-Marseille I & II, France

"CAZomes: where is genome sequence data taking us"

Session 1

Structure-function relationships of carbohydrate active enzymes (CAZymes)

Chairpersons: Birte Svensson and Gideon Davies

- 18:30 **Dr. T. Gloster**
University of York , UK
"Divergence of catalytic mechanism within glycoside hydrolase family 97"
- 19:00 **Dr. S. Kralj**
University of Groningen, The Netherlands
"GTFB provides an evolutionary link between enzyme families GH13 and GH70"

- 19:30 **Prof. W. W. Wakarchuk**
National Research Council of Canada, Institute for Biological Sciences, Canada
"The structure and function of the *Streptococcus pneumoniae* endo- α -*N*-acetylgalactosaminidase a GH101 CAZyme."
- 20:30 **Welcome Reception** (All delegates and accompanying persons)

Monday 11th May 2009

8:20 **Opening**

Session 2

Structure-function relationships of carbohydrate active enzymes (CAZymes)

- 8:30 **Prof. David Vocadlo**
Simon Fraser University, Burnaby, Canada
"Mechanistic understanding of *O*-GlcNAc processing enzymes affords probes for investigating the biological role of *O*-GlcNAc" (Keynote)
- 9:00 **Dr. E. Ficko-Blean**
University of Victoria, Canada
"The molecular details of mucopolysaccharidosis IIIb revealed by the structure of a bacterial α -*N*-acetylglucosaminidase."
- 9:30 **Prof. Y. Shoham**
Technion—Israel Institute of Technoloo, Israel
"An insoluble discrete filamentous structure of the *Zymomonas mobilis* levansucrase is essential for levan synthesis"
- 10:00 **Dr. M. Sandgren**
Swedish University of Agricultural Sciences, Sweden
"The first crystal structure of a glycoside hydrolase family 3 β -xylosidase, Bx11 from *Hypocrea jecorina*, at 18Å resolution"
- 10:30 - 11:00 **Coffee break**

Session 3

Applications of carbohydrates and carbohydrate active enzymes

Chairpersons: Garabed Antranikian and Mosé Rossi

- 11:00 **Prof. Jan A.M. de Bont**
Royal Nedalco, Bergen op Zoom, The Netherlands
"Second generation fuel ethanol: the role of enzymes" (Keynote)
- 11:30 **Dr. H-J. Jördening**
Technical University, Braunschweig, Germany
"Tailormade biocatalysts for enzymatic isomaltose formation"
- 12:00 **Dr. W.F. Vann**
US Food and Drugs Administration, USA
"Chemoenzymatic synthesis of conjugatable oligosialic acids"
- 12:30 **Dr. G. Sulzenbacher**
CNRS, Universités Aix-Marseille I & II, France
"Bacterial glycosidases for the enzymatic removal of blood group antigens"
- 13:00-14:00 **Lunch**
- 14:00-15:30 **Poster Session I (odd numbers)**

Session 4

Applications of carbohydrates and carbohydrate active enzymes

- 15:30 **Dr. N. Alonso-Casajus**
Idea Biotechnology S.L., Spain,
"Ectopic expression of glycogen phosphorylase (GlgP) from Escherichia coli leads to enhancement of starch and amylose contents in potato tubers"
- 16:00 **Dr. H. Takata**
Ezaki Glico Co., Ltd., Japan
"Application of branching enzyme in the starch processing"

Carbohydrates and glycoconjugates in health and nutrition

Chairpersons: Pierre Monsan and Lubbert Dijkhuizen

- 16:30 **Prof. John C. Mathers**
University of Newcastle, Newcastle upon Tyne, UK
"Resistant starches and human health" (Keynote)

17:00-17:20 **Coffee break**

17:20 **Dr. D. K. Banerjee**
University of Puerto Rico, USA
"Targeting anti-angiogenic glycotherapeutic for the treatment of breast cancer"

Session 5
Carbohydrates and glycoconjugates in health and nutrition

17:50 **Dr. A. La Gatta**
Second University of Naples, Italy
"Synthesis and characterization of innovative crosslinked hyaluronan (HA) based materials"

New developments in carbohydrates analysis and technology

18:20 **Dr F. Abballe**
Dionex Corporation, USA
"Carbohydrate-analysis: liquid chromatography to solve a challenge"

Free evening

Tuesday 12th May 2009

8:20 **Opening**

Session 6
Glycomics and bioinformatics

Chairpersons: Pedro Coutinho and Harry Brumer

8:15 **Dr. Eric J. Mathur**
Synthetic Genomics, La Jolla, CA, USA
"Synthetic biology tools for accelerated glycosyl hydrolase development" (Keynote)

8:45 **Dr. G. Potocki-Veronese**
Université de Toulouse and CNRS, INRA, France
"Screening the human gut microbiota for the discovery of enzymes efficient for plant fiber degradation"

9:15 **Dr. I. Sorensen**
University of Copenhagen, Denmark
"Wide-scale surveying of plant cell walls across the plant kingdom: implications for industrial applications and understanding cell wall evolution"

9:45 **Dr. M. Frank**
DKFZ Heidelberg, Germany
"New bioinformatic tools and databases for glycomics"

10:15-10:45 **Coffee break**

Session 7
Carbohydrates and enzyme engineering

Chairpersons: Steve Withers and Giuseppe Peruginò

10:45 **Prof. Paul L. DeAngelis**
University of Oklahoma Health Sciences Center, Oklahoma City, OK USA
"Customizing glycosaminoglycan polymer size and chemistry with synthase enzymes" (Keynote)

11:15 **Prof. C. Tellier**
University of Nantes, France
"Converting glycosidases into transglycosidases by directed evolution"

11:40 **Dr. A. Lòpez-Munguia**
Universidad Nacional Autònoma de México, México
"Modification of levansucrase specificity through a strategy of addition/deletion of glucansucrase regions"

12:05 **Dr. E. Yavuz**
ETH Zurich Switzerland and CNRS, France
"Evaluation of display of oligosaccharides of medical and nutritional interests in LPS engineered *E. coli*"

12:30 **Dr. K. Routenberg Love**
Massachusetts Institute of Technology, USA
"A new strategy for the directed evolution of glycosyltransferases for the synthesis of therapeutic glycoconjugates"

13:00 -14:00 **Lunch**

14:00-15:50 **Poster Scssion 2 (even numbers)**

Session 8

Synthesis, structure and function of carbohydrates and glycoconjugates

Chairpersons: Vincent Bulone and Sven Pedersen

- 15:30 **Prof. Dr. Peter H. Seeberger**
Max-Planck-Institute for Colloids and Interfaces, Berlin, Germany
"From automated synthesis to applications of carbohydrates in diagnostics and therapeutics" (Keynote)
- 16:00 **Dr. E. Bedini**
Università degli Studi di Napoli "Federico II", Italy
"Synthetic oligosaccharides for phytopathological studies"
- 16:30 **Dr. S. Bornemann**
John Innes Centre, Norwich Research Park, UK
"Enzyme-catalysed polysaccharide synthesis on a surface can be monitored in real time using surface plasmon resonance spectroscopy"
- 17:00-17:20 **Coffee break**

Session 9

Synthesis, structure and function of carbohydrates and glycoconjugates

- 17:20 **Dr. R. Toman**
Slovak Academy of Sciences, Slovakia
"Structural and functional peculiarities of the lipopolysaccharides from *Coxiella burnetii*, the etiological agent of Q fever"
- 17:50 **Dr. K. Paschinger**
Universität für Bodenkultur, A-1190 Wien, Austria
"Mutant worms and defective N-glycan processing"
- 20:30 **Social Dinner and Ceremony for the best Poster Award**

Wednesday 13th May 2009

8:20 **Opening**

Session 10

New insights in enzymatic reaction mechanism and recognition

Chairpersons: Antoni Planas and Beatrice Cobucci-Ponzano

8:30 **Dr. Carlos M.G.A. Fontes**
CIISA — Lisboa, Portugal
"Mechanisms of cellulosome assembly and cell-surface attachment revealed by the structure of cohesin-dockerin complexes" (Keynote)

9:00 **Dr. A. Blennow**
University of Copenhagen, Denmark
"Dynamics of starch granule biogenesis — the role of redox regulated enzymes and low affinity CBMs"

9:30 **Prof. B. Nidetzky**
Graz University of Technology, Austria
"Retaining glucosyl transfer catalyzed by disaccharide phosphorylases: mechanisms and application in synthesis"

10:00-10:15 **Coffee Break**

Session 11

New insights in enzymatic reaction mechanism and recognition

10:15 **Dr. C. Rovira**
Parc Científic de Barcelona, Spain
"Substrate conformational changes in glycoside hydrolase catalysis"

10:45 **Dr. R. Zhang**
University of British Columbia, Canada
"Visualizing the covalent glycosyl-enzyme intermediate of human pancreatic alpha-amylase: snapshots along the reaction coordinate of amylase catalysis"

11:15 -11:45

Closing Lecture

Chairperson: Marco Moracci

Prof. Anne Dell

Imperial College London, UK

"Mass spectrometry: a powerful tool for systems glycobiology"

12.00

Closing remarks