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23rd ICAR Abstract Issue

The Twenty-Third International Conference on Antiviral Research

Sponsored by

The International Society For Antiviral Research

Hyatt Regency San Francisco

San Francisco, California, USA

April 25–April 28, 2010

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Organization

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

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President-Elect – Joseph M. Colacino, South Plainfield, New Jersey, USA

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Organizing Secretariats

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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 fourth 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 23rd International Conference on Antiviral Research



Platinum

Gilead Sciences, Inc., Foster City, CA, USA

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Chimerix, Inc., Durham, NC, USA

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Additional Support Provided by:

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

KEYNOTE ADDRESS**“Recent Progress in the Simplification of HIV Therapy and Future Prospects”**

John Martin, Ph.D.

Sunday, April 25, 2010

5:00–6:00 p.m.

MINI-SYMPOSIA**“Antiviral Drug Resistance”**

Monday, April 26, 2010

8:00 a.m.–12:00 p.m.

“Clinical Update on Antiviral Drugs”

Tuesday, April 27, 2010

1:00–4:00 p.m.

“Prodrug Chemistry and Antiviral Drug Development”

Wednesday, April 28, 2010

8:00 a.m.–12:00 p.m.

SOCIAL EVENTS**Opening Reception**

with light hors d'oeuvres

Sunday, April 25, 2010

6:00–8:00 p.m.

Conference Banquet

Tuesday, April 27, 2010

Reception

7:30 p.m.

Dinner and Program

8:00–10:00 p.m.

***All Scientific and Social Events will be held in the
Hyatt Regency San Francisco***

Final Program

Twenty-Third International Conference on Antiviral Research

Sponsored by the

International Society for Antiviral Research

Hyatt Regency San Francisco

San Francisco, California, USA

April 25–April 28, 2010

Sunday, April 25, 2010**Drug Discovery and Development 101**

Chair(s): Joe Colacino, Ph.D. and Amy Patick, Ph.D.

Grand A

01:00 p.m.–04:00 p.m.

- | | | |
|-------|----|---|
| 13:00 | 1. | Nonclinical Toxicology Safety Assessment of Antiviral Therapeutics
Anne Chester
Gilead Sciences, USA |
| 13:45 | 2. | Computational Chemistry in Drug Discovery
Ken Brameld, Ph.D.
Roche Palo Alto, LLC USA |
| 14:30 | 3. | Navigating the Regulatory Challenges in Drug Development
Natalie McClure, Ph.D.
Adamas Pharmaceuticals, Inc., USA |

Opening Greetings

Grand A

04:45 p.m.–05:00 p.m.

- | | |
|-------|--|
| 16:45 | Welcome to the 23rd ICAR
Amy Patick, Ph.D.
President, ISAR |
| 16:50 | Welcome to San Francisco
Joe Colacino, Ph.D.
Chair, ICAR Conference Committee |
| 16:55 | Introduction of the Keynote Speaker
Joseph Colacino, Ph.D.
President-Elect, ISAR |

Keynote Address

Chair(s): Joe Colacino, Ph.D.

Grand A

05:00 p.m.–06:00 p.m.

- | | |
|----|--|
| 4. | Recent Progress in the Simplification of HIV Therapy and Future Prospects
John Martin
Gilead Sciences, Inc., USA |
|----|--|

Opening Reception

Atrium 2–5

06:00 p.m.–08:00 p.m.

Monday, April 26, 2010**Oral Session 1: Mini-Symposium: Antiviral Drug Resistance**

Chair(s): Samuel Broder, M.D. and Jose Este, Ph.D.

Grand A

08:00 a.m.–12:00 p.m.

- | | | |
|-------|----|--|
| 08:15 | 5. | Confronting HIV Drug Resistance
Douglas Richman, M.D.
University of California at San Diego, USA |
| 09:00 | 6. | Emergence of Resistance to HCV Direct Acting Antivirals and Potential Therapeutic Implications
Isabel Najera, Ph.D.
Roche Palo Alto LLC, USA |
| 09:45 | | Break |
| 10:15 | 7. | Expanding the Capability of HIV Drug Resistance Assays to New Drug Targets, HCV, and Influenza
Christos Petropoulos, Ph.D.
Monogram Biosciences, Inc., USA |
| 10:45 | 8. | Next Generation Sequencing Insights into Virus Quasispecies
Robert Schafer, Ph.D.
Stanford University, USA |
| 11:15 | 9. | Influenza Antiviral Resistance: Epidemiologic and Clinical Implications
Frederick Hayden
University of Virginia, USA; World Health Organization, Switzerland |

Elion Award Lecture

Grand A

01:00 p.m.–02:00 p.m.

- | | |
|-------|---|
| 13:00 | Presentation of Elion Award
Amy Patick, Ph.D.
President, ISAR |
|-------|---|

- 13:15 10. Uncommon Combinations
Bo Oberg, Ph.D.
Medivir AB, Huddinge, Sweden

Oral Session 2: Hepatitis Viruses

Chair(s): Phillip Furman, Ph.D. and Klaus Klumpp, Ph.D.
Grand A

02:00 p.m.–04:00 p.m.

- 14:00 11. Diphenylcarboxamides as Inhibitors of HCV Non-structural Protein NS5A
Malcolm Carter, Bob Baxter, David Bushnell, Stuart Cockerill, Jo Chapman, Sally Fram, Emma Goulding, Mike Lockyer, Neil Mathews, Pilar Najarro, Dilupa Rupassara, James Salter, Elaine Thomas, Chris Wheelhouse, Jessica Borger, Kenneth Powell
Arrow Therapeutics, London, United Kingdom
- 14:15 12. Selection of Clinically Relevant Protease Inhibitor Resistant Viruses using the HCV Infection System
Guofeng Cheng, Katie Chan@gilead.com, Huiling Yang, Amy Corsa, Maria Pokrovskii, Matthew Paulson, Margaret Robinson, Gina Bahador, Weidong Zhong, William Delaney
Gilead Sciences, Foster City, CA, USA
- 14:30 13. *In Vitro* Selection and Characterization of Hepatitis C Virus Replicons Double or Triple Resistant to Various Non-nucleoside HCV Polymerase Inhibitors
Leen Delang, Inge Vliegen, Pieter Leyssen, Johan Neyts
Rega Institute for Medical Research, K.U.Leuven, Leuven, Belgium
- 14:45 14. Identification and Characterization of a Hepatitis C Virus Capsid Assembly Inhibitor
*Juliane Gentzsch*¹, Clarence R. Hurt², Vishwanath R. Lingappa², Thomas Pietschmann¹
¹Division of Experimental Virology, TWINCORE, Hannover, Germany; ²Prosetta Bioconformatics, San Francisco, CA, USA
- 15:00 15. The Requirement of HCV NS3 Oligomerization for RNA Helicase Activity is RNA Substrate Dependent
Julie Hang, Yanli Yang, Junjun Gao, Vincent Leveque, Marie Dinh, Mohammad Hekmat-Nejad, George Stepan, Phil Kobel, Klaus Klumpp
Roche, Palo Alto, CA, USA
- 15:15 16. Bound Structure and Biochemical Mechanism of Action of BI 201335, A Potent, Non-covalent Inhibitor of HCV NS3-NS4A Protease
Christopher T. Lemke, Songping Zhao, Nathalie Goudreau, Oliver Hucke, Diane Thibeault, Montse Llinàs-Brunet, Peter W. White
Boehringer Ingelheim (Canada) Ltd., Laval, QC, Canada
- 15:30 17. MK-5172, A Novel Macrocyclic Inhibitor of NS3/4A Protease Demonstrates Efficacy against Viral Resistance in the Chimpanzee Model of Chronic Hepatitis C Virus Infection
*Steve Ludmerer*¹, Steve Carroll², John McCauley³, Mike Rudd³, Paul Coleman³, Nigel Liverton³, Christine Burlein², Jill DiMuzio², Adam Gates², Don Graham¹, Carolyn McHale¹, Mark Stahlhut², Christine Fandozzi⁴, Daria Hazuda², Joe Vacca¹, David Olsen²
¹Department of Antiviral Research, Merck-Frosst Research Laboratories, Kirkland, QC, Canada; ²Department of Antiviral Research, Merck Research Labs, West Point, PA, USA; ³Department of Medicinal Chemistry, Merck Research Labs, West Point, PA, USA; ⁴Department of Drug Metabolism, Merck Research Labs, West Point, PA, USA
- 15:45 18. Late Breaker Presentation

Tuesday, April 27, 2010

Prusoff Young Investigator Award Lecture

Grand A

08:00 a.m.–09:00 a.m.

- 08:00 Presentation of Prusoff Award
Amy Patick, Ph.D.
President, ISAR
- 08:15 19. Coreceptors and Cellular Factors as Targets for Antiviral Drugs
Jose Este, Ph.D.
Fundacio Irsicaixa, Barcelona, Spain

Oral Session 3: Retroviruses and Herpesviruses

Chair(s): Rhonda Cardin, Ph.D. and Masanori Baba, Ph.D.
Grand A

09:00 a.m.–11:30 a.m.

- 09:00 20. Identification of a N-linked Glycan on HIV-1 gp120 that is Indispensable for Viral Entry
Katrien François, Jan Balzarini
Rega Institute for Medical Research, K.U.Leuven, B-3000 Leuven, Belgium
- 09:15 21. Protein–Protein Interactions Occurring during HIV Capsid Assembly in a Cell-free Protein Synthesizing System
*Kiel Copeland*¹, William Hansen¹, Vinod Asundi¹, Shi Hong¹, James Chamberlin¹, Debendranath Dey¹, Sean Broce¹, Harold Himmel¹, Caleb Decloutte¹, Salvin Ram¹, Imke Steffen², Stefan Pöhlmann², Jaisri R. Lingappa³, Clarence R. Hurt¹, Vishwanath R. Lingappa¹
¹Prosetta Bioconformatics, Inc., San Francisco, CA, USA; ²Institute of Virology Hannover Medical School, Hannover, Germany; ³Department of Global Health, University of Washington, Seattle, WA, USA
- 09:30 Break
- 10:00 22. An Intrabody based on a Llama Single-Domain Antibody Targeting the N-terminal α -Helical Multimerization Domain of HIV-1 Rev Inhibits Viral Replication
*Dirk Daelemans*¹, Thomas Vercruysse¹, Els Pardon², Els Vanstreels¹, Jan Steyaert²
¹Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium; ²Structural Biology Brussels, Department of Molecular Interactions, VUB, Brussels, Belgium
- 10:15 23. Discovery of GS-9350: A Novel and Selective Pharmacoenhancer without Anti-HIV Activity
L. Xu, H. Liu, B. Murray, C. Callebaut, A. Hong, R. Vivian, M. Lee, L. Tsai, K. Stray, J. Chau, R. Strickley, J. Koziara, Y. Choi, G. Rhodes, M. Desai
Gilead Sciences, Foster City, CA, USA

- 10:30 24. Protection against Genital HSV-2 in Guinea Pigs with Subunit Vaccines Containing gD2, gB2, and gH/gL glycoprotein antigens complexed with CLDC Adjuvant
R.D. Cardin¹, F.J. Bravo¹, J.D. Earwood¹, J.R. Clark¹, R.J. Eisenberg², G.H. Cohen², J. Fairman³, D.I. Bernstein¹
¹Cincinnati Children's Hosp, Cincinnati, OH, USA; ²Univ. of Penn, Philadelphia, PA, USA; ³Juvaris BioTherapeutics, Inc., Pleasanton, CA, USA
- 10:45 25. *In Vitro* and *In Vivo* Activities of the Novel Anti-Cytomegalovirus Compound AIC246
Peter Lischka¹, Guy Hewlett², Tobias Wunberg³, Judith Baumeister⁴, Daniela Paulsen¹, Thomas Goldner¹, Helga Ruebsamen-Schaeff¹, Holger Zimmermann¹
¹AiCuris GmbH&Co.KG, Wuppertal, Germany; ²HBSC, Wuppertal, Germany; ³Boehringer Ingelheim RCV GmbH&CoKG, Vienna, Austria; ⁴Ablynx N.V., Zwijnaarde-Gent, Belgium
- 11:00 26. A Chimeric Guinea Pig Cytomegalovirus (GPCMV) Encoding Wild Type or Mutant HCMV UL97 Renders GPCMV Susceptible or Resistant to Ganciclovir while Retaining an Ability to Disseminate in the Animal Host
Alistair McGregor, Jared Leibel, Catherine Bouska, Mark Schleiss
University of Minnesota, Minneapolis, MN, USA
- 11:15 27. Late Breaker Presentation

Clinical Symposium

Chair(s): Paul Griffiths, M.D. and Richard Whitley, M.D.

Grand A

01:00 p.m.–04:00 p.m.

Reception

Grand Foyer

07:00 p.m.–07:30 p.m.

ICAR Banquet and Program

Grand A

07:30 p.m.–09:30 p.m.

Wednesday, April 28, 2010

Oral Session 4: Mini-Symposium: Prodrug Chemistry and Antiviral Drug Development

Chair(s): Karl Y. Hostetler, M.D. and Adrian S. Ray, Ph.D.

Grand A

08:00 a.m.–12:00 p.m.

- 08:00 28. IDX-184—A Novel, Liver-targeted, Once-A-Day Nucleotide Prodrug for the Treatment of Chronic HCV Infection
David Standring, Ph.D.
Idenix, Inc., USA
- 08:30 29. CMX157: Design and Development of Hexadecyloxypropyl Cidofovir and Tenofovir
Randall Lanier, Ph.D.
Chimerix, Inc., USA
- 09:00 30. Altering the Chemistry of Alkoxyalkyl Prodrugs of Acyclic Nucleoside Phosphonates: New Directions and Novel Applications
Karl Hostetler
University of California at San Diego, USA
- 09:30 Break
- 10:00 31. Nucleoside Phosphonate Prodrugs: From Improved Oral Bioavailability to Target Tissue Enrichment
Adrian Ray
Gilead Sciences, Inc., USA
- 10:30 32. PSI-7851: From Discovery to the Clinic
Phillip Furman
Pharmasset, Inc., USA
- 11:00 33. Breaking the Rules: Selection of a Prodrug Clinical Candidate for HCV Therapy
Geoff Henson, Ph.D.
Inhibitex, Inc., USA

Oral Session 5: Respiratory Viruses, Emerging Viruses and Biodefense

Chair(s): Graciela Andrei, Ph.D. and Peter Silvera, Ph.D.

Grand A

01:00 p.m.–05:30 p.m.

- 13:00 34. PLENARY: Celebrating AZT! Antiretroviral Drugs: From Bench to Bedside to the World.
Samual Broder, M.D.
Celera Genomics, Inc., USA
- 13:45 35. ST-246, A Therapeutic for Smallpox
Tahar Babas¹, Deborah Sites¹, Lourdes Nieves-Duran¹, Amy Sands¹, Rhonda Wright¹, Amy Rippeon¹, Dawn Golightly¹, Ginger Donnelly¹, Lowrey Rhodes¹, Robert Jordan², Dennis Hruby², Peter Silvera¹
¹Southern Research Institute, Frederick, MD, USA; ²SIGA Technologies, Corvallis, OR, USA
- 14:00 36. Evidence for Host Drug Targets Essential for Dengue Virus Capsid Formation.
Marissa Baker-Wagner¹, Nicole Wolcott², Yoko Marwidi¹, Shao Feng Yu¹, Debendranath Dey¹, Bruce Onisko¹, Katie Barlow¹, Shalini Potluri¹, Christine Sahlman¹, Alfredo Calayag¹, Vishwanath R. Lingappa¹, Pamela Glass³, Michael Farmer¹, Clarence R. Hurt¹, William Hansen¹
¹Prosetta Bioconformatics, Inc., San Francisco, CA, USA; ²CUBRC, Inc., Buffalo, NY, USA; ³Virology Division, USAMRIID, Ft Detrick, MD, USA

- 14:15 37. An Adenosine Nucleoside Inhibitor of Dengue Virus.
Wouter Schul, Yen-Liang Chen, Zheng Yin, Thomas Keller, Pei-Yong Shi
Novartis Institute for Tropical Diseases, Singapore, Singapore
- 14:30 38. Small Molecule Agonists of the RIG-I Pathway and their Potent Antiviral Actions
Kristin Bedard¹, Nicholas Pointinger¹, Eric Tarcha¹, Michael Katze², Michael Gale Jr.², Shawn Iadonato¹
¹Kineta, Inc., Seattle, WA, USA; ²University of Washington, Seattle, WA, USA
- 14:45 39. The NF-KappaB-Inhibitor SC75741 Efficiently Blocks Influenza Virus Propagation by Retention of the Viral RNP Complexes in the Nucleus without the Tendency to Induce Resistant Virus Variants
Christina Erhardt¹, Andrea Rückle¹, Karoline Droebner², Eike Hrinčius¹, Oliver Planz², Stephan Ludwig¹
¹FLI, Tuebingen, Germany; ²IMV/ZMBE, Muenster, Germany
- 15:00 40. The Triple Combination Antiviral Drug (TCAD) Regimen of Amantadine, Ribavirin, and Oseltamivir is Highly Efficacious Against Susceptible and Resistant Influenza Virus Strains in Mouse Treatment Models
Matthew Gross¹, Minh Le¹, Donald Smee², Dale Barnard², Amy Patick¹, Jack Nguyen¹
¹Adamas Pharmaceuticals, Emeryville, CA, USA; ²Utah State University, Logan, UT, USA
- 15:15 41. *In Vitro* and *In Vivo* Efficacy of Combinational Therapy with Favipiravir (T-705) and Oseltamivir against Influenza A/CA/04/09 Pandemic H1N1 Virus
Dale Barnard¹, Yousuke Furuta², Klaus Klumpp³, Donald Smee¹, John Morrey¹, Bart Tarbet¹
¹Institute for Antiviral Research, Utah State University, Logan, UT, USA; ²Toyama Chemical Co., Ltd., Tokyo, Japan; ³Roche Palo Alto LLC, Palo Alto, CA, USA,
- 15:30 Invitation to 24th ICAR, Sofia, Bulgaria
Angel Galabov, Ph.D.
Host, 24th ICAR
- 15:45 ISAR Business Meeting
- 16:00 Break
- 16:15 42. Antiviral Activity of Leflunomide against Respiratory Syncytial Virus
Melinda Dunn, Deborah Knight, W. James Waldman
Department of Pathology, The Ohio State University, Columbus, OH, USA
- 16:30 43. Small-molecule Inhibition of Respiratory Syncytial Virus Fusion: It takes Two to Tango
Dirk Roymans¹, Eric Arnoult², Maxwell D. Cummings¹, Anil Koul³, Koen Andries⁴
¹Tibotec-Virco Virology BVBA, Mechelen, Belgium; ²Tibotec, A Division of Janssen-Cilag, Val de Reuil Cedex, France; ³Tibotec-Virco Virology BVBA, Beerse, Belgium; ⁴J&JPRD, Beerse, Belgium
- 16:45 44. Enterovirus 3C Proteases: Structure-based Discovery of Inhibitors
Rolf Hilgenfeld
University of Luebeck, Luebeck, Germany
- 17:00 45. A Novel 9-Arylpyrrole Acts as a Selective Inhibitor of *In vitro* Enterovirus Replication Possibly by Targeting Virus Encapsidation
Hendrik Jan Thibaut¹, Lonneke van der Linden², Jan Paeshuyse¹, Armando De Palma¹, Leire Aguado³, Frank Van Kuppeveld², María-Jesús Pérez-Pérez³, Johan Neyts¹
¹Rega Institute for Medical Research, K.U. Leuven, Leuven, Belgium; ²Department of Medical Microbiology, Radboud University Nijmegen Medical Centre, Nijmegen Centre for Molecular Life Sciences, Nijmegen, Netherlands; ³Instituto de Química Médica (CSIC), Madrid, Spain
- 17:15 46. Is the Large T Antigen: A Target for the Inhibition of SV40 Replication?
Dimitri Topalis, Ilya Lebeau, Pierre Fiten, Ghislain Opdenakker, Graciela Andrei, Robert Snoeck
Rega Institute for Medical Research, Leuven, Belgium

Poster Session 3: Shotgun Poster Presentations

Chair(s): Mark Prichard, Ph.D. and Johan Neyts, Ph.D.
Grand A

05:30 p.m.–06:30 p.m.

Monday, April 26, 2010**Poster Session 1: Retroviruses, Hepatitis Viruses, Respiratory Viruses, Emerging Viruses, and Antiviral Methods**

Pacific D-O

04:00 p.m.–06:00 p.m.

47. Studies of HIV-1 Integrase Inhibitory Activity of *Wrightia tinctoria*
Periyasamy Selvam¹, Kasthuraiah Maddali², Yves Pommier²
¹Devaki Amma Memorial College of Pharmacy, Chelembra, Malapuram, India; ²Laboratory of Molecular Pharmacology, National Cancer Institute, NIH, Bethesda, Maryland 20892, MD, USA
48. Preliminary Evidence of Rapid HBsAg Seroconversion in Patients with Chronic Hepatitis B (CHB) Treated with a DNA-based Amphipathic Polymer
Mamun Al-Mahtab¹, Michel Bazinet², Andrew Vaillant²
¹Sheikh Mujib Medical University, Dhaka, Bangladesh; ²REPLiCor Inc., Montreal, QC, Canada
49. γ -Carboline Derivatives as Potent and Selective Inhibitors of Bovine Viral Diarrhea Virus (BVDV) Replication.
Masanori Baba¹, Mohammed Salim¹, Mika Okamoto¹, Hiroshi Aoyama², Yuichi Hashimoto², Yutaka Takebe³, Jan Paeshuyse⁴, Johan Neyts⁴
¹Kagoshima University, Kagoshima, Japan; ²The University of Tokyo, Tokyo, Japan; ³National Institute of Infectious Diseases, Tokyo, Japan; ⁴Katholieke Universiteit Leuven, Leuven, Belgium
50. Combination of Peramivir and Rimantadine Demonstrate Synergistic Interaction in Influenza A Mouse Model
Shanta Bantia, Debra Kellogg, Cynthia Parker, YuHong Luo, Y.S. Babu
BioCryst Pharmaceuticals, Inc., Birmingham, AL, USA
51. A Single Intramuscular Injection of Peramivir Demonstrates Anti-influenza Activity against Recently Isolated Pandemic Flu Virus H1N1 (A/CA/04/2009)
Shanta Bantia¹, Debra Kellogg¹, Cynthia Parker¹, Ramanda Upshaw¹, Natalia Ilyushina², Mark Prichard³, Y.S. Babu¹
¹BioCryst Pharmaceuticals, Inc., Birmingham, AL, USA; ²St. Jude's Children's Research Hospital, Memphis, TN, USA; ³University of Alabama at Birmingham, Birmingham, AL, USA

52. *In Vitro* Dose Ranging Studies for Serine Protease Inhibitor, MK-4519, against a Hepatitis C Virus (HCV) Replicon using the BelloCell System
Ashley N. Brown¹, D.V. Singer¹, J.J. McSharry¹, R.J.O. Barnard², D.J. Hazuda², G.L. Drusano¹
¹Ordway Research Institute, Albany, NY, USA; ²Merck Research Labs, West Point, PA, USA
53. Maporal Hantavirus β -Integrin Utilization and Sensitivity to Favipiravir
Kristin Buys¹, Kie-Hoon Jung¹, Yousuke Furuta², Brian Gowen¹
¹Institute for Antiviral Research and Department of Animal, Dairy, and Veterinary Sciences at Utah State University, Logan, UT, USA; ²Research Laboratories, Toyama Chemical Company, Ltd., Toyama, Japan
54. Small Molecule Inhibitors of Dengue Virus Replication are Active *In Vivo*
Chelsea Byrd, Chris Harver, Kara Cardwell, Doug Grosenbach, Aklile Berhanu, Dongcheng Dai, Dennis Hruby, Robert Jordan
SIGA Technologies, Corvallis, OR, USA
55. Biological Profiling of GS-9350, A Novel Pharmacoenhancer that Lacks Anti-HIV Activity and Exhibits Low Potential for Metabolic Adverse Effects *In Vitro*
Christian Callebaut, Luong Tsai, Kirsten Stray, Hongtao Liu, Lianhong Xu, Manoj Desai, Tomas Cihlar
Gilead Sciences, Foster City, CA, USA
56. Production and Characterization of a Highly Infectious Genotype 1B/2A Chimeric Hepatitis C Virus in Cell Culture
Katie Chan, Huiling Yang, Guofeng Cheng, Maria Pokrovskii, Matthew Paulson, Andrew Greenstein, Hongmei Ho, William Delaney
Gilead Sciences, Inc., Foster City, CA, USA
57. Excision of HIV-1 Proviral DNA Using Tre-recombinase: An Experimental Update
Jan Chemnitz¹, Patrick Ziegler², Ilona Hauber¹, Claus-Henning Nagel¹, Helga Hofmann-Sieber¹, Markus Manz³, Frank Buchholz⁴, Joachim Hauber¹
¹Heinrich-Pette-Institute for Experimental Virology and Immunology, Hamburg, Germany; ²Institute for Research in Biomedicine, Bellinzona, Switzerland; ³University Hospital Zurich, Zurich, Switzerland; ⁴Max-Planck-Institute for Molecular Cell Biology and Genetics, Dresden, Germany
58. Small Molecules Targeting Protein–Protein Interactions: A Promising Anti-HIV Strategy
Alba Chimirri¹, Laura De Luca¹, Stefania Ferro¹, Rosaria Gitto¹, Anna Maria Monforte¹, Stefano Agnello¹, Maria Letizia Barreca², Frauke Christ³, Zeger Debyser³
¹Department of Medicinal Chemistry, University of Messina, Messina, Italy; ²Department of Pharmaceutical Chemistry and Technology, University of Perugia, Perugia, Italy; ³Mol. Virology and Gene Therapy Mol. Medicine, Katholieke Universiteit Leuven and IRC KULAK, Leuven, Belgium
59. A Cell Protection Screen Reveals Potent Inhibitors of Multiple Stages of the Hepatitis C Virus Life Cycle
Karuppiyah Chockalingam¹, Rudo Simeon¹, Charles Rice², Zhilei Chen¹
¹Texas A&M University, College Station, TX, USA; ²Rockefeller University, New York City, NY, USA
60. Synthesis and Tissue Distribution Studies of Acyloxyalkyl Prodrug Derivative of an Anti-HBV Dinucleotide
John Coughlin¹, Kathleen O'Loughlin², Sung Rhee², Mary Tanga², Radhakrishnan Iyer¹, Anna Furimsky², Seetharamaiyer Padmanabhan¹, Judith Marquis³, Amy Ta², Carol Green², Jon Mirsalis²
¹Spring Bank Pharmaceuticals, Inc., Milford, MA, USA; ²SRI International, Menlo Park, CA, USA; ³Genzyme Corporation, Cambridge, MA, USA
61. CYSTUS052, A New Compound against Seasonal and Pandemic Influenza Virus
Karolin Droebner¹, Christina Ehrhardt², Stephan Ludwig², Oliver Planz¹
¹Friedrich-Loeffler-Institut, Institute of Immunology, Tübingen, Germany; ²Institute of Molecular Virology (IMV), University of Münster, Münster, Germany
62. Lectins and T-20, But not Neutralizing Antibodies, Inhibit HIV-1 Env-Mediated Syncytium Formation Between Clone69T1RevEnv and SupT1 Cells Monitored by Fluorescence Microscopy
Nejat Düzgünes¹, Michael Yee¹, Jan Balzarini², Krystyna Konopka¹
¹Department of Microbiology, University of the Pacific Arthur A. Dugoni School of Dentistry, San Francisco, CA, USA; ²Rega Institute for Medical Research, Catholic University of Leuven, Leuven, Belgium
63. CYSTUS052, A Polyphenol Rich Plant Extract, Exerts Potent Antiviral Activity against Influenza- and Rhinoviruses by Preventing Viral Attachment to Host Cells
Christina Erhardt¹, Eike Hrinčius¹, Anne Poetter², Karoline Droebner³, Oliver Planz³, Stephan Ludwig¹
¹FLI, Tuebingen, Germany; ²IMV/ZMBE, Muenster, Germany; ³Dr. Pandalis Urheimische Medizin, Glandorf, Germany
64. Withdrawn
65. Development of Resistance to the Natural HIV-1 Entry Virus Inhibitory Peptide (VIRIP)
Emmanuel Gonzalez, Maria Pau Mena, Mercedes Armand-Ugon, Ester Ballana, Bonaventura Clotet, Jose Esté
IrsiCaixa, Badalona, Spain
66. Single-dose Intranasal Delivery with DEF201 (Adenovirus Vecteded Mouse Interferon- α) Protects against *Phlebovirus* and SARS Coronavirus Challenge
Brian Gowen¹, Dale Barnard¹, Min-Hui Wong¹, Deanna Larson¹, Josh Wu², Jane Ennis³, John Morrey¹, Jeffery Turner³
¹Institute for Antiviral Research and Department of Animal, Dairy, and Veterinary Sciences, Logan, UT, USA; ²Defence R&D Canada – Suffield, Medicine Hat, AB, Canada; ³Defyrus Inc., Toronto, ON, Canada
67. Evaluation of the Contribution of Amantadine, Ribavirin, and Oseltamivir in a Triple Combination Antiviral Drug (TCAD) Regimen to Suppressing the Emergence of Resistance using a Novel Quantitative Approach
Justin Hoopes¹, Minh Le³, Elizabeth Driebe², Erin Kelley², David Engelthaler², Amy Patick³, Jack Nguyen³
¹Utah State University, Logan, UT, USA; ²TGen North, Flagstaff, AZ, USA; ³Adamas Pharmaceuticals, Emeryville, CA, USA
68. Orally Bioavailable Anti-HBV Dinucleotide Acyloxyalkyl Prodrugs
Radhakrishnan Iyer¹, John Coughlin¹, Cassandra Kirk¹, Seetharamaiyer Padmanabhan¹, Brent Korba², Kathleen O'Loughlin³, Carol Green³, Jon Mirsalis³, John Morrey⁴
¹Spring Bank Pharmaceuticals, Inc., Milford, MA, USA; ²Georgetown University, Rockville, MD, USA; ³SRI International, Menlo Park, CA, USA; ⁴Utah State University, Logan, UT, USA
69. Activation of Retinoic Acid Inducible Gene (RIG-I) by Nucleotide Analogs: A Potential Novel Mechanism for Antiviral Discovery
Radhakrishnan Iyer¹, John Coughlin¹, Seetharamaiyer Padmanabhan¹, Brent Korba², Sua Myong³
¹Spring Bank Pharmaceuticals, Inc., Milford, MA, USA; ²Georgetown University, Rockville, MD, USA; ³University of Illinois, Urbana-Champaign, IL, USA

70. Efficacy of 2'-C-Methylcytidine against Yellow Fever Virus in a Hamster Model of Disease
*Justin Julander*¹, *Ashok Jha*², *Jung-Ae Choi*¹, *Don Smee*¹, *John Morrey*¹, *Chung Chu*²
¹Institute for Antiviral Research, Utah State University, Logan, UT, USA; ²The University of Georgia, College of Pharmacy, Athens, GA, USA
71. Immunosafety Assessment of CD4 mAb-based Bifunctional HIV Entry Inhibitor (CD4-BFFI) using In Vitro Immunoassays
*Ford Kirschenbaum*¹, *Sandhya Bohini*¹, *Harald Kropshofer*², *Nick Cammack*¹, *Surya Sankuratri*¹, *Changhua Ji*¹
¹Roche Palo Alto, Palo Alto, CA, USA; ²Roche Basel, Basel, Switzerland; ³CA, USA
72. Inhibition of Severe Acute Respiratory Syndrome Coronavirus Replication in a Lethal SARS-CoV BALB/c Mouse Model by Stinging Nettle Lectin, Urtica Dioica Agglutinin (UDA).
Yohichi Kumaki, *Miles K. Wandersee*, *Kevin W. Bailey*, *Aaron J. Smith*, *Craig W. Day*, *Jason R. Madson*, *Donald F. Smee*, *Dale L. Barnard*
Institute for Antiviral Research, Utah State University, Logan, UT, USA
73. Viprolaxikine, A Novel Cytokine-like Protein from Insect Cell Cultures Can Reduce Dengue-2 Virus Titres in Mammalian Cells
Chaowanee Laosutthipong, *Timothy Flegel*
74. The Susceptibility of Isolates of Pandemic 2009 H1N1 Influenza A Virus to Russian Domestic antivirals
*Irina Leneva*¹, *Alesya Romanovskaya*², *Elena Burtseva*³, *Mike Erokin*⁴, *Alexander Shestopalov*²
¹Centre of Chemistry of Drugs, Moscow, Russia; ²Center of Virology and Biotechnology "Vector", Novosibirsk, Russia; ³D.I. Ivanovsky Institute of Virology, Moscow, Russia; ⁴Institute of Influenza, St.-Petersburg, Russia
75. Small Molecule Inhibitors of *De Novo* Cell-free Capsid Assembly Effective against *Flaviviridae* and *Togaviridae*
*Vishwanath R. Lingappa*¹, *Juliane Gentzsch*², *Kiel Copeland*¹, *I-Ting Jaing*¹, *Michael Corpuz*¹, *Pamela Glass*³, *Jaisri R. Lingappa*⁴, *Brenna Kelley-Clarke*⁴, *Debendranath Dey*¹, *Colm Kelleher*¹, *Andy Atuegbu*¹, *Amy Anderson*¹, *Josh Lehrer-Graiwer*¹, *Thomas Pietschmann*², *Clarence R. Hurt*¹, *William Hansen*¹
¹Prosetta Bioconformatics, Inc., San Francisco, CA, USA; ²Division of Experimental Virology, TWINCORE, Hannover, Germany; ³Virology Division, USAMRIID, Ft Detrick, MD, USA; ⁴Department of Global Health, University of Washington, Seattle, WA, USA
76. Anti-influenza Action of Multinutrient Functional Peptide Complex (MFPC) Grinization®
*V. Lozitsky*¹, *I. Gomolyakov*², *S. Pozdnyakov*¹, *A. Fedchuk*¹, *T. Gridina*¹, *L. Socheslo*¹, *V. Pushkina*¹, *N. Klochkova*², *V. Shestakov*³
¹Ukrainian Mechnikov Antiplague Research Institute, Odesa, Ukraine; ²The National Institute of Surgery and Transplantation named by A.A. Shalimov, Kyiv, Ukraine; ³The Institute of Health of Nation, Kyiv, Ukraine
77. Antiviral Action of Artificial Ribonucleases against Avian & Human Influenza Viruses
*V. Lozitsky*¹, *A. Fedchuk*¹, *T. Grydina*¹, *L. Korolyeva*², *V. Sil'nikov*², *L. Socheslo*¹
¹Ukrainian Mechnikov Research Anti-Plague Institute, Odesa, Ukraine; ²Institute of Chemical Biology and Fundamental Medicine, Siberian Branch, Russian Academy of Sciences, Novosibirsk, Russia
78. Efficient Suppression of Human Immunodeficiency Virus in Macrophages by Nano-NRTIs
Edward Makarov, *Trevor Gerson*, *Thulani Senanayake*, *Larisa Poluektova*, *Serguei Vinogradov*
University of Nebraska Medical Center, Omaha, NE, USA
79. Oseltamivir Protection of Oxidative Damages in Mice Experimentally Infected by Influenza Virus
Milka Mileva, *Angel S. Galabov*
The Stephan Angeloff Institute of Microbiology, Sofia, Bulgaria
80. Discovery and Treatment of Respiratory Neurological Sequelae in West Nile Virus Infected Hamsters
*John D. Morrey*¹, *Venkatraman Siddharthan*¹, *Hong Wang*¹, *Neil E. Motter*¹, *Jeffery O. Hall*¹, *Robert D. Skinner*²
¹Institute for Antiviral Research, Department of Animal, Dairy and Veterinary Sciences, Utah State University, Logan, UT, USA; ²Center for Translational Neuroscience and Department of Neurobiology and Developmental Sciences, University of Arkansas for Medical Sciences, Little Rock, AR, USA
81. Breaking Tolerance with CLDC-HBsAg in HBV Transgenic Mice
*John D. Morrey*¹, *Jeff Fairman*², *Stella Chang*², *Neil E. Motter*¹
¹Institute for Antiviral Research, Department of Animal, Dairy and Veterinary Sciences, Utah State University, Logan, UT, USA; ²Juvaris BioTherapeutics, Inc., Burlingame, CA, USA
82. Pro-drugs of Strand Transfer Inhibitors of HIV-1 Integrase: Inhibition Data, Structure–Activity Analysis and Anti-HIV Activity
Vasu Nair, *Byung Seo*, *Malik Nishonov*, *Maurice Okello*, *Sanjay Mishra*
University of Georgia, Athens, GA, USA
83. Triple Combination Antiviral Drug (TCAD) Regimen Composed of Amantadine, Ribavirin, and Oseltamivir Imposes A High Genetic Barrier to the Development of Resistance against Influenza A Viruses *In Vitro*
*Jack Nguyen*¹, *Justin Hoopes*², *Elizabeth Driebe*³, *Kelly Sheff*³, *David Engelthaler*³, *Minh Le*¹, *Amy Patick*¹
¹Adamas Pharmaceuticals, Emeryville, CA, USA; ²Utah State University, Logan, UT, USA; ³TGen North, Flagstaff, AZ, USA
84. Inhibition of Hepatitis C Virus Replication by Semisynthetic Derivatives of Glycopeptide Antibiotics
*Susan Obeid*¹, *Maria N. Preobrazhenskaya*², *Leen Delang*¹, *Svetlana S. Printsevskaya*², *Eugenia N. Olsufyeva*², *Svetlana E. Solovieva*², *Jan Balzarini*¹, *Alfons Van Lommel*³, *Johan Neyts*¹, *Jan Paeshuyse*¹
¹Rega Institute for Medical Research, K.U.Leuven, Leuven, Belgium; ²Gause Institute of New Antibiotics, Russian Academy of Medical Sciences, Moscow, Russia; ³Department of Morphology and Molecular Pathology, K.U.Leuven, Leuven, Belgium
85. Eradication of Persistent Bovine Viral Diarrhea Virus Infection in Cell Culture by Antiviral Treatment: How to Get Ahead of the Viral Evasion Strategy
*Jan Paeshuyse*¹, *Simone Musiu*¹, *Gerhard Puerstinger*², *Johan Neyts*¹
¹Rega Institute for Medical Research, K.U.Leuven, Leuven, Belgium; ²University of Innsbruck, Innsbruck, Austria
86. *N,N'*-Bis(1,2,3-Thiadiazol-5-yl)Benzene-1,2-Diamine Targets the HIV-1 Retroviral Nucleocapsid Zinc Fingers
*Christophe Pannecouque*¹, *Beata Szafarowicz*², *Natalia Volkova*³, *Vasily Bakulev*³, *Wim Dehaen*⁴, *Yves Mély*², *Dirk Daelemans*¹
¹Rega Institute for Medical Research, Katholieke Universiteit Leuven, Minderbroedersstraat 10, B-3000 Leuven, Belgium; ²Laboratoire de Biophotonique et Pharmacologie, UMR 7213 du CNRS, Université de Strasbourg, Faculté de Pharmacie, 74 route du Rhin, 67401, Illkirch, France; ³Urals State Technical University, Mira Str.19, Ekaterinburg, Russia; ⁴Chemistry Department Katholieke Universiteit Leuven, Celestijnenlaan 200F, B-3001 Leuven, Belgium
87. *In Vitro* Combination Studies of ANA598 with Anti-HCV Agents Demonstrate Enhanced Anti-viral Activity
Rupal Patel, *Peggy Thompson*, *Richard Showalter*, *James Appleman*
Anadys Pharmaceuticals, Inc., San Diego, CA, USA

88. Discovery of Novel Small Molecule Inhibitors of Multiple Influenza Strains in Cell Culture
Benjamin Petsch¹, Clarence R. Hurt², Beverly Freeman², Elisabeth Zirdum¹, Anupama Ganesh², Alexandra Schörg¹, Anatoliy Kitaygorodskyy², Yoko Marwidi², Olivier Ducoudret², Colm Kelleher², William Hansen², Vishwanath R. Lingappa², Christian Essrich², Lothar Stitz¹
¹Friedrich-Loeffler-Institute, Federal Research Institute for Animal Health, Institute of Immunology, Tübingen, Germany; ²Prosetta Bioconformatics, San Francisco, CA, USA
89. Novel Imino Sugars Potently Inhibit HCV Virion Secretion by Targeting Cellular Endoplasmic Reticulum Alpha-glucosidases
Xiaowang Qu¹, Xiaoben Pan¹, Jessica Weidner¹, wenquan Yu², Michael Xu^{2,3}, Timothy Block^{1,2}, Ju-Tao Guo¹, Jinhong Chang¹
¹Drexel Institute for Biotechnology and Virology Research, Drexel University College of Medicine, Doylestown, PA, USA; ²Institute for Hepatitis and Virus Research, Hepatitis B Foundation, Doylestown, PA, USA; ³Enantigen Therapeutics, Inc., Doylestown, PA, USA
90. Antiviral Activity of Attachment Inhibitor against the Pandemic Influenza A (H1N1) Virus
S. Rak¹, O. Pyankova¹, A. Chinarev², A. Tuzikov², N. Bovin², A. Agafonov¹, O. Demina¹, A. Ryzhikov¹
¹FSRI SRC VB Vector, Koltsovo, Russia; ²Shemyakin Institute of Bioorganic Chemistry, Moscow, Russia
91. Therapeutic Response Guided Interferon Therapy among Patients Chronically Infected with Hepatitis C Virus
Abida Raza¹, Hafsa Aziz¹, Naseeb Zaman², Iqbal Yousuf³, Faateh Din⁴, Shahnaz Murtaza¹, Javed Irfan¹, Mukhtar Muhammad²
¹Nuclear Medicine, Oncology & Radiotherapy Institute, Islamabad, Pakistan; ²PMAS Arid Agriculture University, Rwp, Pakistan; ³Pakistan Council for Science & Technology, Isb, Pakistan; ⁴National Institute of Population Studies, Isb, Pakistan
92. The NF-kappaB-Inhibitor SC75741 Efficiently Blocks Influenza Virus Propagation *In Vitro* and *In Vivo* without the Tendency to Induce Resistant Virus Variant
Sarah Reiling¹, Karoline Droebner¹, Christina Ehrhardt², Eike Hirinus Hrcinius², Stephan Ludwig², Oliver Planz¹
¹Friedrich-Loeffler-Institut, Institute of Immunology, Tübingen, Germany; ²Institute of Molecular Virology (IMV), University of Münster, Münster, Germany
93. Trypsin Digestion of Hepatitis C Virus NS5B Polymerase Exposes A Hinge at the Active Site
Karen Rigat, Yi Wang, Thomas W. Hudyma, Min Ding, Xiaofan Zheng, Robert G. Gentles, Brett R. Beno, Min Gao, Susan B. Roberts
Bristol-Myers Squibb, Wallingford, CT, USA
94. Neuraminidase Inhibitor Susceptibility of Swine Influenza A Viruses Isolated Between 1981 and 2008 in Germany
Michaela Schmidtk¹, Katja Bauer¹, Dominik Topf¹, Heike Braun¹, Martina Richter¹, Kathrin Pfarr¹, Ralf Dürrwald², Michael Schlegel², Peter Wutzler¹
¹Department of Virology and Antiviral Therapy, Jena University Hospital, Jena, Germany; ²IDT Biologika GmbH, Research and Development Department, Dessau, Germany
95. Liver Biopsy Tissue—Real Time Polymerase Chain Reaction (RT-PCR) Viral Load is the Only Goldstandarddiagnostic Assay in Inactive Viral Hepatitis Patients
P. Selvam¹, M. Chandramohan¹, S.C. Vivekananthan¹, D. Sivakumar¹, M. Suresh², P.K. Rath²
¹Kamarajar Liver, Jaundice Hospital & Research Centre, Madurai 625001, India; ²Doctor's Blood Bank & Research Centre, Tiruchirapalli 620018, India
96. Design, Molecular Modelling Studies on Isatin Analogues as Novel Inhibitors of HIV Integrase
P. Selvam¹, M. Chandramohan², N. Saravanan Prabhu³, M. Suresh Kumar³
¹Devaki Amma Memorial College of Pharmacy, Chelembra, Malapuram, Kerala, India; ²Bharat Ratna Kamarajar Liver Hospital and Research Centre, Madurai 625020, India; ³Centre for Bioinformatics, School of Life Sciences, Pondicherry University, Puducherry 605014, India
97. Activity of Isatine-Sulphadimidine Derivatives against 2009 Pandemic H1N1 Influenza Virus in Cell Culture
Periyasamy Selvam¹, Markandavel Chandramohan², Brett L. Hurst³, Donald F. Smee³
¹Devaki Amma Memorial College of Pharmacy, Malapuram, India; ²Bharat Ratna Kamarajar Liver Hospital and Research Centre, Madurai, India; ³Institute for Antiviral Research, Utah State University, Utah, UT, USA
98. Studies of HIV Integrase Inhibitory Activity of *Morinda Citrifolia* L Noni Fruit Extracts
Periyasamy Selvam¹, Kasthuraiah Maddali², Christophe Marchand², Yves Pommier²
¹Devaki Amma Memorial College of Pharmacy, Malapuram 676364, India; ²Laboratory of Molecular Pharmacology, National Cancer Institute, Bethesda, MD 20892, USA
99. Synergistic Inhibition of Influenza A Virus Replication by a Bacterial Protease Inhibitor and a Plant Preparation
Julia Serkedjieva¹, Michele Dalgalarondo², Iskra Ivanova³
¹Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria; ²Institut National de la Recherche Agronomique-BIA-FIPL, Nantes, France; ³Department of Microbiology, Sofia University, Sofia, Bulgaria
100. Optimization of Novel Broad Spectrum Anti-Influenza Therapeutics
William Severson¹, Xi Chen³, Colleen Jonsson^{1,2,5}, Clinton Maddox³, Joseph Maddry³, James Noah¹, Stephen Ontiveros¹, William Parker¹, Donald Smee⁴
¹Department of Biochemistry, Birmingham, USA; ²SRMLSC, Birmingham, USA; ³Department of Chemistry Southern Research, Birmingham, USA; ⁴Institute for Antiviral Research, USU, Logan, USA; ⁵Predictive Medicine for Biodefense and Emerging Infectious Diseases, University of Louisville, Louisville, USA
101. Humanized Neutralizing Monoclonal Antibody and Cyclosporine Treatment for Motor Unit Number Estimation in West Nile Virus Infected Hamster Model
Venkatraman Siddharthan¹, Brandon Taro¹, Hong Wang¹, Jeffery Nordstrom², Jeffery Hall¹, Robert Skinner³, John Morrey¹
¹Institute for Antiviral Research, Animal Dairy and Veterinary Sciences, Utah State University, Logan, UT, USA; ²MacroGenics, Inc., Rockville, MD, USA; ³Center for Translational Neuroscience and Department of Neurobiology and Developmental Sciences, University of Arkansas for Medical Sciences, Little Rock, AR, USA
102. Effect of Acridonoacetic Acid on Production of IL-6 in Influenza-infected Peripheral Blood Lymphocytes
Alexander Slita, Marina Stukova, Vladimir Zarubaev
Influenza Research Institute, St. Petersburg, Russia
103. Efficacy of Combinations of Oseltamivir and Peramivir in Treating Influenza A (H1N1) Virus Infections in Cell Culture and in Mice
Donald Smee¹, Brett Hurst¹, Min-Hui Wong¹, E. Bart Tarbet¹, Y.S. Babu², John Morrey¹
¹Institute for Antiviral Research, Utah State University, Logan, UT, USA; ²Biocryst Pharmaceuticals, Birmingham, AL, USA
104. Antiviral Drug Efficacy Evaluation against Pandemic Influenza A (H1N1) Viruses in MDCK Cells
Bart Tarbet¹, Brett Hurst¹, Dale Barnard¹, Y.S. Babu², Yousuke Furuta³, Donald Smee¹
¹Utah State University, Logan, UT, USA; ²BioCryst Pharmaceuticals, Birmingham, AL, USA; ³Toyama Chemical Co., Toyama, Japan
105. *In Vitro* Combination of ANA598 with other Anti-HCV Agents Can Eliminate the Emergence of Resistant Colonies
Peggy Thompson, Richard Showalter, Rupal Patel, James Appleman
Anadys Pharmaceuticals, San Diego, CA, USA

106. Development and *In Vitro* Evaluation of Gel-Formulated Saquinavir as Vaginal Microbicide: Anti-HIV-1 Activity and Pharmaceutical Availability in Biorelevant Media
Kurt Vermeire¹, Joachim Brouwers², Patrick Augustijns², Dominique Schols¹
¹Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium; ²Laboratory for Pharmaceutotechnology and Biopharmacy, Katholieke Universiteit Leuven, Leuven, Belgium
107. Identification of Antiviral Activity of Koe-Ken Tang against Influenza Virus
MingSian Wu, ChiChun Chen, JimTong Horng
1, Taoyuan, Taiwan
108. Anti-influenza Virus Activity by Tricin, Isolated from *Sasa Albo-Marginata* in Japan
Kurumi Yazawa¹, Yuuzou Tsuchida², Rie Yamada¹, Hidetaka Sadanari¹, Tsuguya Murayama¹
¹Department of Microbiology and Immunology, Faculty of Pharmaceutical Sciences, Hokuriku University, Kanazawa, Japan; ²Hououdou Co., Ltd., Tokyo, Japan
109. Synthesis and Biological Evaluation of Triazolo-Pyrimidine Derivatives as Novel Inhibitors of Hepatitis B Virus Surface Antigen (HBsAg) Secretion
Wenquan Yu^{1,2}, Cally Goddard¹, Courtney Mills¹, Elizabeth Clearfield¹, Andrea Cuconati¹, Kang Zhao², Timothy Block^{1,3}, Xiaodong Xu¹
¹Institute for Hepatitis and Virus Research, Doylestown, PA, USA; ²School of Pharmaceutical Science and Technology, Tianjin University, Tianjin, China; ³Drexel Institute for Biotechnology and Virology Research, Drexel University, Doylestown, PA, USA
110. Anti-influenza Activity of Dihydroquercetin against Lethal Influenza Virus Infection
Vladimir Zarubaev¹, Angela Garshinina¹, Nelly Kalinina¹, Vadim Anikin¹, Vasily Babkin², Liudmila Ostroukhova², Oleg Kiselev¹
¹Influenza Research Institute, St. Petersburg, Russia; ²Irkutsk Institute of Chemistry, Irkutsk, Russia
111. Anti-viral Activity of Ingavirin (Imidazolyl Ethanamide Pentandioic Acid) against Lethal Influenza Infection Caused by Pandemic Strain A/California/07/09 (H1N1) Virus in White Mice
Vladimir Zarubaev¹, Vladimir Nebolsin², Angela Garshinina¹, Nelly Kalinina¹, Anna Shtro¹, Oleg Kiselev¹
¹Influenza Research Institute, St. Petersburg, Russia; ²ValentaPharmaceuticals JSC, Moscow, Russia
112. Activity of a Novel Fullerene-based Antiviral against Influenza Virus Infection *In Vitro* and *In Vivo*
Vladimir Zarubaev¹, Pavel Anfimov¹, Anna Shtro¹, Lev Rasnetsov², Oleg Kiselev¹
¹Influenza Research Institute, St. Petersburg, Russia; ²Intelpharm GC, Nizhny Novgorod, Russia

Tuesday, April 27, 2010

Poster Session 2: Herpes Viruses, Pox Viruses, Other Antiviral, Medicinal Chemistry and Topical Microbicides

Pacific D-O

04:00 p.m.–06:00 p.m.

113. Synthesis and Antiviral Activity of 3-O-Phosphonomethyl Nucleosides
Michal Cesnek, Piet Herdewijn
Laboratories of Medicinal Chemistry and Virology, Rega Institute for Medical Research, Minderbroedersstraat 10, Belgium
114. Oral Pharmacokinetics of Hexadecyloxypropyl 9-(R)-[2-(Phosphono-Methoxy)Propyl]Guanine (HDP-(R)-PMPG) in Mice using LC/MS/MS
Kathy A. Aldern¹, Julissa Trahan², James R. Beadle¹, Yongxuan Su¹, Karl Y. Hostetler^{1,2}
¹University of California, San Diego, La Jolla, CA, USA; ²Veterans Medical Research Foundation, San Diego, CA, USA
115. Efficient Synthesis and Biological Properties of Base Substituted 2,4-Diamino-6-(R)-[3-Hydroxy-2-(Phosphonomethoxy)Propoxy]Pyrimidine (HPMPO-DAPy)
Petra Břehová, Martin Dračinský, Antonín Holý
Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic
116. A Single Intranasal Administration of DEF201 Protects against Lethal Respiratory Challenge with Western Equine Encephalitis Viruses
Tahar Babas¹, Elizabeth Peters¹, Jocelyn Bassler¹, Amy Rippeon¹, Ronda Wright¹, Ginger Donnelly¹, Jane Ennis², Lowery Rhodes¹, Jeffrey Turner², Peter Silvera¹
¹Southern Research Institute, Frederick, MD, USA; ²Defyrus, Inc., Toronto, ON, Canada
117. Synthesis and Solution Structure of DNA Duplexes Containing the Potent Anti-poxvirus Agent Cidofovir
James R. Beadle¹, Subhrangsu Chatterjee², Wendy C. Magee², Brian D. Sykes², David H. Evans², Karl Y. Hostetler¹
¹University of California, San Diego, La Jolla, CA, USA; ²University of Alberta, Edmonton, AB, Canada
118. Inhibition of Calicivirus Replication in Mammalian Cells by RNAi
Mirko Bergmann, Jacques Rohayem, Dresden, Germany
119. Withdrawn
120. Developing Capsid Inhibitor V-073 for Poliovirus
Marc Collett, Jeffrey Hincks
ViroDefense Inc., Rockville, MD, USA
121. Addition Antiflogistic to Viral Inhibitor
G. Danilenko¹, S. Rybalko², T. Bukhtiarova³, V. Danilenko³, S. Guzhova¹, V. Lozitsky⁴
¹Institute of Organic Chemistry, Kyiv, Ukraine; ²Institute of Epidemiology and Infectious Diseases, Kyiv, Ukraine; ³Institute of Pharmacology and Toxicology, Kyiv, Ukraine; ⁴Ukrainian Mechnikov Research Anti-Plague Institute, Odesa, Ukraine
122. Unsymmetrical CADA Analogs as Novel Down-modulators of the CD4 Receptor
Violeta Demillo¹, 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
123. The Discovery and Efficacy of a Small Molecule Inhibitor of Ebola Capsid Assembly in an Animal Model
Jean Francis¹, Warren Kalina³, Travis Warren³, Katie Edwards², I-ting Jaing¹, A. Pia Abola¹, Abhar Nissar¹, Anatoliy Kitaygorodskyy¹, Clarence R. Hurt¹, Sina Bavari³, William Hansen¹, Vishwanath R. Lingappa¹
¹Prosetta Bioconformatics, San Francisco, CA, USA; ²CUBRC, Inc., Buffalo, NY, USA; ³Integrated Toxicology Division, USAMRIID, Ft. Detrick, MD, USA

124. Structure–Activity Relationships of D- and L-Analogs of Maribavir and 1-Beta-D-Ribofuranosyl-2-Bromo-5,6-Dichlorobenzimidazole (BDCRB) against Human Herpesvirus 6
Samuel Frederick¹, Shannon Daily¹, Kathy Borysko², Leroy Townsend², John Drach², Mark Prichard¹
¹The University of Alabama at Birmingham School of Medicine, Birmingham, AL, USA; ²School of Dentistry and College of Pharmacy, University of Michigan, Ann Arbor, MI, USA
125. Stereospecific Phosphorylation of Cyclopropavir by pUL97 and Inhibition by Maribavir
Brian G. Gentry¹, Jeremy P. Kamil², Donald M. Coen², Jiri Zemlicka³, John C. Drach¹
¹University of Michigan, Ann Arbor, MI, USA; ²Harvard Medical School, Boston, MA, USA; ³Wayne State University, Detroit, MI, USA
126. Screening and Rational Design of Low Molecular Weight HIV Fusion Inhibitors
Miriam Gochin^{1,4}, Guangyan Zhou¹, Dong Wu¹, Landon Whitby², Dale Boger², Thomas Chung³
¹Touro University, Vallejo, CA, USA; ²Scripps Research Institute, San Diego, CA, USA; ³Burnham Institute, San Diego, CA, USA; ⁴University of California, San Francisco, CA, USA
127. A New Tacaribe Arenavirus Infection Model to Explore the Antiviral Activity of a Novel Aristeromycin Analog
Brian Gowen¹, Kie-Hoon Jung¹, Deanna Larson¹, Wei Ye², John Morrey¹, Donald Sme¹, Stewart Schneller²
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