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Program

The Third International Conference On Antiviral Research

Sponsored by

The International Society For Antiviral Research

National Institutes of Health
National Institute of Allergy and Infectious Diseases
The Fogarty International Center

TNO, The Netherlands Organization For
Applied Scientific Research

The Palais Congress Center

Brussels, Belgium

April 22–27, 1990

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Introduction To Sponsors

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 will organize a meeting every year. Although the society is only in its third year of existence, we have about 800 members representing 30 countries. For membership application forms or further information, please contact *Earl R. Kern, Ph.D., Dept. of Pediatrics, The University of Alabama at Birmingham, 653 CHT 1600 7th Avenue South, Birmingham, AL 35294.* The ISAR will also have a desk at the registration area in the Palais Congress Center.

National Institutes Of Health
The National Institute Of Allergy And Infectious Diseases
The Fogarty International Center

The National Institute of Allergy and Infectious Diseases conducts and supports research to study the causes and pathogenesis of allergic, immunologic and infectious diseases and to develop better means of preventing, diagnosing and treating illnesses. Basic and clinical research is carried out in intramural laboratories, and an extensive extramural grants and contracts program supports investigators in universities, hospitals, and commercial laboratories throughout the country. To combat the serious health problems of AIDS and other viral infections, all phases of antiviral research, development and evaluation are a high priority of the Institute.

The John E. Fogarty International Center for Advanced Study in the Health Sciences (FIC), a component of the National Institutes of Health (NIH), promotes international cooperation in the biomedical and behavioral sciences. This is accomplished primarily through long- and short-term fellowships and scientist exchanges. This compendium of international opportunities is prepared by the FIC with the hope that it will stimulate scientists to seek research-enhancing experiences abroad.

TNO, The Netherlands Organization For Applied Scientific Research

TNO is a fully independent non-profit R & D organization with a staff of about 5,200 and an annual research volume of approximately Dfl. 606 million. R & D is performed in 30 branch- or discipline-oriented institutes for both government and private parties and in particular for trade and industry. The main fields of R & D activities are: the environment, health, building and infrastructure, industrial technology, food and nutrition, energy and national defense. These last few years special attention has been devoted to virology, biotechnology and micro-electronics.

Corporate Sponsors

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General Information

Registration

The registration desk will be located in the foyer (Delvaux Hall) of the Palais Congress Center. Registration will be open during the following hours:

Sunday, April 22	5:00 pm – 8:00 pm
Monday, April 23	8:00 am – 5:00 pm
Tuesday, April 24	8:00 am – 5:00 pm
Wednesday, April 25	8:00 am – 12 noon
Thursday, April 26	8:00 am – 5:00 pm
Friday, April 27	8:00 am – 12 noon

Registration fees	*Advance*	*Late*
Society members	$300	$350
Nonmembers	325	375
Accompanying person	100	100

Registration fees include two receptions, one banquet, coffee breaks, meeting materials and copies of abstracts. Registration must be received by March 15, 1990 for advance rate.

The special package rate offered for persons accompanying registered participants includes the receptions and the banquet.

Fees are payable in U.S. funds only, drawn on a U.S. bank. Personal or company checks, travelers checks, or money orders will be accepted. Registration fees may also be paid using VISA or MasterCard.

Accommodations

Rooms in different price categories have been reserved at a number of hotels in downtown Brussels. All are within walking distance of the Palais Congress Center. For hotel reservations, contact Mark De Marrée or Robert Vanesch, Agri Travel, Oude Markt 24, B-3000, Leuven, Belgium. Telephone 32-16-24.38.12 or 32-16-24.38.15, Telefax 32-16-24.38.01.

Travel Information

For assistance in travel arrangements or for information about pre- and post-conference tours, contact Mark De Marrée or Robert Vanesch, Agri Travel, Oude Markt 24, B-3000, Leuven, Belgium. Telephone 32-16-24.38.12 or 32-16-24.38.15, Telefax 32-16-24.38.01.

Financial Information

Arrangements have been made with the CERA Bank for foreign currency exchange. They will be located in the Magritte Hall of the Palais Congress Center. The Office will be open at the same hours as the Registration (see above).

Sightseeing Tours

The afternoon of Wednesday, April 25, 1990 will be left free for recreation or sightseeing. Optional tours are available for accompanying persons on April 23, 24, 25 and 26, 1990. For these excursions, reservations can be made with Agri Travel, which will have a travel desk in the registration area.

Social Functions

Get-Together Reception:

Sunday, April 22, 1990 – 7:00 pm
Palais Congress Center – Delvaux Hall

Welcome Reception:

Monday, April 23, 1990 – 7:00 pm
(starting with a piano recital and followed by the reception at 8:30 pm)
Concert Noble, Aardenstraat 82 Rue d'Arlon, B-1040 Brussels

Conference Banquet:

Thursday, April 26, 1990 – 7:30 pm
Hilton Hotel, Louiza Room, 1st Floor
Boulevard de Waterloo 38, B-1000 Brussels

Scientific Program

Monday, April 23

Oral Session I: Albert I Hall, Palais Congress Center

Design and In Vitro Evaluation of Antiviral Agents

Co-chairmen: A.K. Field and A. Holy

9:00 am Welcome – Erik De Clercq, Rega Institute for Medical Research
Richard J. Whitley, Univ. of Alabama at Birmingham

9:30 Where Do We Stand with Antivirals?
John C. Martin, Bristol Myers-Squibb Co., Wallingford, CT, U.S.A.

10:15 1. Synthesis and Antiviral Activity of N7-substituted Acyclic Purine Nucleoside Analogues. First Example of an Antivirally Active N7-Isomer.
G. Jähne, M. Rösner, I. Winkler and M. Helsberg
PGU Antiinfectives, Hoechst AG, Frankfurt/Main, Fed. Rep. of Germany.

10:30 Break

11:00 2. In Vitro Evaluation Of Selected New Compounds As Inhibitors Of HIV-1 Replication.
M.A. Chirigos[3], J.S. Driscoll[2], J.B. Kahlon[1], M. Tucker[1], L.E. White[1], A.D. Brazier[1] and W.M. Shannon[1]
[1]Southern Research Institute, Birmingham, AL, U.S.A.; [2]Laboratory of Medicinal Chemistry, Division of Therapeutics Program, Division of Cancer Treatment, NCI, NIH, Bethesda, MD, U.S.A.; [3]U.S. Army Medical Research, Institute of Infectious Diseases, Fort Detrick, Frederick, MD, U.S.A.

11:15 3. 5-Chloropyrimidine 2′,3′-Dideoxyribosides: Synthesis and Anti-HIV Evaluation.
A. Van Aerschot, J. Balzarini, K. Augustyns, L. Jie, E. De Clercq and P. Herdewijn
Laboratories of Pharmaceutical Chemistry and Antiviral Chemotherapy, Rega Institute for Medical Research, Leuven, Belgium.

11:30 4. Structure Activity Relationships in a Series of Phosphate Derivatives of AZT.
C. McGuigan[1], K.G. Devine[1], D. Curley[1], T.J. O'Connor[2], D.J. Jeffries[2] and D. Kinchington[2]
[1]Department of Chemistry, University College London, WC1H 0AJ, U.K.; [2]Division of Virology, Department of Medical Microbiology, St. Mary's Hospital Medical School, London, U.K.

11:45 5. Synthesis and Anti-HIV Activities of Diphosphohexose Prodrugs of AZDU (Azddu or CS-87).
C.K. Chu[1], Q. Islam[1], R.F. Schinazi[2], G.J. Williams[3] and J.P. Sommadossi[4]
[1]University of Georgia College of Pharmacy, Athens, GA, U.S.A.; [2]Emory University School of Medicine/VA Medical Center, Atlanta, GA, U.S.A.; [3]Triton Biosciences, Alameda, CA, U.S.A.; and [4]The University of Alabama at Birmingham, School of Medicine, Birmingham, AL, U.S.A.

12:00 6. Oxathiin Carboxanilide, A Novel Potent Inhibitor of HIV Reproduction.
J.P. Bader[1], J.B. McMahon[1], R.J. Schultz[1], V.L. Narayanan[1], M.R. Boyd[1], O.S. Weislow[2], J.B. Pierce[3] and W.A. Harrison
[1]Developmental Therapeutics Program, DCT, NCI, Bethesda, MD, U.S.A.; [2]Program Resources Inc., FCRF, Frederick, MD, U.S.A.; [3]Uniroyal Chemical Co., Middlebury, Connecticut, U.S.A.; [4]Uniroyal Chemical Ltd., Guelph, Ontario, Canada.

12:15 7. Synthesis and Antiviral Activity of 3-(Dialkylamino) Isoxazoles.
P. La Colla[1], M. Mazzei[2], A. Balbi[2], E. Sottofattori[2], A. Pani[1] and M.E. Marongiu[1]
[1]Dipartimento di Biologia Sperimentale, Università di Cagliari, Italy; [2]Istituto di Scienze Farmaceutiche, Università di Genova, Italy.

12:30 Lunch

Oral Session II: Albert I Hall

Antiviral Agents and Immunomodulators

Co-chairmen: G.J. Galasso and H.A. Rosenthal

2:30 pm Therapy of Cytomegalovirus Infections
John Mills, University of California, San Francisco, CA, U.S.A.

3:15 8. Antiherpes Virus Activity of 5-Methoxymethyl-2'-deoxycytidine in Combination with Deaminase Inhibitors.
P.J. Aduma, V.S. Gupta, A.L. Stuart and G. Tourigny
Departments of Veterinary Physiological Sciences and Chemistry, University of Saskatchewan, Saskatoon, Canada.

3:30 9. Mechanisms of Augmented Resistance of Cyclosporin A-treated Mice to Influenza Virus Infection by Trehalose-6,6'-dimycolate.
M. Azuma, K. Sazaki and T. Suzutani
Department of Microbiology, Asahikawa Medical College, Asahikawa, Japan.

3:45 10. The Lipophilic Muramyl Peptide MTP-PE is a Potent Inhibitor of HIV Replication in Macrophages.
J.K. Lazdins, K.A. Woods-Cook and M.R. Walker
Ciba-Geigy Ltd., Pharma Research Laboratories, Basle, Switzerland.

4:00 11. Alpha Interferon in Combination with AZT and Activated Lymphocytes for the Prevention and Treatment of FeLV-Induced Immunodeficiency Syndrome (FeLV-FAIDS).
N.S. Zeidner, M.H. Myles, C.K. Mathiason-Dubard and E.A. Hoover
Department of Pathology, Colorado State University, Ft. Collins, CO, U.S.A.

4:15 12. 7-Deazaguanosine, A New Immune Enhancer Active Against RNA Viral Infections in Mice.
R.K. Robins, D.F. Smee, H.A. Alaghamandan A. Jin, W.B. Jolley, K. Ramasamy and G.R. Revankar
ICN Nucleic Acid Research Institute, Costa Mesa, California, U.S.A.

Poster Session I: Astrid Hall, Palais Congress Center

Synthesis, In Vitro Evaluation, Immunomodulators

4:30 – 6:30 pm

13. Screening of Topoisomerase Inhibitors for Activity Against Human Immunodeficiency Virus: Inhibition by Coumermycin Al.
G. Tachedjian, D. Tyssen, I. Gust, S. Locarnini and C. Birch
Macfarlane Burnet Centre for Medical Research and Virology Department, Fairfield Hospital, Fairfield, Victoria, Australia.

14. A Need For A Multi-Parameter Virological Testing In Screening Potential AIDS Drugs *In Vitro*.
D.J. Volsky, N. Hamblet, B. Volsky, M.G. Pellegrino and G. Li

Molecular Virology Laboratory, St. Luke's/Roosevelt Hospital Center and Columbia University College of Physicians and Surgeons, New York, NY, U.S.A.

15. Synthesis and Enzymology of New Dideoxynucleosides with Anti-HIV Potential.
V. Nair, G.S. Buenger, D.F. Purdy and T.B. Sells
Department of Chemistry, The University of Iowa, Iowa City, Iowa, U.S.A.

16. Synthesis and Anti-HIV Activity of 2′,3′-Dideoxy-4′-thionucleosides.
J.A. Secrist III, R.M. Riggs, K.N. Tiwari, W.M. Shannon, J.B. Kahlon and J.A. Montgomery
Kettering-Meyer Laboratory, Southern Research Institute, Birmingham, AL, U.S.A.

17. TIBO Derivatives Represent a New Lead of Potent and Selective HIV-1 Inhibitors that Interact with a Reverse Transcriptase-Associated Process.
R. Pauwels[1], K. Andries[2], D. Schols[1], Z. Debyser[1], H. Nakashima[1], M. Kukla[3], J. Desmyter[1], E. De Clercq[1] and P.A.J. Janssen[2]
[1]Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium; [2]Janssen Research Foundation, Beerse, Belgium; [3]Janssen Research Foundation, Spring House, PA, U.S.A.

18. Synthesis of 2′,3′-Dideoxy-3′-methylenepyrimidine Nucleosides as Potential Anti-AIDS Agents.
M. Bobek and M. Sharma
Grace Cancer Drug Center, Roswell Park Memorial Institute, New York Department of Health, Buffalo, NY, U.S.A.

19. Anti-HIV Drug Activity *In Vitro*: Impact of Infection Methodology and Virus Infectivity.
O. Weislow, J. McMahon, J. Bader and M. Boyd
Program Resources, Inc. and Developmental Therapeutics Program, DCT, NCI, Frederick Cancer Research Facility, Frederick, MD, U.S.A.

20. A Novel Route to 3′-Azido-3′-deoxythymidine.
B.E. Reitter[1], M.A. Almond[1], J.L. Rideout[1], J.D. Wilson[1], J.L. Collins[1], J. Hurford[2]
[1]Burroughs Wellcome Co., Research Triangle Park, NC, U.S.A.; [2]Wellcome Research Laboratory, Kent, U.K.

21. The Mechanism of Action of Ro 31-8959 on HIV Infected Cells.
J.C. Craig[1], I.B. Duncan[1], D. Hockley[2], C. Grief[2], N.A. Roberts[1] and J.S. Mills[1]

[1]Roche Products Ltd., Welwyn Garden City, Hertfordshire, U.K.; [2]NIBSC, South Mimms, Potters Bar, Herts, U.K.

22. Synthesis and Anti-HIV Evaluation of Some 5′-O-Phosphonomethyl-2′,3′-Dideoxynucleosides.
L. Jie, A. Van Aerschot, J. Balzarini, E. De Clercq and P. Herdewijn
Laboratories of Pharmaceutical Chemistry and Antiviral Chemotherapy, Rega Institute for Medical Research, Leuven, Belgium.

23. Anti-HIV-1 Activity of Antiviral Compounds, as Measured by a Quantitative Focal Immunoassay in CD4$^+$ HeLa Cells and a Plaque Assay in MT-4 Cells.
H. Nakashima, D. Schols, R. Pauwels, J. Balzarini, J. Desmyter and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

24. 3′-Heterocyclic Substituted 3′-Deoxythymidines: Synthesis and Anti-Retrovirus Activity.
P. Wigerinck, J. Balzarini, P. Claes, E. De Clercq and P. Herdewijn
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

25. Synthesis and Anti-Retrovirus Properties of 5′-Isocyano- and 5′-Formamido Derivatives of AZT and the Corresponding Uridine Derivatives.
J. Hiebl[1], E. Zbiral[1], J. Balzarini[2] and E. De Clercq[2]
[1]Institut für Organische Chemie der Universität Wien, Austria; [2]Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

26. Synthesis of 2′,3′-Dideoxy-2′3′-didehydro- and 2′3′-Dideoxy-3-deaza-adenosine as potential anti-HIV Agents.
P. Franchetti[1], G. Cristalli[1], M. Grifantini[1], L. Cappellacci[1], S. Vittori[1], M.E. Marongiu[2] and A. Pani[2]
[1]Dipartimento di Scienze Chimiche, Università di Camerino, Camerino, Italy; [2]Dipartimento di Biologia sperimentale, Università di Cagliari, Cagliari, Italy.

27. Herbal Extracts and Their Components as a Novel Class of Inhibitors for HIV-Reverse Transcriptase.
K. Ono
Laboratory of Viral Oncology, Aichi Cancer Center Research Institute, Nagoya, Japan.

28. SQ 33,912: A Selective Inhibitor of Varicella-Zoster Virus Replication.

R. Zahler, M.G. Young, W.A. Slusarchyk, G.A. Jacobs, G.S. Bisacchi, M.L. Haffey, B. McGeever-Rubin, A.V. Tuomari, G.A. Yamanaka and A.K. Field
The Squibb Institute for Medical Research, Princeton, NJ, U.S.A.

29. Synthesis and In Vitro Antiviral Activity of Substituted Derivatives of the Potent Antiviral Agent 9-[2-(Phosphonylmethoxy)ethyl]guanine (PMEG).
J.J. Bronson, K.L. Yu, C.U. Kim, H. Yang, V. Brankovan, M.J.M. Hitchcock and J.C. Martin
Bristol-Myers Squibb Co., Wallingford, CT, U.S.A.

30. Acyclic Nucleoside and Nucleotide Analogues Derived from 1-Deaza and 3-Deazaadenine.
A. Holý[1], H. Dvořáková[1], E. De Clercq[2] and J. Balzarini[2]
[1]Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Science, Czechoslovakia; [2]Rega Instituut, Katholieke Universiteit Leuven, Leuven, Belgium.

31. Antiviral Activity and Metabolism of 7-Isomer Derivatives of the Purine Nucleoside Analogue HOE 602.
I. Winkler, M. Helsberg, T. Scholl, C. Meichsner, G. Jähne and M. Rösner
PGE: Antiinfektiva, Hoechst AG, Frankfurt, F.R.G.

32. Comparison of the Activity of 4-Amino and 4-Hydroxyamino Acyclic Tubercidin Analogs Against Cytomegaloviruses and Evaluation of Cytotoxicity in Mammalian Cell Lines.
M.R. Nassiri, S.R. Turk, E.R. Kern, J.P. Robinson, M.J. Cameron, J.S. Pudlo, L.B. Townsend and J.C. Drach
University of Michigan, Ann Arbor, MI, U.S.A.; University of Alabama at Birmingham, Birmingham, AL, U.S.A.; and Purdue University, West Lafayette, IN, U.S.A.

33. Establishment of Automated Assay Systems for Detection of Anti-HSV Agents.
H. Takeuchi, M. Baba and S. Shigeta
Fukushima Medical College, Fukushima, Japan.

34. Antiviral Activity of Anti-Cytomegalovirus Agents Assessed by a Flow Cytometric Method and DNA Hybridization Technique.
R. Snoeck, D. Schols, G. Andrei, J. Neyts and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

35. A Rapid Assay for Cytomegalovirus Antiviral Sensitivity.

T. Kino, E. Kern, W. Britt, R. Whitley and F. Lakeman
Fugisawa Pharmaceuticals, Co., Ltd., Tsukuba, Tokodai, Japan; and The University of Alabama at Birmingham, Birmingham, AL, U.S.A.

36. In Vitro Sensitivity of Herpesvirus simiae (B-virus) to Twelve Antivirals Effective Against Herpesvirus hominis (H. simplex).
K.F. Soike and J.K. Hilliard
Delta Regional Primate Research Center, Covington, LA, U.S.A.; and Southwest Foundation for Biomedical Research, San Antonio, TX, U.S.A.

37. Effect of Oxetanocin-G on Replication of Hepatitis B Virus In Vitro and In Vivo.
T. Nagahata[1,2], K. Araki[3], K. Yamamura[3] and K. Matsubara[1]
[1]Institute for Molecular and Biology, Osaka University; [2]Research Laboratories, Nippon Kayaku Co., Ltd.; [3]Institute for Medical Genetics, Kumamoto University Medical School, Kumamoto, Japan.

38. Inhibition of Duck Hepatitis B Viral Replication by Conventional Inhibitors and Supercoiled DNA Active Compounds.
G. Civitico, Y. Wang, G. Tachedjian, I. Gust and S. Locarnini
Macfarlane Burnet Centre for Medical Research, Fairfield Hospital, Fairfield, Victoria, Australia.

39. Synthesis and Antiviral (RNA) Evaluation of Nucleoside Analogs of Ribavirin and Tiazofurin Modified at the Carboxamide Moiety.
M.J. Phelan[1], B. Gabrielsen[1], L. Barthel-Rosa[1], C. See[1], T.P. Monath[1], J.J. Kirsi[2], W.M. Shannon[2], E.M. Schubert[3], G.D. Kini[4] and R.K. Robins[4]
[1]U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland, U.S.A.; [2]Southern Research Institute, Birmingham, Alabama, U.S.A.; [3]Pharm-Eco Laboratories, Simi Valley, California, U.S.A.; [4]Nucleic Acid Research Institute, Costa Mesa, CA, U.S.A.

40. Antiviral (RNA) Evaluation and Synthesis of a Series of Amaryllidaceae Alkaloids and Related Substances.
B. Gabrielsen[1], G.R. Pettit[2], S.B. Singh[2], T.P. Monath[1], J.W. Huggins[1], M.J. Phelan[1], D. Kefauver[1], E.M. Schubert[3], J.H. Huffman[4], R.W. Sidwell[4], W.M. Shannon[5] and J.J. Kirsi[5]
[1]U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, U.S.A.; [2]Cancer Research Institute, Arizona State University, Tempe, Arizona, U.S.A.; [3]Pharm-Eco Laboratories, Simi Valley, California, U.S.A.; [4]Dept. of Animal, Dairy and Veterinary Sciences, Utah State University, Logan, Utah, U.S.A.; [5]Southern Research Institute, Birmingham, Alabama, U.S.A.

41. Selective Antiviral Agents for the Treatment of Arenavirus Infections.
G. Andrei and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

42. Establishment of an ELISA-Based Primary Antiviral Screen and Plaque Reduction Based Confirmatory Assay for Evaluation of Compounds Against the Filovirus Ebola Under Maximum Biological Containment Conditions (BL-4).
J.W. Huggins, Z.X. Zhang and T.P. Monath
Department of Antiviral Studies, Virology Division, U.S. Army Medical Institute of Infectious Diseases, Fort Detrick, Frederick, Maryland, U.S.A.

43. Summary of Natural Products Isolated From Marine Organisms With Antiviral Activity Against Mouse Coronavirus.
S. Cross and L. Moritz
Harbor Branch Oceanographic Institution, Pierce, FL, U.S.A.

44. Synthesis and in vitro antirhinoviral activity of broad spectrum 6-substituted-3-amino-pyridazines.
R. Stokbroekx, M. Van der Aa, M. Luyckx, G. Grauwels, M. Willems, K. Andries, M. Janssen and P.A.J. Janssen
Janssen Research Foundation, Beerse, Belgium.

45. SCH 38057: A New Molecule With Broad Spectrum Inhibitory Activity Against Picornaviruses.
E. Rozhon, S. Cox, P. Buontempo, J. O'Connell, J. Schwartz, P. Pinto, R. Versace, T. Duelfer and V. Girijavallabhan
Schering-Plough Corporation, Bloomfield, NJ, U.S.A.

46. Inhibitory Activity of Sulfated Polysaccharides Against Respiratory Syncytial Virus Infection In Vitro.
M. Hosoya and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

47. Efficacy of Antivirals Against Different Ocular Adenoviral Serotypes *In Vitro* and a New Organ Culture Method.
Y.J. Gordon[1], T. Araullo-Cruz[1], E. Romanowski[1], R. Tolman[2] and E. De Clercq[2]
University of Pittsburgh, Pittsburgh, PA, U.S.A.; Merck Sharpe & Dohme, Rahway, NJ, U.S.A.; and Katholieke Universiteit, Leuven, Belgium.

48. Antiviral Properties of Platinum(II) and Palladium(II) Complexes Con-

taining Antiviral Nucleoside Analogs.
R.C. Taylor and S.G. Ward
Oakland University, Department of Chemistry, Rochester, Michigan, U.S.A.

49. Synthesis and Antiviral Activity of Avarone Aminoacidic Derivatives.
A. Pani, A. De Giulio, S. De Rosa, G. Strazzullo, P. La Colla and M.E. Marongiu
Dipartimento di Biologia Sperimentale, Università di Cagliari Istituto per la Chimica M.I.B. del CNR, Napoli, Italy.

50. Antiviral Activity of 5'-O-Methylphosphonyladenosine.
D. Ungheri, M.A. Verini, S. Vioglio and C. Battistini
Farmitalia Carlo Erba-Erbamont Group, R&D – Infectious Diseases Department, Nerviano-Milano, Italy.

51. An Automated Evaluation of Antiviral Compounds In Vitro Against Representatives of Several RNA Virus Families.
W.M. Shannon[1], J.J. Kirsi[1], T.P. Monath[2] and J.W. Huggins[2]
[1]Southern Research Institute, Birmingham, AL, U.S.A.; [2]U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, MD, U.S.A.

52. Synthesis and Antiviral Evaluation of Novel 5,6-Dichlorobenzimidazole *D*-Pentofuranonucleosides.
G. Gosselin[1], C. Perigaud[1], M.-C. Bergogne[1], J.-L. Imbach[1], J. Balzarini[2] and E. De Clercq[2]
[1]Laboratoire de Chimie Bio-Organique, Université de Montpellier II, Sciences et Techniques du Languedoc, Place Eugène-Bataillon, France; [2]Katholieke Universiteit Leuven, Rega Institute for Medical Research, Leuven, Belgium.

53. An Evaluation of Human Recombinant Interferon Beta (rIFN-β) Against Selected Positive- and Negative-Stranded RNA Viruses using an MTT Assay Procedure.
J.J. Kirsi[1], W.M. Shannon[1], T.P. Monath[2] and J.W. Huggins[2]
[1]Southern Research Institute, Birmingham, AL, U.S.A.; [2]U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, MD, U.S.A.

54. RNA-Intercalating Drug Interactions: In Vitro Antiviral Activity Studies.
J.M. Jamison, K. Krabill and C. Tsai
Kent State University, Department of Chemistry, Kent, Ohio, U.S.A.; and Northeastern Ohio Universities College of Medicine, Department of Microbiology and Immunology, Rootstown, Ohio, U.S.A.

55. Synthesis and in Vitro Antiviral Activity of some Pyrazole-related Nucleosides.
S. Manfredini[1], P.G. Baraldi[2], M. Guarneri[1], M.E. Marongiu[3], A. Pani[3] and P. La Colla[3]
[1]Dipartimento di Scienze Farmaceutiche University of Ferrara and of [2]Bologna; [3]Dipartimento di Biologia Sperimentale University of Cagliari, Italy.

56. Combo: New Principles and New Methods for Analyzing Synergistic and Antagonistic Drug Combinations in Antiviral Therapy.
J.N. Weinstein[1] and B. Bunow[2]
[1]National Cancer Institute, Bethesda, MD, U.S.A.; [2]Civilized Software, Inc., Bethesda, MD, U.S.A.

57. Antipicornavirus Activity of R 77975, a New Analog of R 61837 With Improved Spectrum and Potency.
K. Andries, B. Dewindt, J. Snoeks, R. Willebrords, R. Stokbroekx and P.A.J. Janssen
Janssen Research Foundation, Beerse, Belgium.

58. Effects of Anti-herpetic Drugs on Ultrastructural Localization of Herpes Simplex Virus (HSV) Glycoprotein D in Cultured Cells Infected with HSV.
T. Masuda[1], A. Yamane[1], H. Sakata[1], H. Yoshida[2] and T. Iwamoto[3]
[1]Department of Ophthalmology, Hiroshima University School of Medicine, Hiroshima, Japan; [2]Department of Ophthalmology, Hiroshima Memorial Hospital, Hiroshima, Japan; [3]Central Clinical Laboratory, Hiroshima General Hospital of West Japan Railway Company, Hiroshima, Japan.

59. An *In Vitro* Assay for the Evaluation of Compounds With Potential Activity Against the Hepatitis B Virus.
B.E. Korba and J.L. Gerin
Georgetown University, Division of Molecular Virology and Immunology, Rockville, MD, U.S.A.

Tuesday, April 24

Oral Session III: Albert I Hall

Mechanism of Action

Co-chairmen: J.-L. Imbach and P. Palese

9:00 am Components of the Antiviral State
Otto Haller, University of Freiburg, West Germany

9:45 60. Mechanism of Action of Amantadine Against the M2 Protein of Influenza A Viruses.
*A.J. Hay, R.J. Sugrue, S.A. Wharton and F. Ciampor**
Division of Virology, National Institute for Medical Research, Mill Hill, London; and *Institute of Virology, Bratislava, Czechoslovakia.

10:00 61. Mechanism of Action of (±)-(1α, 2β, 3α)-9-[2,3-Bis(hydroxymethyl)-cyclobutyl]-guanine (BHCG).
B.J. Terry, K.E. Mazina, M.L. Haffey and A.K. Field
The Squibb Institute for Medical Research, Princeton, New Jersey, U.S.A.

10:15 62. Design of Herpesvirus-specific Glycosylation Inhibitors.
R. Datema[1], S. Olofsson[2], D. Shugar[3] and C. Hirschberg[4]
[1]Bristol-Myers Squibb Company, Wallingford, Connecticut, U.S.A.; [2]University of Goteborg, Goteborg, Sweden; [3]Acadamy of Sciences, Warsaw, Poland; [4]University of Massachusetts, Worcester, Massachusetts, U.S.A.

10:30 Break

11:00 63. Chain Termination Mapping: A Novel Approach Utilizing Ganciclovir (DHPG) to Identify the Origin of Replication of the Human Cytomegalovirus (HCMV).
F.M. Hamzeh, P.S. Lietman, G.S. Hayward and W. Gibson
The Johns Hopkins University School of Medicine, Baltimore, MD, U.S.A.

11:15 64. Targeting of Anti-Viral Drugs to HIV Infected T4-Lymphocytes: Anti-HIV Activity of Neoglycoprotein-AZTMP Conjugates In Vitro.8
G. Molema[1], R.W. Jansen[1], R. Pauwels[2], E. De Clercq[2] and D.K.F. Meijer[1]
[1]Department of Pharmacology & Therapeutics, University Centre for Pharmacy, Groningen, The Netherlands; [2]Division of Microbiology, Department of Human Biology, Rega Institute for Medical Research,

Leuven, Belgium.

11:30 65. Marked Inhibition of Human Immunodeficiency Virus Type 1 and Type 2 by α-(1-3)- and α-(1-6)-D-mannose-specific plant lectins.
J. Balzarini[1], D. Schols[1], E. Van Damme[2], W. Peumans[2] and E. De Clercq[1]
Rega Institute for Medical Research[1] and Laboratory for Phytopathology and Plant Protection, Faculty of Agronomy[2], Katholieke Universiteit Leuven, Leuven, Belgium.

11:45 66. Studies of the cellular pharmacology of the carbocyclic guanosine analog Carbovir, an inhibitor of human immunodeficiency virus.
A. Fridland[1], L. Bondoc[1], W.M. Shannon[2], J.A. Secrist[2] and R. Vince[3]
[1]St. Jude Children's Research Hospital, Memphis, TN, U.S.A.; [2]Southern Research Institute, Birmingham, AL, U.S.A.; [3]College of Pharmacy, University of Minnesota, Minneapolis, MN, U.S.A.

12:00 67. Inhibitors of HIV Proteinase.
J.A. Martin[1], A.V. Broadhurst[1], I.B. Duncan[1], S.A. Galpin[2], B.K. Handa[1], D. Kinchington[2], A. Krohn[1], R.W. Lambert[1], P.J. Machin[1], J.H. Merrett[1], N.A. Roberts[1], K.E.B. Parkes[1], S. Redshaw[1] and G.J. Thomas[1]
[1]Roche Products Ltd., Welwyn Garden City, Hertfordshire, England; [2]Division of Virology, Department of Medical Microbiology, St. Mary's Hospital Medical School, Norfolk Place, London, England.

12:15 68. X-ray Structures of the HIV-1 Protease Complexed with Statine-Containing Peptide Inhibitors – Implications for Structure Based Drug Design.
K. Appelt, R. Ogden, Z. Hostomsky, S. Jordan, W. Smith, L. Musick and B-W. Wu
Agouron Pharmaceuticals, Inc., La Jolla, CA, U.S.A.

12:30 Lunch

Oral Session IV: Albert I Hall

Viral Inhibitors and Drug Resistance

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

2:00 pm Inhibitors of S-Adenosylhomocysteine Hydrolase
Ronald T. Borchardt, University of Kansas, Lawrence, KS, U.S.A.

2:45 69. In vitro Anti-HIV Activity of Phosphorothioate α-Anomeric Oligodeoxynucleotides.
J.-L. Imbach[1], B. Rayner[1], F. Morvan[1], M. Matsukura[2] and J.S. Cohen[3]
[1]Laboratoire de Chimie Bio-Organique, Université de Montpellier II, Sciences et Techniques du Languedoc, France; [2]Department of Pediatrics, Kumamoto University, Medical School, Kumamoto City, Japan; [3]Clinical Pharmacology Branch, Clinical Oncology Program, Division of Cancer Treatment, National Cancer Institute, National Institutes of Health, Bethesda, MD, U.S.A.

3:00 70. Disruption Of Epstein-Barr Virus Episomal DNA Maintenance By A Specific Oligodeoxyribonucleotide.
J.-C. Lin, N. Raab-Traub and J.S. Pagano
Lineberger Cancer Research Center, University of North Carolina, Chapel Hill, U.S.A.

3:15 71. Point Mutations in the Herpes Simplex Virus DNA Polymerase Selectively Affect Sensitivity of the Enzyme to Novel Nucleotide Antiviral Agents.
M.L. Haffey, J.T. Stevens, R.D. Carroll, B.J. Terry, A.K. Field and J.T. Matthews
The Squibb Institute for Medical Research, Princeton, New Jersey, U.S.A.

3:30 72. Susceptibility Profiles of Ganciclovir-resistant HCMV Clinical Isolates to Several Candidate Antiviral Compounds.
S.C. Stanat[1], M.T. Gaillard[1], W.L. Drew[2] and K.K. Biron[1]
[1]Burroughs Wellcome Co., Research Triangle Park, NC, U.S.A.; [2]Mount Zion Hospital and Medical Center, San Francisco, CA, U.S.A.

3:45 73. Pathogenicity for Man of Human Rhinovirus Type 2 Mutants Resistant to or Dependent on Chalcone Ro 09-0410.
W. Al-Nakib[1,2], S.R. Yasin[1,2] and D.A.J. Tyrrell[1]
[1]MRC Common Cold Unit, Harvard Hospital, Coombe Road, Salisbury, Wilts, U.K.; [2]Department of Microbiology, Faculty of Medicine, Kuwait University, Safat, Kuwait.

Poster Session II: Astrid Hall

Molecular and Biochemical Approaches to Antiviral Targets

4:30 – 6:30 pm

74. Soluble T4 (sT4) Mediates Release of gp120 from HIV: Quantitative

Electron Microscopy and Biochemical Analysis.
T.K. Hart, R. Kirsh, D.M. Lambert, J. Leary and P.J. Bugelski
SmithKline Beecham Pharmaceuticals, Philadelphia, Pennsylvania, U.S.A.

75. Dipyridamole inhibits HIV-1 and potentiates the antiviral activity of dideoxynucleoside drugs in cultured cells: biochemical mechanisms of action.
J. Szebeni[1], S. Patel[1], O.S. Weislow[2], G. Betageri[1], S.M. Wahl[3], L.M. Wahl[3] and J.N. Weinstein[2]
[1]National Cancer Institute (NCI), Bethesda, MD, U.S.A.; [2]NCI-Frederick Cancer Research Facility, Frederick, MD, U.S.A.; [3]National Institute of Dental Research, NIH, Bethesda, MD, U.S.A.

76. Cellular Pharmacology of 5′,2-Anhydro-3′-azido-3′-deoxythymidine. A Potent and Selective Inhibitor of HIV-1 Replication.
E.M. August and W.H. Prusoff
Department of Pharmacology, Yale University School of Medicine, New Haven, CT, U.S.A.

77. Lack of Inhibitory Effect of SCH-39304 (An Antifungal Agent) on the Antiviral Efficacy of AZT Against HIV-1 In Vitro.
J.B. Kahlon[1], W.M. Shannon[1], A.D. Brazier[1], G.H. Miller[2], J. Schwartz[2] and R.J. Whitley[3]
[1]Southern Research Institute, Birmingham, AL, U.S.A.; [2]Schering-Plough Corporation, Bloomfield, NJ, U.S.A.; [3]The University of Alabama at Birmingham, Birmingham, AL, U.S.A.

78. Effect of Natural Products of Various Microbial Fermentations from Schering-Plough Corporation on the Replication of HIV-1 as Measured by CPE-Inhibition Assays in Infected Cells.
P. Daniels[1], S. Watkins[1], J. Kahlon[1], R. Hart[2], A.C. Horan[2], V. Gullo[2], J. Schwartz[2], R.J. Whitley[3] and W.M. Shannon[1]
[1]Southern Research Institute, Birmingham, AL, U.S.A.; [2]Schering-Plough Corporation, Bloomfield, NJ, U.S.A.; [3]The University of Alabama at Birmingham, Birmingham, AL, U.S.A.

79. Biological Properties of Ro 31-8959.
N.A. Roberts[1], A.V. Broadhurst[1], I.B. Duncan[1], S.A. Galpin[2], B.K. Handa[1], J. Kay[3], D. Kinchington[2], J.A. Martin[1], J.S. Mills[1], H.A. Overton[1], A.J. Ritchie[1] and S. Redshaw[1]
[1]Roche Products Ltd., Welwyn Garden City, Hertfordshire, England; [2]Division of Virology, St. Mary's Hospital Medical School, Norfolk Place, London, England; [3]Department of Biochemistry, University of Wales College of Cardiff, Cardiff, Wales, U.K.

80. Gag and Pol Antisense Oligodeoxynucleotides as Inhibitors of HIV 1.
D. Kinchington[1], S. Galpin[1], J. Jaroszewski[2], C. Subasinghe[2] and J. Cohen[2]
[1]Division of Virology, Department of Medical Microbiology, St. Mary's Hospital Medical School, London, U.K.; [2]Clinical Pharmacology Branch, Division of Cancer Treatment, National Cancer Institute, NIH, Bethesda, MD, U.S.A.

81. Expression and Characterization of the Retroviral Protease of the Simian Immunodeficiency Virus.
I. Deckman, S. Grant, J. Culp, M. Minnich, T. Meek and C. Debouck
SmithKline Beecham Pharmaceuticals, King of Prussia, PA, U.S.A.

82. Molecular Targets for the Development of AIDS Therapeutics.
C. Debouck
Department of Molecular Genetics, SmithKline Beecham Pharmaceuticals, King of Prussia, PA, U.S.A.

83. Molecular Biology of Organic Thiogold Compounds in the Chemotherapy of AIDS.
H.A. Blough[1,2], M. Richetti[1], L. Montagnier[1] and H. Buc[1]
[1]Institut Pasteur, Paris, France; [2]U.S. Army Medical Research Institute for Infectious Diseases, Fort Detrick, Frederick, MD, U.S.A.

84. In Vitro Evaluation of the Antiviral Effects of Acemannan on the Replication and Pathogenesis of HIV-1 and Other Enveloped Viruses: Modification of the Processing of Glycoprotein Precursors.
M.C. Kemp[1], J.B. Kahlon[2], A.D. Chinnah[1], R.H. Carpenter[3], B.H. McAnalley[3], H.R. McDaniel[4] and W.M. Shannon[2]
[1]Texas A&M University, TX, U.S.A.; [2]Southern Research Institute, Birmingham, AL, U.S.A.; [3]Carrington Labs., Inc., Irving, TX, U.S.A.; [4]DFW Medical Center, Grand Prairie, TX, U.S.A.

85. Influence of S-Adenosylhomocysteine Hydrolase Inhibitors on S-Adenosylhomocysteine/S-Adenosylmethionine Pool Levels in Murine L929 Cells.
M. Cools and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

86. Study of the Binding Parameters of R 61837 to HRV 9 and Immuno-Biochemical Evidence for a Capsid Stabilizing Activity of the Drug.
M. Moeremans, M. De Raeymaeker, G. Daneels, M. De Brabander and K. Andries
Janssen Research Foundation, Beerse, Belgium.

87. Studies on the Mode of Action of R 61837, an Antirhinovirus Compound.
B. Dewindt, K. Andries, J. Snoeks and R. Willebrords
Janssen Research Foundation, Beerse, Belgium.

88. Isolation and Preliminary Characterization of Chalcone Ro 09-0410 Resistant Human Rhinovirus Type 2.
W. Al-Nakib[1,2], S.R. Yasin[1,2] and D.A.J. Tyrrell[1]
[1]MRC Common Cold Unit, Harvard Hospital, Coombe Road, Salisbury, Wilts, U.K.; [2]Department of Microbiology, Faculty of Medicine, Kuwait University, Safat, Kuwait.

89. Inhibitory Effects of (S)-1-(3-Hydroxy-2-Phosphonylmethoxy-propyl) Cytosine and 9-(1,3-Dihydroxy-2-Propoxymethyl) Guanine on Human Cytomegalovirus Replication and DNA Synthesis.
J. Neyts, R. Snoeck, J. Balzarini and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

90. Mechanism of Cellular Uptake of Phosphonylmethoxyalkyl Purine Derivatives.
G. Palú[1], S. Stefanelli[1], M. Rassu[1], C. Parolin[1], J. Balzarini[2] and E. De Clercq[2]
[1]Institute of Microbiology, Padova University, Padova, Italy; [2]Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

91. Use of isotopically chiral [4′-^{13}C] Penciclovir (BRL 39123) and its oral prodrug [4′-^{13}C] Famciclovir (BRL 42810) to determine the absolute configuration of their metabolites.
R.A. Vere Hodge, D.L. Earnshaw, R.L. Jarvest and S.A. Readshaw
SmithKline Beecham Pharmaceuticals, Epsom, Surrey, England.

92. Mode of Action Studies on the Anti-Cytomegalovirus Nucleoside Analog [1-(2-HYDROXY-1-(HYDROXYMETHYL) ETHOXYMETHYL)-CYTOSINE].
C. Talarico, S. Stanat, C. Lambe, J. Tuttle, L. Beauchamp and K. Biron
Burroughs Wellcome Co., Research Triangle Park, NC, U.S.A.

93. Effect of HPMPC on the Replication of Herpes Simplex Virus Type 1 in Monkey Kidney and Human Fibroblast Cells.
S. Chatterjee, P. Burns, R. Whitley and E. Kern
The University of Alabama at Birmingham, Birmingham, AL, U.S.A.

94. Macrophage membrane lectins: their potential for antiviral drug targeting.

A.C. Roche, P. Midoux, E. Nègre, V. Pimpaneau, R. Mayer and M. Monsigny
Centre de Biophysique Moléculaire, CNRS, Orleans Cedex 2, France.

95. Mechanism of Selective Inhibition of Herpes Simplex Virus Replication by Deoxycytidine Analogs: Interaction of 5-Methoxymethyl-2′-deoxycytidine-5′-triphosphate with DNA Polymerases.
V.S. Gupta, P.J. Aduma, H.S. Allaudeen, A.L. Stuart and G. Tourigny
Departments of Veterinary Physiological Sciences and Chemistry, University of Saskatchewan, Saskatoon, Canada.

96. Resistance Artifact From an Automated Assay Observed in Viral Isolates from Patients with Frequent Genital Herpes Simplex Virus (HSV) Infections Serially Treated with Topical 3% Edoxudine (EDU) Cream.
S.L. Sacks
University of British Columbia, Vancouver, BC, Canada.

97. Flow Cytometry as an Aid in Antiviral Research.
D. Schols, R. Pauwels, J. Desmyter and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

98. A Sensitive Method for the Determination of Anti-Viral Agents and Drug Content in Drug-Neoglycoprotein Conjugates.
G. Molema, R.W. Jansen, J. Visser, F. Moolenaar and D.K.F. Meijer
Department of Pharmacology & Therapeutics, University Centre for Pharmacy, Groningen, The Netherlands.

99. Targeting of Antiviral Agents to Specific Liver Cell Types by Neoglycoproteins.
R.W. Jansen[1], G. Molema[1], G. Harms[2], M. Hardonk[2] and D.K.F. Meijer[1]
[1]Department of Pharmacology & Therapeutics, University Centre for Pharmacy and [2]Department of Pathology, Groningen University, The Netherlands.

100. Multivariate Data Analysis in Antiviral Research.
P.J. Lewi, J. Van Hoof and K. Andries
Janssen Research Foundation, Beerse, Belgium.

101. *In-Vitro* Anti HIV Effect of Recombinant IFN-α (BDBB Hybrid) in Macrophages and MT-2 Cells.
J.K. Lazdins, M.R. Walker, K.A. Woods-Cook and E. Alteri
Ciba-Geigy Ltd., Pharma Research Laboratories, Basle, Switzerland.

102. Interferon Inducers and Other Biological Response Modifiers in Murine Retrovirus Models.
M.A. Ussery[1], P.L. Black[2], J.T. Rankin, Jr.[3] and M.A. Chirigos[3]
[1]Food and Drug Administration, Rockville, Maryland, U.S.A.; [2]Southern Research Institute – Frederick Research Center, U.S.A.; and [3]USAMRIID, Ft. Detrick, Maryland, U.S.A.

103. A Comparison of Immunomodulator Effects on Infections Induced by the Friend Retrovirus Complex in Genetically Defined Mice.
R.W. Sidwell, J.D. Morrey, K. Okleberry, R.P. Warren, R. Burger and M.I. Johnston
AIDS Research Program, Utah State University, Logan, UT, U.S.A.; and Division of AIDS, NIAID, Bethesda, MD, U.S.A.

104. Protective Effect of Trehalose Dimycolate on Encephalomyocarditis Virus-Induced Disease in Mice.
B. Mabboux[1], M. Geniteau-Legendre[1], I. Poilane[1], J. Cotte-Laffitte[1], C. Labarre[1], J.F. Petit[2] and A.M. Quéro[1]
[1]Université Paris-Sud – Lab. de Virologie et Immunologie Expérimentales, Châtenay-Malabry, France; [2]Université Paris-Sud – Institut de Biochimie-Orsay, France.

105. In Vitro Modulation of the Activity of Anti-HIV Drugs in Monocytes by GM-CSF and Other Cytokines.
C.F. Perno[1,2], R. Calio'[1], G. Rocchi[1], J. Balzarini[2], S. Broder[3] and R. Yarchoan
[1]II University of Rome, Italy; [2]Rega Institute for Medical Research, Leuven, Belgium; [3]National Cancer Institute, Bethesda, MD, U.S.A.

106. In Vivo Administration of Tumor Necrosis Factor-α: Association with Antiviral Activity in Human Peripheral Mononuclear Cells.
R. Pollard, D. Matzke, M. Jennings and M. Nokta
The University of Texas Medical Branch at Galveston, Galveston, TX, U.S.A.

107. Effect of immunotherapy on UV induced recurrent herpes simplex virus infections.
C.J. Harrison, D.I. Bernstein and L.R. Stanberry
Children's Hospital Research Foundation, Cincinnati, OH, U.S.A.

108. Quantitatively Different Effects Of Cytokines On Chronic HIV-1 Infection.
B. Rosenwirth and J. Besemer
Sandoz Forschungsinstitut, Brunnerstrasse 59, Vienna, Austria.

Wednesday, April 25

Oral Session V: Albert I Hall

Minisymposium – Antiviral Targets

Co-chairmen: R.J. Whitley and H.J. Field

9:00 am Studies on Influenza Virus
Don Wiley, Harvard University, Cambridge, MA, U.S.A.

9:30 Two Groups of Rhinoviruses: Targets for Rational Drug Screening
Koen Andries, Janssen Pharmaceutica, Beerse, Belgium

10:00 Antisense Oligonucleotides as Antiviral Agents
Jack S. Cohen, National Cancer Institute, Bethesda, MD, U.S.A.

10:30 Break

11:00 Inhibitors of HIV Reverse Transcriptase
Katsuhiko Ono, Aichi Cancer Center, Nagoya, Japan

11:30 Resistance to Antiviral Drugs
Don Coen, Harvard Medical School, Boston, MA, U.S.A.

12:00 Discussion

12:30 **Business Meeting**

Afternoon – Free

Thursday, April 26

Oral Session VI: Albert I Hall

Pharmacology and Animal Models

Co-chairmen: E.R. Kern and H. Schellekens

9:00 am Drug Delivery Systems
Dirk Meijer, Laboratory for Pharmacology and Pharmacotherapy, Groningen, The Netherlands

9:45 109. Preclinical Development of Recombinant Soluble T4 (sT4).
P.J. Bugelski, K-L. L. Fong, H.A. Solleveld, A. Truneh, T.K. Hart, J.L. Perri, R. Kirsh and D.G. Morgan
SmithKline Beecham Pharmaceuticals, Philadelphia, Pennsylvania, U.S.A.

10:00 110. Metabolism In Vitro and Pharmacokinetics In Vivo of 2′-fluoro-2′-3′-dideoxyarabinosyladenine (FddA), an inhibitor of HIV with improved stability over 2′,3′-dideoxyadenosine.
M.J.M. Hitchcock, H-T. Ho, K. Woods, H. De Boeck, J.W. Russell, V.J. Whiterock and L.J. Klunk
Bristol-Myers Squibb Company, Wallingford, Connecticut, U.S.A.

10:15 111. Pharmacokinetics and safety of anti-HIV-1 TIBO-derivatives in rats, dogs and man.
J. Heykants, R. Woestenborghs, J. Monbaliu, V. Van de Velde, L. van Beijsterveldt, R. Xhonneux, P. Van Rooy, G. Cauwenbergh and P.A.J. Janssen
Janssen Research Foundation, Beerse, Belgium.

10:30 Break

11:00 112. Phosphonylmethoxyethyl Adenine (PMEA) Therapy of FeLV-FAIDS Infection in Cats.
E.A. Hoover[1], J.P. Ebner[1], N.S. Zeidner[1] and J.I. Mullins[2]
[1]Department of Pathology, Colorado State University, Fort Collins, Colorado, U.S.A.; [2]Department of Microbiology and Immunology, Stanford University, Stanford, CA, U.S.A.

11:15 113. Woodchuck Hepatitis Virus: A Model for the Development of Antiviral Therapies Against HBV.
B.E. Korba[1], P.J. Cote[1], B.C. Tennant[2] and J.L. Gerin[1]
Georgetown University, Division of Molecular Virology and Immunology, Rockville, MD, U.S.A.; College of Veterinary Medicine, Cornell University, Ithaca, NY, U.S.A.

11:30 114. Human Cytomegalovirus (HCMV) Ocular Infection – A Rabbit Model of Chorioretinal Disease.
E.C. Dunkel, M.L. Siegel, D. Freitas and D. Pavan-Langston
Eye Research Institute and Department of Ophthalmology, Harvard Medical School, Boston, MA, U.S.A.

11:45 115. An Animal Model of Neonatal Herpes Simplex Virus Infection.
M.G. Myers, F.J. Bravo, D.I. Bernstein, B.L. Connelly, C.J. Harrison and L.R. Stanberry
Children's Hospital Research Foundation, Cincinnati, OH, U.S.A.

12:00 116. Topical Bioavailability in Rats of the Antiviral Drug 2-Acetylpyridine Thiosemicarbazone.
J.C. Drach, C.R. Eck, K. Perrott, J.P. Moreau and C. Shipman, Jr.
School of Dentistry, The University of Michigan, Ann Arbor, MI, U.S.A.; and Biomeasure, Inc., Hopkinton, MA, U.S.A.

12:15 117. SQ 32,756 (BV-araU): Characteristics and Pharmacokinetic Evaluation in Healthy Male Volunteers.
J.W. Sherman, L.M. Kassalow, J.G. Harkins, B.J. Swites, B. Stouffer, D. Whigan, A.A. Sugerman and S.A. Smith
The Squibb Institute for Medical Research and The Medical Center at Princeton, Princeton, NJ, U.S.A.

12:30 Lunch

Oral Session VII: Albert I Hall

Clinical Studies

Co-chairmen: C.A. Laughlin and B. Oberg

2:30 pm 118. Treatment of Experimental Ultraviolet Radiation (UVR)-Induced Herpes Labialis with Peroral and Topical Acyclovir (ACV).
S.L. Spruance, D.J. Freeman, J.C.B. Stewart, M.B. McKeough, G. Wenerstrom, G.G. Krueger and N.H. Rowe
University of Utah, Salt Lake City, UT, U.S.A.; University of Pittsburgh, Pittsburgh, PA, U.S.A.; and University of Michigan, Ann Arbor, MI, U.S.A.

2:45 119. Topical 15% Undecylenic Acid (UDA) Cream vs Placebo (PLB): A Canadian, Randomized, Multicenter, Patient-Initiated (PI) Trial in Patients with Recurrent Oral-labial (OL) Herpes Simplex Virus (HSV) Infections.
S.L. Sacks, S. Shafran, F.Y. Aoki, D.L.J. Tyrrell, W. Schlech, J. Mendelson, D. Rosenthal, M.J. Gill, I. Chang and R. Bader
University of British Columbia, Vancouver, BC, Canada; Canadian Cooperative Study Group, Fisons Pharmaceuticals, Rochester, NY, U.S.A.

3:00 120. Cutaneous Reactions to Combination Zidovudine-Probenecid Treatment.
B.G. Petty, D.M. Kornhauser and P.S. Lietman
The Johns Hopkins University School of Medicine, Baltimore, MD, U.S.A.

3:15 121. Alterations Of Productive HIV Infection Levels In Patients Under Antiviral Therapy.
M. Dominique[1], Y. Sultan[2], C. De Belilovsky[1], D. Paul[3], R. Decker[3] and J. Leibowitch[1]
[1]Hôpital Raymond Poincare, Garches, France; [2]Hôpital Cochin, Paris, France; [3]Abbott Laboratories, North Chicago, Illinois, U.S.A.

3:30 122. Efficacy of Intranasal R 77975 for the Prevention of Experimentally Induced Rhinovirus Infection and Illness.
F.G. Hayden, K. Andries and P.A.J. Janssen
University of Virginia School of Medicine, Charlottesville, VA, U.S.A.; and Janssen Research Foundation, Beerse, Belgium.

3:45 123. WC3 Rotavirus Vaccine Trial: Correlates of Protection.
D.I. Bernstein, V.E. Smith, G.M. Schiff and R.L. Ward
James N. Gamble Institute of Medical Research, Division of Clinical Virology, Cincinnati, OH, U.S.A.

4:00 124. Incidence of Anti-IFN Alpha Neutralizing Antibodies in Hepatitis Patients Treated with Different IFN Alpha Preparations.
G. Antonelli, M. Currenti, O. Turriziani and F. Dianzani
Institute of Virology, University "La Sapienza", Rome.

4:15 125. A Regulatory Perspective on Preclinical Studies to Support Antiviral Drug Activity.
M.A. Ussery, J.C. Ramsey and E.C. Cooper
Division of Antiviral Drug Products, Food and Drug Administration, Rockville, Maryland, U.S.A.

Poster Session III: Astrid Hall

Animal Models, Pharmacology and Clinical Studies

4:30 – 6:30 pm

126. Ultraviolet Radiation (UV) Induced Recurrent Genital Herpes: An Animal Model for Evaluating Antiviral Treatment.
L.R. Stanberry, C.J. Harrison and D.I. Bernstein
Division of Infectious Diseases, Children's Hospital Research Foundation, Cincinnati, OH, U.S.A.

127. Comparison of Peroral Acyclovir (ACV) and Topical 15% Idoxuridine in Dimethyl Sulfoxide (IDU/DMSO) for the Treatment of Herpes Labialis.

S.L. Spruance, J.C.B. Stewart, D.J. Freeman, V.J. Brightman, J.L. Cox, G. Wenerstrom, M.B. McKeough and N.H. Rowe
University of Utah, Salt Lake City, UT, U.S.A.; University of Michigan, Ann Arbor, MI, U.S.A.; University of Pittsburgh, Pittsburgh, PA, U.S.A.; University of Pennsylvania, Philadelphia, PA, U.S.A.; and David Grant MC, Travis AFB, CA, U.S.A.

128. The Effects of 5-iodo-2'-deoxyuridine (IDU) and Acyclovir (ACV) on Herpes Simplex Virus (HSV) Specific Cytotoxic T Lymphocytes (CTL).
H. Yamashiro, H. Sakata, M. Watanabe and M. Matsukawa
Department of Ophthalmology, Hiroshima University School of Medicine, Hiroshima, Japan.

129. Antiherpesviral Efficacy of Brovavir (BV-araU) in Immuno-Suppressed Mice.
H. Machida, K. Ijichi and N. Ashida
Res. Lab., Yamasa Shoyu Co., Ltd., Japan.

130. Bromovinyldeoxyuridine Treatment of Herpes Simplex Virus and Varicella-Zoster Virus Infections: A Review.
P.C. Maudgal and E. De Clercq
Ophthalmological Clinic and Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

131. Phosphonylmethoxyalkylpurines and -Pyrimidines in the Treatment of HSV Keratitis.
P.C. Maudgal and E. De Clercq
Ophthalmological Clinic and Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium.

132. Activity of Cyclobutyl Adenine and Cyclobutyl Guanine in Experimental Models of Infection with Herpes Simplex Type 1 and Type 2 Virus.
J.J. Clement, D.J. Hardy, R.N. Swanson and N. Shipkowitz
Abbott Laboratories, Abbott Park, IL, U.S.A.

133. Antiviral Activity of Cyclobutyl Guanine Against Herpes Virus Infections.
E.R. Kern, C. Hartline, B. Lidin and P.E. Vogt
Department of Pediatrics, University of Alabama School of Medicine, Birmingham, AL, U.S.A.

134. Effect of Treatment with HPMPC on Mortality and Pathogenesis of Experimental Herpes Simplex Virus Infections.
E.R. Kern and P.E. Vogt

Department of Pediatrics, University of Alabama School of Medicine, Birmingham, AL, U.S.A.

135. Treatment of Opportunistic Cytomegalovirus and Herpes Simplex Virus Infections in Murine AIDS (MAIDS).
J.D. Gangemi[1], L. De Castro[1], A. Ghaffar[1], E.P. Mayer[1], E. De Clercq[2], P.E. Vogt[3] and E.R. Kern[3]
[1]Univ. of South Carolina Sch. of Med., Columbia, SC, U.S.A.; [2]Rega Inst. Med. Res., Katholieke Universiteit Leuven, Belgium; [3]Univ. of Alabama Sch. of Med., Birmingham, AL, U.S.A.

136. (*S*)-[3-Hydroxy-2-(phosphonylmethoxy)propyl]cytosine (HPMPC): Studies on Intracellular Metabolism and the Effect of Infrequent Dosing on Antiviral Efficacy.
J.J. Bronson, H-T. Ho, H. De Boeck, K.L. Woods, I. Ghazzouli, H. Yang, L.J. Klunk, J.W. Russell, V.J. Whiterock, R. Datema, J.C. Martin and M.J.M. Hitchcock
Bristol-Myers Squibb Co., Wallingford, CT, U.S.A.

137. Effective Inhibition of Equine Herpesvirus-1 In Vivo by Phosphonylmethoxyalkyl Derivatives of Adenine.
H.J. Field, R. De La Fuente and A.R. Awan
Department of Clinical Veterinary Medicine, University of Cambridge, U.K.

138. Evaluation of Infrequent Dosing Regimens with (S)-1-[(3-hydroxy-2-(phosphonylmethoxy)propyl]cytosine (HPMPC) in Simian Varicella Infection in Monkeys.
K.F. Soike, J.-L. Huang, J.-E. Zhang, M.J.M. Hitchcock and J.C. Martin
Delta Regional Primate Research Center, Covington, LA, U.S.A.; and Bristol-Myers Squibb, Wallingford, CT, U.S.A.

139. Infrequent Administration of 9-(2-Phosphonylmethoxyethyl) Adenine (PMEA) Results in Increased Anti-Retrovirus Activity In Vivo.
L. Naesens, J. Balzarini and E. De Clercq
Rega Institute for Medical Research, Katholieke Universiteit Leuven, Belgium.

140. Immunomodulatory Activity of Anti-HIV Nucleoside Analogues on In Vivo Murine Models.
V. Del Gobbo, A. Foli, E. Balestra, N. Villani, S. Marini, C.F. Perno and R. Calió
II University of Rome, Italy.

141. Effects of 28 Day Treatment With Azidothymidine (AZT) Initiated

1 to 72 Hours After Infection With Simian Immunodeficiency Virus (SIV).
L.N. Martin, M. Murphey-Corb, K.F. Soike and B. Davison-Fairburn
Delta Regional Primate Research Center, Tulane University, Covington, LA, U.S.A.

142. Initial Pharmacokinetic Studies on the Potent HIV-1 and HIV-2 Inhibitors PVAS and PAVAS.
M. Witvrouw[1], D. Schols[1], R. Pauwels[1], S. Görög[2] and E. De Clercq[1]
[1]Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium; [2]Chemical Works of Gedeon Richter Ltd., Budapest, Hungary.

143. Effect of Castanospermine on Virus Titers in Rauscher MuLV Infected NIH Swiss Mice.
L. Allen, L. Westbrook, B. Toyer and M. Hollingshead
Southern Research Institute, Birmingham, AL, U.S.A.

144. Failure of a Chronic Retrovirus-induced Immunodeficiency Syndrome to Respond to Interleukin-2 (IL-2) Alone or in Combination with Azidothymidine (AZT).
J.A. Bilello[1], C. MacAuley[1], M. Bell[1], S.G. Shapiro[1], T. Fredrickson[2], R.A. Yetter[1] and J.L. Eiseman[1]
[1]University of Maryland Cancer Center and VAMC, Baltimore, MD, U.S.A.; [2]Department of Pathobiology, University of Connecticut, Storrs, CT, U.S.A.

145. Dose-Escalating Study of Safety and Efficacy of Dideoxydidehydrothymidine (d4T) for HIV Infection.
L. Dunkle, A. Cross, R. Gugliotti, R. Martin, M. Browne and H. Murray
Bristol-Myers Squibb, Wallingford, Connecticut, U.S.A.; University of Rhode Island, Providence, Rhode Island, U.S.A.; Cornell Medical Center, New York, New York, U.S.A.; and NIAID, U.S.A.

146. Continuous Intravenous Dextran Sulfate in Patients with ARC and AIDS.
C. Flexner, P. Barditch-Crovo, D.M. Kornhauser, L. Nerhood, B.G. Petty and P.S. Lietman
Division of Clinical Pharmacology, The Johns Hopkins University School of Medicine, Baltimore, MD, U.S.A.

147. Extended Survival and Prognostic Criteria for Acemannan (ACE-M) Treated HIV-1 Patients (pts).
H.R. McDaniel, R.H. Carpenter, M. Kemp, J. Kahlon and B. McAnalley

Dallas-Ft. Worth Medical Center, Grand Prairie, Texas, U.S.A.; Carrington Labs, Inc., Irving, Texas, U.S.A.; Southern Research Institute, Birmingham, AL, U.S.A.

148. AIDS Statistics in Spectral Maps.
P.J. Lewi[1], J. Van Hoof[1], K. Andries[1] and R. Pauwels[2]
[1]Janssen Research Foundation, Beerse, Belgium; and [2]Rega Institute, Leuven, Belgium.

149. Antiviral Activity of LY253963 in BALB/c and Swiss Mice Infected With Lethal Doses of Influenza A Virus.
J.E. Herrmann, M.J. Bruns and K.Y. West
University of Massachusetts Medical School, Worcester, Massachusetts, U.S.A.

150. Use of Rimantadine, Amantadine, Ribavirin, and LY253963 for Influenza A Virus Infection in Mice and the Effects of These Agents on Immune Responses *In Vivo* and *In Vitro*.
J.E. Herrmann, K.Y. West, M.J. Bruns and F.A. Ennis
University of Massachusetts Medical School, Worcester, Massachusetts, U.S.A.

151. Safety and Efficacy of NPC 567 for the Treatment of Experimentally Induced Rhinovirus Infections.
D.J. Bernstein, J.R. Sherwood, E.C. Young and G.M. Schiff
James N. Gamble Institute of Medical Research, Division of Clinical Virology, Cincinnati, OH, U.S.A.

152. Development of an Adult Mouse Model for Studies on Protection Against Rotavirus.
R.L. Ward[1], M.M. McNeal[1] and J.F. Sheridan[2]
[1]James N. Gamble Institute for Medical Research, Division of Clinical Virology, Cincinnati, OH, U.S.A.; [2]Ohio State University, College of Dentistry, Columbus, OH, U.S.A.

153. Effects of 7-Thia-8-Oxoguanosine Alone and in Combination with Ribavirin on Punta Toro Virus Infections in Mice.
D.F. Smee, J.H. Huffman, J. Coombs, J.W. Huggins and R.W. Sidwell*
Antiviral Program, Utah State University, Logan, Utah, U.S.A.; and *U.S. Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Maryland, U.S.A.

154. Comparison of Ribavirin Analogues in Hantaan-Infected SCID Mice.
Z.X. Zhang and J.W. Huggins
Department of Antiviral Studies, Virology Division, U.S. Army Med-

ical Institute of Infectious Diseases, Fort Detrick, Frederick, Maryland, U.S.A.

155. Rift Valley Fever Virus Infected Rhesus as a Model for Drug Evaluation: Comparison of Prophylaxis with Ribavirin or Placebo.
J.W. Huggins[1], J.C. Morrill[2], Z.X. Zhang[1], O.M. Brand[1], M.J. Topper[3], J.I. Smith[4] and C.R. Bartz[1]
[1]Department of Antiviral Studies, Virology Division, [2]Disease Assessment Division, [3]Pathology Division, [4]Medical Division, U.S. Army Medical Research Institute of Infectious Diseases, Ft. Detrick, Maryland, U.S.A.

156. Quantitative Measurement of Serum Neopterin in Acute Sandfly Fever Virus (Sicilian) Infection in Medical Research Volunteer Subjects.
J.I. Smith, T.P. Monath, F.J. Malinoski, D.C. Hack, M. Kende, J.W. Huggins, M. Turell, J. Ortaldo, R.H. Kenyon, T. Ksiazek, J. Morrill, P. Gibbs and K. Womble
U.S. Army Medical Research Institute of Infectious Diseases, Frederick, Maryland, U.S.A.

157. Ribavirin Therapy of Acute Viral Hepatitis "B" and "C".
J. Paquentin, V. Fortuño and G. Cruz
Infectology Hospital "La Raza", IMSS, Mexico City, Mexico.

158. Observation on Antiviral Effect of Combined Treatment on Small Dose Interferon and Thymosin in Patients with Chronic Hepatitis B.
Z.-Q. Wu, H.-F. Huang and K.-J. Xiong
Wuhan Institute of Virology, Academia Sinica and Xiehe Hospital, Tongji Medical University.

159. Followed-up Observation on Antiviral Effect of Combined Treatment of Small Dosage of Interferon and Thymosin in Patients with Chronic Hepatitis B.
Z.-Q. Wu, H.-F. Huang and K.-J. Xiong
Wuhan Institute of Virology, Academia Sinica and Xiehe Hospital, Tongji Medical University.

160. Antiinfluenza Effect Of A Plant Polyphenolic Complex.
J. Serkedjieva and N. Manolova
Institute of Microbiology, Bulg. Acad. Sci., Sofia, Bulgaria.

161. 1-Morpholinomethyl-tetrahydro-2(1H)-pyrimidinone (MCU): Selective Inhibitor of Influenza Virus Reproduction.
A.S. Galabov[1], S. Uzunov[1], M.L. Christova[2], L. Vassileva[1], E. Velichkova[1] and I.G. Kharitonenkov[2]

[1]Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria; [2]Institute of Virology, USSR Academy of Medical Sciences, Moscow, USSR.

162. Experimental Transmission of Duck Hepatitis B Virus To Pekin Ducklings: A Potent Model For In Vivo Evaluation of Anti-HIB Drugs.
I. Fourel[1], O. Hantz[1], C. Jacquet[1], J.J. Fox[2] and C. Trepo[1]
[1]Inserm U 271, Lyon, France; [2]Sloan Kettering Institute, New York, NY, U.S.A.

163. Differential Susceptibilities of Two HIV-1 Strains to ddAzThd, ddCyd, ddIno and PFA in MT-2 Cells.
N.K. Ayisi[1], S.V. Gupta[2] and L.F. Qualtierre[3]
[1]Noguchi Memorial Inst., Univ. of Ghana, Legon, Ghana, Depts. of [2]Vet. Physiology and [3]Microbiology, University of Saskatchewan, Saskatoon, Canada.

164. Intracellular Delivery of Oligonucleotides with Antiviral Properties: Poly (L-Lysine) Conjugation and Liposomes Encapsulation.
G. Degols[1], P. Machy[2], J.-P. Leonetti[1], L. Leserman[2] and B. Lebleu[1]
[1]Laboratoire de Biochimie des Protéines, Montpellier cedex, France; [2]Centre d'Immunologie INSERM-CNRS de Marseille-Luminy, Marseille cedex 9, France.

Friday, April 27

Oral Session VIII: Albert I Hall

Minisymposium – HIV Infections

Co-chairmen: J.J. McGowan and H.J. Eggers

9:00 am Peptides as Inhibitors of HIV Replication
Ruth Nutt, Merck, Sharp and Dohme, West Point, PA, U.S.A.

9:30 New Therapeutics for HIV Infections
Rudi Pauwels, Rega Institute for Medical Research, Leuven, Belgium

10:00 Molecular Pharmacology of HIV Drugs
Jean-Pierre Sommadossi, University of Alabama at Birmingham, Birmingham, AL, U.S.A.

10:30	Break
11:00	Animal Models for HIV Infections Ruth Ruprecht, Dana-Farber Cancer Inst., Boston, MA, U.S.A.
11:30	Clinical Trials for HIV Infections Martin S. Hirsch, Massachusetts General Hospital, Boston, MA, U.S.A.
12:00	Discussion
12:30	Closing Remarks, President, ISAR Adjourn