CARB

DIVISION OF CARBOHYDRATE CHEMISTRY

Eriks Rozners, Program Chair

OTHER SYMPOSIA OF INTEREST:

Frontiers in Glycoscience (see CELL, Mon, Tue)

Ronald Breslow Award for Achievement in Biomimetic Chemistry (see ORGN, Sun)

Cellulose in Solid State and Solution - Structure, Chemistry and Reaction Mechanisms (see CELL, Sun, Mon, Tue, Wed)

ACS Chemical Biology Award Symposium (see BIOL, Tue)

Application of Computational Chemistry to Biomass Chemistry and Utilization (see CELL, Sun, Mon)

The Chemistry & Biology of Non-Natural Nucleic Acids (see BIOL, Mon)

BUSINESS MEETINGS:

Business Meeting, 5 PM: Sun

SUNDAY MORNING

Colorado Convention Center
Mile High Ballroom 1C

Wolf from Award Symposium

N. L. Pohl, E. Rozners, Organizers
J. C. Paulson, Presiding

9:30 1. Building on Wolfrom’s legacy: From the Chemurgy of yesterday to the renewables of today. K.B. Hicks, A.A. Boateng, C.A. Mullen, Y. Elkasabi, A.T. Hotchkiss, M.P. Yadav

10:10 2. Cranberries: From polyphenols to polysaccharides. C. Khoo


SUNDAY AFTERNOON

Section A
Isbell Award and Gin New Investigator Award Symposium

N. L. Pohl, E. Rozners, *Organizers*
J. C. Paulson, *Presiding*

1:00 4. Recent studies on the synthesis of glycans from mycobacteria and campylobacters. **T.L. Lowary**


2:00 6. Therapeutic in vivo synthesis by glycocarriers. **K. Tanaka**

2:30 Intermission.

2:50 7. Split personality of human O-GlcNAc transferase. **S. Walker**


3:50 9. Chemical probes for the functional analysis of O-GlcNAc modifications. **M. Pratt**

MONDAY MORNING

Section A

Colorado Convention Center
Mile High Ballroom 1C

Glycomimetic Compounds: An Untapped Source of Novel Therapeutics

J. Magnani, *Organizer, Presiding*

9:00 10. Hexosamine mimetics designed to reverse the Warburg Effect. **K.J. Yarema**


10:00 12. Toward the development of selective DC-SIGN antagonists. **A. Bernardi**

10:30 Intermission.

11:30 14. New NMR tools for unraveling the conformation, dynamics, and recognition properties of glycomimetics. **J. Jimenez-Barbero**

**MONDAY AFTERNOON**

Colorado Convention Center
Mile High Ballroom 1C

**Glycomimetic Compounds: An Untapped Source of Novel Therapeutics**

J. Magnani, *Organizer, Presiding*


2:30 17. Well-defined antibody-drug conjugates (ADCs) through site-specific conjugation. **G. Boons**

3:00 Intermission.


4:00 19. Synthesis and properties of polyfluorinated carbohydrates. **B. J. Linclau**

4:30 20. Computational design of glycomimetic inhibitors - prospects and limitations. **M. Frank**, P. Nyholm

**MONDAY EVENING**

Colorado Convention Center
Halls C/D

**Sci-Mix**

E. Rozners, *Organizer*

8:00 - 10:00


**TUESDAY MORNING**
Protein Glycosylation: Simulation, Synthesis, Characterization & Application

G. Beckham, Organizer
Z. Tan, Organizer, Presiding

9:15 21. Sugars and proteins: Building glycoproteins. B.G. Davis

9:40 Discussion.

9:45 22. New tools in glycoprotein chemical synthesis. X. Li

10:10 Discussion.

10:15 23. Synthesis of homogeneous glycoproteins and application to biochemical studies and biosimilar comparability analysis. T.J. Tolbert

10:40 Discussion.

10:45 Intermission.


11:30 Discussion.

11:35 25. Chemical synthesis as a tool to study protein glycosylation. Z. Tan, X. Guan

12:00 Discussion.

TUESDAY AFTERNOON

Section A

Protein Glycosylation: Simulation, Synthesis, Characterization & Application

Z. Tan, Organizer
G. Beckham, Organizer, Presiding

1:45 26. Intracellular traffic of cell surface mimetic quantum dots-anchored glycopeptides. S. Nishimura, R. S. Tan, K. Naruchi, M. Amano, H. Hinou

2:10 Discussion.

2:15 27. Protein glycosylation in the baculovirus-insect cell system. D. L. Jarvis
2:40 Discussion.

2:45 28. Manipulating protein stability by glycosylation. Y. Levy

3:10 Discussion.

3:15 Intermission.


4:00 Discussion.


4:30 Discussion.

TUESDAY EVENING

Section A

Colorado Convention Center
Hall C

General Posters

E. Rozners, Organizer

7:00 - 9:00


37. Progress on the total synthesis of Aspergillus fumigatus galactosylaminoglycans for diagnostic and therapeutic applications. E.J. Baker, N.L. Snyder
38. Progress on the synthesis of N-acetyllactosamine (LacNAc) probes for studying binding differences carbohydrate recognition domains of galectins-1, -3 and -9. C. Tao, N.L. Snyder

39. Carbohydrate-based small molecules with immunostimulatory properties. C.E. Marzabadi, V. Basava, C. Bitsaktsis, E. Hanawa

40. Synthesis of wooden based resource derived furanic diol and polymerization of PU via various isocyanate. B. Kim, S. Kim, J. Cho

41. Selective hydrogenation of biomass-derived sugars using supported Ru nanoparticles based catalysts. J. Hwang, A.A. Dabbawala

42. Hydrothermal treatment of eucalyptus using acidic ionic liquid as catalysis toward a biorefinery concept. J. Xu, R. Sun

43. Carbohydrate polymer-coating chemistry for cellulose based bioassays. R. Cao, L. Guan, M. Li, W. Shen


45. Synthesis and stability study of DNA duplexes with 1’-carboxamide residues. W. Dong, S.A. Woski

46. Semisynthetic approach to cancer vaccines utilizing mimetics of natural and unnatural Tn antigens. S. Nishat, A.A.Shaik, P.R. Andreana

47. Chemical synthesis and O-glycosidic linkage conformation in a $^{13}$C-labeled $\beta$Man(1→4)$\beta$Xyl(1→4)$\beta$Man(1→4)$\beta$XyLOCH3 tetrasaccharide: Effects of linkage structure and context. W. Zhang, A.S. Serianni


49. Lipase-mediated modification of peracylated macrolactonic sophorolipids. A. Sembayeva, J.A. Carr


51. Facile synthesis of nested fragments of high-mannose N-glycans with lightly protected glycosyl acceptors. Q. Pan, S. Zhao, W. Zhang, Z. Zhang, A.S. Serianni

52. Synthesis of 2-amino sugar building blocks and application for glycodiversification studies. C.M. Rojas, A. Brown, G. Ezeude, M. Miller, A. Scharnow, A. Oviatt

53. Novel catalytic approach for the regioselective oxidation of carbohydrates under mild conditions. W. Muramatsu

54. Using potatoes as a carbohydrate based additive in road salt. R. Byrnes, D. Szlosek, G. Smith, J. Walters, R. Tanous, D.A. Arris


57. Targeted study of bacterial glycoproteins using metabolic oligosaccharide engineering. D.H. Dube, E. Clark


60. Synthesis of chitosan beads enclosed magnetic Fe₃O₄ nanoparticles endorsed several applications from environmental remediation to bio-nanocomposite integration in biomedicine interdisciplinary fields. V. Fernandez-Alos, A. Padilla, C. Castro-Alvarado, F.R. Roman

61. Hybrid ceramide–gypsogenin triterpene saponin as a vaccine adjuvant. V. Pathak, A.K. Pathak


63. Structural characterization of a newly discovered trisaccharide in banana fruit ethanol extract. M.A. Madson

64. Effect of conjugation and microwave treatment on structure and functional characteristics of gum karaya (Sterculia urens). H. Mirhosseini, E. Shekarforoush

65. Synthesis, characterization, and application of soy protein flour-based additive to increase the dry strength of recycled and virgin paper furnish. A. Salam, L. Lucia, H. Jameel

66. Structural insight into glycosylated human Notch1 EGF12 analogs. S. Hayakawa, H. Hinou, S. Nishimura

67. Metabolism of four metabolic chemical reporters and their relative selectivity for different glycoproteins. A. Batt, M. Pratt

68. Changes in metabolic chemical reporter structure yield a selective probe of O-GlcNAc modification. K.N. Chuh

69. Efficient method for the incorporation of molecular probes at multiple/specific sites in RNA: Levulinyl protection for 2′-ACE®, 5′-silyl oligoribonucleotide synthesis. M.O. Delaney

70. Aldehyde bearing triterpene saponins as vaccine adjuvants. V. Pathak, A. K. Pathak

71. Xanthan: Conformation, degradation, and hydrophobic modification. I. Jenssen, A. Ulset, H. Schols, A. Roy, F. Renou, B. Christensen

72. Alkali pretreatment of cellulose I to cellulose II with thiourea as an additive. V. Uniyal, P. Gupta, S. Naithani

73. Immunomodulation of the linear b-(1,3)-glucan frSaccharomyces cerevisiae through activation of mitogen-activated protein kinases and nuclear factor-kB in murine RAW264.7 macrophages. X. Xu

74. O-mannosylated glycan induced conformational alteration of α-dystroglycan fragment. H. Hinou, S. Nishimura
Efficient and α-selective glycosylation using 3-iodo Kdo (3-deoxy-D-manno-oct-2-ulosonic acid) fluoride donors. **B. Pokorny**, P. Kosma