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Program and Abstracts

The Twenty-Second International Conference on Antiviral Research

Sponsored by:

The International Society For Antiviral Research

Miami Beach Resort & Spa

Miami Beach, Florida, USA

May 3–7, 2009

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Organization

International Society for Antiviral Research and Twenty-Second International Conference on Antiviral Research

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The International Society For Antiviral Research (ISAR)

The Society was organized in 1987 as a non-profit scientific organization for the purpose of advancing and disseminating knowledge in all areas of antiviral research. To achieve this objective, the Society organizes an annual meeting. The Society is now in its twenty-third year of existence, and has about 550 members representing 30 countries. For membership application forms or further information, please contact Dr. Susan Cox, Secretary, ISAR; Senior Vice President, Drug Development, Avexa Ltd., 576 Swan Street, Richmond, VIC 3121, Australia, telephone +61 3 9208 4066; fax +61 3 9208 4004; E-mail: scox@avexa.com.au. Membership application forms will also be available at the Conference Registration desk, or from our website www.isar-icar.com.



Contributors to the 22nd International Conference on Antiviral Research



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Office of AIDS Research, National Institutes of Health, Bethesda, MD, USA

KEYNOTE ADDRESS**“Beautiful Biology But Bad Chemistry: Recognizing Chemistry Problems Earlier Rather Than Later”**

Christopher Lipinski, Ph.D.

Sunday, May 3, 2009

5:00–6:00 p.m.

Mediterranean East

MINI-SYMPOSIA**“Development of Novel Therapies for HCV: Continuing the Fight”**

Monday, May 4, 2009

8:00–12:00 p.m.

Mediterranean East

“Clinical Update on Antiviral Drugs”

Tuesday, May 5, 2009

1:00–4:00 p.m.

Mediterranean East

“Perspectives and Challenges in the Development Of Topical Microbicides”

Thursday, May 7, 2009

8:00–10:00 a.m.

Mediterranean East

Conference Banquet

Wednesday, May 6, 2009

Reception

7:30 p.m.

Grande Promenade

SOCIAL EVENTS**Opening Reception**

with light hors d'oeuvres

Sunday, May 3, 2009

6:00–8:00 p.m.

Grande Promenade

Dinner and Program

8:00–10:00 p.m.

Grande Promenade

***All Scientific and Social Events will be held in the
Miami Beach Resort & Spa***

Final Program

Twenty-Second International Conference on Antiviral Research

Sponsored by the

International Society for Antiviral Research

Miami Beach Resort & Spa

Miami Beach, Florida, USA

May 3–7, 2009

Sunday, May 3, 2009**Drug Discovery and Development 101**

Chairs: Joe Colacino, Ph.D. and Amy Patick, Ph.D.

Mediterranean East

13:00–16:00

- 13:00 1. Medicinal Chemistry and Lead Product Discovery
Chris Lipinski, Ph.D.
Melior Discovery, Waterford, CT, USA
- 14:00 2. Product Development: Getting to the IND
Shayne Gad, Ph.D.
CAD Consulting Services, Cary, NC, USA
- 15:00 3. ICAR Panelists: A Discussion of Development Successes and Failures: Karen Biron, Ph.D., Tomas Cihlar, Ph.D., Joe Colacino, Ph.D., Susan Cox, Ph.D., Phil Furman, Ph.D., Klaus Klumpp, Ph.D, Amy Patick, Ph.D., and Simon Tucker, Ph.D.

Opening Greetings

Mediterranean East

16:45–17:00

- 16:45 4. Welcome to the 22nd ICAR
Amy Patick, Ph.D.
President, ISAR
- 16:50 5. Welcome to Miami Beach
Christopher McGuigan, Ph.D
Chair, ICAR Conference Committee
- 16:55 6. Introduction of the Keynote Speaker
Joseph Colacino, Ph.D.
President-Elect, ISAR

Keynote Address

Chairs: Joe Colacino, Ph.D

Mediterranean East

17:00–18:00

- 17:00 7. Beautiful Biology But Bad Chemistry: Recognizing Chemistry Problems Earlier Rather Than Later
Christopher Lipinski, Ph.D.
Melior Discovery, Waterford CT, USA

Monday, May 4, 2009**Oral Session 1: Mini-Symposium: Development of Novel Therapies for Hepatitis C Virus (HCV): Continuing the Fight**

Chairs: Phillip Furman, Ph.D. and Julian Symons, Ph.D.

Mediterranean East

08:00–12:00

- 08:00 8. HCV and the Immune Response
Stan Lemon, Ph.D.
University of Texas Medical Branch, Galveston, TX, USA
- 08:30 9. The Complexities of Hepatitis C Virus Entry
Jane McKeating, Ph.D.
University of Birmingham, United Kingdom
- 09:00 10. Targeting Hepatitis C Virus NS2—An Unusual Protease with Multiple Functions
Thomas Pietschmann, Ph.D.
TWINCORE-Center for Experimental and Clinical Infection Research, Hannover, Germany
- 09:30 Break
- 10:00 11. New Methods to Identify and Analyze HCV Helicase Inhibitors
David Frick, Ph.D.
New York Medical College, Valhalla, NY, USA
- 10:30 12. New Targets Within Hepatitis C Virus NS4B
Jeffrey Glenn, Ph.D.
Stanford University School of Medicine, Stanford, CA, USA
- 11:00 13. The Hepatitis C Virus NS5A: New Functions and New Mysteries
Tim Tellinghuisen, Ph.D.
The Scripps Research Institute, Jupiter, FL, USA
- 11:30 Panel Discussion

Elion Award Lecture

Mediterranean East

- 13:00 14. Presentation of the Award
Amy Patick, Ph.D.
President, ISAR
- 13:10 15. Award Lecture: Following Acyclovir—The Quest for a More Potent CMV Drug
Karen Biron, Ph.D.
Pathfinder Pharmaceuticals, Inc., Raleigh, NC, USA

Oral Session 2: Hepatitis Viruses

Chairs: Chris Roberts, Ph.D., and Klaus Klumpp, Ph.D.

Mediterranean East

13:45–16:00

- 13:45 16. 2'-Deoxy-Nucleoside Analogs can be Potent Dual Inhibitors of HCV and HIV Replication with Selectivity against Human Polymerases
Klaus Klumpp¹, Guoping Su^{1,2}, Vincent Leveque¹, Jerome Deval¹, Gabrielle Heilek¹, Sonal Rajyaguru¹, Yu Li¹, Julie Q. Hang¹, Han Ma¹, Nicole Inocencio¹, Genadiy Kalayanov³, Anna Winqvist³, David B. Smith¹, Nick Cammack¹, Nils Gunnar Johansson³, Isabel Najera¹
¹Roche, Palo Alto, CA, United States; ²Rigel, South San Francisco, CA; United States; ³Medivir, Huddinge, Sweden
- 14:00 17. A Role for Nitazoxanide in Combination with STAT-C Agents for Inhibition of HCV Replication and the Potential for the Prevention of Viral Resistance
Brent Korba¹, Jeffery Glenn², Menashe Elazar², Jean-François Rossignol^{2,3}
¹Georgetown University Medical Center, Washington, DC, United States; ²Stanford University School of Medicine, Stanford, CA, United States; ³The Romark Institute for Medical Research, Tampa, FL, United States
- 14:15 18. Discovery and *In Vitro* Characterization of a Novel, Chain-terminating Tricyclic Nucleoside, GI60630, With Potent Anti-HCV Activity
Christopher Roberts, Jesse Keicher, Samantha Koo-McCoy, Derek Latour, Jeffrey Pouliot, Kevin Fung, John Zhang, Mohan Sivaraja, Mark Cunningham, Jill Bechtel, Lillian Lou, Natalia Dyatkina, Ting Wang, Wenbao Li, Amy K. Patick, Ronald Griffith
Genelabs Technologies, Inc., Redwood City, CA, United States
- 14:30 19. *In Vitro* Anti-Hepatitis C Virus (HCV) Activities and Resistance Profile of DEBIO 025—A Non-immunosuppressive Cyclophilin Binding Molecule
Lotte Coelmont¹, Philippe Galloway², Michael Bobardt², Suzanne Kaptein¹, Jan Paeshuyse¹, Inge Vliegen¹, Grégoire Vuagniaux³, Johan Neyts¹
¹Rega Institute, Leuven, Belgium; ²The Scripps Research Institute, La Jolla, CA, United States; ³Debiopharm, Lausanne, Switzerland
- 14:45 20. DUY11—A Rigid Amphipathic Fusion Inhibitor, Inhibits HCV Infectivity By Modulating Membrane Curvature
M St. Vincent¹, A. Ustinov², N. Barsby¹, M. Joyce¹, L. Tyrrell¹, R. Epand³, R. Epand³, V. Korshun², L. Schang¹
¹Biochem and Med Micro & Immuno, University of Alberta, AB, Canada; ²Shemyakin-Ovchinnikov Institute, Russian Academy of Sciences, Russia; ³Biochem. & Biomed. Sci., McMaster University, ON, Canada
- 15:00 21. Comparative Study of the Genetic Barrier and Pathways towards Resistance of Selective Inhibitors of HCV Replication
Inge Vliegen, Leen Delang, Johan Neyts
Rega Institute for Medical Research, KU Leuven, Leuven, Belgium
- 15:15 22. A Tetrazolo-pyrimidine Induces Intracellular Redistribution of Hepatitis B Surface Antigen, Resulting in Reduced Secretion
Cally Goddard¹, Haitao Guo², Xiadong Xu^{1,3}, Wenquan Yu^{1,3}, Courtney Mills¹, Timothy Block^{1,2}, Andrea Cuconati^{1,3}
¹Institute for Hepatitis and Virus Research, Doylestown, PA, United States; ²Drexel Institute for Biotechnology and Virology Research, Doylestown, PA, United States; ³Pharmabridge, Inc., Doylestown, PA, United States
- 15:30 23. Inhibition of Hepatitis B Virus Replication by a Set of Small Interferon-stimulated Genes
Haitao Guo^{1,2}, Jessica Levy², Dong Jiang^{1,2}, Ju-Tao Guo^{1,2}, Timothy Block^{1,2}
¹Drexel Institute for Biotechnology and Virology Research, Drexel University College of Medicine, Doylestown, PA, United States; ²Institute for Hepatitis and Virus Research, Hepatitis B Foundation, Doylestown, PA, United States
- 15:45 24. Administration of a HepDirect™ Prodrug of 2'-C-Methylcytidine to Hepatitis C Virus Infected Chimpanzees
Steven Carroll¹, Kenneth Koeplinger¹, Marissa Vavrek¹, Laurence Handt¹, Malcolm MacCoss¹, Scott Hecker², David Olsen¹
¹Merck Research Laboratories, West Point, PA, United States; ²Metabasis Therapeutics, San Diego, CA, United States

Poster Session 1: Retroviruses, Hepatitis Viruses, Respiratory Viruses, Emerging Viruses, and Antiviral Methods

Mediterranean West and Central

16:00–18:00

25. Antiviral Activity of Carbohydrate Binding Agents (CBAS) and the Role of DC-sign in Dengue Virus and HIV Infection
Marijke Alen, Suzanne J.F. Kaptein, Tine De Burghgraef, Johan Neyts, Jan Balzarini, Dominique Schols
Rega Institute for Medical Research, Leuven, Belgium
26. Evaluation of the Anti-HIV Activity of Natalizumab—An Antibody against Integrin Alpha 4
Ester Ballana¹, Eduardo Pauls¹, Gemma Moncunill¹, Margarida Bofill¹, Bonaventura Clotet¹, Cristina Ramo-Tello², José A. Esté¹
¹Retrovirology Laboratory IrsiCaixa, Hospital Universitari Germans Trias i Pujol, Badalona, Spain; ²Neurology Unit, Hospital Universitari Germans Trias i Pujol, Badalona, Spain
27. Antiviral Activity of Unithiolium against the Human Immunodeficiency Virus and Herpes Simplex Virus
Alla Fedchuk¹, Victor Lozitsky², Tatyana Gridina³, Svetlana Rybalko⁴, Dasha Fedorchenko⁵, Olga Maximenok⁶, Felix Ershov⁷, Olga Shcheglovitova⁸
¹Ukrainian Research Anti-Plague Institute, Odessa, Ukraine; ²Institute of Epidemiology and Infection Diseases, Kyiv, Ukraine; ³Research Institute of Epidemiology and Microbiology, Moscow, Russia
28. A Novel Small Molecule CCR5 Agonist, ESN-196, with Potent R5 HIV-1 Activity
Thierry Ferain¹, Dominique Schols², Jérôme Bernard¹, Graeme Fraser¹
¹Euroscreen S.A., Gosselies, Belgium; ²Rega Institute for Medical Research, Leuven, Belgium
29. Human Immunodeficiency Virus Type 1 does not Escape from Novel Single-stranded Dnazyme Expression-mediated Inhibition
Yuichiro Habu^{1,2}, Ryuichi Sugiyama¹, Hiroshi Takaku¹
¹Chiba Institute of Technology, Narashino, Japan; ²Colorado State University, Fort Collins, CO, United States
30. In Silico Screening for Anti-HIV-1 Compounds Targeting to Human Cyclin T1
Takayuki Hamasaki^{1,2}, Masanori Baba¹
¹Center for Chronic Viral Diseases, Kagoshima University, Kagoshima, Japan; ²Japanese foundation for AIDS prevention, Tokyo, Japan
31. Predicted Models of Resistance and Hypersensitivity Conferred by Natural Polymorphisms of HIV-1 Integrase
Raymond Hewer¹, Telisha Traut^{1,2}, Judy Coates¹, Bradley Williams²
¹Mintek, Johannesburg, South Africa; ²University of Johannesburg, Johannesburg, South Africa
32. Synergistic Inhibition of Bovine Leukemia Virus Replication *In Vitro* by Ribavirin and Alpha-Interferon
Jeffrey Isaacson¹, Charles Wood², Jay Reddy²
¹Nebraska Wesleyan University, Lincoln, NE, United States; ²Nebraska Center for Virology, University of Nebraska, Lincoln, NE, United States
33. Design of Artificial Polyepitope DNA Vaccine Constructs for Eliciting of HIV-specific CD8+ CTL Responses
Svetlana Oreshkova, Sergey Bazhan, Pavel Belavin, Tatyana Ilyicheva, Sergey Seregin, Alexander Ilyichev, Larisa Karpenko
State Research Center of Virology and Biotechnology Vector, Koltsovo, Novosibirsk region, Russia

34. Feglymycin—A Unique 13 Amino-acid Peptide, with a Novel Mechanism of Anti-HIV-1 Activity
*Dominique Schols*¹, Geoffrey Férrir¹, Bart Hoorelbeke¹, Anne Hänchen², Frank Dettner², Roderich D. Süßmuth²
¹Rega Institute for Medical Research, Leuven, Belgium; ²Technische Universität Berlin, Berlin, Germany
35. Anti-HIV-1 Activity of A3g is Enhanced by Hsp70
*Ryuichi Sugiyama*¹, Yuichiro Habu^{2,3}, Haruki Naganuma¹, Hiroshi Koseki¹, Ayako Furukawa⁴, Takashi Nagata⁴, Masato Katahira⁴, Hiroshi Takaku^{1,3}
¹Department of Life and Environmental Science, Chiba Institute of Technology, Chiba, Japan; ²Department Microbiology, Immunology and Pathology, Colorado State University, Fort Collins, CO, United States; ³High Technology Research Center, Chiba Institute of Technology, Chiba, Japan; ⁴International Graduate School of Arts and Sciences, Yokohama City University, Kanagawa, Japan
36. Immediate and Persistent Anti-HIV-1 Activity of the Biguanide-based Compound NB325 Involves Specific Interactions with the Viral Co-Receptor CXCR4
*Nina Thakkar*¹, Vanessa Pirrone¹, Shendra Passic¹, Mohamed Labib², Robert Rando², Brian Wigdahl¹, Fred Krebs¹
¹Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, United States; ²Novaflux Biosciences, Inc., Princeton, NJ, United States
37. From β -Amino- γ -Sultone to New Bicyclic Pyridine and Pyrazine Heterocyclic Systems: Discovery of a Novel Class of HIV-1 Non-nucleoside Inhibitors
*Sonsoles Velazquez*¹, Sonia De Castro¹, Jan Balzarini², María-Jose Camarasa¹
¹Instituto De Química Médica (C.S.I.C.), 28006 Madrid, Spain; ²Rega Institute For Medical Research, Katholieke Universiteit Leuven, B-3000 Leuven, Belgium
38. A Small Llama Antibody Fragment Efficiently Inhibits the HIV Rev Multimerization *In Vitro*
*Thomas Vercruyssen*¹, Els Pardon², Jan Steyaert², Dirk Daelemans¹
¹Rega Institute For Medical Research, Katholieke Universiteit Leuven, B-3000 Leuven, Belgium; ²Structural Biology Brussels, Vrije Universiteit Brussels, and Department of Molecular Interactions, VIB, B-1050 Brussels, Belgium
39. Study of the Retention of Metabolites of 4'-Ed4t—A Novel Anti-HIV-1 Thymidine Analog in Cells
*Xin Wang*¹, Hiromichi Tanaka², Masanori Baba³, Yung-Chi Cheng¹
¹Department of Pharmacology, Yale University School of Medicine, New Haven, CT, United States; ²School of Pharmaceutical Sciences, Showa University, Tokyo, Japan; ³Division of Antiviral Chemotherapy, Center For Chronic Viral Diseases, Graduate School of Medical and Dental Sciences, Kagoshima University, Kagoshima, Japan
40. A High-content Screening Approach to Identify Compounds that Interfere with the Formation of the Hepatitis C Virus Replication Complex
J.M. Berke, D. Fenistein, F. Pauwels, O. Lenz, T.-I. Lin, E. Krausz, G. Fanning
Tibotec BVBA, Generaal De Wittelaan L11B 3, 2800 Mechelen, Belgium
41. A Novel HCV Replication Mouse Model Using Human Hepatocellular Carcinoma Xenografts
Carl Guévin, Alain Lamarre, Patrick Labonté
INRS-Institut Armand-Frappier, Laval, QC, Canada
42. *In Vitro* Activity and *In Vivo* Pharmacokinetics of Highly Potent Phosphoramidate Nucleoside Analogue Inhibitors of Hepatitis C NS5B
*J. Hutchins*¹, S. Chanberlain¹, C. Chang¹, B. Ganguly¹, E. Gorovits¹, A. Hall¹, G. Henson¹, A. Kolykhalov¹, Y. Liu¹, J. Muhammad¹, P. Perrone², A. Gilles², S. Holl², K. Madela², C. Mcguigan², J. Patti¹
¹Inhibitex, Alpharetta, GA, United States; ²Cardiff University, Cardiff, Wales
43. Hepatitis C Virus NS5A Protein *In Vitro* Modulates Template Selection by the RNA-dependent RNA Polymerase
*Olga Ivanova*¹, Vera Tunitskaya¹, Alexander Ivanov^{1,2}, Vladimir Mitkevich^{1,2}, Vladimir Prassolov¹, Alexander Makarov¹, Marina Kukhanova¹, Sergey Kochetkov¹
¹Engelhardt Institute of Molecular Biology, Moscow, Russia; ²University of Oslo, Center For Medical Studies In Russia, Moscow, Russia
44. Comparison of Various Combination Therapies for the Treatment of Yellow Fever Virus
*Justin Julander*¹, Don Smee¹, John Morrey¹, Yousuke Furuta²
¹Institute For Antiviral Research, Logan, UT, United States; ²Toyama Chemical Co., Ltd., Tokyo, Japan
45. A New Series of Tricyclic Nucleosides as Potent Inhibitors of Hepatitis C Virus RNA Replication: Design, Synthesis and Structure–Activity Relationships
Jesse Keicher, Natalia Dyatkina, Xiaoling Zheng, Vivek Rajwanshi, Marija Prhavc, Samantha Koo-Mccoy, Kevin Fung, Derek Latour, Mohan Sivaraja, Uli Schmitz, Christopher Roberts, Ronald Griffith
Genelabs Technologies, Redwood City, CA, United States
46. Phosphoramidate Protides Greatly Enhance the Anti-HCV Activity of 2'-Methylguanosine
*Karolina Madela*¹, Plinio Perrone¹, Arnaud Gilles¹, Johan Neyts², Chris Mcguigan¹
¹Welsh School of Pharmacy, Cardiff University, Cardiff, United Kingdom; ²Rega Institute For Medical Research, Leuven, Belgium
47. Use of the Bellocell System to Determine the Optimal Dose of Ribavirin to Inhibit the Expression of an HCV Replicon in 2209-23 Cells
James Mcsharry, Diane Singer, Robert Kulawy, Ashley Brown, George Drusano
Ordway Research Institute, Albany, NY, United States
48. Silibinin (Legalon-Sil) Inhibits HCV Replication *In Vitro*
*Isabel Najera*¹, Vincent Leveque¹, Matt Mccown¹, Julie Q. Hang¹, Han Ma¹, Sonal Rajyaguru¹, Amy Fung¹, Yanli Yang¹, Yang Liu¹, Simran Kular¹, Nick Cammack¹, Peter Ferenci², Klaus Klumpp¹
¹Roche, Palo Alto, CA, United States; ²Medical University of Vienna, Vienna, Austria
49. Therapeutic Efficacy of the Amphipathic DNA Polymer REP 9AC in the Treatment of Duck Hepatitis B Virus Infection *In Vivo*
*Faseeha Nordeen*¹, Arend Grosse^{1,2}, Jean-Marc Juteau³, Andrew Vaillant³, Allison Jilbert^{1,2}
¹School of Molecular and Biomedical Science, The University of Adelaide, Adelaide, Australia; ²Infectious Diseases Laboratories, SA Pathology, Adelaide, Australia; ³Replicon Inc., Laval, QC, Canada
50. Characterization of the Mechanism of Action of PG-301029: A Novel Late Stage Inhibitor of HCV Replicon Replication
Todd Parsley, Lu Yang, Robert W. Buckheit, Jr.
Imquest Biosciences, Inc., Frederick, MD, United States
51. Predictive Factors to Response to Interferon Therapies for Treatment-naïve Patients Infected with Hepatitis C Virus in Islamabad and Vicinity Areas: A Study From Pakistan
Abida Raza, Hafsa Aziz, Javed Irfan
Nuclear Medicine Oncology and Radiotherapy Institute, Islamabad, Pakistan

52. Design, Molecular Modelling Studies of Specific Targeted Candidate Inhibitors of HCV NS5B RNA Polymerase
P. Selvam¹, M. Chandramohan², J. Pranitha³, N. Saravanan Prabhu³, Muthuvels Suresh Kumar³
¹Amrita School of Pharmacy, AIMS Campus, Kochi-26, India; ²Bharat Ratna Kamarajar Jaundice, Liver Hospital and Research Centre, Madurai 01, India; ³Centre For Bioinformatics, Pondicherry University, Puducherry-14, India
53. Identification and Characterization of Pyrimidinediones as Potent Non-nucleoside Reverse Transcriptase Inhibitors of Hepatitis B Virus
Lu Yang, Todd Parsley, Robert W. Buckheit, Jr.
ImQuest BioSciences, Inc., Frederick, MD, United States
54. Prophylactic Efficacy of Intranasally Administered HSP Nanoparticles for Treating a Lethal SARS-CoV Infection in Balb/C Mice
Dale Barnard¹, James Wiley², Miles Wandersee¹, Yohichi Kumaki¹, Mark Young², Trevor Douglas², Allan Harmsen²
¹Utah State University, Logan, UT, United States; ²Montana State University, Bozeman, MT, United States; ³United States; ⁴United States
55. The Activity of New Cage Compounds Against Avian Influenza Virus (H5N1)
Evgeny Belanov¹, Marina Leonova², Vladimir Osyanin², Pavel Krasnikov², Sergey Kuznetsov², Andrey Shiraev², Evgeny Golovin², Olga Serova¹, Nikolay Bormotov¹, Sergei Balakhnin¹, Yuri Klimochkin²
¹FSRI SRC VB "Vector" Rospotrebnadzor, Novosibirsk, Russia; ²Samara State Technical University, Samara, Russia
56. Oseltamivir-resistant Subpopulations of H5N1 Influenza Variants are Genetically Stable and Virulent in Ferrets
Elena A. Govorkova, Natalia A. Ilyushina, Jennifer L. McClaren, Robert G. Webster
St. Jude Children's Research Hospital, Memphis, TN, United States
57. Inhibition of Influenza Virus Replication: Discovery and Development of Therapeutic Compounds which Suppress Viral RNA Synthesis
Tracy Hartman, Robert W. Buckheit, Jr.
ImQuest BioSciences, Inc., Frederick, MD, United States
58. Combinations of 5-Iodo-4'-Thio-2'-Deoxyuridine and ST-246 or CMX001 Synergistically Inhibit Orthopoxvirus Replication *In Vitro*
Kathy Keith¹, Shalisa Sanders¹, Kamal Tiwari², Joseph Maddry², John Secrist², Robert Jordan³, Dennis Hruby³, Randall Lanier⁴, George Painter⁴, Earl Kern¹, Mark Prichard¹
¹University of Alabama School of Medicine, Birmingham, AL, United States; ²Southern Research Institute, Birmingham, AL, United States; ³SIGA Technologies Inc., Corvallis, OR, United States; ⁴Chimerix Inc., Research Triangle Park, NC, United States
59. Induction of Interferon Gamma Inducible Protein 10 By SARS-CoV Infection, Interferon Alfacon 1 and Interferon Inducer in Human Bronchial Epithelial Calu-3 Cells and Balb/C Mice
Yohichi Kumaki, Craig W. Day, Miles K. Wandersee, Jason R. Madsen, John D. Woolcott, Justin D. Hoopes, Kevin W. Bailey, Min-Hui Wong, Donald F. Smee, John D. Morrey, Dale L. Barnard
Institute For Antiviral Research, Logan, UT, United States
60. Anti-Influenza Efficacy of Combination Apply of Proteolytic Inhibitor E-Aminocaproic Acid with Neuraminidase Inhibitor Tamiflu
V. Lozitsky¹, A. Frolov², A. Fedchuk¹, T. Grydina¹, L. Mudrik¹, L. Shitikova¹, L. Socheslo¹, V. Zadorozhnaya²
¹RAPI, Odesa, Ukraine; ²NCI&ARI, Kiev, Ukraine
61. Structure–Activity Relationship of a Novel Class of Aglycoristocetin Derivatives with Potent and Broad Activity Against Influenza Viruses
Lieve Naesens¹, Evelien Vanderlinden¹, Erzsébet Róth², József Jekő², Graciela Andrei¹, Robert Snoeck¹, Christophe Pannecouque¹, Eszter Illyés³, Gyula Batta², Pál Herczegh², Ferenc Sztaricskai²
¹Rega Institute For Medical Research, Leuven, Belgium; ²Department of Pharmaceutical Chemistry, University of Debrecen, Debrecen, Hungary; ³Department of Chemistry, Eötvös Loránd University, Budapest, Hungary
62. Cinnamon Fraction Neutralizes Avian Influenza H5N1 both *In Vitro* and *In Vivo*
Michael Ovidia, Immanuel Kalily, Emily Bernstein
Tel-Aviv University, Ramat-Aviv, Israel
63. Comparative Study of the Efficacy of Low- and High-molecular Inhibitors of Influenza Virus Hemagglutinin
S. Rak¹, E. Goncharova¹, I. Vinogradov¹, E. Ryabchikova¹, A. Chinarev², A. Tuzikov², N. Bovin², A. Ryzhikov¹
¹FSRI SRC VB Vector, Koltsovo, Russia; ²Shemyakin Institute of Bioorganic Chemistry, Moscow, Russia
64. The Antiviral Effect of a Novel Inhibitor of Influenza Virus Hemagglutinin on Influenza A (H5N1) Virus
Svetlana Rak¹, Elena Goncharova¹, Alexander Chinarev², Alexander Tuzikov², Nicolai Bovin², Alexander Ryzhikov¹
¹FSRI SRC of Virology and Biotechnology Vector, Koltsovo, Russia; ²Shemyakin Institute of Bioorganic Chemistry, Moscow, Russia
65. *In Vitro* Anti-Influenza Virus Effect of a Protease Inhibitor from a *Streptomyces* Strain
Julia Serkedjieva¹, Lidia Angelova-Duleva^{1,2}, Iskra Ivanova²
¹Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria; ²Department of Microbiology, Sofia University, Sofia, Bulgaria
66. Protective Effect of a Fungal Superoxide Dismutase Combined with a Plant Polyphenol Extract and Rimantadine Hydrochloride in the Murine Experimental Influenza Virus Infection
Julia Serkedjieva, Maria Angelova
Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria
67. Discovery of New Inhibitors of the Influenza H5N1 Virus
William Severson¹, Xi Chen¹, Joseph Maddry¹, Yong-Kyu Chu¹, Colleen Jonsson¹, Alexis Mcbrayer¹, Ronald Tapp¹, Donald Smee², Clinton Maddox¹, Subramaniam Ananthan¹, James Noah¹, Leland Black¹, Blake Moore¹, Melinda Sosa¹, Lucile White¹, Lynn Rasmussen¹
¹Southern Research Institute, Drug Discovery Division, Birmingham, AL, United States; ²Institute For Antiviral Research, Logan, UT, United States
68. Rimantadine and Oseltamivir Combination Effects in a Therapeutic Course of Application Against Influenza A (H3N2) in Mice
Lora Simeonova, Galina Gegova, Angel S. Galabov
Institute of Microbiology, Bulg. Acad. Sci., Sofia, Bulgaria
69. Combination of Neuraminidase Inhibitors with T-705 for Treating Influenza Virus Infections in Cell Culture and in Mice
Donald Smee¹, Min-Hui Wong¹, Kevin Bailey¹, John Morrey¹, Masako Maekawa², Kazumi Takahashi², Yousuke Furuta²
¹Utah State University, Logan, UT, United States; ²Toyama Chemical Co., Ltd., Toyama, Japan
70. High-Throughput Screening of Protease Inhibitor Libraries Using a Novel Dual Pseudotype-based Assay for SARS-CoV Entry
Yanchen Zhou, Kai Lu, Juliet Agudelo, Graham Simmons
Blood Systems Research Institute, and University of California, San Francisco, San Francisco, CA, United States

71. Pichinde Virus Induces Endothelial Cell Monolayer Permeability Through the Production of Nitric Oxide
Rebecca Brocato, Thomas Voss
Tulane School of Medicine, Department of Microbiology and Immunology, New Orleans, LA, United States
72. Novel Small Molecule Inhibitors of Dengue Virus Replication
Chelsea Byrd, Jessica Page, Chris Harver, Doug Grosenbach, Aklile Berhanu, Dennis Hruby, Robert Jordan
SIGA Technologies, Corvallis, OR, United States
73. Escaping Development of Drug-Resistant Mutants: Basis for Effective Chemotherapy of Enterovirus Infections
Angel S. Galabov¹, Ralitsa Vassileva-Pencheva¹, Ivanka Nikolova¹, Boris Atanasov²
¹Institute of Microbiology, Bulg. Acad. Sci., Sofia, Bulgaria; ²Institute of Organic Chemistry, Bulg. Acad. Sci., Sofia, Bulgaria
74. Escaping Development of Drug-Resistant Mutants: Basis for Effective Chemotherapy of Enterovirus Infections
Angel S. Galabov¹, Ralitsa Vassileva-Pencheva¹, Ivanka Nikolova¹, Boris Atanasov²
¹The Stephan Angeloff Institute of Microbiology, Bulg. Acad. Sci., Sofia, Bulgaria; ²Institute of Organic Chemistry, Bulg. Acad. Sci., Sofia, Bulgaria
75. Arenaviral Inhibitory Activity of MY-24—A Novel Aristeromycin Derivative
Brain Gowen¹, Kie-Hoon Jung¹, Wei Ye², Min-Hui Wang¹, Deanna Larson¹, Donald Smee¹, John Morrey¹, Stewart Schneller²
¹Institute For Antiviral Research and Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, UT, United States; ²Chemistry & Biochemistry Department, Auburn University, Auburn, AL, United States
76. Pyrazine Derivative Treatment of Phleboviral Infection in Cell Culture and Rodent Model Systems
Brian Gowen¹, Min-Hui Wong¹, Kie-Hoon Jung¹, Donald Smee¹, John Morrey¹, Yousuke Furuta²
¹Utah State University, Logan, UT, United States; ²Research Laboratories, Toyama Chemical Company, Ltd., Toyama, Japan
77. FGI-104: A Broad-Spectrum Small Molecule Inhibitor of Viral Infection
Michael Kinch¹, Abdul Yunus¹, Hanwen Mao¹, Calli Lear², Guangxiang Luo³, Michael Murray⁴, Zhuhui Huang⁴, Zena Fesseha¹, Hanson Chen¹, Gene Olinger², Michael Goldblatt¹
¹Functional Genetics, Inc., Gaithersburg, MD, United States; ²United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, MD, United States; ³Department of Microbiology Immunology and Molecular Genetics, Lexington, KY, United States; ⁴Hepatitis Research Program, Frederick, MD, United States
78. Derivatives of Tunicamycin as Effective Inhibitors of Classical Swine Fever Virus
Ewelina Krol¹, Ilona Wandzik³, Bogusław Szewczyk¹, Grzegorz Gryniewicz², Wiesław Szeja³
¹Department of Molecular Virology, University of Gdansk, Gdansk, Poland; ²Pharmaceutical Institute, Warsaw, Poland; ³Silesian Technical University, Gliwice, Poland
79. Anti-Picornavirus Activity and other Antiviral Activity of Sulfated Exopolysaccharide from the Marine Microalga *Gyrodinium impudicum* Strain KG03
Chong-Kyo Lee¹, Hae Soo Kim¹, Ju Ryung Nam¹, Myung-Jin Lee¹, Joung-Han Yim², Hong Kum Lee², Erik De Clercq³
¹Pharmacology Research Center, Korea Research Institute of Chemical Technology (KRICT), 305-600 Daejeon, Korea; ²Polar Biocenter, Korea Polar Research Institute (KOPRI), 406-840 Incheon, Korea; ³Rega Institute For Medical Research, K.U.Leuven, 3000 Leuven, Belgium
80. Assay Development for Antiviral Drug Efficacy Evaluation against Dengue Virus
Qianjun Li
University of Alabama At Birmingham, Birmingham, AL, United States
81. Structural Basis of the Disoxaril Resistance and Dependence of Coxsackievirus B1
Ivanka Nikolova¹, Angel S. Galabov¹, Rumena Petkova², Stoyan Chakarov³, Boris Atanasov⁴
¹Institute of Microbiology, Bulg. Acad. Sci., Sofia, Bulgaria; ²Scientific Technological Service, Ltd., Sofia, Bulgaria; ³Department of Biochemistry, Sofia University, Sofia, Bulgaria; ⁴Institute of Organic Chemistry, Bulg. Acad. Sci., Sofia, Bulgaria
82. Anti-Adenoviral Activity of 6-Azanucleoside Analogues
Lidiya Nosach¹, Olga Povnitsa¹, Inna Alexeeva², Larisa Palchikovska², Nadezhda Nesterova¹
¹Institute of Microbiol. & Virol., NAS of Ukraine, Kiev, Ukraine; ²Institute of Mol. Biol. & Genetic NAS of Ukraine, Kiev, Ukraine
83. Antiviral Activity of Octadecyloxypropyl Esters of 3-Hydroxy-2-(Phosphonomethoxy)Propyl Nucleosides against Adenovirus *In Vitro*
J.P. Roth¹, T.Z. Mclean¹, N. Valiaeva², J.R. Beadle², K.Y. Hostetler², D.L. Barnard¹
¹Institute For Antiviral Research, Utah State University, Logan, UT, United States; ²Division of Infectious Disease, University of California, San Diego, La Jolla, CA, United States
84. Indole Derivatives are Potent Inhibitors of HIV Integrase
Periyasamy Selvam¹, Kasthuraiah Maddali², Yves Pommier²
¹Dept. of Medicinal Chemistry, Amrita School of Pharmacy, Kochi 26, India; ²Laboratory of Molecular Pharmacology, Centre For Cancer Research, NCI, NIH, Bethesda, WA, United States
85. The Antiproliferative Effects of Octadecyloxyethyl-phosphonomethoxyethylguanine (Ode-Pmeg) on the Growth of Human Papilloma Virus Positive Cervical Carcinoma (ME-180) Cells *In Vitro* and Solid Tumors in Athymic Nude Mice
Julissa Trahan, Kathy Aldern, Karl Hostetler
University of California San Diego and The Veterans Medical Research Foundation, San Diego, CA, United States
86. Antiviral Activity of Geneticin Against Dengue Virus
Xianchao Zhang¹, Peter Mason², Edward Dubovi³, Alex Birk¹
¹Institute For Hepatitis and Virus Research, Doylestown, PA, United States; ²University of Texas Medical Branch, Galveston, TX, United States; ³Cornell University, Ithaca, NY, United States

Tuesday, May 5, 2009

Oral Session 3: Retroviruses

Chairs: Jan Balzarini, Ph.D. and Ronald Swanstrom, Ph.D.

Mediterranean East

08:00–11:30

- 08:00 87. Plenary: A Strong Dominant Negative Mutation in the HIV-1 Gag Protein Defines a New Drug Target
Ronald Swanstrom, Ph.D.
The University of North Carolina, Chapel Hill, NC, USA
- 08:30 88. Small-molecule CCR5 Ligands that may Spare the CCR5 Function: Opportunity for New Antiviral Discovery?
Wiesław Kazmierski, Vanessa Muniz-Medina, Susan Danehower, Stacey Jones, Terry Kenakin
Glaxosmithkline, Research Triangle Park, NC, United States

- 08:45 89. Development of Hexadecyloxypropyl Tenofovir (CMX157) for HIV: Potential for use as a Microbicide and Therapeutic
Randall Lanier, Bernhard Lampert, Lawrence Trost, Merrick Almond, George Painter
Chimerix Inc, Durham, NC, United States
- 09:00 90. Toward Unsymmetrical CADA Analogs as Novel Down-modulators of the CD4 Receptor
Violeta Demillo¹, Sreenivasa Anugu¹, Kurt Vermeire², Dominique Schols², Thomas Bell¹
¹Department of Chemistry, University of Nevada, Reno, NV, United States; ²Rega Institute For Medical Research, Department of Microbiology and Immunology, Katholieke Universiteit Leuven, Leuven, Belgium
- 09:15 Break
- 09:45 91. Pradimicin-S is a Highly Soluble Non-peptidic Small-size Carbohydrate-binding Antibiotic that may Qualify as a Potential Drug Lead for HIV Treatment
J. Balzarini¹, K. François¹, K. Van Laethem¹, B. Hoorelbeke¹, J. Auwerx¹, S. Liekens¹, Y. Igarashi², T. Oki³, D. Schols¹
¹Rega Institute For Medical Research, K.U. Leuven, B-3000 Leuven, Belgium; ²Biotechnology Research Center, Toyama Prefectural University, Toyama 939-0398, Japan; ³Shoda, Sakae, Yokohama 247-0022, Japan
- 10:00 92. Highly Potent and Dual Acting Pyrimidinedione Inhibitors of HIV-1 Possess a High Genetic Barrier to Resistance
Robert W. Buckheit, Jr., Karen Watson, Tracy Hartman, Lu Yang
ImQuest BioSciences, Inc., Frederick, MD, United States
- 10:15 93. Design, Synthesis and Anti-HIV-1 Evaluation of Novel Arylazolylthioacetanilides as Potent NNRTIs
Xinyong Liu¹, Peng Zhan¹, Christophe Pannecouque², Erik De Clercq²
¹Department of Medicinal Chemistry, School of Pharmaceutical Sciences, Shandong University, 44, West Culture Road, 250012, Jinan, China; ²Rega Institute For Medical Research, Katholieke Universiteit Leuven, Minderbroedersstraat 10, Leuven, Belgium
- 10:30 94. ZNRD1 as a Host Cellular Factor Influencing HIV-1 Replication
Ester Ballana, Jordi Senserrich, Eduardo Pauls, Josep Maria Mercader, Bonaventura Clotet, Lidia Ruiz, Jorge Gallego, Frédéric Uytendaele, Amalio Telenti, Angela Cuiffi, José A. Esté
Retrovirology Laboratory Irsicaixa, Hospital Universitari Germans Trias I Pujol, Universitat Autònoma De Barcelona, Badalona, Spain
- 10:45 95. CXCR4 Chemokine Receptor Antagonists from Ultra Rigid Metal Complexes Profoundly Inhibit HIV-1 Replication and also AMD3100-resistant Strains
Stephen J. Archibald¹, Dirk Daelemans², Timothy J. Hubin³, Dana Huskens², Dominique Schols², Kristel Van Laethem², Erik De Clercq², Christophe Pannecouque²
¹Department of Chemistry and Clinical Biosciences Institute, University of Hull, Hull, HU6 7RX, United Kingdom; ²Rega Institute For Medical Research, Katholieke Universiteit Leuven, B-3000 Leuven, Belgium; ³Department of Chemistry and Physics, Southwestern Oklahoma State University, OK 73096, United States
- 11:00 96. High-throughput *In Vitro* HIV Rev-multimerization Assay
Thomas Vercruysse¹, George Pavlakis², Dirk Daelemans¹
¹Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven 3000, Belgium; ²Human Retrovirus Pathogenesis Section, National Cancer Institute, Frederick 21702-1201, MD, United States
- 11:15 97. Pre-clinical Development of IQP-0410—A Highly Potent Dual-acting Agent for the Therapy of HIV-1 Infection
Nick Kaludov, Karen Watson, Robert Buckheit, Jr.
ImQuest BioSciences Inc., Frederick, MD, United States

Clinical Symposium

Chairs: Richard Pollard, M.D. and Richard Whitley, M.D.

Mediterranean East

13:00–16:00

Poster Session 2: Herpesviruses, Poxviruses, Other Antiviral Agents, Medicinal Chemistry And Topical Microbicides

Mediterranean West and Central

16:00–18:00 p.m.

98. Antiviral Activity of Monoterpene Components of Essential Oils Against Herpes Simplex Virus
Akram Astani¹, Jürgen Reichling², Paul Schnitzler¹
¹ Department of Virology, Hygiene Institute, University of Heidelberg, Heidelberg, Germany; ² Department of Biology, Institute of Pharmacy and Molecular Biotechnology, University of Heidelberg, Heidelberg, Germany
99. Preclinical Pharmacokinetic, Toxicokinetic and Toxicology Results for Cyclopropavir—A Promising New Agent for the Treatment of Beta- and Gamma-Herpesviruses
Terry Bowlin¹, Jennifer Brooks¹, Jiri Zemlicka²
¹Microbiotix, Inc., Worcester, MA, United States; ²Karmanos Cancer Institute, Wayne State University, Detroit, MI, United States
100. Phenotyping Human Cytomegalovirus Drug Resistance Mutations Using a Recombinant Virus Incorporating EGFP
Meike Chevillotte¹, Hans A. Kestler², Thomas Mertens¹, Jens Von Einem¹
¹Institute of Virology, University Hospital, Ulm, Germany; ²Internal Medicine I, University Hospital, Ulm, Germany
101. The Effect of Human Cytomegalovirus Proteins Pul97 and Pul27 on Host Interferon Responses
Rachel Gill, Ety Benveniste, Mark Prichard
University of Alabama School of Medicine, Birmingham, AL, United States
102. Mutation of the Thymidine Kinases Encoded by Herpes Simplex Virus or Vaccinia Virus can confer Resistance to 5-Iodo-4'-Thio-2'-Deoxyuridine
Emma Harden¹, Kathy Keith¹, Shannon Daily¹, Kamal Tiwari², Joseph Maddry², John Secrist², Earl Kern¹, Mark Prichard¹
¹University of Alabama School of Medicine, Birmingham, AL, United States; ²Southern Research Institute, Birmingham, AL, United States
103. Conserved Retinoblastoma Protein-binding Motifs in Human Cytomegalovirus UL97 Minimally Impact Viral Replication But Can Affect Susceptibility to Maribavir
Caroll Hartline¹, Rachel Gill¹, Samuel Frederick¹, Sunwen Chou², Mark Prichard¹
¹University of Alabama School of Medicine, Birmingham, AL, United States; ²Oregon Health and Science University, Portland, OR, United States
104. Antiviral Activities of Nucleoside Analogs Against HSV-1 Replication in 143B Cells Expressing the Viral Tk Genes with Different Initiation Codon Sites
Chong-Kyo Lee, Ju Ryung Nam, Myung-Jin Lee, Hae Soo Kim
Korea Research Institute of Chemical Technology, Daejeon, Korea, Korea

105. A Study of the Safety and Pharmacokinetics of Multiple Ascending Doses of FV-100 in Healthy Subjects
Mark Matson¹, Helen Pentikis², Brian Boehlecke³, Eric Wenzel⁴, Geoff Henson⁴, Amy Morris⁴
¹Prism Research Inc., St. Paul, MN, United States; ²SAJE Consulting LLC, Baltimore, MD, United States; ³Rho Inc., Chapel Hill, NC, United States; ⁴Inhibitex, Inc., Alpharetta, GA, United States
106. A Study of the Safety and Pharmacokinetics of Single and Multiple Doses of FV-100 in Subjects 65 years and Over.
Mark Matson¹, George Atiee², Helen Pentikis³, Brian Boehlecke⁴, Eric Wenzel⁵, Amy Morris⁵
¹Prism Research Inc., St. Paul, MN, United States; ²ICON Plc., San Antonio, TX, United States; ³SAJE Consulting LLC, Baltimore, MD, United States; ⁴Rho Inc., Chapel Hill, NC, United States; ⁵Inhibitex Inc., Alpharetta, GA, United States
107. Study of Anti Epstein-Barr Virus Activity of Novel Fluorinated Heterocyclic Nucleoside Analogues
N. Nesterova¹, Yu. Shermolovich², S. Zagorodnya¹, A. Golovan¹, O. Kanishchev², G. Baranova¹
¹Zabolotny Institute of Microbiology and Virology, NAS of Ukraine, Kyiv, Ukraine; ²Institute of Organic Chemistry, NAS of Ukraine, Kyiv, Ukraine
108. Study of Anti Epstein-Barr Virus Activity of Novel Fluorinated Heterocyclic Nucleoside Analogues
N. Nesterova¹, Yu. Shermolovich², S. Zagorodnya¹, A. Golovan¹, O. Kanishchev², G. Baranova¹
¹Zabolotny Institute of Microbiology and Virology, NAS of Ukraine, Kyiv, Ukraine; ²Institute of Organic Chemistry, NAS of Ukraine, Kyiv, Ukraine
109. Induction of Lytic Cytotoxicity by NF-KB Inhibitors in Epstein-Barr Virus-associated Gastric Carcinoma Cells
Paula Ordonez Suarez¹, Chihaya Koriyama¹, Yoshito Eizuru², Suminori Akiba¹
¹Department of Epidemiology and Preventive Medicine, Kagoshima University Graduate School of Medical and Dental Sciences, Kagoshima, Japan;
²Division of Oncogenic and Persistent Viruses, Center For Chronic Viral Diseases, Kagoshima University Graduate School of Medical and Dental Sciences, Kagoshima, Japan
110. Anti-Cytomegalovirus Activity of Membranotropic Polyacidic Agents Effects *In Vitro*
M. Pavlova¹, A. Serbin², N. Fedorova¹, E. Karaseva², E. Klimova¹, A. Kushch¹
¹Ivanovski Virology Inst., Moscow, Russia; ²Health RDF, Moscow, Peru
111. A Mass Spectrometry-based Method to Detect Antiviral Drug Resistance in Human Cytomegalovirus
Clara Posthuma¹, Martha Van Der Beek, Caroline Van Der Blij, Willy Spaan, Louis Kroes, Eric Snijder
Leiden University Medical Center, Leiden, Netherlands
112. L-Analogs of 1-Beta-D-Ribofuranosyl-2-Bromo-5,6-Dichlorobenzimidazole (BDCRB) inhibit Human Herpesvirus-6 Replication
Mark Prichard¹, Samuel Frederick¹, Shannon Daily¹, Kathy Borysko², Julie Breitenbach², Leroy Townsend², John Drach²
¹The University of Alabama School of Medicine, Birmingham, AL, United States; ²School of Dentistry and College of Pharmacy, University of Michigan, Ann Arbor, MI, United States
113. Comparative Efficacy of Treatment with CMX001 Versus Acyclovir in Balb/C Mice Infected with Herpes Simplex Virus
Debra Quenelle¹, Mark Prichard¹, Emma Harden¹, Deborah Collins¹, Terri Rice¹, George Painter², Alice Robertson², Earl Kern¹
¹University of Alabama School of Medicine, Birmingham, AL, United States; ²Chimerix, Inc., Durham, NC, United States
114. Compounds that Target Host Cell Enzymes Prevent Varicella-Zoster Virus Replication *In Vitro*, *Ex Vivo*, and In SCID-HU Mice
J. Rowe, R. Greenblatt, D. Liu, J. Moffat
SUNY Upstate Medical University, Syracuse, NY, United States
115. Evaluation of Octadecyloxyethyl Esters of 3-Hydroxy-2-(Phosphonomethoxy)Propyl Nucleosides against HCMV, HSV and Poxviruses
Nadejda Valiaeva¹, Julissa Trahan¹, Kathy A. Keith², Carol Hartline², Mark Prichard², James R. Beadle¹, Karl Y. Hostetler¹
¹University of California, San Diego, and The Veterans Medical Research Foundation, La Jolla, CA, United States; ²University of Alabama, Birmingham, AL, United States
116. Effects of Antivirals via Intratympanic Delivery in GPCMV Related Hearing Loss
Jonette Ward¹, Daniel Choo^{1,2}
¹Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States; ²University of Cincinnati, Cincinnati, OH, United States
117. Inhibition of Herpes Simplex Virus by Polyamines
Ira Yudovin-Farber¹, Irina Gurt², Ronen Hope², Abraham J. Domb¹, Ehud Katz²
¹Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine, Hebrew University, Jerusalem, Israel; ²Department of Virology, Hadassah Medical School, Hebrew University, Jerusalem, Israel
118. Characterization of Cowpox Virus (CPV) Mutants Arising under Pressure with Different Acyclic Nucleoside Phosphonates
Graciela Andrei, Pierre Fiten, Erik De Clercq, Ghislain Opdenakker, Robert Snoeck
Rega Institute, Leuven, Belgium
119. Interactions between the Human Oligopeptide Transporter, HPEPT1 and Serine Side Chain-linked Cidofovir Prodrugs
Monica Sala-Rabanal¹, Larryn W. Peterson², Michaela Serpi², Ivan S. Krylov², Boris A. Kashemirov², Jae Seung Kim³, Stefanie Mitchell³, John M. Hilfinger³, Charles E. McKenna²
¹Department of Physiology, David Geffen School of Medicine, UCLA, Los Angeles, CA, United States; ²Department of Chemistry, University of Southern California, Los Angeles, CA, United States; ³TSRL, Inc., Ann Arbor, MI, United States
120. Compounds Designed to Bind Conserved Regions of Human Papillomavirus (HPV) DNA Show Broad-spectrum Activity Against High-risk Genotypes
James Bashkin^{1,2}, Terri Edwards², Kevin Koeller¹, Terri Edwards², Ursula Slomczynska¹, Chris Fisher²
¹University of Missouri-St. Louis, St. Louis, MO, United States; ²Nanovir, Kalamazoo, MI, United States
121. Synthesis and Biological Studies of Mutagenic Ribonucleoside Analogues as Potential Inducers of Error Catastrophe of Riboviruses
María-José Camarasa¹, Ana San-Félix¹, M. Teresa Peromingo¹, Mercedes Dávila², Ana I. De Avila², Rubén Agudo², Esteban Domingo²
¹Instituto De Química Médica (CSIC), Madrid, Spain; ²Centro De Biología Molecular "Severo Ochoa" (CSIC), Madrid, Spain
122. Antiflogistics as Viral Inhibitors
Georgy Danilenko¹, Svitlana Rybalko², Tatiana Bukhtiarova³, Valentina Danilenko³, Svitlana Guzhova¹, Victor Lozitsky⁴
¹institute Organic Chemistry, Kyiv, Ukraine; ²Institute Epidemiology, Kyiv, Ukraine; ³Institute Pharmacology, Kyiv, Ukraine; ⁴Institute Pharmacology, Kyiv, Ukraine; ⁵Institute Organic Chemistry, Kyiv, Ukraine; ⁶Anti-Plague Institute, Odessa, Ukraine
123. Synthesis, Antiviral Activity, and Cytotoxicity of Some Novel 2-Phenyl-3-Disubstituted Quinazolin-4(3H)-ones
Periyasamy Selvam¹, Julie M. Breitenbach², Katherine Z. Borysko², John C. Drach²
¹Amrita School of Pharmacy, AIMS Campus, Elamakkara, Kochi-682026, India, Kochi, India; ²School of Dentistry and College of Pharmacy, University of Michigan, Ann Arbor, MI, United States

124. Expression of Infectious Bursal Disease Virus (IBDV) Polyprotein and VP4 Protease
Phillia Vukea, Alain Boulange, Theresa Coetzer
University of Kwa-Zulu-Natal, Pietermaritzburg, South Africa
125. Synthesis and SAR of 9-Arylpurines As Novel Inhibitors of Enterovirus Replication
*Leire Aguado*¹, Hendrik Jan Thibaut², María-José Camarasa¹, Johan Neyts², María-Jesús Pérez-Pérez¹
¹Instituto De Química Médica (CSIC), 28006 Madrid, Spain; ²Rega Institute For Medical Research, Katholieke Universiteit Leuven, B-3000 Leuven, Belgium
126. HIT QSAR Study of Antivirals' Bioavailability
*Anatoly Artemenko*¹, Eugene Muratov^{1,2}, Victor Kuz'min¹, Maxim Kulinskij¹, Irina Borisuk¹, Nikolay Golovenko¹, Alexander Tropsha²
¹A.V. Bogatsky Physical-Chemical Institut, Odessa, Ukraine; ²University of Nort Carolina, Chapel Hill, NC, United States
127. Synthesis and Evaluation of Novel Acyclovir Phosphoramidates as Anti-HIV Agents
*Davide Carta*¹, Christopher Mcguigan¹, Leonid Margolis², Jan Balzarini³
¹Welsh School of Pharmacy, Cardiff University, Cardiff, United Kingdom; ²Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, United States; ³Rega Institute For Medical Research, Leuven, Belgium
128. Design, Synthesis and SAR of New Potent HIV-1 RT Inhibitors
*Alba Chimirri*¹, Erik De Clercq², Giovanni Maga³, Patrizia Logoteta¹, Stefania Ferro¹, Laura De Luca¹, Nunzio Iraci¹, Christophe Pannecouque², Annamaria Monforte¹
¹University, Messina, Italy; ²Katholieke Universiteit, Leuven, Belgium; ³Istituto Di Genetica Molecolare IGM-CNR, Pavia, Italy
129. The Application of Phosphoramidate Proside Technology to Acyclovir Confers Novel Anti-HIV Inhibition
*Marco Derudas*¹, Christopher Mcguigan¹, Andrea Brancale¹, Leonid Margolis², Jan Balzarini³
¹Welsh School of Pharmacy, Cardiff University, Cardiff, United Kingdom; ²Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, United States; ³Rega Institute For Medical Research, Leuven, Belgium
130. Design, Synthesis, and Biological Evaluation of Novel Fluoro Derivatives of BCNA
*Marco Derudas*¹, Maurizio Quintiliani¹, Christopher Mcguigan¹, Andrea Brancale¹, Geoffrey Henson², Jan Balzarini³
¹Welsh School of Pharmacy, Cardiff University, Cardiff, United Kingdom; ²Inibitex Inc., Alpharetta, GA, United States; ³Rega Institute For Medical Research, Leuven, Belgium
131. 4,4-Disubstituted Cyclohexylamine based CCR5 Chemokine Receptor Antagonists as Anti-HIV-1 Agents
Maosheng Duan, Wieslaw Kazmierski, Christopher Aquino, Rob Ferris, Terry Kenakin, Chris Watson, Pat Wheelan
Infectious Disease Center For Excellence In Drug Discovery, Glaxosmithkline, Research Triangle Park, NC, United States
132. Macrocyclic Polyamines Targeting the Cellular HIV Co-Receptors, CXCR4 and CCR5.
*Sunil Hamal*¹, Li Cui¹, Bell Thomas¹, Aquaro Stefano², Dana Huskens³, Dominique Schols³
¹Department of Chemistry, University of Nevada, Reno, NV, United States; ²Department of Experimental Medicine and Biochemical Sciences, University of Rome 'Tor Vergata', Rome, Italy; ³Rega Institute For Medical Research, Department of Microbiology and Immunology, Katholieke Universiteit Leuven, Leuven, Belgium
133. Synthesis and Antiviral Activity of Substituted Uracils
*Alexander Ivanov*¹, Vera Tunitskaya¹, Olga Smirnova¹, Robert W. Buckheit, Jr.², Katherine Seley-Radtke³, Alexander Ozerov⁴, Mikhail Novikov⁴
¹Engelhardt Institute of Molecular Biology, Moscow, Russia; ²University of Maryland, Baltimore County, Baltimore, MD, United States; ³Imquest Biosciences, Inc., Frederick, MD, United States; ⁴Volgograd State Medical University, Volgograd, Russia
134. Synthesis and Biological Evaluation of Acyclic Nucleotide Analogues of Bicyclic Pyrimidine Bases
*Zlatko Janeba*¹, Antonin Holý¹, Robert Snoeck², Graciela Andrei², Eric De Clercq², Jan Balzarini²
¹Institute of Organic Chemistry and Biochemistry AS CR, Prague, Czech Republic; ²Rega Institute For Medical Research, Leuven, Belgium
135. HIV-1 Gag Matrix Protein Fragments and Polyacid Conjugates Designed for the HIV Inhibition
E. Karaseva, A. Serbin, I. Rodionov, A. Vasiliev, V. Abramov, O. Alikhanova
Health RDF, Moscow, Russia
136. CXCR4 Antagonists: A New Generation of Configurationally Restricted Bis-Azamacrocyclic Compounds
*Abid Khan*¹, Gary Nicholson¹, Graeme Mcrobbie¹, John Greenman⁴, Christophe Pannecouque², Dirk Daelemans², Dominique Schols², Erik De Clercq², Timothy J. Hubin³, Stephen J. Archibald¹
¹Department of Chemistry, University of Hull, Hull, United Kingdom; ²Rega Institute For Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium; ³Department of Chemistry and Physics, Southwestern Oklahoma State University, Weatherford, OK, United States; ⁴Centre For Medical Research, University of Hull, Hull, United Kingdom
137. West Nile Virus Helicase: Homology Modeling and Docking Studies
Mohammed Khedr, Andrea Brancale
Cardiff University, Welsh School of Pharmacy, Cardiff, United Kingdom
138. Nucleoside Phosphonate Analogues Modified by Lipophilic Cage Moiety as Potential Antiviral Agents.
*Yuri Klimochkin*¹, Marina Leonova¹, Alexander Reznikov¹, Andrey Shiraev¹, Eugene Golovin¹, Eugene Belanov²
¹Samara State Technical University, Samara, Russia; ²FSRI SRC "Vector", Novosibirsk, Russia
139. Antiviral Activity of New Derivatives of CAGE Compounds
*Yuri Klimochkin*¹, Vitalij Osyanin¹, Pavel Krasnikov¹, Marina Leonova¹, Eugene Golovin¹, Sergey Balakhnin², Eugene Belanov²
¹Samara State Technical University, Samara, Russia; ²FSRI SRC "Vector", Novosibirsk, Russia
140. Antiviral Activity of Tetrahydro-2(1H)-Pyrimidinones and Related Compounds: Classification SAR Study
*V. Kuz'min*¹, E. Muratov^{1,2}, A. Artemenko¹, D. Sidzhakova³, A. Galabov³
¹A.V. Bogatsky Physical-Chemical Institute NASU, Odessa, Ukraine; ²University of Nort Carolina, Chapel Hill, NC, USA; ³S. Angeloff Institute of Microbiology BAS, Sofia, Bulgaria
141. Cyclosaligenyl-Di-D4TMP: Highly Loaded Cyclosal-Pronucleotides that Release Two Equivalents of Nucleotides and Leaving One Masking Unit
*Chris Meier*¹, Nicolas Gisch¹, Ducho Christian¹, Balzarini Jan²
¹Organic Chemistry, Department of Chemistry, Faculty of Sciences, University of Hamburg, Hamburg, Germany; ²Rega Institute For Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium

142. Computer-aided Drug Design of Novel Anti-Coxsackievirus B3 Nancy Agents By Means of HIT QSAR
E. Muratov¹, E. Varlamova¹, V. Kuz'min¹, A. Artemenko¹, A. Kuz'mina², A. Tropsha³, V. Makarov⁴, O. Riabova⁴, P. Wutzler⁵, M. Schmidtke⁵
¹A.V. Bogatsky Physical-Chemical Institute NASU, Odessa, Ukraine; ²I.I. Mechnikov Odessa National Medical University, Odessa, Ukraine; ³University of North Carolina, Chapel Hill, NC, USA; ⁴Research Center For Antibiotics, Moscow, Russia; ⁵Institute of Virology and Antiviral Therapy, F. Schiller University, Jena, Germany
143. A Heterocyclic Molecule with Significant Activity against Dengue Virus
Vasu Nair¹, Guochen Chi¹, Qingning Shu¹, Justin Julander², Donald Smee²
¹University of Georgia, Athens, GA, USA; ²Utah State University, Logan, UT, USA
144. Synthesis and Properties of Cyclosal-phosphatetriesters of Fluorescent Bicyclic Nucleoside Analogues (BCNAS)
Florian Pertenbreiter, Chris Meier
Organic Chemistry, Department of Chemistry, Faculty of Sciences, University of Hamburg, Hamburg, Germany
145. Anti-H5N1 Influenza Virus Activity of Carbocyclic Cytosine Nucleosides
J.R. Rao¹, A.K. Jha¹, A. Sharon¹, C.W. Day², D.L. Bernard², D.F. Smee², C.K. Chu¹
¹University of Georgia, College of Pharmacy, Athens, GA, USA; ²Utah State University Institute For Antiviral Research, Logan, UT, USA
146. Synthesis of CADA Analog Pro-drugs Designed as Novel Down-Modulators of the CD4 Receptor
Emily Scarbrough¹, Sreenivasa Anugu¹, Kurt Vermeire², Dominique Schols², Thomas Bell¹
¹Department of Chemistry, University of Nevada, Reno, NV, USA; ²Rega Institute For Medical Research, Department of Microbiology and Immunology, Katholieke Universiteit Leuven, Leuven, Belgium
147. Bioreversible Protection of Nucleosidediphosphates—Synthesis and Properties
Tilman Schulz¹, Henning J. Jessen¹, Jan Balzarini², Chris Meier¹
¹Institute of Organic Chemistry, Department of Chemistry, Faculty of Science, University of Hamburg, Martin-Luther-King Platz 6, D-20146, Hamburg, Germany; ²Rega Institute For Medical Research, Katholieke Universiteit Leuven, Minderbroederstraat 10, B-3000, Leuven, Belgium
148. Multivalent Synthetic Lectin Polymers against HIV
Julie Jay¹, Bonnie Lai², Patrick Kiser¹
¹University of Utah, Department of Bioengineering, Salt Lake City, UT, USA; ²Duke University, Department of Biomedical Engineering, Durham, NC, USA
149. Induction of HIV-1 Gene Expression in Human Monocytic Cells by the Failed Microbicide Carrageenan Occurs through Activation of Toll-like Receptor 4 (TLR4)
Shawn Keogan, Vanessa Pirrone, Shendra Passic, Brian Wigdahl, Fred Krebs
Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, USA
150. Sevi and Semen Impair the Anti-HIV-1 Activity of Drugs and Microbicides
Kim Kyeong-Ae¹, Shibo Jiang², Frank Kirchhoff¹, Jan Muench¹
¹Institute of Virology, Ulm, Germany; ²New York Blood Center, New York, NY, USA
151. Nonoxynol-9 (N-9), After Repeated Applications, Does Not Result in Cumulative Damage to the Murine Cervicovaginal Epithelium
Karissa Lozenski¹, Tina Kish-Catalone², Brian Wigdahl¹, Fred Krebs¹
¹Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, USA; ²Department of Natural Sciences, Desales University, Center Valley, PA, USA
152. Resistance Developed against Alamethicin an Antimicrobial Peptide in *Enterococcus faecalis* is Directly Proportional to its Concentration
Jitender Mehla, S.K., Sood
National Dairy Research Institute, Karnal, India
153. Using the CONRAD Testing Algorithm to Evaluate the Cytotoxicity and Anti-HIV-1 Activity of Candidate Microbicide Compounds
Shendra Passic¹, Vanessa Pirrone¹, Brian Wigdahl¹, Gustavo Doncel², Fred Krebs¹
¹Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, USA; ²CONRAD, Arlington, VA, USA
154. Clinical Failures of Select Polyanionic Microbicide Candidates may be Predicted by *In Vitro* Enhancement of HIV-1 Infection
Vanessa Pirrone, Shendra Passic, Brian Wigdahl, Fred Krebs
Department of Microbiology and Immunology, Drexel University College of Medicine, Philadelphia, PA, USA
155. A Macromolecular Basis for Microbicides Dual Protecting against HIV and Cytomegalovirus Infection
A. Serbin¹, E. Karaseva¹, Y. Egorov¹, I. Dunaeva¹, M. Pavlova², A. Kushch²
¹Biomodulators RC, Health RDF, Moscow, Russia; ²D.I. Ivanovskii Res. Inst. of Virology, RAMS, Moscow, Russia
156. CADA—A Potential Anti-HIV Microbicide that Specifically Targets the Cellular CD4 Receptor
Kurt Vermeire¹, Thomas Bell², Roger Le Grand³, Joachim Brouwers⁴, Patrick Augustijns⁴, Dominique Schols¹
¹Rega Institute For Medical Research, K.U. Leuven, Leuven, Belgium; ²Department of Chemistry, University of Nevada, Reno, NV, USA; ³Service De Neurovirologie, Fontenay-Aux-Roses, France; ⁴Laboratory For Pharmacotechnology and Biopharmacy, K.U. Leuven, Leuven, Belgium
157. The Development of HIV-1 NCP7 Inhibitors as Components in Combination Topical Microbicides
Karen Watson, Kathleen Powers, Lu Yang, Tracy Hartman, Robert W. Buckheit, Jr.
ImQuest BioSciences, Inc., Frederick, MD, USA
158. Development of a Long Lasting Combination Microbicide Product Consisting of Highly Potent Compounds Exhibiting Multiple Mechanisms of Action
Karen Watson, Lu Yang, Kathleen Powers, Joseph Kurczewski, Tracy Hartman, Robert Buckheit, Jr.
ImQuest BioSciences, Inc., Frederick, MD, USA

Wednesday, May 6, 2009

Prusoff Young Investigator Award Lecture
Mediterranean East

159. Presentation of Award
Amy Patick, Ph.D.
President, ISAR
160. Viral Kinases as Targets for Antiviral Therapy
Mark Prichard, Ph.D.
University of Alabama School of Medicine, Birmingham, AL, USA

Oral Session 4: Herpesviruses And Poxviruses

Chairs: Rhonda Cardin, Ph.D. and Mark Prichard, Ph.D.

Mediterranean East

08:45–11:30

- 08:45 161. Inhibition of Herpesvirus Replication with 5-Iodo-4'-Thio-2'-Deoxyuridine
Mark Prichard¹, Debra Quenelle¹, Carol Hartline¹, Emma Harden¹, Geraldine Jefferson¹, Samuel Frederick¹, Terri Rice¹, Deborah Collins¹, Kamal Tiwari², Joseph Maddry², Richard Whitley¹, John Secrist², Earl Kern¹
¹University of Alabama School of Medicine, Birmingham, AL, USA; ²Southern Research Institute, Birmingham, AL, USA
- 09:00 162. Selection and Characterization of (S)-1-[3-Hydroxy-2-(Phosphonomethoxypropyl)-2,6-Diaminopurine [HPMPDAP] Resistant Camelpox Viruses
Sophie Durauffour¹, Robert Snoeck¹, Pierre Fiten², Ghislain Opdenakker², Graciela Andrei¹
¹Laboratory of Virology, Rega Institute, Leuven, Belgium; ²Laboratory of Immunobiology, Rega Institute, Leuven, Belgium
- 09:15 163. Effects of Anti-Human Papillomavirus (HPV) Disease Agents on HPV Episome Levels *In Vitro*: Cidofovir, Podophyllotoxin, and Pyrrole-imidazole Polyamides
Terri Edwards¹, Kevin Koeller², James Bashkin^{1,2}, Chris Fisher¹
¹Nanovir, Kalamazoo, MI, USA; ²University of Missouri-St. Louis, St. Louis, MO, USA
- 09:30 Break
- 09:50 164. Invitation to the 23rd ICAR, San Francisco, CA, USA
Chris McGuigan, Ph.D.
Chair, ICAR Conference Committee
- 10:00 ISAR Business Meeting
- 10:15 165. Identification of the Type of Cells Responsible for Transfer of Herpes Simplex Virus (HSV) and Vaccinia Virus (VACV) Infection to Epithelial Cells Grown in 3D
Graciela Andrei¹, Dirk Daelemaers¹, Els Vanstreels¹, Sophie Durauffour¹, Joos Van Den Oord², Erik De Clercq¹, Robert Snoeck¹
¹Rega Institute For Medical Research, K.U. Leuven, Leuven, Belgium; ²Laboratory of Morphology and Molecular Pathology, K.U. Leuven, Leuven, Belgium
- 10:30 166. Drug Resistance Mutations in HSV-1 UL5 Selected Using a Helicase-Primase Inhibitor: Frequency and Effects on Virus Growth and Pathogenicity
Subhajit Biswas, Soumi Sukla, Hugh J Field
Department of Veterinary Medicine, University of Cambridge, Cambridge, CB3 0ES, United Kingdom
- 10:45 167. Murine Model of Recurrent Vaginal HSV-2 Shedding and Effect of Acyclovir
Rhonda Cardin, Nicholas Farley, Fernando Bravo, Julie Earwood, Nancy Sawtell, David Bernstein
Cincinnati Children's Hosp, Med. Center, Cincinnati, OH, USA
- 11:00 168. Activation of Cyclopropavir Involves Unique Phosphorylation by Guanylate Kinase
Brian G. Gentry¹, Chengwei Li², John C. Drach¹, Jiri Zemlicka²
¹University of Michigan, Ann Arbor, MI, USA; ²Wayne State University, Detroit, MI, USA
- 11:15 169. EBNA1—A Virally Encoded Protein Binds Cellular Host Promoters in a Unique Sequence and Directly Interferes with Cellular Gene Expression: Implications for Genomics Approaches in Drug Design
Allon Canaan, Vincent Schulz, Milind Mahajan, Alexander Urban, Sherman Weissman
Yale University School of Medicine, New Haven, CT, USA

Oral Session 5: Respiratory Viruses, Emerging Viruses And Biodefense

Chairs: Dale Barnhard, Ph.D. and Brian Gowen, Ph.D.

Mediterranean East

13:00–16:00

- 13:00 170. Plenary: Filoviral Minigenome Systems and iVLPs as Tools for Antiviral Research
Stephan Becker, Ph.D.
University of Marburg, Marburg, Germany
- 13:30 171. Identification and Mechanistic Studies on a Novel Class of Influenza Virus Fusion Inhibitors
Evelien Vanderlinden¹, Nesrin Cesur², Zafer Cesur², Fusun Goktas², Mathy Froeyen¹, Charles Russell³, Lieve Naesens¹
¹Rega Institute For Medical Research, Leuven, Belgium; ²Istanbul University, Faculty of Pharmacy, Istanbul, Turkey; ³St. Jude Children's Research Hospital, Memphis, TN, USA
- 13:45 172. Novel Broad-spectrum Biopharmaceuticals: From HIV-1 to Pandemic Influenza A Virus
François Jean¹, Vesna Posarac¹, Peter Cheung², Martine Boutin¹, Heather Braybrook¹, Richard Harrigan²
¹Department of Microbiology & Immunology, University of British Columbia, Vancouver, BC, Canada; ²B.C. Centre For Excellence In HIV/AIDS, St. Paul's Hospital, Vancouver, BC, Canada
- 14:00 173. Recruitment of the TSG101/ESCRT-I Machinery in Host Cells by Influenza Virus: Implications for Broad Spectrum Therapy
Leyla Diaz, Josephine Cassella, Aurelio Bonavia, Roxanne Duan, David Santos, Zena Fesseha, Michael Goldblatt, Michael Kinch
Functional Genetics, Inc., Gaithersburg, MD, USA
- 14:15 174. Role of NA Mutations Conferring Resistance to NA Inhibitors on Viral Fitness and Pathogenicity in A/Turkey/15/06 (H5N1) Influenza Virus
Natalia A. Ilyushina, Jon P. Seiler, Robert G. Webster, Elena A. Govorkova
St. Jude Children's Research Hospital, Memphis, TN, USA
- 14:30 175. *In-Vivo* Efficacy Evaluation of Vaccines against H5N1 Influenza Virus
Nutan Mytle
Southern Research Institute, Birmingham, AL, USA
- 14:45 176. Activity of Certain 5-Substituted-4'-Thio Pyrimidine Nucleosides against Orthopoxvirus Infections
Earl Kern¹, Mark Prichard¹, Debra Quenelle¹, Kathy Keith¹, Kamal Tiwari², Joseph Maddry², John Secrist III²
¹University of Alabama School of Medicine, Birmingham, AL, USA; ²Southern Research Institute, Birmingham, AL, USA
- 15:00 177. Motor Unit Number Estimation as a Therapeutic Marker in Acute and Persistent West Nile Virus Infection In Hamsters
John D. Morrey¹, Venkatraman Siddharthan¹, Hong Wang¹, Neil E. Motter¹, Jeffery O. Hall¹, Robert D. Skinner², Ramona T. Skirpstunas¹
¹Utah State University, Logan, UT, USA; ²University of Arkansas For Medical Sciences, Little Rock, AR, USA

- 15:15 178. Novel Imino Sugar Derivatives Demonstrate Potent Antiviral Activity against Dengue Virus
*Jinhong Chang*¹, *Lijuan Wang*¹, *Dongling Ma*¹, *Xiaodong Xu*^{2,3}, *Wouter Schul*⁴, *Pei-Yong Shi*⁴, *Peter M. Mason*⁵, *Nigel Bourne*⁵, *Robert Moriarty*⁶, *Ju-Tao Guo*¹, *Timothy M. Block*^{1,2}
¹Drexel University College of Medicine, Doylestown, PA, USA; ²Institute For Hepatitis and Virus Research, Hepatitis B Foundation, Doylestown, PA, USA; ³Pharmabridge Inc., Doylestown, PA, USA; ⁴Novartis Institute For Tropical Diseases, Chromos, Singapore; ⁵University of Texas Medical Branch, Galveston, TX, USA; ⁶University of Illinois, Chicago, IL, USA
- 15:30 179. Using The C57BL/6 and SKH1 Strains to Evaluate the Efficacy of CMX001 following Lethal Respiratory Infections with Ectromelia Virus
*Scott Parker*¹, *Christina Oberle*¹, *Ed Hembrador*¹, *Jill Schriewer*¹, *Geroe Painter*², *Randall Lanier*²
¹Saint Louis University, St Louis, MO, USA; ²Chimerix Inc., Durham, NC, USA
- 15:45 180. Novel 9-Arylpurines, as Selective Inhibitors of *In Vitro* Enterovirus Replication
*Hendrik Jan Thibaut*¹, *Leire Aguado*², *Lonneke Van Der Linden*³, *Armando De Palma*¹, *María-José Camarasa*², *Jan Balzarini*¹, *Frank Van Kuppeveld*³, *María Jesús Pérez-Pérez*², *Johan Neyts*¹
¹Rega Institute For Medical Research, Kuleuven, Leuven, Belgium; ²Instituto De Química Médica (CSIC), Madrid, Spain; ³Department of Medical Microbiology, Radboud University Nijmegen Medical Centre, Nijmegen Centre For Molecular Life Sciences, Nijmegen, Netherlands

Shotgun Poster Presentations

Chairs: Robert W. Buckheit, Jr., Ph.D. and Chris McGuigan, Ph.D.

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16:15–18:15

Thursday, May 7, 2009

Oral Session 6: Mini-Symposium: Perspectives And Challenges In The Development Of Topical Microbicides

Chairs: Sharon Hillier, Ph.D. and Jim Turpin, Ph.D.

Mediterranean East

08:00–10:00

- 08:00 181. A Microbicide Perspective: Past, Present, and Future
Sharon Hillier, Ph.D.
 University of Pittsburgh, Pittsburgh, PA, USA
- 08:20 182. Microbicide Product Development: What is a Microbicide?
Jim Turpin
 DAIDS, NIAID, NIH, Bethesda, MD, USA
- 08:40 183. Formulation of Compounds for Vaginal and Rectal Delivery
Patrick Kiser, Ph.D.
 University of Utah, Salt Lake City, UT, USA
- 09:00 184. Development of Microbicides with Broad Based Anti-infective Action
Betsy Herold, M.D.
 The Albert Einstein University, Bronx, NY, USA
- 09:20 185. The Microbicide Pipeline: Clinical Development Success and Failure
Joseph Romano, Ph.D.
 International Partnership For Microbicides, Silver Spring, MD, USA
- 09:40 Break

Oral Session 7: Microbicides, Drug Design And Late Breaker Presentations

Chairs: Nick Kaludov, Ph.D. and Andrea Brancale, Ph.D.

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10:00 a.m.–12:00

- 10:00 186. Design of an Intravaginal Ring for Simultaneous Delivery of Antiretroviral Drugs
Todd Johnson, *Kavita Gupta*, *Patrick Kiser*
 University of Utah, Department of Bioengineering, Salt Lake City, UT, USA
- 10:15 187. Biophysical Mechanisms in Microbicide Pharmacokinetics
David Katz, *Marcus Henderson*, *Bonnie Lai*, *Anthony Geonnotti*, *Jennifer Peters*
 Department of Biomedical Engineering, Duke University, Durham, NC, USA
- 10:30 188. Virtual Reality Applications in Antiviral Drug Design
Nicola Zonta, *Andrea Brancale*
 Welsh School of Pharmacy, Cardiff, United Kingdom
- 10:45 189. Identification of a Small-Molecule Antiviral with Broad-spectrum Application to Multiple, Lethal Virus Types
*Abdul Yunus*¹, *Travis Warren*², *Kelly Warfield*³, *Sven Enterlein*³, *Shaojing Chang*¹, *Hanwen Mao*¹, *Javad Aman*³, *Sina Bavari*², *Michael Goldblatt*¹, *Michael Kinch*¹
¹Functional Genetics, Inc., Gaithersburg, MD, USA; ²United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, MD, USA; ³Integrated Biotherapeutics, Germantown, MD, USA
- 11:00 Late Breaker Presentation
- 11:15 Late Breaker Presentation
- 11:30 Late Breaker Presentation
- 11:45 Late Breaker Presentation

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