

Scientific Program

Monday, April 22

Oral Session I: LaSalle Ballroom, Hotel Inter•Continental

9:00 am Welcome – Erik De Clercq, Rega Institute for Medical Research
Kenneth F. Soike, Delta Primate Center

9:15 Invited Speaker – Herbert E. Kaufman
“Progress in Antiviral Therapy”
LSU Medical Center, New Orleans, LA, USA

Design of Antiviral Agents

Co-chairmen: K. Andries and J.C. Martin

10:00 Plenary Speaker – Piet Herdewijn
“Novel Nucleoside Strategies for Anti-HIV and Anti-HSV Therapy”
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium

10:30 1. 4'-Azidothymidine: Synthesis and In Vitro Anti-HIV Activity.
H. Maag, N. Chu, D. Crawford-Ruth, E. Eugui, M.J. McRoberts, A. Mirkovich, M. Pettibone, E.J. Prisbe, R.M. Rydzewski, J.P.H. Verheyden
Syntex Research, Palo Alto, CA, USA

10:45 2. Asymmetric Synthesis of 1,3-Dioxolane Nucleosides and Their Anti-HIV Activities.
C.K. Chu, H.O. Kim, S.K. Ahn, A.J. Alves, J.W. Beach, L.S. Jeong, P. Van Roey, and R.F. Schinazi
The University of Georgia, College of Pharmacy, Athens, GA, USA; Medical Foundation of Buffalo, Buffalo, NY, USA; Emory University/VA Medical Center, Atlanta, GA, USA

11:00 Break

11:30 3. Novel Modified Nucleosides and Their Phosphorylated Analogues as Potential Anti-HIV Agents.
V. Nair, T.B. Sells, A.G. Lyons, and D.F. Purdy
University of Iowa, Iowa City, Iowa, USA

- 11:45 4. Design, Synthesis and Configuration of 5-[2,2-Dichloro(or 2-chloro)-cyclopropyl]-2'-deoxyuridines.
E.E. Knaus, M. Tandon, M.L. Tempest, and L.I. Wiebe
University of Alberta, Edmonton, Alberta, Canada
- 12:00 5. Novel Non-Nucleoside Inhibition of Reverse Transcriptase (RT) for Human Immunodeficiency Virus-1 (HIV-1).
J. Adams, V.J. Merluzzi, K.D. Hargrave, M. Labadia, K. Grozinger, M. Skoog, J. Wu, C-K Shih, K. Eckner, S. Hattox, A.S. Rosenthal, R. Faanes, R. Eckner, R.A. Koup, and J.L. Sullivan
Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT; University of Massachusetts Medical School, Worcester, MA, USA
- 12:15 6. Novel Azolylalkyloxy Heterocycles as Potential Antipicornavirus Agents.
M. Daneshtalab, M.L. Tempest, D.Q. Nguyen, C.M. Ha, H.T. Luu, C.A. Koski, R.G. Micetich
SynPhar Laboratories Inc., Edmonton, Alberta, Canada
- 12:30 Lunch

Oral Session II: LaSalle Ballroom

Synthesis, In Vitro Evaluation

Co-chairmen: W.M. Shannon and S. Shigeta

- 2:30 pm Plenary Speaker – John A. Secrist, III
“Novel Nucleoside Strategies for Anti-CMV Therapy”
Southern Research Institute, Birmingham, AL, USA
- 3:00 7. Potent and Selective Anti-retrovirus Activity of 9-(RS)-(3-fluoro-2-phosphonylmethoxypropyl)purine Derivatives.
J. Balzarini, A. Holý, J. Jindřich, H. Dvořáková, Z. Hao, R. Snoeck, P. Herdewijn, D.G. Johns, and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium; Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Czechoslovakia; National Cancer Institute, NIH, Bethesda, MD, USA
- 3:15 8. Synthesis and Biological Evaluation of an Acyclic Thiosangivamycin.
T.E. Renau, M.R. Nassiri, L.A. Coleman, S.R. Turk, D.E. Lopatin, E.E. Swayze, L.B. Townsend, and J.C. Drach
University of Michigan, College of Pharmacy, Ann Arbor, MI, USA

- 3:30 9. Activity of Tricyclic Nucleoside and Tricyclic Nucleoside 5' Phosphate (Triciribine) Against HIV and Other Retroviruses.
L. Kucera, N. Iyer, S. Puckett, R.W. Buckheit, M. Hollingshead, L. Westbrook, B. Toyer, E.L. White, J. Germany, W. Shannon, R.C.-S. Chen, J.C. Drach, and L.B. Townsend
Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, NC; Southern Research Institute, Birmingham, AL; University of Michigan, Ann Arbor, MI, USA
- 3:45 10. Antimyxovirus Activities of Pyridobenzazole Derivatives.
S. Shigeta, S. Mori, M. Baba, and T. Chiba
Fukushima Medical College, Fukushima; Pharmaceutical Institute, Tohoku University, Sendai, Japan
- 4:00 11. A Cell Culture Assay for Compounds Which Inhibit Hepatitis B Virus Replication.
B.E. Korba and J.L. Gerin
Georgetown University, Rockville, MD, USA
- 4:15 12. Anti-adenovirus Activity of 3'-Fluoro-2',3'-Dideoxythymidine.
J.W.T. Selway
Wellcome Research Laboratories, Beckenham, Kent, U.K.

Poster Session I: Conference Center, Hotel InterContinental

Synthesis, In Vitro Evaluation

4:30 – 6:30 pm

13. Synthesis of Some Uridine and 2'-deoxyuridine 5-N-Alkoxycarbonyl-carboxamides.
G. Shaw and D.C. Agathocleous
University of Bradford, Bradford, West Yorkshire, U.K.
14. 2'-Deoxy-2'-fluoropyrimidine Nucleosides with Antiviral Activity.
M.J. Slater, S.M. Tisdale, and C. Gowrie
The Wellcome Research Laboratories, Beckenham, Kent, U.K.
15. Novel 6-Alkoxypurine-2',3'-dideoxynucleosides as Inhibitors of the Human Immunodeficiency Virus.
C.L. Burns, M.H. St. Clair, L.W. Frick, T.A. Spector, D.R. Averett, M.L. English, T.J. Holmes, T.A. Krenitsky, and G.W. Koszalka
Wellcome Research Laboratories, Research Triangle Park, NC, USA
16. Synthesis of some Mimics of Nucleoside Triphosphates.

D.M. Coe, H. Hilpert, S.A. Noble, M.R. Peel, S.M. Roberts, and R. Storer
University of Exeter, Exeter, Devon, U.K.; Glaxo Group Research, Greenford, Middlesex, U.K.; Glaxo Inc., Research Triangle Park, NC, USA

17. Synthesis and Anti-RSV Activities of Novel Nucleosides: 6-Substituted Analogs of 2',3'-Dideoxypurine Nucleosides.
E. Kojima, M. Machida, H. Yoshioka, and K. Murakami
Sanyo-Kokusaku Pulp Co., Iwakuni, Yamaguchi, Japan
18. Low Molecular Weight Difluoroketones that are Inhibitors of HIV-1 Protease and with Antiviral Activities In Vitro.
H. Sham, D. Betebenner, N. Wideburg, W. Kohlbrenner, D. Norbeck, J. Erickson, and J. Plattner
Abbott Laboratories, Abbott Park, IL, USA
19. Antiviral Activity of 5'-Modified Analogs of AZT Against HIV-1 and 2.
G.A. Freeman, J.L. Rideout, M.H. St.Clair, G.B. Roberts, and P.A. Sherman
Burroughs Wellcome Co., Research Triangle Park, NC, USA
20. Synthesis of 2-amino-9-(3'-azido-2',3'-dideoxy-beta-D-erythro-pentofuranosyl)-6-methoxy-9H purine (AzddMAP) and AzddGuo.
M.R. Almond, J.L. Collins, B.E. Reitter, J.L. Rideout, G.A. Freeman, and M.H. St.Clair
Burroughs Wellcome Co., Research Triangle Park, NC, USA
21. Short and Stereoselective Synthesis of a New Bioisoster of 2',3'-Dideoxy Adenosine Monophosphate.
S. Halazy
Marion Merrell Dow Research Institute, Strasbourg, France
22. Inhibition of HIV Protease Activity by Various Dipeptide Isosteres.
A. Fässler, E. Alteri, G. Bold, E. Hungerbühler, M. Lang, B. Poncioni, J. Rösel, H. Rüeger, P. Schneider
CIBA-GEIGY Limited, Basel, Switzerland
23. 2,3-Dideoxyfuranoses in Convergent Syntheses of 2',3'-Dideoxy Nucleosides.
E.B. Pedersen, A. E.-S. Abdel-Megied, Y. Aly, K.L. Dueholm, P. Hansen, J. Lau, M.S. Motawia, C.M. Nielsen, K. Pupek, and K. Walczak
Odense University, Odense, Denmark

24. The Anti-HCMV Potential of Carbocyclic 3'-Deoxypurine Nucleosides.
S.W. Schneller, W.F. Frick, and P.G. Medveczky
University of South Florida, Tampa, FL, USA
25. Anti-herpes Activity of Fatty Acid Nucleoside Derivatives.
M.D. Winther, C. Stewart, and S. Randall
Scotia Pharmaceuticals Ltd., Guildford, UK; Birmingham, University,
Birmingham, U.K.
26. Photo-Arbuzov Route to Acyclic Nucleoside-Based Phosphonates.
W.G. Bentrude and K.B. Mullah
University of Utah, Salt Lake City, UT, USA
27. The Synthesis of 1-Phosphonylmethoxyethyl-1,2,4-triazole-3-carbox-
amide, a New and Novel Acyclic Nucleotide Analog.
C.D. Kwong, J.A. Secrist III, G.S. McCaleb, and B.J. Gabrielsen
Southern Research Institute, Birmingham, AL; U.S. Army Medical
Research Institute of Infectious Diseases, Fort Detrick, Frederick, MD,
USA
28. Synthesis of C- and N-Nucleosides and Use of Distance Geometry
Approach for the Evaluation of In Vitro Antiviral Activity.
J. Kobe, B. Kobe, M. Prhavic, A. Štimac, and T. Šolmajer
Pharmaceutical and Chemical Works; University of Ljubljana; Lek,
Chemical and Pharmaceutical Works, Ljubljana, Slovenia, Yugoslavia
29. Synthesis and Properties of Novel Derivatives of 1,N-2
Bridged Acyclovir and DHPG.
B. Golankiewicz and T. Ostrowski
Institute of Bioorganic Chemistry of the Polish Academy of Sciences,
Poznań, Poland
30. Synthesis and Properties of Bithiazole-Linked Netropsin Derivatives.
J-L. Imbach, G. Gosselin, D. Mrani, C. Bailly, R. Houssin, J-P.
Hénichart, E. Rao, J. Zimmermann, J-W. Lown, J. Balzarini, and E.
De Clercq
Université de Montpellier, Montpellier, France; INSERM, Lille,
France; University of Alberta, Edmonton, Canada; Katholieke Uni-
versiteit, Leuven, Belgium
31. Racemic and Acyclic Analogues of D4 Nucleosides: Synthesis and
Antiviral Evaluation.
J-L. Imbach, M. Azymah, C. Chavis, M. Lucas
Université de Montpellier, Montpellier, France

32. Nucleoside HIV-antiviral Agents Incorporating Degenerate Bases.
D. Loakes and D.M. Brown
Medical Research Council, Cambridge, England

33. Structural Design and Anti-HIV-1 Evaluation of Novel Naphthalenedisulfonic Acid Derivatives.
P. Mohan and M. Baba
University of Illinois at Chicago, Chicago, IL, USA; Fukushima Medical College, Fukushima, Japan

34. The Activity of Brequinar, an Inhibitor of *de novo* Pyrimidine Biosynthesis, against Human Cytomegalovirus Replication.
F.M. Hamzeh and P.S. Lietman
The Johns Hopkins University School of Medicine, Baltimore, MD, USA

35. Inhibition of HIV and DHBV Reverse Transcriptase by Extracts or Components of Chinese Traditional Medicines and Herbs.
H.S. Chen, X.S Tang, and J.T. Guo
Institute of Medicinal Biotechnology, Chinese Academy of Medical sciences, Beijing, China (PRC)

36. Selective Inhibition of Alpha-, Arena-, Bunya-, and Flaviviruses by 3'-Fluoro-3'-Deoxyadenosine.
D.F. Smee, J.L.B. Morris, D.L. Barnard, and A. Van Aerschot
Utah State University, Logan, UT, USA; Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium

37. Evaluation of Structure-Activity Relation Between (E)-5-(2-Bromovinyl)- and 5-Vinyl-1-β-D-Arabinofuranosyluracil (BV-araU, V-araU) in Inhibition of Epstein-Barr Virus Replication.
J.C. Lin, J. Reefschrager, and G. Herrmann
Centers for Disease Control, Atlanta, GA, USA; Pharma Research Center, Bayer AG, Wuppertal, F.R.G.; Central Institute of Molecular Biology, Academy of Sciences Berlin-Buch, F.R.G.

38. Activity of HIV-I Protease Inhibitors in Various Enzymatic Assays.
J. Roesel, B. Poncioni, E. Alteri, J. Wood, G. Bold, A. Faessler, H. Ruegger, M. Lang, P. Schneiderl
CIBA-GEIGY Ltd., Basel, Switzerland

39. Subcellular Localization and Antiviral Activity of Cationic Dye/Polymers (A-U) Combinations.
K. Krabill, J.M. Jamison, J. Gilloteaux, D.G. Flowers, and C-C Tsai
Kent State University, Kent, OH, USA; NE Ohio University COM, Rootstown, OH, USA

40. Synthesis and Antiviral Activity of New Disoxaril Analogues.
P. La Colla, F. Corelli, S. Massa, M. Artico, P. Obino, M.E. Marongiu, and A. Pani
Università di Cagliari; Farmaco-Chimico Tecnologico, Università di Siena; Università di Roma, Italy
41. Anti-HIV Activity of iso-Trimethoprim Analogues.
P. La Colla, M. Botta, M. Artico, S. Massa, L. Diliberto, A. Pani, and M.E. Marongiu
Università di Cagliari; Farmaco-Chimico Tecnologico, Università di Siena; Università di Roma, Italy
42. Comparative Antiviral Activity of HPMPA, PMEA, HPMPG, HPMPG and Structurally Related Compounds Against African Swine Fever Virus.
P. La Colla, A. Holý, J. Jindrich, H. Dvorakova, L. Gelli, M.E. Marongiu, and A. Pani
Czechoslovak Academy of Science, Praha; Università di Cagliari, Italy
43. Enhanced Inhibition of HIV-1 Protease by a Combination of Peptide and Non-Peptide Inhibitors.
R.B. Luftig, M. Bu, C. Michejda, and J.J. Blumenstein
Louisiana State University Medical Center; New Orleans, LA; Frederick Cancer Center, Frederick, MD; Food and Drug Administration, Rockville, M.D., USA
44. Inhibitory Activity of Lipophilic 2',3'-Dideoxynucleoside Derivatives Against HIV
M.D. Winther, H. Nakashima, N. Yamamoto, and E. De Clercq
Scotia Pharmaceuticals Ltd., Guildford, U.K.; Rega Institute for Medical Research, Katholieke Universiteit, Leuven, Belgium
45. Elucidation of a Polyphenolic Polymer with Antiviral Activity against Myxo- and Paramyxoviruses.
P.R. Wyde, L.R. Meyerson, M.W. Ambrose, J.B. Pfeifer, T.G. Voss, and B.E. Gilbert
Baylor College of Medicine, Houston, TX; Shaman Pharmaceuticals, San Carlos, CA, USA
46. Antiviral (RNA) Evaluation of a Series of Substituted Tyrosines.
B. Gabrielsen, T.P. Monath, J.J. Kirs, and G.R. Pettit
U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, MD; Southern Research Institute, Birmingham, AL; Arizona State University, Tempe, AZ, USA
47. Cardiolipin Liposomes Specifically Inhibit HIV-1 Infectivity.

K. Konopka, B.R. Davis, C.E. Larsen, and N. Düzgünes
University of California, San Francisco, CA; Pacific Presbyterian Medical Center, San Francisco, CA; University of the Pacific, San Francisco, CA, USA

48. Dextran Sulfate and Other Sulfated Polysaccharides Induce Persistent HIV-1 Infection.
R.W. Buckheit, Jr., C. Hayslette-Doggett, R. Swanstrom
Southern Research Institute, Birmingham, AL; and University of North Carolina, Chapel Hill, NC, USA
49. Anti-HIV Activity of Sulfated Polysaccharides from the Brown Seaweed *Ascophyllum Nodosum*.
M.M. Klinger and R.W. Buckheit, Jr.
Southern Research Institute, Birmingham, AL, USA
50. Evaluation of Antiretroviral Drugs Against Rauscher MuLV by ELISA.
M. Hollingshead, L. Westbrook, M. Ross, J. Bailey, J. Qualls, and L. Allen
Southern Research Institute, Birmingham, AL, USA
51. The Inhibition Effects of Catechin Derivatives on the Activities of Human Immunodeficiency Virus Reverse Transcriptase and DNA Polymerases.
P.Z. Tao, T. Zhang, P. Zhou, S.Q. Wang, S.J. Cheng, and J.Y. Jiang
Institute of Medicinal Biotechnology, CAMS, Beijing, P.R. China
52. A Novel Soluble Factor (HIF) from CEM T Cell Line Induced by an Extract from *Pinus parviflora* Sieb et Zucc Can Inhibit the Replication of Human Immunodeficiency virus In Vitro.
P.K. Lai, W.G. Bradley, Y. Tamura, A. Tanaka, and M. Nonoyama
Tampa Bay Research Institute, St. Petersburg, FL, USA
53. Inhibition of HIV Replication by Prostaglandin A.
H. Ankel, O. Turriziani, G. Antonelli, and F. Dianzani
University of Rome "La Sapienza", Rome, Italy
54. Potent Anti-HIV Activity of Some Phosphate Derivatives of AZT.
C. McGuigan, T.J. O'Connor, D. Curley, K.G. Devine, D.J. Jeffries, B.C.N.M. Jones, C. Nickson, R. Pathirana, D. Kinchington
University of Southampton, Southampton; Medical College of St. Bartholomew's Hospital, West Smithfield, London; University College, London, U.K.
55. 4-Quinolones do not Inhibit the Nickase Activity of HIV Integrase.

I.K. Pemberton and J.S. Oxford
The London Hospital Medical College, London, U.K.

56. Evaluation of some Novel Compounds for Anti-HIV and Anti-Influenza Activity.
K. Broadhurst, A. Ball, M.A. Zuckerman, R. Dourmashkin, and J.S. Oxford
Retroscreen Ltd., Academic Virology, LHMC, London, U.K.
57. Screening of Anti-retroviral Drugs Based on Inhibition of Transformative-destructive Effect of Mouse Sarcoma Virus in Cell Culture.
E.A. Sinyagina, S.G. Zavgorodny, and A.V. Azhayev
Chimtech Ltd., Moscow, USSR
58. Antiviral Activity of the SHS-174 Plant Preparation.
J. Serkedjieva, I. Zgorniak-Nowosielska
Institute of Microbiology, Bulg. Acad. Sci., Sofia, Bulgaria; Institute of Microbiology, Medical Academy, Cracow, Poland
59. The Assessment of the Broad Spectrum In Vitro Antiviral Activity of a Series of Organogermanium Compounds.
R.C. Taylor, S.G. Ward, N. Kakimoto, J. Balzarini, and E. De Clercq
Oakland University, Rochester, MI, USA; ASAI Germanium Research Institute, Komae-shi, Tokyo, Japan; Rega Institute for Medical Research, Katholieke Universiteit, Leuven, Belgium
60. Activity of Several Inhibitors of S-Adenosyl Homocysteine Hydrolase Against African Swine Fever Virus.
D.G. Villalón, C. Gil-Fernández, and E. De Clercq
C.I.B. Velázquez, Madrid, Spain; Rega Institute for Medical Research, Katholieke Universiteit, Leuven, Belgium
61. Aurintricarboxylic Acid: An Inhibitor of Herpes Simplex Types I and II, Vaccinia and African Swine Fever Viruses Replication in Vero Cells.
C. Gil-Fernández and M.D.G. Villalón
Centro de Investigaciones Biológicas, Velázquez, Madrid, Spain
62. Development of a Neural Cell Line/HIV-1 Infection System for Evaluation of Antiviral Compounds.
D.J. Volsky, X-P Ma, B. Volsky, Y. Mizrachi, and M. Zeira
St. Luke's/Roosevelt Hospital Center and Columbia College of Physicians and Surgeons, New York, NY, USA
63. Development of an in situ-based Hybridization Format for the in vitro Evaluation of Antiviral Compounds.
M. Forman, G. Westlake, C. York, G. Goodrum, and D. Scholl

The Johns Hopkins Medical Institutions, Baltimore, MD; Ohio University; Diagnostic Hybrids, Inc., Athens, OH, USA

64. Human Monoclonal Anti Cytomegalovirus (CMV) Antibody (MSL-109): Enhancement of In Vitro Ganciclovir Induced Inhibition of CMV Replication.
M.A. Nokta, M.D. Tolpin, P.I. Nadler, and R.B. Pollard
The University of Texas Medical Branch, Galveston, TX; Sandoz Research Institute, East Hanover, NJ, USA
65. In Vitro Neutralization of Cytomegalovirus (CMV) Strains by a Human Monoclonal Antibody, MSL-109.
F. Lakeman, C. Blevins, R. Whitley, and M. Tolpin
The University of Alabama at Birmingham, Birmingham, AL; Sandoz Research Institute, East Hanover, NJ, USA
66. Effects of Ribosome Inactivating Proteins Against Herpesviruses.
S.K.H. Fong, J. Rowe, M. Piatek, E.R. Kern
Stanford University, Stanford, CA; Genelabs, Redwood City, CA; The University of Alabama at Birmingham, Birmingham, AL, USA
67. Inhibition of Coxsackie, Echo, and Hepatitis A Virus Infection by Polyelectrolytes.
L. Seganti, P. Mastromarino, R. Petruzzello, R. Gabrieli, M. Divizia, A. Paná, and N. Orsi
University of Rome "La Sapienza"; University of Rome "Tor Vergata", Italy
- 67A. The Synthesis and Antiviral Properties of Some 2'-Deoxy-4'-thio-ribonucleoside Analogues.
M.R. Dyson, P.L. Coe, and R.T. Walker
University of Birmingham, Birmingham, U.K.
- 67B. In Vitro Sensitivity of Rhinovirus Infection to New Flavanoids.
C. Conti, P. Tomao, D. Genovese, N. Desideri, M.L. Stein and N. Orsi
University of Rome "La Sapienza", Rome, Italy.

Tuesday, April 23

Oral Session III: LaSalle Ballroom

Mechanism of Action

Co-chairmen: A.K. Field and J.-L. Imbach

- 9:00 am Plenary Speaker – J. William Lown
 “DNA Groove Binders as Inhibitors of Gene Expression”
 University of Alberta, Edmonton, Alberta, Canada
- 9:30 68. Modulation of the Antiretroviral Activity and Anabolism of Purine-
 2',3'-Dideoxynucleoside Analogs by Inhibitors of IMP Dehydrogenase
 L.L. Bondoc, Jr., G.S. Ahluwalia, N.R. Hartman, D.A. Cooney, H.
 Mitsuya, D.G. Johns, and A. Fridland
 St. Jude Children's Research Hospital, Memphis, TN; LMC, DTP,
 COP, DCT, NCI, NIH, Bethesda, MD, USA
- 9:45 69. Initial Binding of 2'-Deoxynucleoside-5'-Triphosphates to HIV-1 Re-
 verse Transcriptase.
 G. Painter, L. Wright, S. Hopkins, P. Furman
 Wellcome Research Laboratories, Research Triangle Park, NC, USA
- 10:00 70. Synthetic Inhibitors of HIV-1 Protease Inhibit Virus Maturation and
 Infectivity of Virions.
 D.M. Lambert, J. Leary, T.J. Matthews, T.D. Meek, G.B. Dreyer, T.
 Hart, B.W. Metcalf, and S.R. Petteway, Jr.
 SmithKline & French Laboratories, King of Prussia, PA; Duke Univer-
 sity Medical School, Durham, NC, USA
- 10:15 71. Negatively Charged Albumins Exhibit a Potent In Vitro Anti-HIV-1
 Activity and a Unique Inhibitory Action on Syncytium Formation.
 R.W. Jansen, G. Molema, R. Pauwels, D. Schols, E. De Clercq, and
 D.K.F. Meijer
 University Centre for Pharmacy, Groningen, The Netherlands; Rega In-
 stitute for Medical Research, Katholieke Universiteit, Leuven, Belgium
- 10:30 Break
- 11:00 72. A Novel RNA Template for the Study of Antiretroviral Drugs.
 E.L. White, W.B. Parker, L.J. Ross, S.C. Shaddix, and W.M. Shannon
 Southern Research Institute, Birmingham, AL, USA

- 11:15 73. GLQ223 Exacerbation of Indirect HIV-associated Neurotoxicity In Vitro.
L. Pulliam and M. McGrath
Veterans Administration, San Francisco and San Francisco General Medical Centers, University of California, San Francisco, CA, USA
- 11:30 74. The Anti-VZV Agent 6-Methoxypurine Arabinoside: Synthesis, Mechanism of Action, Prodrug Development, and Preclinical Toxicity.
G.W. Koszalka, D.R. Averett, P. de Miranda, K.K. Biron, J.A. Fyfe, A.R. Moorman, G.M. Szczech, and T.A. Krenitsky
Burroughs Wellcome Co., Research Triangle Park, NC, USA
- 11:45 75. Pattern of Resistance Against AZT-Resistant HIV-1 in Human Peripheral Blood Mononuclear Cells.
R.F. Schinazi, A. McMillan, D. Cannon, R. Mathes, and C.K. Chu
Emory University School of Medicine, VA Medical Center, Atlanta, GA; College of Pharmacy, University of Georgia, Athens, GA, USA
- 12:00 76. Resistance of HCMV to DHPG, HPMPC, and HPMPA Mapped to the Viral DNA Polymerase Gene.
V. Sullivan, K. Biron, M. Davis, S. Stanat, C. Talarico, D. Coen
Harvard Medical School, Boston, MA; Wellcome Research Laboratories, Research Triangle Park, NC, USA
- 12:15 77. N²-Phenylguanines as Inhibitors of HSV Thymidine Kinases: Potential for Prevention of Recurrent Herpes Infections.
G.E. Wright, J. Gambino, E.R. Smith, F. Focher, G. Maga, and S. Spadari
University of Massachusetts Medical School, Worcester, MA, USA; Istituto di Genetica Biochimica ed Evoluzionistica, CNR, Pavia, Italia

12:30 Lunch

Oral Session IV: LaSalle Ballroom

Targeting of Antiviral Agents

Co-chairmen: G.J. Galasso and B. Öberg

2:00 pm Plenary Speaker – James M. Hogle
“Interaction of Picornavirus with Antiviral Compounds”
Research Institute of Scripps Clinic, La Jolla, CA, USA

- 2:30 78. The TIBO-site on HIV-1 Reverse Transcriptase Represents a New Target for Anti-HIV Chemotherapy.
R. Pauwels, Z. Debyser, K. Andries, M. Baba, D. Schols, M. Kukla, J. Desmyter, P.A.J. Janssen, and E. De Clercq

Rega Institute for Medical Research, Katholieke Universiteit, Leuven, Belgium; Janssen Research Foundation, Beerse, Belgium; Janssen Research Foundation, Spring House, PA, USA; Fukushima Medical College, Fukushima, Japan

- 2:45 79. Receptor Targeted Inhibition of HIV-1 RNA Production in Cells by an IL-2 Diphtheria Toxin Fusion Protein.
L. Zhang, C. Waters, J. Nichols, and C. Crumpacker
Beth Israel Hospital, Harvard Medical School; Seragen, Inc., Boston, MA, USA
- 3:00 80. Crosslinking of Substrates Occurs Exclusively to the p66 Subunit of Heterodimeric HIV-1 Reverse Transcriptase.
N. Cheng, G. Painter, P. Furman
Burroughs Wellcome Co., Research Triangle Park, NC, USA
- 3:15 81. HIV TAT Inhibitor.
M-C. Hsu, A. Schutt, M. Holly, L. Slice, U. Dhingra, D. Antelman, D. Richman, and D. Volsky
Hoffmann-La Roche Inc., Nutley, NJ; VA Medical Center, San Diego, CA; St. Luke's/Roosevelt Hospital, New York, NY, USA
- 3:30 82. GAG and REV Antisense Oligodeoxynucleotides as Inhibitors of HIV 1.
D. Kinchington, S. Galpin, J. Jaroszewski, C. Subasinghe, K. Gosh, and J.S. Cohen
Medical College of St. Bartholomew's Hospital, London, U.K.; Royal Danish School of Pharmacy, Copenhagen, Denmark; Georgetown University Laboratories, Rockville, MD, USA
- 3:45 83. Intracellular Immunization Against HIV-1 Through Inhibition of Trans-activation by Poly-Tar RNA Elements.
J. Lisiewicz, P. Lusso, R. Gallo, and M. Reitz
National Cancer Institute, Bethesda, MD, USA
- 4:00 84. Human Immunodeficiency Virus (HIV) Replication: Modulation by Cellular Levels of Cyclic Adenosine Monophosphate (cAMP).
M.A. Nokta and R.B. Pollard
The University of Texas Medical Branch, Galveston, TX, USA

Poster Session II: Conference Center

Mechanism of Action, Targeting, Resistance, Drug Combinations

4:30 – 6:30 pm

85. 2',5'-Oligoadenylate Analogues Prevent HIV Replication via Inhibition of Reverse Transcriptase.
W.E.G. Müller and H.C. Schröder
Institut für Physiologische Chemie, Universität, Duesbergweg, Mainz;
Germany
86. Kinetic Analysis of the Inhibition of Human Immunodeficiency Virus Type 1 (HIV-1) Reverse Transcriptase by R82150, a TIBO Analog.
E.V. Connell, K.B. Frank, and I.S. Sim
Roche Research Center, Nutley, NJ, USA
87. Mechanism of the Inhibitory Effect of 4'-Azido-thymidine (ADRT) on the Replication of Human Immunodeficiency Virus In Vitro.
M.S. Chen, R. Suttman, C. Bach, J.C. Wu, E.J. Prisbe, M.J. McRoberts, and D. Crawford-Ruth
Syntex Research, Palo Alto, CA, USA
88. Differential Inhibitory Effects of Sulfated Polysaccharides on the Replication of Various Myxo- and Retroviruses.
M. Hosoya, J. Balzarini, S. Shigeta, and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit, Leuven, Belgium; Fukushima Medical College, Fukushima, Japan
89. The Anti-HIV-1 Activity of CD4 Synthetic Oligopeptides is not Related to Gp120 Binding.
G. Palù, M. Rassu, C. Parolin, C. DiBello, P. La Colla, and H. Repke
Universities of Padova and Cagliari, Italy; Dana Farber Cancer Institute, Boston, MA, USA
90. Inhibition of the Human Immunodeficiency Virus Type 1 Reverse Transcriptase by 2'-Deoxynucleoside-5'-Triphosphate Substrates.
P.A. Furman, N. Cheng, S. Hopkins, and G. Painter
Burroughs Wellcome Co., Research Triangle Park, NC, USA
91. Interaction of the 5'-triphosphate of the Carbocyclic Analog of 2'-deoxyguanosine with Human Immunodeficiency Virus Type-1 Reverse Transcriptase.
W.B. Parker, E.L. White, S.C. Shaddix, L.J. Ross, J.A. Secrist III, and W.M. Shannon

Southern Research Institute, Birmingham, AL, USA

92. TIBO Derivatives are Potent Inhibitors of HIV-1 Reverse Transcriptase with Heteropolymer Templates.
E.L. White, R.W. Buckheit, Jr., W.B. Parker, L.J. Ross, J.M. Germany, W.M. Shannon, P.A.J. Janssen, and M.A. Chirigos
Southern Research Institute, Birmingham, AL, USA; Janssen Pharmaceuticals, Beerse, Belgium; U.S. Army Medical Research Institute of Infectious Diseases, Frederick, MD, USA
93. On the Specificity of the 2-5A Phosphodiesterase.
T. Kovács and P.F. Torrence
NIDDK, National Institutes of Health, Bethesda, MD, USA
94. Activation of 2'-fluoro-2',3'-dideoxyarabinosyladenine (FddA), an Anti-HIV Agent, in Both Quiescent and PHA-Activated Human Peripheral Blood Mononuclear Cells (PBMC).
H-T. Ho, K.L. Woods, M. Mansuri, and M.J.M. Hitchcock
Bristol-Myers Squibb Pharmaceutical Research Institute, Wallingford, CT, USA
95. Structure and Activity Correlation-Studies of Anti-HIV Acyclic Guanine Nucleotide Analogs at Enzyme Level.
H-T. Ho, H. De Boeck, K.L. Woods, S.A. Konrad, V. Brankovan, M.J.M. Hitchcock, and R. Datema
Bristol-Myers Squibb Pharmaceutical Research Institute, Wallingford, CT, USA.
96. Potentiation by Dipyridamole of Dideoxynucleoside Activity Against HIV-1: Differential Effects on Salvage of Deoxy- and Dideoxynucleosides as a Possible Mechanism.
J. Szebeni, S.S. Patel, G.V. Betageri, L.M. Wahl, and J.N. Weinstein
National Cancer Institute and National Institute of Dental Research, National Institutes of Health, Bethesda, MD, USA
97. Further Studies on the HIV Proteinase Inhibitor RO 31-8959.
S. Galpin, J. Martin, T. O'Connor, S. Redfern, N. Roberts, and D. Kinchington
Medical College of St. Bartholomew's Hospital, London; Roche Products U.K. Ltd., Welwyn Garden City, U.K.
98. Effect of AZT, Azddu, FDT, and BCH-189 Nucleotides on DNA Chain Termination Mediated by HIV-1 Reverse Transcriptase.
R.F. Schinazi, R. Lloyd, B. Oswald, and C. Manning
Emory University School of Medicine, VA Medical Center, Atlanta, GA, USA

99. Inhibition of Sindbis Virus Replication by Prostaglandins: A Cell-mediated Event Associated with Heat Shock Protein Synthesis.
P. Mastromarino, C. Conti, R. Petruzzello, A. De Marco, and M.G. Santoro
University "La Sapienza", Rome; Institute of Experimental Medicine, CNR, Rome, and University of L'Aquila, Italy
100. Mechanism of Action of Ribavirin.
J.L. Patterson and R. Fernandez-Larsson
Harvard Medical School, Boston, MA, USA
101. Antirhinovirus Spectrum and Mechanism of Action of R 77975.
K. Andries, B. Dewindt, J. Snoeks, R. Willebrords, K. Van Eemeren, R. Stokbroekx
Janssen Research Foundation, Beerse, Belgium
102. Duck Hepatitis B Virus DNA Polymerase: Comparison of the Main Properties of Different Enzyme Preparations and the Inhibition by Some Inhibitors.
P.Z. Tao and B. Yang
Institute of Medicinal Biotechnology, CAMS, Beijing, P.R. China
103. Characterization of the Anti-human Cytomegalovirus (HCMV) Activity of Three Anthraquinone Compounds.
D.L. Barnard, J.H. Huffman, and S.G. Wood
Utah State University, Logan, UT; Murdock Healthcare, Springville, UT, USA
104. Inhibition of HSV-1 DNA Polymerase by (R)-(1 α ,2 β ,3 α)-9-[2,3-bis(hydroxymethyl)cyclobutyl]guanine and (S)-(1 α ,2 β ,3 α)-9-[2,3-bis(hydroxymethyl)cyclobutyl]guanine
M.E. Hagen, C.W. Cianci, and B.J. Terry
Bristol-Myers Squibb Pharmaceutical Research Institute, Princeton, NJ, USA
105. Penciclovir: Mode of Action Studies in HSV-1, HSV-2, and VZV Infected MRC-5 Cells.
R.A. Vere Hodge, D.L. Earnshaw, S.J. Darlison, and K. Martin
SmithKline Beecham Pharmaceuticals, Epsom, Surrey, U.K.
106. The Molecular Effect of Lithium on Herpes Simplex Virus Replication.
S. Randall, C.E. Hartley, G.R.B. Skinner, A. Buchan
Birmingham University, Birmingham, U.K.
107. In Vitro Antiviral Activity, Cytotoxicity, and Metabolism of 5-Bromo

and 5-Iodo Tubercidin Analogs.

M.R. Nassiri, S.R. Turk, L.A. Coleman, K.Z. Borysko, S.L. Engelhart, E.D. Kreske, J.S. Pudlo, L.B. Townsend, and J.C. Drach
School of Dentistry, College of Pharmacy, University of Michigan,
Ann Arbor, MI, USA

108. Site of Action of 9-(1,3-Dihydroxy-2-Propoxymethyl) Guanine (DHPG) in the Virus Replication Cycle.
M. Dragúň and B. Rada
Institute of Virology, Slovak Academy of Sciences, Bratislava,
Czechoslovakia
109. Inhibition of HSV-2 Replication and Glycoprotein Expression in Human Fibroblast Cells by HPMPC.
S. Chatterjee, P. Burns, R.J. Whitley, and E.R. Kern
The University of Alabama at Birmingham, Birmingham, AL, USA
110. Herpes Simplex Virus Type 1 Helicase-primase: Inhibition by N²-Phenylguanines, 2-Anilinoadenines and Related Compounds.
G.E. Wright, J. Gambino, J.J. Crute, and I.R. Lehman
University of Massachusetts Medical School, Worcester, MA; Stanford University School of Medicine, Stanford, CA, USA.
111. Inhibitors of Herpes Simplex Thymidine Kinase Suppress Reactivation of Latent Infection In Vitro.
L.S. Klavinskis, P. Wong Kai-In
Roche Products, Ltd., Welwyn Garden City, U.K.
112. Multiple Methods for the Analysis of Inhibitors of HIV-1 TAT-Dependent Transactivation.
T.W. Thais, S.K. Malcolm, P.A. Smanik, M.C. Smith, S.R. Jaskunas
Lilly Research Laboratories, Eli Lilly and Company, Indianapolis, IN, USA
113. Antisense Targeting of HIV RNA Secondary Structures.
R.W. Buckheit, W.M. Shannon, D.J. Ecker, T. Vickers, B. Baker, T. Bruice, S. Freier, M. Zounes, P.D. Cook
Southern Research Institute, Birmingham, AL; ISIS Pharmaceuticals, Carlsbad, CA, USA
114. Proteolytic Processing of the Conserved V3 Region of HIV GP120 by T-cell Lysates. Implications for HIV Infectivity.
G.A. Krafft and G.T. Wang
Abbott Laboratories, Abbott Park, IL, USA
115. Inhibition of Poly (ADP-ribose) Polymerase by Various Antiviral and

Anti-cancer Nucleoside Analogs.

A.D. Pivazyan, T-S Lin, and W.H. Prusoff

Yale University School of Medicine, New Haven, CT, USA

116. RNA-Dependent DNA Polymerases (Reverse Transcriptases) of Normal Cells: A Possible Basis for Nucleotide Analogue Toxicities?
D.J. Hart, S.R. Gogu, K.C. Agrawal, and R.F. Garry
Tulane University School of Medicine, New Orleans, LA, USA
117. Reduction of Herpes Simplex Virus Infection using Phosphorothioate Oligonucleotides Complementary to Viral mRNA.
K.G. Draper and V. Brown-Driver
ISIS Pharmaceuticals, Carlsbad, CA, USA
118. Structure-Based Drug Design: Inhibitors of Purine Nucleoside Phosphorylase (PNP).
J.A. Secrist III, J.A. Montgomery, S.E. Ealick, C.E. Bugg, S. Babu, M.D. Erion, and W.C. Guida
Southern Research Institute, Birmingham, AL; The University of Alabama at Birmingham, Birmingham, AL; BioCryst, Inc., Birmingham, AL; CIBA-GEIGY Corp., Summit, NJ, USA
119. A Soluble Form of Intercellular Adhesion Molecule-1 Inhibits Rhinovirus Infection.
K. Last-Barney, S.D. Marlin, C. Cahill, R. Jejer, D. Fortugno-Erikson, M. O'Neill, F. Hayden, and V.J. Merluzzi
Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT; University of Virginia School of Medicine, Charlottesville, VA, USA
120. In Vitro Exposure of Cytomegalovirus (CMV)-Infected Cells to High Concentrations of Acyclovir (ACV) Induces Resistance to Ganciclovir (GCV).
R.J. Dworkin, R.C. Miner, and W.L. Drew
Mt. Zion Hospital and Medical Center, San Francisco, CA, USA
121. Activity of Foscarnet Versus Ganciclovir-resistant Cytomegalovirus (CMV).
W.L. Drew, D. Miner, D. Parenti
Mount Zion Hospital and Medical Center of U.C. San Francisco; George Washington University Medical Center, Washington DC, USA
122. Antiviral Activity of FIAU Versus Strains of CMV Sensitive and Resistant to Ganciclovir.
W.L. Drew, R. Miner, D. King
Mount Zion Hospital and Medical Center of U.C. San Francisco,

Oclassen Pharmaceuticals, San Rafael, CA, USA

123. Latent Infection With An Herpes Simplex Virus Type 1 Resistant to Acyclovir.
E. Katz
Hebrew University – Hadassah Medical School, Jerusalem, Israel
124. Sensitivity of Mutated Herpes Simplex Virus Type-1 DNA Polymerase to Conventional Guanine and Novel Cyclobutane Guanine Nucleotide Analogues.
J.T. Stevens, M.L. Haffey, R.D. Carroll, B.J. Terry, C. Cianci, M. Hagen, and J.T. Matthews
The Bristol-Myers Squibb Pharmaceutical Research Institute, Princeton, NJ, USA
125. Lithium Resistant Herpes Virus Mutant.
S. Randall, C.E. Hartley, A. Buchan, and G.R.B. Skinner
Birmingham University, Birmingham, U.K.
126. Acyclovir Resistance In HSV-2 Isolates From A Patient With AIDS.
F. Bevilacqua, A. Marcello, G. Gerna, M. Toni, and G. Palù
Institutes of Microbiology and Infectious Diseases, Universities of Padova and Pavia, Italy
127. Rapid Screening of Clinical Herpes Simplex Virus Isolates for Resistance to Acyclovir.
D.G. Ketchum, R.S. Gohd, E.D. Starszak, and R.B. Van Dyke
Tulane Medical School and Louisiana State University Medical School, New Orleans, LA, USA
128. In Vitro and In Vivo Characterization of Herpes Simplex Virus Isolates Recovered from HIV+ Patients.
E.L. Hill, G.A. Hunter, and M.N. Ellis
Burroughs Wellcome Co., Research Triangle Park, NC, USA
129. Sequence Analysis of the Thymidine Kinase Genes of Acyclovir-Resistant Varicella Zoster Virus Isolates.
C. Talarico, W. Phelps, K. Biron
Burroughs Wellcome Co., Research Triangle Park, NC, USA
130. Zidovudine (AZT) Resistance in a Cohort of Patients at the London Hospital.
K. Broadhurst, A. Ball, C.A. Stein, P. Levantis, G.E. Forster, B.T. Goh, B. Colvin, G.G. Jackson, & J.S. Oxford
Academic Virology, LHMC, London, U.K.

131. A Study of the Degree of the Influenza Virus A Sensitivity to Rimantadine.
V. Kalnina and M. Indulen
Institute of Microbiology, Latvian Academy of Sciences, Riga, Latvia, USSR
132. COMBO: A New Approach to the Design and Analysis of Experiments on Antiviral Drug Combinations.
J.N. Weinstein and B. Bunow
National Cancer Institute, NIH, Bethesda, MD; Civilized Software, Inc., Bethesda, MD, USA
133. A Three-Dimensional Model to Analyze Drug-Drug Interactions.
M.N. Prichard and C. Shipman, Jr.
The University of Michigan, Ann Arbor, MI, USA
134. Combined Antiviral Effect and Cytotoxicity of Ganciclovir and Azidothymidine Against Cytomegalovirus Infection in Cultured Cells.
P.Y. Tian, J.Y. Crouch, and G.D. Hsiung
Yale University School of Medicine, New Haven, CT, VAMC, West Haven, CT, USA
135. Ganciclovir Antagonizes the Anti-HIV-1 Activity of Zidovudine In Vitro.
D.J. Medina, G.D. Hsiung, and J.W. Mellors
Yale University School of Medicine, New Haven, CT, VAMC, West Haven, CT, USA
136. Synergistic Interactions Between Lithium and Nucleoside Analogue Antiviral Compounds.
S. Randall, G.R.B. Skinner, A. Buchan, and M.D. Winther
Birmingham University, Birmingham, U.K.; Scotia Pharmaceuticals, Guildford, U.K.
137. The Efficacy of Combinative Drugs at Sub-threshold Concentrations.
S. Randall, M.A. Billstrom, J. Davies, S. Patel, A. Buchan, D.F. Horrobin, and G.R.B. Skinner
Birmingham Medical School, Birmingham, U.K.; Scotia Pharmaceuticals, Guildford, U.K.
138. Synergistic Effects of 3-Deazaneplanocin A, Carbocyclic 3-deazaadenosine, Neplanocin A and Ribavirin against Measles Virus.
J.B. Pfeifer, B.E. Gilbert, and P.R. Wyde
Baylor College of Medicine, Houston, TX, USA

139. Synergistic Inhibition of Human Immunodeficiency Virus Type 1 In Vitro by Coumermycin A1 and Human Leukocyte Interferon.
G. Tachedjian, D. Tyssen, D. Jardine, and C. Birch
Macfarlane Burnet Centre for Medical Research, Fairfield Hospital,
Fairfield, Victoria, Australia
140. Synergistic Inhibition of Drug-Resistant and Sensitive Herpes Simplex Virus In Vitro by Trifluorothymidine and Interferon Alpha.
C. Birch, K. Hayes, and R. Doherty
Macfarlane Burnet Centre for Medical Research, Fairfield Hospital,
Fairfield, Victoria, Australia
141. The Antiviral Activities of Monoclonal Antibodies to Antigenic Site 3A of Poliovirus Type 1 Sabin Acts Synergistically with the Antiviral Activity of Interferon- α (IFN- α).
M.P. Langford
Louisiana State University Medical Center, Shreveport, LA, USA
- 141A. Inhibition of Herpes Simplex Virus Replication by Antisense.
E.M. Cantin, G. Podsakof, R. MacMahon, D. Willey, and H. Openshaw
City of Hope National Medical Center, Duarte, California, USA

Wednesday, April 24

Oral Session V: LaSalle Ballroom

Minisymposium – Molecular Targets

Co-chairmen: J. Balzarini and P. Palese

- 9:00 am Gerard Orth
“Papillomaviruses”
Institut Pasteur, Paris, France
- 9:30 Howard C. Thomas
“Hepatitis B Virus”
St. Mary’s Hospital Medical School, London, U.K.
- 10:00 Break
- 10:30 Patricia G. Spear
“Herpes Simplex Virus Receptors”
Northwestern University Medical and Dental Schools, Chicago, IL, USA
- 11:00 Joseph S. Pagano
“Epstein-Barr Virus”
University of North Carolina, Chapel Hill, NC, USA
- 11:30 Discussion
- 12:00 ISAR Business Meeting

Thursday, April 25

Oral Session VI:

Animal Models

Co-chairmen: E.R. Kern and K.F. Soike

- 9:00 am Plenary Speaker – J.M. McCune
“The Role of the SCID-hu Mouse in Antiviral Drug Development”
Systemix, Palo Alto, CA, USA
- 9:30 142. Development of an Animal Model for Ocular Adenoviral Infection.
Y.J. Gordon, E. Romanowski, and T. Araullo-Cruz
The Eye and Ear Institute of Pittsburgh, Pittsburgh, PA, USA

- 9:45 143. An Antisense Oligonucleotide to the HSV-1 UL-13 Gene is Effective Against Herpetic Keratitis.
C.R. Brandt, L.M. Coakley, D.R. Grau, and K.G. Draper
University of Wisconsin-Madison; ISIS Pharmaceuticals, Carlsbad, CA, USA
- 10:00 144. MSL-109 Therapy of Human Cytomegalovirus-Induced Chorioretinitis in the Rabbit.
E.C. Dunkel, M.L. Siegel, J. Brooks, M.D. Tolpin, P. Magid, D. Freitas, and D. Pavan-Langston
Eye Research Institute, Boston, MA; The Sandoz Research Institute, East Hanover, NJ, USA
- 10:15 145. Genital Herpes Simplex Virus (HSV) Infections of Mice: A Model for Evaluating Cross Susceptibility of Drug Resistant Mutants.
E.R. Kern, J. Palmer, T.P. Gerchow, and P.E. Vogt
The University of Alabama at Birmingham, Birmingham, AL, USA
- 10:30 Break
- 11:00 Plenary Speaker – John L. Gerin
“The Woodchuck Model of Hepadnavirus Infection and Disease: Application to Antiviral Therapy”
Georgetown University Medical Center, Rockville, MD, USA
- 11:30 146. Inhibition of Duck Hepatitis B Virus Replication by Ganciclovir and Supercoiled DNA Active Compounds.
T. Shaw, Y. Wang, S. Bowden, G. Civitico, and S. Locarnini
Macfarlane Burnet Centre for Medical Research, Fairfield Hospital, Fairfield, Victoria, Australia
- 11:45 147. Inhibition of Ebola Virus Replication In Vitro and in a SCID Mouse Model by S-Adenosylhomocysteine Hydrolase Inhibitors.
J.W. Huggins, Z.X. Zhang, and T.P. Monath
U.S. Army Medical Institute of Infectious Diseases, Fort Detrick, Frederick, MD, USA
- 12:00 148. Feline Immunodeficiency Virus: A Lentivirus Model for Chemotherapy of AIDS and Drug-Resistance.
T.W. North, R.C. Cronn, K.M. Remington, J.D. Whitmer, and J.M. Gobert
University of Montana, Missoula, MT, USA
- 12:15 149. Utilization of Pulse Oximetry for Study of Potential Anti-Influenza Virus Compounds in Mice.

R.W. Sidwell, J.H. Huffman, J. Gilbert, R. Burger, and R.P. Warren
Utah State University, Logan, UT, USA

12:30 Lunch

Oral Session VII: LaSalle Ballroom

Pharmacology and Clinical Studies

Co-chairmen: H.J. Eggers and F.G. Hayden

- 2:30 pm Plenary Speaker – Frederick G. Hayden
“Clinical Importance of Drug Resistance in Influenza Virus”
University of Virginia, Charlottesville, VA, USA
- 3:00 150. Influence of Template Primary Structure on 3'-azido-3'-deoxythymidine Triphosphate (AZT-TP) Incorporation into Genomic DNA.
E.G. Bridges, R.B. LeBoeuf, D.A. Weidner, J.P. Sommadossi
The University of Alabama at Birmingham, Birmingham, AL; Bristol-Myers Squibb Co., Wallingford, CT, USA
- 3:15 151. Potentiation of the Anti-HIV Activity of ddAdo by Coformycin, EHNA and deaza-EHNA Derivatives.
P. La Colla, G. Cristalli, P. Franchetti, M. Grifantini, E. Tramontano, M.E. Marongiu, and A. Pani
Università di Cagliari; Università di Camerino, Italy
- 3:30 152. Stilbene Disulfonic Acids: CD4 Antagonists that Block Human Immunodeficiency Virus Type-1 Growth at Multiple Stages of the Virus Life Cycle.
A.D. Cardin, P.L. Smith, L. Hyde, D.T. Blankenship, T.L. Bowlin, K. Schroeder, D.L. Taylor, and A.S. Tyms
Marion Merrell Dow Research Institute, Cincinnati, OH, USA; The Medical Research Council Collaborative Center, London, U.K.
- 3:45 153. Intravenous Dextran Sulfate (DS) Increases Circulating HIV Antigen Levels in Patients with ARC or AIDS.
C. Flexner, P. Barditch-Crovo, D.M. Kornhauser, L. Nerhood, C. Hendrix, K. Lorentsen, H. Farzadegan, B.G. Petty, and P.S. Lietman
The Johns Hopkins University School of Medicine and The Johns Hopkins University School of Hygiene and Public Health, Baltimore, MD, USA
- 4:00 154. Use of Flow Cytometry to Monitor the Expression of HIV p24 Antigen in PBMC Obtained from HIV-seropositive Individuals Undergoing Antiviral Chemotherapy.

J. McSharry, S. Remick, S. Szebenyi, D. Herman, J. Bills, J. Slaga, P. Gorman, A. Ogden-McDonough, E. Dickerson, and J. Lehman
Albany Medical College, Albany, NY, USA

- 4:15 155. Induction of Neutralizing Antibodies to Interferon During Treatment of Hepatitis Patients: Comparison Among Different Interferon Preparations.
F. Dianzani, G. Antonelli, M. Currenti, O. Turriziani, C.M. Ausiello, G.C. Spagnoli, M. Casato
University "La Sapienza", Rome, Italy; Lab. Tip. Tiss. CNR, L'Aquila, Italy
- 4:30 156. In Vivo Antiviral Efficacy of Oral Ganciclovir.
W.L. Drew, J. Lalezari, D. Busch, S. Follansbee, S. Spector, W. Dankner, M. Jacobson, R. Miner, B. Mastre, and W. Buhles
Mount Zion Hospital and Medical Center and San Francisco General Hospital of UCSF; Davies Medical Center, San Francisco, CA; UC San Diego, San Diego, CA; Syntex Research, Palo Alto, CA, USA

Poster Session III:

Animal Models, Pharmacology, Toxicity, Clinical Studies

4:30 – 6:30 pm

157. Efficacy of Short Term Continuous Zidovudine Infusion at Early Stages of Retroviral Infection in Mice.
M. Sinet, L. Harcouet, B. Desforges, J.N. Colin, R. Farinotti, and J.J. Pocidalo
INSERM, Hôpital Claude Bernard, Paris, France; Hôpital Bichat, Paris, France; Laboratories Wellcome, Paris, France
158. SCID Mice Engrafted with HIV-infected Human T4-lymphocytes as an In Vivo Model for the Evaluation of Anti-HIV Drugs.
L. Naesens, J. Balzarini, and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit, Leuven, Belgium
159. The Suppression of p24 Antigenemia in the HIV-1 Xenotransplanted Nude Mouse by Azidothymidine.
N.T. Wetherall, J. Zhou, S. Armstrong, and D.C. Montefiori
Vanderbilt University School of Medicine, Nashville, TN, USA
160. Antiviral Activity of Protease Inhibitors in Animal Models of AIDS.
P.L. Black, M.G. Lewis, M.B. Downs, M.A. Ussery, D.M. Lambert, and Stephen R. Petteway, Jr.

Southern Research Institute, Frederick Research Center; U.S. Army Medical Institute of Infectious Diseases, Fort Detrick, Frederick, MD; Food and Drug Administration, Rockville, MD; Smith Kline Beecham, King of Prussia, PA, USA

161. New Antiretroviral Agent: Phosphonate Isostere of D4A-monophosphate.
H. Yang, A. Patick, C. Franco, R. Drain, V. Brankovan, M. Hitchcock, C. Kim, J. Martin, and R. Datema
Bristol-Myers Squibb Company, Wallingford, CT, USA
162. New Antiretroviral Acyclic Nucleotide Analog: (R)-2'-Me-PMEG ((R)-N⁹(2-Phosphonylmethoxypropyl)guanine).
H. Yang, C. Franco, R. Drain, V. Brankovan, M. Hitchcock, K-L. Yu, J. Bronson, J. Martin, and R. Datema
Bristol-Myers Squibb Company, Wallingford, CT, USA
163. Treatment of Chronic Carriers of Woodchuck Hepatitis Virus Infection with Thymosin Alpha-1.
B.E. Korba, B. Tennant, P. Cote, and J. Gerin
Georgetown University, Rockville, MD; Cornell University, Ithaca, NY, USA
164. Ganciclovir is a Potent Inhibitor of Duck Hepatitis B Virus Replication In Vivo.
T. Shaw, S. Bowden, Y. Wang, G. Civitico, and S. Locarnini
Macfarlane Burnet Centre for Medical Research, Fairfield Hospital, Fairfield, Victoria, Australia
165. In Vivo Inhibition of HBsAg and DHBsAg Expression in Ducks after Injection of HBsAg or DHBsAg Antisense Vaccinia Recombinant.
H.S. Chen, Z. Li, J.T. Guo, W.G. Yang, H. Su, X.X. Zhou, A.C. Zhang, and D.L. Mao
Institute of Medicinal Biotechnology, Chinese Academy of Medical Sciences; Institute of Virology, Chinese Academy of Preventive Medicine, Beijing, China (PRC)
166. New Models of Murine Cytomegalovirus Infection in Immunocompromised Mice.
D.F. Smee, J. Coombs, R.A. Burger, J.H. Huffman, K.M. Okleberry, J.D. Morrey, and R.W. Sidwell
Utah State University, Logan, UT, USA
167. Efficacy of (S)-1-(3-hydroxy-2-phosphonylmethoxypropyl) Cytosine [HPMPC] Against Intraperitoneal and Intracerebral Murine Cytomegalovirus Infection.

J. Neyts, J. Balzarini, and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit, Leu-
ven, Belgium

168. Evaluation of Antiviral Compounds Against Human CMV in a Mouse Model.
L.B. Allen, S. Li, G. Arnett, L. Rose, B. Toyer, M.G. Hollingshead,
and W.M. Shannon
Southern Research Institute, Birmingham, AL, USA
169. Therapy of Herpetic Stroma Keratitis by an Antisense Oligonucleotide Analogue in a Mouse Model of Ocular Disease.
J.F. Metcalf and L.S. Rich
University of South Alabama, Mobile, AL, USA
170. CTC 23 Efficacy in vitro and on HSV-1-induced Ocular Epithelial and Stromal Disease in the Rabbit.
E.C. Dunkel, P.A. Geary, J. Brooks, and D. Pavan-Langston
Harvard Medical School, Boston, MA, USA
171. Efficacy of a Recombinant Human Interferon Alpha B/D Hybrid (IFN- α B/D) Against Experimental Genital Herpes Infection in Male and Female Guinea Pigs.
R.M. Cozens and H.K. Hochkeppel
CIBA-GEIGY Ltd., Basel, Switzerland
172. A Modified Guinea Pig HSV-2 Infection Model Designed To Prevent Ingestion Of The Topically Applied Antiviral Drug R-837.
L.M. Imbertson, R.L. Miller, M.J. Reiterl
3M Pharmaceuticals, 3M Co., St. Paul, MN, USA
173. R837 Treatment of Recurrent Genital HSV-2 Disease in the Guinea Pig.
C.J. Harrison, R.L. Miller, D.I. Bernstein
Children's Hospital Research Foundation, J.N. Gamble Institute Med-
ical Research, Cincinnati, OH; 3M Pharmaceuticals, St. Paul, MN,
USA
174. Effect of Indomethacin on UV-induced Recurrent Genital HSV-2 Disease in the Guinea Pig.
C.J. Harrison, D.F. Bratcher, N. Bourne, L.R. Stanberry, and D.I. Bernstein
Children's Hospital Research Foundation; The Gamble Institute of
Medical Research, Cincinnati, OH, USA
175. Effect of Topical Treatment with HPMPC on Genital Herpes Simplex

- Virus Type 2 (HSV-2) Infections of Guinea Pigs or Mice.
P.E. Vogt and E.R. Kern
The University of Alabama at Birmingham, Birmingham, AL, USA
176. Capsaicin Reduces the Zosteriform Spread of Genital Herpes Simplex Virus Infection in Guinea Pigs.
L.R. Stanberry, N. Bourne, F.J. Bravo, D.I. Bernstein
Children's Hospital Research Foundation, Cincinnati, OH, USA
177. The Effect of Age on the Outcome of Neonatal HSV Infection in Guinea Pigs.
C. Mani, F.J. Bravo, L.R. Stanberry, and M.G. Myers
Children's Hospital Research Foundation, Cincinnati, OH, USA
178. Efficacy of Oral Treatment with BV-araU against Cutaneous Infection with Herpes Simplex Type 1 in Shaved Mice.
H. Machida, J. Takezawa, and K. Ijichi
Yamasa Shoyu Co., Ltd., Choshi, Japan
179. Ribavirin Therapy for SSPE Virus Infection in Hamster.
Y. Honda, F. Kawana, H. Suzuki, S. Mori, M. Baba, S. Shigeta, M. Hosoya, and E. De Clercq
Fukushima Medical College, Fukushima, Japan;
Rega Institute for Medical Research, Katholieke Universiteit, Leuven, Belgium
180. Ebola Infected SCID Mice as a Model for Drug Evaluation.
Z.X. Zhang, T.P. Monath, and J.W. Huggins
U.S. Army Medical Institute of Infectious Diseases, Fort Detrick, Frederick, MD, USA
181. Treatment of Phlebovirus Infections of Mice by Poly ICLC.
J.H. Huffman, R.W. Sidwell, J. Coombs, J. Huggins, and M. Kende
Utah State University, Logan, UT; U.S. Army Medical Research Institute for Infectious Diseases, Frederick, MD, USA
182. An Effective Anti-Influenza virus Combination of Mopyridone and Rimantadine Hydrochloride.
A.S. Galabov, S. Uzunov, L. Tancheva, E. Velichkova, V. Hadjiathanassova, M. Behar
Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria
183. Morphopathogenesis of Influenza A Pneumonia in Mice Treated with LY217896 or Amantadine.
J.A. Engelhardt, C.A. Brodhecker, J.M. Colacino, J. Tang, and

W.A. Spitzer
Lilly Research Laboratories, Indianapolis, IN, USA

184. Treatment of Mice Infected with Influenza and Parainfluenza Viruses by Aerosolized Aprotinin.
O.P. Zhimov and A.V. Ovcharenko
The D.I. Ivanovsky Virology Institute, Moscow, USSR
185. Efficiency of Antioxidant Agents in Prevention and Treatment of Experimental Influenza in Mice.
L. Chetverikova, R. Polyak, L. Inozemtseva, G. Razorenov, and B. Frolov
Institute of Experimental Medicine, Leningrad, USSR
186. Minimum High Dose Ribavirin Aerosol for the Treatment of Influenza in Mice and Respiratory Syncytial Virus in Cotton Rats.
B.E. Gilbert, P.R. Wyde, M.W. Ambrose, H.L. Meyer, S.Z. Wilson
Baylor College of Medicine, Houston, TX, USA
187. Masked Nucleotides: A Strategy to Introduce Therapeutic Nucleoside 5'-phosphates into Cells.
D. Farquhar, B. Nowak, S. Khan, and W. Plunkett
The University of Texas System M.D. Anderson Cancer Center, Houston, TX, USA
188. The Transport of 9-(2-Phosphonylmethoxyethyl)adenine (PMEA) into Vero Cells.
K.L. Prus, E.L. Hill, and M.N. Ellis
Wellcome Research Laboratories, Research Triangle Park, NC, USA
189. Transport of the Anti-Varicella Zoster Agent, 6-Methoxypurine Arabinoside and its 2'-O-Valerate Prodrug into Human Erythrocytes.
K.L. Prus, A.C. Heidenreich, and T.P. Zimmerman
Wellcome Research Laboratories, Research Triangle Park, NC, USA
190. Development of a Competitive, Enzyme-Linked Immunosorbent Assay for the Quantitation of Antiviral Agent 348U87.
B.S. Orban and R. Quinn
Burroughs Wellcome Co., Research Triangle Park, NC USA
191. 6-Substituted Purine Arabinosides As Selective and Potent Inhibitors of Varicella-Zoster Virus.
G.W. Koszalka, D.R. Averett, J.A. Fyfe, G.B. Roberts, T. Spector, D.J.M. Purifoy, and T.A. Krenitsky
Burroughs Wellcome Co., Research Triangle Park, NC, USA; Beckenham, Kent, U.K.

192. Anabolism of 6-Methoxypurine Arabinoside in Varicella-Zoster Virus (VZV) Infected Human Fibroblasts.
P. de Miranda, K.K. Biron, T.C. Burnette, R.L. Miller, D.R. Averett, and T.A. Krenitsky
Burroughs Wellcome Co., Research Triangle Park, NC, USA

193. 2'- and 5'-Ester Prodrugs of the Varicella-Zoster Antiviral Agent, 6-Methoxypurine Arabinoside.
A.R. Moorman, S.D. Chamberlain, L.A. Jones, P. de Miranda, D.J. Reynolds, G.W. Koszalka, M.E. Peoples, G.M. Szczech, and T.A. Krenitsky
Wellcome Burroughs Wellcome Co., Research Triangle Park, NC, USA

194. Selective Phosphorylation of 6-Dimethylamino-9-(β -D-arabinofuranosyl)-9H-purine (ara-DMAP) in Varicella-Zoster Virus Infected Human Foreskin Fibroblast Cells.
D.J. Nelson, K.K. Biron, D.R. Averett, C.U. Lambe, and T.A. Krenitsky
Burroughs Wellcome Co., Research Triangle Park, NC, USA

195. Metabolism and Pharmacokinetics of the Anti-Varicella-Zoster Virus Agent 6-Dimethylaminopurine Arabinoside.
C.U. Lambe and D.J. Nelson
Burroughs Wellcome Co., Research Triangle Park, NC, USA

196. The Anti-VZV Agent 6-Methoxypurine Arabinoside: Neurotoxic Effects in 90-Day Oral Studies in Monkeys and Rats Given a Prodrug.
G.M. Szczech and W.E. Tucker, Jr.
Burroughs Wellcome Co., Research Triangle Park, NC, USA

197. Comparison of Anti-Proliferative Activity of Selected Antiviral Agents in Human Cell Lines and a Bone Marrow Cell Assay.
C.B. Hartline, M.-Y. Xie, J.-P. Sommadossi, and E.R. Kern
The University of Alabama at Birmingham, Birmingham, AL, USA

198. 3'-Azido-2'3'-dideoxythymidine (AZT) Inhibits Proliferation of Normal Bone Marrow Progenitor Cells by Reducing Mitochondrial Biogenesis.
L.D. Lewis, S. Amin, T.M. Trishman, C.I. Civin, and P.S. Lietman
The Johns Hopkins University School of Medicine, Baltimore, MD, USA

199. Effects of 2'3'-Dideoxycytidine (DDC) an Anti HIV-1 Nucleoside Analogue on Mitochondrial Biogenesis, Structure, and Function.
L.D. Lewis, F.M. Hamzeh, and P.S. Lietman

The Johns Hopkins University School of Medicine, Baltimore, MD,
USA

200. Lack of retinal toxicity of the anti-CMV drug (*S*)-1-(3-hydroxy-2-phosphonylmethoxypropyl)cytosine (HPMPC).
D.R. Dolnack, D. Mungwai, G.L. Bergeron-Lynn, C.A. Wiley, E. De Clercq, C. Boscher, J.D. Connor, and W.R. Freeman
University of California, San Diego, CA, USA;
Rega Institute for Medical Research, Katholieke Universiteit, Leuven, Belgium; Hospital Foch Suresnes, France
201. Evaluation of Immunotoxic Potential of Antiviral Drugs: Effects of DHPG and HPMPC on Lymphocyte Transformation and Delayed-type Hypersensitivity (DTH) Responses.
J.W. Simecka, P. Patel, and E.R. Kern
The University of Alabama at Birmingham, Birmingham, AL, USA
202. Protection of Zidovudine (AZT)-Induced Fetal Toxicity in Mice by Interleukin-3 (IL-3).
S.R. Gogu, B.S. Beckman, and K.C. Agrawal
Tulane University School of Medicine, New Orleans, LA, USA
203. In vitro Pharmacodynamic Modeling of Anti-retroviral Agents and Interferon.
J.A. Bilello, M.N. Dudley, and G.L. Drusano
University of Maryland School of Medicine, Baltimore, MD; University of Rhode Island, Kingston, RI, USA.
204. Use of SIV and HIV-2 Infected Monkeys in the Evaluation of Drugs Against HIV/AIDS.
B. Öberg, D. Böttiger, E. Ljungdahl-Stähle, P. Putkonen, E. Norrby, and B. Wahren
Karolinska Institute; SBL, Stockholm, Sweden
205. Cellular Pharmacology of 2',3'-Didehydro-2',3'-dideoxythymidine (D4T) in Human Bone Marrow Progenitor Cells (HBMC).
Z. Zhu, H.T. Ho, M.J. Hitchcock, and J.P. Sommadossi
The University of Alabama at Birmingham, Birmingham, AL; Bristol-Myers Squibb Co., Wallingford, CT, USA
206. Treatment of Acyclovir (ACV)-Resistant Zoster with Foscarnet in a Man with AIDS.
D.P. Paar and S.E. Straus
NIH, Bethesda, MD, USA
207. Rimantadine (RIMA) in Nasal Secretions Impairs Accurate Virus

Quantitation in Humans Undergoing Antiviral Treatment.
R.L. Atmar, M.L. Chang, S.B. Greenberg, R.B. Couch
Baylor College of Medicine, Houston, TX, USA

208. The Treatment of Interferon with Different Dosages for Chronic Hepatitis B.

Z.-q. Wu, H.-f. Huang, K.j. Xiong
Wuhan Institute of Virology, Academia Sinica and Xiehe Hospital,
Tongji Medical University, Wuhan, PRC

209. Trends in Antiviral and AIDS Therapeutics Patents and Research and Development.

R.A. Rader
Biotechnology Information Institute, Rockville, MD, USA

- 209A. Modulation of Phagocytic and Bactericidal Activities in Alveolar Macrophages from Influenza Infected Mice.

O.K. Pozdeev, G.Kh. Gilmanova, M.P. Shulaeva, and S.V. Andreev
Institute of Organic and Physical Chemistry, Kazan Scientific Centre
of the Academy of Sciences of the USSR, Kazan, USSR

Friday, April 26

Oral Session VIII: LaSalle Ballroom

Minisymposium – HIV Infections

Co-chairmen: E. De Clercq and R.J. Whitley

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| 9:00 am | Masanori Baba
“New Anti-HIV Agents”
Fukushima Medical College, Fukushima, Japan |
| 9:30 | Joseph A. Martin
“HIV Protease Inhibitors”
Roche Products Ltd., Welwyn Garden City, U.K. |
| 10:00 | Bernard Lebleu
“Antisense Inhibitors of HIV”
Lab. de Biochimie des Proteines, Montpellier, Cedex, France |
| 10:30 | Break |

- 11:00 Carlo F. Perno
“Macrophages as Reservoirs of HIV”
II University of Rome, Roma, Italy
- 11:30 Marc Girard
“Where do we Stand with AIDS Vaccines?”
Institut Pasteur, Paris, France
- 12:00 Robert T. Schooley
“New Approaches to HIV Therapy”
University of Colorado, Denver, CO, USA
- 12:30 Discussion
- 12:45 Closing Remarks, President, ISAR
Adjourn