Draft Final Program

CARB

DIVISION OF CARBOHYDRATE CHEMISTRY
X. Huang, Program Chair

SUNDAY MORNING

New Orleans Downtown Marriott at the Convention Center
Blaine Kern A

Wolfrom Award Symposium

X. Huang, Organizer
B. Pinto, Presiding

9:30 1. Stop and go: Biosynthesis and export of polymannose lipopolysaccharide O antigens in Escherichia coli. C. Whitfield

10:05 2. Glycuronic acids: Reactivity, selectivity, automated synthesis, and applications. J. Codee

10:40 3. Amphiphilic mycobacterial glycans: Synthesis, biosynthesis, and lipid-binding properties. T. L. Lowary

SUNDAY AFTERNOON

New Orleans Downtown Marriott at the Convention Center
Blaine Kern A

Isbell Award and Gin New Investigator Award Symposium

X. Huang, Organizer, Presiding


1:35 5. Probing hyperconjugation experimentally with the conformational deuterium isotope effect. B. Pinto, K. T. Greenway, A. G. Bischoff


2:45 Intermission.

3:05 7. Click chemistry today. K. B. Sharpless


4:15 9. Imaging the glycome using a click-chemistry based approach. P. Wu

MONDAY MORNING

New Orleans Downtown Marriott at the Convention Center
Blaine Kern A
2012 Hudson Award Symposium

X. Huang, Organizer, Presiding

8:30 10. Structural insights into O-GlcNAc transferase. S. Walker


10:15 Intermission.

10:35 13. Synthetic carbohydrate antigens for HIV antibody detection and vaccine design. L. Wang

11:10 14. Microbial polysaccharide biosynthesis. L. L. Kiessling

Section B

New Orleans Downtown Marriott at the Convention Center
Blaine Kern C

Biofuels, Bioproducts, and Biomass from Sugar Feedstocks

R. Viator, Organizer
G. Eggleston, Organizer, Presiding

8:40 Introductory Remarks.


9:35 17. Sweet sorghum production on fallow sugarcane fields in Louisiana. C. Dalley

10:00 Intermission.


11:30 Panel Discussion.

MONDAY AFTERNOON

Section A

New Orleans Downtown Marriott at the Convention Center
Blaine Kern A

Heparin Synthesis, Analysis and Biological Functions

Cosponsored by ANYL‡
C. Larive, Organizer
R. Linhardt, J. Liu, Organizers, Presiding

1:30 22. Chemical biology of heparan sulfates: From insights to applications in neurodegeneration and nerve repair. J. E. Turnbull


2:30 Intermission.

3:00 24. Quality by design risk assessment for heparin manufacturing process. A. Al-Hakim


4:00 26. Colorimetric tests for heparin purity analysis. D. A. Keire


Section B
New Orleans Downtown Marriott at the Convention Center
Blaine Kern C

Biofuels, Bioproducts, and Biomass from Sugar Feedstocks

G. Eggleston, Organizer
R. Viator, Organizer, Presiding


2:20 30. Establishing and managing Miscanthus x giganteus and Panicum virgatum feedstocks in the temperate U.S. T. Voigt

2:45 31. Sugarcane residue and bagasse as biochar precursors for soil amendment applications. I. Lima, P. White, K. Klasson, M. Uchimiya

3:10 Panel Discussion.

3:30 Intermission.


4:10 33. Conversion of oligosaccharides into alkanes. A. D. Sutton, J. C. Gordon, P. Silks, R. Wu, M. Schlaf

4:35 34. Custom-tailored water-insoluble glucans from sucrose via glucansucrases. G. L. Cote, C. D. Skory

MONDAY EVENING

Section A
Morial Convention Center
Hall D

Sci-Mix

X. Huang, Organizer

8:00 - 10:00
TUESDAY MORNING

New Orleans Downtown Marriott at the Convention Center
Blaine Kern A

Heparin Synthesis, Analysis and Biological Functions

J. Liu, R. Linhardt, Organizers
C. Larive, Organizer, Presiding
X. Huang, Presiding

9:00 35. Progress in heparin synthesis and new methods for analysis. R. J. Linhardt

9:30 36. Analysis of heparin oligosaccharides using anionic capillary isotachophoresis - NMR. C. K. Larive

10:00 37. Isolation from semuloparin of pure octadecasaccharides bearing aFIIa activity. P. A. Mourier, C. Viskov, F. Herman

10:30 Intermission.

11:00 38. Identification of ligands for chemokines and cytokines using a heparan sulfate microarray. G. Boons


Section B

60+ Years of Advances in Carbohydrate Chemistry and Biochemistry: Symposium in Honor of Professor Derek Horton

T. Lowary, Organizer, Presiding

8:25 Introductory Remarks.

8:30 40. Glycodendrimers toward breast cancer diagnostics and vaccines. R. Roy

9:05 41. New tactics and strategies in oligosaccharide assembly. X. Liu

9:40 42. Automated oligosaccharide synthesis and the challenge of efficient building block syntheses. N. L. Pohl

10:15 Intermission.

10:45 43. Molecular recognition of carbohydrates: A 3D view by using NMR. J. Jiménez-Barbero

11:20 44. Synthesis of glycoconjugate vaccines designed for targeted delivery to dendritic cells. D. R. Bundle

TUESDAY AFTERNOON

New Orleans Downtown Marriott at the Convention Center
Blaine Kern A

Heparin Synthesis, Analysis and Biological Functions

R. Linhardt, Organizer

2:30 Intermission.

3:00 47. Advances in the mass spectrometry analysis of heparinoids and other highly sulfated glycosaminoglycans. I. Amster, M. J. Kailemia, L. Li, R. J. Linhardt


4:00 49. Regulation of heparin injections. T. Toida

Section B

New Orleans Downtown Marriott at the Convention Center Blaine Kern C

60+ Years of Advances in Carbohydrate Chemistry and Biochemistry: Symposium in Honor of Professor Derek Horton

T. Lowary, Organizer, Presiding

1:30 50. Glyconanoparticles as multifunctional and multimodal carbohydrate systems. S. Penadés

2:05 51. Thioglycosides as glycosyl donors in oligosaccharide synthesis. S. Oscarson

2:40 52. De novo asymmetric synthesis of oligosaccharides. G. A. O’Doherty

3:15 Intermission.


4:10 54. Oligosaccharide synthesis: Mechanisms and minetics. D. Crich

4:45 Concluding Remarks.

TUESDAY EVENING

Morial Convention Center
Hall D

General Posters

X. Huang, Organizer

6:30 - 9:00

55. Chemoenzymatic synthesis of heparosan oligosaccharides. C. M. Harvey, C. Cai, J. Liu, R. J. Linhardt

56. Selective hydrogenation of D-glucose to D-sorbitol using zeolite supported ruthenium (Ru/zeolite) catalyst. D. K. Mishra, J. S. Hwang

57. Guar gum/polyacrylamide graft copolymer for preparation of silver nanoparticles. E. S. Abdel-Halim

58. Hydrogel from crosslinked polyacrylamide/guar gum graft copolymer for sorption of hexavalent chromium ion. S. S. Al-Deyab, E. S. Abdel-Halim

59. Long-range NMR $^1$H,$^{13}$C-coupling and conformational analysis of polyphenolic glycosides. I. Serebnitskaya, A. H. Franz
60. Can natural enzymes use septanoses as substrates? K. Tandjigora, R. Vannam, M. M. Peczuh

61. Wearing a pathogen’s mask: Specific targeting of dendritic cells with MRI responsive nanoparticles. R. C. Saliba, G. Bort, P. Losey, S. C. Bruijn, Y. van Kooyk, D. C. Anthony, B. G. Davis

62. Effects of turbidity and viscosity on syneresis in biopolymer-stabilized nano/microemulsions. G. K. Kouassi, A. Shashank

63. Miscible polymer blend formulations for oral drug delivery applications. J. A. Marks, K. J. Edgar

64. Influence of SFC, microstructure, and polymorphism on hardness of binary blends of palm stearin and palm olein at different cooling rates. X. Zhang, L. Li, H. Xie, Z. Liang, J. Su, G. Liu, B. Li


69. Influence of locked conformation on the stereoselectivity of mannose donors. L. Gottlieb, Z. Li

70. Synthesis of oligomannan epitopes for nanoparticle functionalization and cyanovirin-N binding evaluation. N. Thota, X. Sheng, E. Matei, A. Gronenborn, M. Yan, O. Ramström


73. Expanding the scope of silyl protecting groups for sialylation reactions. R. Starner, C. Wallace, C. De Meo

74. Neuraminidase resistant sialoside microarray for the detection of influenza viruses. Y. He, Y. Yang, S. S. Iyer


76. Functionalization of monosaccharides with electrophiles. C. Lopez Gonzalez, S. Blooser, C. Pugh

77. Structure affects glycosaminoglycan interaction with TAT peptide and G5 PAMAM dendrimer. L. E. Prevette, A. Schoenecker, K. Braden, D. Francen


79. Edible carbohydrate blend materials for food surface protection. A. Alarifi, M. Senna, A. Alowais


81. Glycation of gelatin treated with ribose or methylglyoxal: Characterization and its effects on cells. B. Boonkaew, K. Tompkins, P. Pavasant, P. Supaphol

82. Utility of infrared vibrational frequencies for the lead optimization of quinoxalines, and pyridinopyrazines as PKB/akt inhibitors. J. K. Kawakami

83. Highly stereoselective cis-1,2-glycosylations using thioglycoside donors in the absence of directing groups. A. Chu, C. S. Bennett

84. CNT-polyimide film synthesis. J. A. Von Behr, B. Hester

85. Inhibitory effect of amino acid-linked chitosan oligomers against HIV-1 infection. F. Karadeniz, S. Lee, S. Kim

WEDNESDAY MORNING
New Orleans Downtown Marriott at the Convention Center
Blaine Kern A

**Current Topics in Glycoscience**

**Synthesis**

X. Huang, *Organizer*
Z. Witczak, *Presiding*

8:30 86. Industrial cleaner production of well-stabilized silver nanoparticles using environmental benign polymer. **M. M. Fouda**, S. S. Al-Deyab

8:50 87. Synthetic study toward pseudopentasaccharide repeating unit of *Streptococcus pneumoniae* zwitterionic polysaccharide. **S. Koutha**, G. Boons

9:10 88. Chiral building blocks from L-arabinose for thio-click functionalization. **Z. J. Witczak**


9:50 Intermission.


10:25 91. Novel Lipid A mimetics based on a 1,1′-α,α-disaccharide scaffold. **F. Adanitsch**, P. Kosma, A. Zamyatina


Section B

New Orleans Downtown Marriott at the Convention Center
Blaine Kern C

**Current Topics in Glycoscience**

**Glycopolymers and Glyconanoparticles**

X. Huang, *Organizer*
R. Narain, *Presiding*

9:00 95. Evaluation of skin tissue repair materials from bacterial cellulose/hyaluronic acid composite. **Y. Li**, **G. Yang**

9:20 96. Sequence and polymer architecture control of glycopolymers with enhanced DC-SIGN recognition. **D. M. Haddleton**, A. Anastasaki, P. Wilson, Q. Zhang, R. Becer

9:40 97. Glycopolymers and glyco-nanogels for gene therapy. **R. Narain**

10:00 98. Antioxidant and antimicrobial activity of xylan-chitooligomer-zinc complex. **S. Wu**, **Y. Du**, X. Shi

10:20 Intermission.


WEDNESDAY AFTERNOON

Section A

New Orleans Downtown Marriott at the Convention Center
Blaine Kern A

Current Topics in Glycoscience

Synthesis and Computation

X. Huang, Organizer
M. Santer, Z. Li, Presiding

1:30 103. Visible light photocatalytic O-glycosylation. J. R. Ragains

1:50 104. Mechanistic study of neighboring group participation in glycosylation of galactose pentaacetate. L. Zhu, Z. Li

2:10 105. Direct observation of the fructofuranosyl oxocarbenium ion: A critical intermediate in the valorization of carbohydrates. G. R. Akien, B. Subramaniam

2:30 106. Cyclopropenium cation mediated glycosylation with 2-deoxy-sugars for α-selective reactions. J. M. Nogueira, C. S. Bennett

2:50 107. Mechanistic studies on the dehydration of glucose to 5-hydroxymethylfurfural and xylose to furfural. G. R. Akien, L. Qi, I. T. Horvath

3:10 Intermission.


3:50 109. Free energy surface for glucose ring opening in aqueous solution. X. Qian

4:10 110. Carbohydrate structure representation and public chemistry databases. C. Batchelor, K. Karapetyan, D. Sharpe, V. Tkachenko, A. Williams


Section B

New Orleans Downtown Marriott at the Convention Center
Blaine Kern C

Current Topics in Glycoscience

Glycopolymers and Glyconanoparticles

X. Huang, Organizer
N. Murthy, Presiding
1:30 113. Synthesis of Thomsen Friedenreich antigen-loaded gold nanoparticles as potential anticancer agents. **S. Biswas, T. Piyush, L. Yu, J. J. Barchi**


2:10 115. In vivo imaging of bacterial infections with maltodextrins. **N. Murthy**

2:30 116. Production of xylooligosaccharides from sugarcane bagasse hemicelluloses by microwave-enhanced acid hydrolysis. **J. Bian, P. Peng, X. Xiao, X. Peng, R. Sun**

2:50 Intermission.

3:10 117. Subcritical water and dilute acid pretreatments for bio-ethanol production from Melaleuca leucadendron shedding bark. **I. Ahmed, Y. Ju**

3:30 118. Pyranose-based ligands for conservation of historical iron gall inks with high copper to iron ratio. **J. Alcantara-Garcia, J. W. Baty**


**THURSDAY MORNING**

Section A

New Orleans Downtown Marriott at the Convention Center
Blaine Kern A

**Current Topics in Glycoscience**

**Glycobiology**

X. Huang, **Organizer**
D. Zhou, **Presiding**

9:00 120. Simple method for the non-reductive β elimination of o-linked oligosaccharide from glycoprotein. **M. A. Madson, J. Christus**

9:20 121. Unique enzyme, unique activity: O-GlcNAc transferase makes the cut. **J. Jiang, M. Lazarus, S. Walker**

9:40 122. New lanthanide binding tags for the structural characterization of carbohydrates both in the free state and bound to protein receptors. **A. Canales, A. Mallagaray, J. Jiménez-Barbero, H. J. Gabius, J. Peréz-Castells, G. Domínguez**

10:00 123. MUC1 glycopeptide epitopes predicted by computational glycomics. **D. Zhou**

10:20 Intermission.


10:55 125. Analysis of the N-linked glycome of plant pollen proteins. **K. Stumpo**

11:15 126. Lysosomal targeting with stable and sensitive fluorescent probes that monitor acidic intracellular pH: Applications for organelle labeling. **N. B. Yapici, L. Bi**

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