2015 Michael, Marcia, and Christa Parseghian Scientific Conference

for

Niemann-Pick Type C Research

Notre Dame, Indiana June 11-13, 2015

THURSDAY, JUNE 11

Jordan Hall of Science, Room 105

1:30 – 1:45 p.m. Opening Remarks
Cindy Parseghian
Ara Parseghian Medical Research Foundation

SESSION I:
Jordan Hall of Science, Room 105

1:45 – 2:15 p.m. NPC1-mediated Cholesterol export from lysosomes
Jian Li, Peter L. Lee, Piyali Saha, Suzanne R. Pfeffer[1]
[1]Department of Biochemistry, Stanford University School of Medicine

2:15 – 2:45 p.m. Cholesterol trafficking between the endocytic compartment and endoplasmic reticulum at ORP1L-VAP membrane contacts
Nicholas L. Cianciola, Cathleen R. Carlin[1]
[1]Department of Molecular Biology and Microbiology, Case Western Reserve University

2:45 – 3:05 p.m. CRISPR/Cas9 Technology for the Study and Treatment of NPC Disease
Guosheng Liang[1]
[1]Associate Professor, Department of Molecular Genetics, University of Texas Southwestern Medical Center
(Poster Talk)

3:05 – 3:20 p.m. Discussion

SESSION II:
Jordan Hall of Science, Room 105

3:35 – 3:55 p.m. Adeno-associated viral gene therapy to treat Niemann-Pick disease, type C1
Randy J. Chandler, Ian M. Williams, Arturo A. Incao, Forbes D. Porter, William J. Pavan, Charles P. Venditti[1]
[1]National Institutes of Health
(Poster Talk)

3:55 - 4:25 p.m. Targeting oxLDL to combat NPC1

Tom Houben, Sofie Walenbergh, Tim Hendrikx, Patrick van Gorp, Mike Jeurissen, Jieyi Li, Fons Verheyen, Marion J. Gijbels[1], Christoph J Binder[2, 3], Ger Koek[4], Marten Hofker[5], Dieter Lütjohann[6], Ronit Shiri-Sverdlov[1]

[1]Departments of Molecular Genetics, Molecular Cell Biology and Electron Microscopy, Nutrition and Toxicology Research (NUTRIM) Institute of Maastricht, University of Maastricht, Maastricht, The Netherlands, [2]Center for Molecular Medicine (CeMM), Austrian Academy of Sciences, Vienna, Austria, [3]Department of Laboratory Medicine, Medical University of Vienna, Vienna, Austria, [4]Department of Internal Medicine, Division of Gastroenterology and Hepatology, Maastricht University Medical Center (MUMC), Maastricht, The Netherlands, [5]Department of Pathology and Medical Biology, Molecular Genetics, Medical Biology Section, University of Groningen, University Medical Center Groningen, Groningen, The Netherlands, [6]Institute of Clinical Chemistry and Clinical Pharmacology, University of Bonn, Germany

4:25 – 4:55 p.m. Modifying Niemann Pick type C disease

Stephen L. Sturley, Claudia Dall'Armi, Elizabeta Micevska, Gil Di Paulo[1], Karen Reue[2], Andrew Munkacsi[3]

[1]Columbia University Medical Center, [2]UCLA Medical School and [3]University of Wellington, New Zealand

4:55 – 5:15 p.m. Discussion

FRIDAY, JUNE 12

SESSION III:
Jordan Hall of Science, Room 105

8:00 – 8:30 a.m. Design and Synthesis of Small Molecule Agents for the Study and Treatment of Niemann-Pick Type C Disease

Olaf Wiest, Paul Helquist[1], Edward Holson[2]

[1]University of Notre Dame, [2]The Broad Institute of MIT and Harvard

8:30 – 9:00 a.m. Testing Histone Deacetylase Inhibitors as NPC Therapeutics

Frederick R. Maxfield, Dana Cruz, Shu Mao, Nina Pipalia[1]

[1]Weill Cornell Medical College, New York, NY

9:00 – 9:30 a.m. Histone Deacetylase Inhibitors as NPC1 Therapeutics

Daniel Ory, Anita Chacko, Abbey Wolfensen, and Maria Praggastis[1]

[1]Washington University School of Medicine

9:30 – 10:00 a.m. HDACi treatment in a murine model of Niemann-Pick Type C disease

Suhail Alam, Michelle Getz, Yana Fedotova, and Kasturi Haldar[1]

[1]Department of Biological Sciences, University of Notre Dame

10:00 – 10:15 a.m. Discussion

SESSION IV: (CLOSED; RESEARCHERS ONLY)
Jordan Hall of Science, Room 105

10:30 – 11:00 a.m. Therapeutic trials for Niemann-Pick Disease, Type C1: Phase 1/2 Studies of HPβCD and vorinostat
Forbes D. Porter[1], the TRND Team, and the HDACi Collaborative Group
[1]The National Institutes of Health

11:00 – 11:30 a.m. Therapeutic trials for Niemann-Pick Disease, Type C1: Phase 2/3 Studies of HPβCD
Ben Machielse[1]
[1]Vtesse

11:30 – 12:00 p.m. Objective Clinical Efficacy Outcome Measures for Cyclodextrin Treatment in Niemann-Pick Type C (NP-C): A Five-Domain Approach
Elizabeth Berry-Kravis[1, 2, 3], Joanne O'Keefe[4], Anne Hoffmann[1, 5], Amy Winston[5], Lisa LaGorio[5], Erin Robertson[4], Jamie Chin[1], Sue Leurgans[2, 5]

Departments of [1]Pediatrics, [2]Neurological Sciences, [3]Biochemistry, [4]Anatomy and Cell Biology [5]Communication Disorders and Sciences, [6]Preventive Medicine, Rush University Medical Center

12:00 – 12:15 p.m. Discussion

SESSION V:
Jordan Hall of Science, Room 105

1:30 – 1:50 p.m. StARD9 is a Novel Kinesin Required for Motility and Tubulation of Late Endosomes/Lysosomes Containing NPC1
Kevin T. Vaughan, Alexandria Brumfield, Kara L. Huegel, Patricia S. Vaughan, Michelle V. Joyce, Bill Boggess[1], Edward H. Hinchcliffe[2]
[1]Departments of Biological Sciences and Chemistry and Biochemistry, University of Notre Dame, [2] Hormel Institute, University of Minnesota
(Poster Talk)

1:50 – 2:10 p.m. An Evolutionary Approach to Precision Drug Discovery for Niemann-Pick C
Ethan O. Perlstein, Nina DiPrimio, Tom A. Hartl, Sangeetha Iyer, Tamy Portillo Rodriguez, Alec Ludin[1]
[1]Perlstein Lab PBC
(Poster Talk)

2:10 – 2:30 p.m. Regulation of Cholesterol Homeostasis with Spliceosome Inhibitor GEX1A, A Potentially Novel Lead for Niemann-Pick Type C Disease

Jarred Pickering, Eve Granatosky, D. Cole Stevens, Richard Taylor[1], Nina DiPrimio, Ethan Perlstein[2]
[1]The Warren Family Center for Drug Discovery and Development, Department of Chemistry & Biochemistry, University of Notre Dame, Perlstein Lab PBC[2]
(Poster Talk)

2:30 – 4:30 p.m. POSTER SESSION
Jordan Hall Galleria

CRISPR/Cas9 Technology for the Study and Treatment of NPC Disease
Guosheng Liang[1]
[1]Associate Professor, Department of Molecular Genetics, University of Texas Southwestern Medical Center

Adeno-associated viral gene therapy to treat Niemann-Pick disease, type C1
Randy J. Chandler, Ian M. Williams, Arturo A. Incao, Forbes D. Porter, William J. Pavan, Charles P. Venditti[1]
[1]National Institutes of Health

StARD9 is a Novel Kinesin Required for Motility and Tubulation of Late Endosomes/Lysosomes Containing NPC1
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Jarred Pickering, Eve Granatosky, D. Cole Stevens, Richard Taylor[1], Nina DiPrimio, Ethan Perlstein[2]
[1]The Warren Family Center for Drug Discovery and Development, Department of Chemistry & Biochemistry, University of Notre Dame, [2]Perlstein Lab PBC

The active form of FTY720/FINGOLIMOD is an HDAC inhibitor that increases NPC1 and NPC2 expression
Jason Newton, Nitai C. Hait, Sheldon Milstien, Sarah Spiegel[1]
[1]Department of Biochemistry and Molecular Biology, VCU School of Medicine

Screening HDAC Inhibitors for Improvement of NPC Cell Cholesterol Accumulation Phenotype
Dana Cruz, Shu Mao, Deepti Gadi, Nina Pipalia[1], Edward Holson[2], Paul Helquist, Olaf Wiest[3], Frederick R. Maxfield[1]

[1]*Weill Cornell Medical College,* [2]*The Broad Institute of MIT and Harvard,* [3]*University of Notre Dame*

The PKC activator, bryostatin 1, improves lipid transport in Niemann Pick C1 cells
Fannie Chen, Jagruti Chaudhari, Yiannis Ioannou[1], Sam Kongsamut, Warren Wasiewski[2]
Department of Genetics and Genomic Sciences, the Mount Sinai School of Medicine[1], and Neurotrope BioScience Inc.[2]

Intrathecal AAV-mediated gene therapy for feline NPC1 disease
Brittney L. Gurda, Gary Swain, Jessica Bagal, Maria Prociuk, Allison Bradbury, Charles H. Vite[1]
[1]*University of Pennsylvania, School of Veterinary Medicine*

Regulation of Cholesterol Homeostasis with the Polyketide GEX1A, A Potential Lead for Niemann-Pick Type C Disease
Jarred Pickering, Eve Granatosky, D. Cole Stevens, Michael Ahlers, Richard Taylor[1], Nina DiPrimio, Ethan Perlstein[2]
[1]*The Warren Family Center for Drug Discovery and Development, Department of Chemistry and Biochemistry, University of Notre Dame,* [2]*Perlstein Lab PBC*

Pharmacokinetic, Biodistribution, and Plasma Protein Binding Properties of 2-Hydroxypropyl-β-Cyclodextrin:Pluronic Polyrotaxanes
Christopher J. Collins, Yawo Mondjinou, Bradley Loren, David H. Thompson*[1]
[1]*Purdue University, Department of Chemistry, Multi-disciplinary Cancer Research Facility*

SATURDAY, JUNE 13

SESSION VI:
Jordan Hall of Science, Room 105

8:20 – 8:50 a.m. Mechanism of cholesterol accumulation and cyclodextrin-mediated reversal in NPC disease
Valérie Demais[1], Amelie Barthelemy, Nicole Ungerer[2], Céline Keime[3], Martine Perraut, Frank W. Pfrieger[2]
[1]*Plateforme Imagerie in Vitro, Strasbourg, France,* [2]*Institute of Cellular and Integrative Neurosciences, University of Strasbourg, Strasbourg, France,* [3]*Institut de Génétique et de Biologie Moléculaire et Cellulaire, Illkirch, France*

8:50 – 9:20 a.m. Pharmacokinetic, Biodistribution, and Plasma Protein Binding Properties of 2-Hydroxypropyl-β-Cyclodextrin:Pluronic Polyrotaxanes
Bradley Loren, Christopher J. Collins, Yawo Mondjinou, David H. Thompson[1]
[1]*Purdue University, Department of Chemistry, Multi-disciplinary Cancer Research Facility, Bindley Bioscience Center*

9:20 – 9:50 a.m. Neuronal dysfunction in Niemann Pick C1 disease: impact of early developmental defects and efficacy of hydroxypropyl-betacyclodextrin in correcting the phenotype

Sonia Canterini, Giampiero Palladino, Jessica Dragotto, Paola Caporali, Francesco Bruno, Georgia Abate[1], Stefano Loizzo[2], Robert P. Erickson[3], Maria Teresa Fiorenza[1]

[1]Department of Psychology, Section of Neuroscience and "Daniel Bovet" Neurobiology Research Center, Sapienza University of Rome, Italy, [2]Department of Therapeutic Research and Medicines Evaluation, ISS, Rome, Italy, [3]Department of Pediatrics, University of Arizona

9:50 – 10:10 a.m. Use of mitoprotective compounds as a therapeutic strategy to promote survival of Niemann-Pick type C1 neurons

John Steele, Paulina Ordonez, Larry Goldstein[1]

[1]University of California San Diego

10:10 – 10:25 a.m. Discussion

SESSION VII:
Jordan Hall of Science, Room 105

10:45 – 11:15a.m. The active form of FTY720/FINGOLIMOD is an HDAC inhibitor that increases NPC1 and NPC2 expression

Jason Newton, Nitai C. Hait, Sheldon Milstien, Sarah Spiegel[1]

[1]Department of Biochemistry and Molecular Biology, VCU School of Medicine

11:15 – 11:45 a.m. Development of a Newborn Screen for NPC1 Disease Based on a Novel Blood-Based Disease Biomarker

Xuntian Jiang, Rohini Sidhu, David E. Scherrer[1], Laurel Mydock[2], Douglas Covey, Fong-Fu Hsu[3], Nicole M. Yanjanin, Forbes D. Porter[4], Dennis J. Dietzen[5], Elizabeth Berry-Kravis[7], Joseph J. Orsini[6], Jean E. Schaffer, Daniel S. Ory[1]

[1]Diabetic Cardiovascular Disease Center, [2]Department of Developmental Biology, [3]Department of Internal Medicine, [5]Department of Pediatrics, Washington University School of Medicine, [4]Program in Developmental Endocrinology and Genetics, Eunice Kennedy Shriver National Institute of Child Health and Human Development, NIH, DHHS, [6]New York State Department of Health, [7]Rush University Medical Center

11:45 – 12:15 p.m. NPC Disease: new targets, new tissues, new technology

Karen S. Pawlowski, Nancy S. Gonzalez, Jeffrey G. McDonald, and Joyce J. Repa[1]

[1]UT Southwestern Medical Center

12:15 – 12:30 p.m. Discussion

12:30 – 12:45 p.m. Closing comments