Asterisks preceding the title refer to studies in humans.


1775 A Model for the Chemotherapy of Acute Leukemia with 1-β-D-Arabinofuranosylcytosine. Richard L. Mompauer.


1794 Cross-reacting Tumor-associated Antigen(s) of Adenovirus Type 9-induced Fibroadenomas and a Chemically Induced Mammary Carcinoma in Rats. J. Ankerst, G. Steele, Jr., and H. O. Sjögren.

1801 Cross-reacting Tumor-associated Antigen(s) among Chemically Induced Rat Colon Carcinomas. G. Steele, Jr., and H. O. Sjögren.


1813 Synthesis of α-Fetoprotein by Membrane-bound Polysomes of Rat Ascites Hepatoma Cells. Koichi Kanai, Yasuo Endo, Toshitsugu Oda, and Naomi Tanaka.

1816 Deviation in Esterase Isozyme Pattern during Early Stage of Hepatocarcinogenesis by 3'-Methyl-4-dimethylaminoazobenzene. Aiko Kaneko, Kimimaro Dempo, Yutaka Yoshida, Noriyasu Chisaka, and Tamenori Ono.

1822 Virus Release by Cell Colonies Derived from Chickens and Cultures Infected with Avian Myeloblastosis Virus. William H. Dodge.

1827 Blood Glucose Levels and Gluconeogenesis in Animals Bearing Transplantable Tumors. V. S. Shapot and V. A. Blinov.


1843 Effect of Nitrofurans Antagonistic to 3'-Methyl-4-dimethylaminoazobenzene in Hepatocarcinogenesis and RNA Polymerase Activity of Liver Cell Nuclei in Rats. Mitsutaro Akao, Keiko Kuroda, Yoshihiro Tsutsui, Masayoshi Kanisawa, and Komei Miyaki.


1862 Enhanced Na+K+-activated Adenosine Triphosphatase Activity in Transformed Fibroblasts. Luka B. Kasar and Herman Friedman.


1870 Primary Neoplasms in Dog Liver Induced by Diethylnitrosamine. Kazuya Hirao, Kazutaka Matsumura, Atsushi Imagawa, Yasuhisa Enomoto, Yasuhiro Hosogi, Toshinori Kani, Kiyotake Fujikawa, and Nobuyuki Ito.

1883 * Effect of Methotrexate on Deoxyribonucleotide Pools and DNA Synthesis in Human Lymphocytic Cells. Arnold Fridland.


1892 Effect of the Acute Rat Leukemia L5222 on Bone Marrow Stromal Cells. Dieter Hoelzer, Eileen B. Harriss, Christine


1921 The Effects of Treatments with 5-(3,3-Dimethyl-1-triazenoimidazole-4-carboxamide in Darkness and in Light on Survival and Progression in Chinese Hamster Ovary Cells in Vitro. A. H. Gerulath, S. C. Barranco, and R. M. Humphrey.


1931 * °Gα Binding to Human Serum Proteins and Tumor Components. Jørgen Clausen, Carl-Johan Edeling, and Jan Fogh.

1938 Minimal Bone Marrow Damage in Mice Given Bleomycin. Sallie S. Boggs, George P. Sartiano, and Angelo DeMezza.


1947 Combination of Active and Passive Immunization and Chemotherapy to Transplantation of Methylcholanthrene-induced Tumor in WKA Rats. Eiki Gotohda, Fujio Sendo, Masuo Hosokawa, Takao Kodama, and Hiroshi Kobayashi.


1957 Duration of Inhibition of Synthesis of DNA in Tumors and Host Tissues after Single Doses of Nitrosoureas. Glynn P. Wheeler and Jo Ann Alexander.


1982 Effects of 1,3-Bis(2-chloroethyl)-1-nitrosourea and Related Compounds on Nuclear RNA Metabolism. Herbert E. Kann, Jr., Kurt W. Kohn, Lawrence Widerlité, and David Gullion.


2026 List of Participants.

2031 Program Committee.

2032 Introduction.


2053 Introduction to Session on Cross-reactive Antigens. Sir Peter Medawar.


2077 Escape from Immune Destruction by the Host
through Shedding of Surface Antigens: Is This a Characteristic Shared by Malignant and Embryonic Cells?

Peter Alexander.


Allyn H. Rule and Carol Goleski-Reilly.

Ectopic Synthesis and Paraneoplastic Syndromes.

Thomas C. Hall.


The Graded Enzymic Immaturity of Transplanted Neoplasms.

W. Eugene Knox.

Tumor Angiogenesis Factor.

Judah Folkman.

Intermolecular Heterogeneity of the Carcinoembryonic Antigen.

Chaim Banjo, Joseph Shuster, and Phil Gold.

Heterogeneity of Carcinoembryonic Antigen.

J. W. Eveleigh.

Interrelationship of Carcinoembryonic Antigen and Colon Carcinoma Antigen-III.

Edward S. Newman, Susan E. Petras, Alex Georgiadis, and Hans J. Hansen.


Norman Zamcheck and Herbert Z. Kupchik.

Esterase Activity of Carcinoembryonic Antigen.

Devidayal Munjal and Norman Zamcheck.

Cover Legend

Lev Alexandrovich Zilber (1894-1966), doctor of medical sciences and member of the U.S.S.R. Academy of Medical Sciences, was the founder of the Russian school of viral oncology. A graduate of Moscow State University in 1919, his earlier experimental work was on auto-serotherapy of typhus (1921), hereditary transformation of serotypes in Proteus vulgaris (1922-1923), and the replication of viruses in unnatural hosts, as vaccinia virus in yeast (1932-1934). He and his coworkers identified the tick-borne, summer-spring encephalitis of the Far East regions of the U.S.S.R. He began work on the virological aspects of cancer in 1944, heading the Department of Immunology and Virology of Tumors at the Gamaleya Institute of Epidemiology and Microbiology, Moscow. [N. F. Gamaleya (1859-1949), after whom the Institute is named, was a bacteriologist who, following a visit with Pasteur in 1896, introduced rabies vaccination in Russia.]


G. I. Abelev (b. 1928) doctor of biological sciences and professor of biochemistry, graduated from Moscow State University in 1950. He was an assistant of Dr. Zilber, whom he succeeded as departmental chairman at the Gamaleya Institute in 1966. Abelev and his colleagues devoted their attention to tumor-specific antigens and demonstrated striking immunological individuality in mouse hepatomas (cf. Progr. Exptl. Tumor Res., 7: 104, 1965). The most important contribution from Abelev's group was the 1963 discovery of embryo-specific α-globulin (α-fetoprotein, or AFP) in experimental hepatomas. This led to the development of an immunodiagnostic test for hepatocellular carcinoma and teratocarcinoma in man. The work is reviewed in Advan. Cancer Res., 14: 295, 1971. The figure is from this article and is a schematic representation of AFP synthesis in normal development and pathological states (solid line, serum AFP levels in arbitrary units; broken line, expected AFP level).

We are indebted to Dr. Lev L. Kisselev for the portraits of Zilber (left) and Abelev (right).
SYMPOSIUM

Sponsored by
U. S. Atomic Energy Commission
Hoffmann-La Roche Inc.
Eli Lilly
Litton Industries

THIRD CONFERENCE ON
EMBRYONIC AND FETAL ANTIGENS IN CANCER

Held at the
Hyatt Regency Hotel
Knoxville, Tennessee
November 4–7, 1973
PROGRAM

List of Participants ................................................................. 2026
Program Committee ................................................................. 2031

Introduction.
Norman G. Anderson and Joseph H. Coggin, Jr. ................................. 2032

Gene Regulation and Cancer
Dorthy Skinner, Chairman

Molecular Aspects of Gene Regulation in Animal Cells.
Eric H. Davidson and Roy J. Britten .............................................. 2034
Phasing of Gene Products during Development.
Cole Manes ................................................................. 2044

Cross-reactive Antigens
Sir P. B. Medawar, Chairman

Introduction to Session on Cross-reactive Antigens.
Sir Peter Medawar ................................................................. 2053
Implications of the Fetal Antigen Theory for Fetal Transplantation.
J. E. Castro, R. Hunt, E. M. Lance, and P. B. Medawar .............................................. 2055
Maternal-Fetal Histoincompatibility in Rats: An Escape from Adversity.
Joy Palm ................................................................. 2061
Searching for Human Tumor Antigens.
J. W. Holleman, J. P. Breillatt, and J. H. Coggin, Jr. .............................................. 2066

Cancer, Pregnancy, and Evolution
Peter Alexander, Chairman

Escape from Immune Destruction by the Host through Shedding of Surface Antigens: Is This a Characteristic
Shared by Malignant and Embryonic Cells?
Peter Alexander ................................................................. 2077
Allyn H. Rule and Carol Goleski-Reilly .............................................. 2083

Ectopic Synthesis, Retrogenesis, and Host Responses
Untae Kim, Chairman

Ectopic Synthesis and Paraneoplastic Syndromes.
Thomas C. Hall ................................................................. 2088
Joseph H. Coggin, Jr., Kathleen R. Ambrose, Peggy J. Dierlam, and Norman G. Anderson .............................................. 2092
The Graded Enzymic Immaturity of Transplanted Neoplasms.
W. Eugene Knox ................................................................. 2102
Tumor Angiogenesis Factor.
Judah Folkman. ................................................................. 2109

Chemistry of Carcinoembryonic Antigen

H. J. Hansen, Chairman

Intermolecular Heterogeneity of the Carcinoembryonic Antigen.
Chaim Banjo, Joseph Shuster, and Phil Gold. ........................................... 2114

Heterogeneity of Carcinoembryonic Antigen.
J. W. Eveleigh. .................................................................................. 2122

Interrelationship of Carcinoembryonic Antigen and Colon Carcinoma Antigen-III.
Edward S. Newman, Susan E. Petras, Alex Georgiadis, and Hans J. Hansen. ................................................... 2225

Carcinoembryonic Antigen

P. Gold, Chairman

Norman Zamcheck and Herbert Z. Kupchik. .............................................. 2131

Esterase Activity of Carcinoembryonic Antigen.
Devidayal Munjal and Norman Zamcheck. .............................................. 2137

Papers Presented and Published as Abstracts in USAEC Report Conf-73-1141

Gene Regulation and Cancer

Dorthy Skinner, Chairman

Cancer Viewed as a Disease of Cell Differentiation. Clement L. Markert.

Cross-reactive Antigens

Sir P. B. Medawar, Chairman


Chemistry of Carcinoembryonic Antigen

H. J. Hansen, Chairman


1 Requests for abstracts of the Third Conference on Embryonic and Fetal Antigens in Cancer should be addressed to: R. E. Canning, Molecular Anatomy (MAN) Program, P. O. Box P, Building K-703, Oak Ridge National Laboratory, Oak Ridge, Tenn. 37830.

2 The person whose name is italicized was the presenter of the paper.
Quantitative Absorption of Undesired (Blood Group) Antibodies from Antisera to CEA. Arnold E. Reif and Cynthia M. Robinson.

Demonstration of Blood Group Antigen A, B, Lewis, and Lewis on Different Preparations of CEA. Jean-Pierre Mach, Alexander Holburn, Dorothy MacDonald, Stephan Carrel, and Claude Merenda.


**Carcinoembryonic Antigens: Clinical Studies**

Jack Snyder, Chairman


Simultaneous Measurement of Serum CEA and αFP in Colorectal and Gastric Cancer. M. Ravry, K. R. McIntire, C. G. Moertel, T. A. Waldmann, and V. L. W. Go.

Serial CEA Levels in the Clinical Assessment of Prognosis of Patients with Resected Colon Cancer. Norman Zamcheck.


The CEA Assay in Bronchogenic Carcinoma. J. P. Concannon, M. H. Dalbow, and John C. Frich, Jr.


CEA in Four Cancer-prone Families. Hoda A. Guirgis and Henry T. Lynch.


A Method of Rapid Dialysis for Use with the Zirconyl Gel Assay for CEA. H. Z. Kupchik, Marvin C. Feil, and Calvin C. Saravis.

Studies on CEA as a Normal Product of Normal Gastrointestinal Epithelium. Thomas C. Hall, Marsha Hollander, Barbara Dyce, and Hans Hansen.


The Effect of Hormones on CEA Levels in Patients with Carcinoma of the Prostate. I. M. Bush, N. Sadoughi, T. John, P. Guinan, and R. J. Ablin.


Plasma CEA in Patients with Hematologic Malignancies. John C. Ruckdeschel and Peter H. Wiernik.

**Retrogenesis, Tumor Antigens, and Gene Control**

K. R. Ambrose, Chairman


Approaches to Improving CEA-Radioimmunoassay Specificity: Use of Baboon and Rabbit Antisera to a “Neonatal” CEA Bound to Different Backbones. Allyn H. Rule, Richard Condie, Mary Kirch, and Larry Nathanson.
Retrogenesis

A. J. Girardi, Chairman

Immunological Response to Tumor-associated Fetal Antigens. F. A. Salinas and M. G. Hanna, Jr.
Immunological Similarities between Fetal Antigens and Methylcholanthrene-induced Tumor Cell Antigens. Samuel A. Wells, Jr., and John P. Grant.
Association and Dissociation of Rat Mammary Tumor Cell Surface Antigen: Possible Mechanisms of Metastasis and a Fundamental Difference between Human and Animal Tumors. Untae Kim.
A Comparison of Enzyme-active Membrane Antigens from Two Different DMAB-induced Hepatomas with Those of Adult and Fetal Rat Liver. M. Raffelt, F. Blomberg, and P. Perlmann.
Expression of Fetal Genes by Mouse Hepatoma Cells in Culture: The Synthesis of αFP. Barry E. Ledford and John Papaconstantinou.
Differentiation between Embryonic and Tumor-specific Antigens on Chemically Induced Tumors. R. W. Baldwin and B. M. Vose.
Tumor Allograft Immunotherapy in Postgestational Choriocarcinoma. Roland A. Portillo, Glen E. Rodey, and Lyle Heim.
Derepressive Interception in Cancer. Wayne E. Criss.

α-Fetoprotein

M. Al-Sarraf, Chairman

Fetal Proteins Used to Monitor Treatment of Testicular Teratomas. Britta Wahren and Folke Edsmyr.
Effect of Treatment on αFP Levels in Patients with Hepatocellular Carcinoma. A. Primack, K. R. Mcintire, C. L. Vogel, and T. A. Waldmann.
Suppression of Hepatoma Growth Using Passively Administered Antiserum to αFP. G. J. Mizejewski.
Immunological Significance of α2-Macroglobulin Detected in Tumor Tissue and Cultured Tumor Cells. M. H. Dalbow and J. P. Conconnan.
Rivanol Counterelectrophoresis Compared with Radioimmunoassay for the Detection of αFP. Jorge Franco, Bernadine Kovaleski, Kit Vanags, and Monika Schreyer.
An Isoenzyme of 5'-Nucleotide Phosphodiesterase and αFP in Human Hepatic Cancer Patient Sera. K. C. Tsou and M. G. McCoy.
Cancer Research

34 (8)

Cancer Res 1974;34:1767-2142.

Updated version  Access the most recent version of this article at:
http://cancerres.aacrjournals.org/content/34/8.citation

E-mail alerts  Sign up to receive free email-alerts related to this article or journal.
Reprints and Subscriptions  To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at pubs@aacr.org.
Permissions  To request permission to re-use all or part of this article, contact the AACR Publications Department at permissions@aacr.org.