Antitumor Action of Chemical on Mice Suggests Possible New Cancer Weapon

A recently developed chemical has been used to control transplanted solid tumors in mice and rats, according to NIH scientists. The chemical is considered of interest for further investigation as a possible new weapon against cancer.

The drug is polyinosinic-polycytidylic acid (poly I:C), an artificial ribonucleic acid (RNA) which has been used experimentally to stimulate production of interferon, the body’s natural virus-fighting system. However, the NIH scientists are not certain whether the antitumor action of poly I:C is directly related to interferon stimulation.

Dr. Hilton Levy, National Institute of Allergy and Infectious Diseases, and Drs. Lloyd Law and Alan Rabson, National Cancer Institute, reported their experiments with poly I:C to the Third International Congress on Interferon in Lyon, France, on Jan. 8.

Dr. Levy said that mice were inoculated with a variety of malignant tissues: leukemias, reticulum cell sarcomas, lymphatic lymphomas, fibrosarcomas, plasma cell tumors, human adenovirus 12-induced tumors, and Bittner mammary tumors.

A sarcoma was also implanted in rats. The tumors were all of animal origin and were transplanted into animals of appropriate strains.

Twenty-four to 48 hours after tumor transplantation, the animals were injected with 100-150 micrograms of poly I:C, 3 times a week. In each experiment, Dr. Levy and his associates observed 8 to 10 treated, and an equal number of untreated tumor-bearing animals.

With all the tumors studied, poly I:C treatment decreased the rate of tumor growth, increased survival time of animals, or caused a regression of established tumors.

However, the effect of poly I:C on survival was most marked in experiments using a strain of black mice known as C57. These animals were inoculated with reticulum cell sarcoma tissue, a slow-developing tumor.

In one such study, all animals treated with poly I:C soon after implantation of the tumors were alive 41 days later; all untreated animals were dead. Thirty percent of the treated animals were alive with no signs of tumor 2 months later.

NIH FY '70 Budget Request, $1.5 Billion, Exceeds Previous Year by $90 Million

The Fiscal Year 1970 Federal Budget submitted by the President to the Congress last Wednesday (Jan. 15) included an appropriation request of $1,484.1 million for the National Institutes of Health.

This represents an increase of $90.2 million over current year (FY 1969) appropriations.

Of the $1,484.1 million requested for NIH, $1,090.8 million is in operating appropriations for research Institutes and Divisions, $357.7 million for the Bureau of Health Professions Education and Manpower Training, $22.2 million for the National Library of Medicine, and $4.4 million for buildings and facilities.

Operating appropriations for NIH research Institutes and Divisions provide $824.2 million for research, fellowships and training grants (an increase of $9.6 million), and $275.6 million for direct operations (an increase of $11.6 million).

Funds requested for FY 1970 will enable NIH to support more than 10,500 research project grants. Of these, approximately 3,000 will be new awards or renewals of grants whose prior period of support has expired.

New investigations include studies ranging from prevention of heart disease to reduction of the inequities in educational opportunities. Programs to improve the health of the nation will be expanded, and the number of new and continuing training grants in the health professions will be increased.

The establishment of the National Institute of Environmental Health Sciences as one of the National Institutes of Health was announced by DHEW Secretary Wilbur J. Cohen on Jan. 12.

Secretary Cohen presided at a ceremony marking the establishment of the newly designated Institute at the National Library of Medicine. Leaders from government, industry, and science attended.

Exhibits Portray Mission

Exhibits portraying the mission and activities of the new Institute as well as rare and old books on environmental diseases and problems were displayed.

NIHES, the NIH unit that studies health hazards in man's environment, was formerly a division.

The headquarters and research center of NIHES are at Research Triangle Park, N.C. The new Institute was named in honor of Dr. Elwood E. Juritz, DHEW Secretary's Science and Education Advisor, who died recently.

NIHES Established As Tenth Institute Within NIH Jan. 12

DHEW Secretary Wilbur J. Cohen (center) signs certificate establishing the new National Institute of Environmental Health Sciences at ceremony held Jan. 12 at the National Library of Medicine. Around him are (from left): Dr. Robert Q. Marston, NIH Director; Dr. Paul Katin, NIHES Director, and Dr. William H. Stewart, PHS Surgeon General.—Photos by Tom Joy.
'Walk-Thrus' of NIH Buildings Scheduled

The third annual "Operation Cleanup" will soon be conducted at NIH. The objective of "Operation Cleanup" is to effect government economies and utilize idle equipment from both offices and laboratories.

Last year such equipment, valued at $296,000, was transferred to Supply Management Branch's Property Utilization Warehouse and resold to other NIH components or Government agencies.

Richard L. Seggel, Associate Director for Administration, has stated that in order to fulfill the objectives of "Operation Cleanup," each NIH component should initiate a "house-cleaning." Organized "walk-thru" teams will visit all NIH buildings, both on and off the reservation, to oversee "Operation Cleanup." The teams will be composed of representatives from each Institute and Division, and SMB.

Off-the-reservation buildings will be visited the week of Feb. 17. Representatives will go to buildings on the reservation during the week of Feb. 24.

Don Watson, SMB chief, has asked for the cooperation of all NIH personnel.

NIH-Westwood Shuttle Adds 4 New Stops to Schedule

The Transportation Section recently announced that the transportation shuttle service between NIH and the Westwood Building has added four new stops to its regular run. As of last Dec. 30, Buildings 12A, 29A, 36 and 37 have been added to its regular schedule. Information on scheduled may be obtained by calling Mrs. Erzen, Ext. 63426.

Latest Participants in NIH Visiting Scientists Program Listed Here

12/8—Dr. Kai-Li Hsia Ting, Taiwan, Section on Chemistry. Sponsor: Dr. Henry M. Fales, NIH, Bldg. 10, Rm. 6N306.


12/24—Dr. Hiroshi Ogata, Japan, National Center for Prevention and Control of Alcoholism. Sponsor: Dr. Jack H. Mendelson, NIMH, Barlow Bldg., Rm. 12A038.

1/6—Dr. Raffaele A. Masserelli, Italy, Laboratory of Preclinical Pharmacology. Sponsor: Dr. Erminio Costa, NIMH, St. Elizabeth's Hospital, Washington, D.C.
2 CC Employees Feted
At Retirement Party

Lucille R. White (left) and Marion E. Nottage, members of the CC Environmental Sanitation Control Department, smile happily at retirement ceremonies held in their honor recently.

More than 50 members of the Clinical Center Environmental Sanitation Control Department assembled at formal ceremonies in the CC auditorium recently to pay tribute to two coworkers.

Lucille R. White and Marion E. Nottage, who retired after completing a combined total of over 43 years of Federal service, were the guests of honor.

Mrs. White began her career in the Public Health Service in 1953. She served in the Business Operations Branch, CC Housekeeping Section until 1956 when she transferred to the CC Administrative Branch.

A resident of Washington, her retirement plans include relaxation first, and then a lengthy visit to her home of many years ago, Norfolk, Va.

Originally from the Bahamas Islands, Mrs. White started her Government career in 1942. With the exception of one brief absence, her service was continuous until she retired late last year. She joined the CC ESCD staff in 1957. As to her future, Mrs. Nottage plans to continue volunteer work at Providence Hospital. She also will remain active in the Women's League of Maryland.

NIH Orchestra Concert
To Be Given January 31

The NIH Orchestra will give its next concert on Friday, Jan. 31, at 8:30 p.m. in the Clinical Center auditorium.

Mark Elsworth will conduct a program including Haydn's "Symphony No. 88 in G," J. Strauss's waltzes, "Roses from the South," Beethoven's "First Symphony in C," and excerpts from Rimsky-Korsakov's suite, "The Snow Maiden."

Admission to the concert, sponsored by the NIH Recreation and Welfare Association, is free. All are welcome.

Dr. Lamont-Havers Reorganizes Office:
Dr. Stephenson Named Training Officer

Dr. Ronald W. Lamont-Havers, NIH Associate Director for Extramural Research and Training (ADERT), has announced a new organizational structure for his office. The reorganization establishes four major staff positions within ADERT (formerly the Office of the Associate Director for Extramural Programs).

Dr. Richard B. Stephenson, former associate director for Operations of the Division of Regional Medical Programs, HSMHA, has been named Training Officer.

In this position, Dr. Stephenson will assist and advise the Associate Director in the development and coordination of the extramural training and educational programs and provide guidance to the awarding units in solving problems relating to these programs.

From 1965 to late 1967, Dr. Stephenson had served as Research Grants Officer in ADERT. Prior to that, he was the first program director of the Gastroenterology Programs. He will also assist the granting units in achieving consistent application of such policies and procedures.

He received his B.S. degree in 1939 from Bates College, Lewiston, Maine, and his M.A. and Ph.D. in physiology from Boston University in 1944, serving as assistant professor.

Dr. Akers has been with the NIH continuously since 1951, first joining the National Heart Institute's Laboratory of Cardiovascular Physiology where he served for 5 years as a research physiologist.

He transferred to the NIH's Extramural Programs where he served as chief of the Research Grants Branch, a position to which he was appointed after extensive experience in the administration of the NIH's fellowship training grant and research programs.

Prior to joining the ADERT staff in 1965, Dr. Akers served for 2 years as chief of the NIH Office of International Research Latin American Office in Rio de Janeiro, Brazil.

Dr. Robert J. Gibbs, who has served on the staff of the ADERT for the past 4 years as Assistant to the Extramural Operations and Procedures Officer, will serve in the newly-created position of Operations Analysis Officer.

In this position, Dr. Gibbs will advise and assist Dr. Lamont-Havers in the analytical aspects of the operations of the extramural research and training programs.

Dr. Gibbs earned his B.S. from Fordham College in 1948. He received his M.S. and Ph.D. in Physical Organic Chemistry in 1949 and 1952, respectively, from Fordham University.

He joined NIH in January 1964 as a member of the Grants Associates Program which provides a one-year intensive training program in the administration of NIH extramural programs.

Before joining the Grants Associates Program, Dr. Gibbs was a research chemist with the U.S. Department of Agriculture from 1956 to 1960, working as project director on basic research on muscle proteins.

Awards Noted

In recognition of his contribution to the understanding of parasitology and tropical medicine, Dr. Weinstein received the Bailey K. Ashford Award from the American Society of Tropical Medicine and Hygiene in 1957 and the Award of Honor from Brooklyn College in 1958.

Before coming to the NIH in 1949, he served on the Florida State Board of Health, Parasitology Division, and as a parasitologist with the Communicable Disease Center.

George E. Jarboe, who has served on the ADERT staff for the past 3 years with responsibility in the training programs area, has been named to serve as the assistant to the Policy and Procedures Officer.

As the assistant, Mr. Jarboe will assist and advise Dr. Akers in the development of policy concerning with extramural research and training programs and will maintain liaison with the Division of Research Grants and the awarding units to assure consistent application of these policies and procedures.

Mr. Jarboe received his B.A. degree from Fordham University in 1956 and subsequently was employed by the Department of Navy. He came to NIH in 1959 as a management intern and, on completion of a one-year training program, was employed by the Personnel Management Branch, OD, where he worked until he joined the staff of the Division of Research Grants in 1962.

Mr. Jarboe served as DRG administrative officer until January 1964 when he became a staff specialist in the DRG Career Development Review Branch, a position he held until joining the ADERT staff in September 1965.

Dr. Paul P. Weinstein, NIAID Lab Chief, Retires; With PHS for 25 Yrs.

Dr. Paul P. Weinstein, has recently retired as chief of the Laboratory of Parasitic Diseases, National Institute of Allergy and Infectious Diseases.

He will become chairman, Department of Biology, University of Notre Dame.

Dr. Weinstein has been LPC chief since 1966, and prior to that served as acting chief. Dr. Weinstein was a member of the USPHS Commissioned Corps for 25 years.

Dr. Weinstein also served as a research associate at the University of Virginia Medical School from June 1952 to 1954 and as a staff member at the Massachusetts Institute of Technology from 1954 to 1956.

Dr. Gibbs also served as a research associate at the University of Virginia Medical School from June 1952 to 1954 and as a staff member at the Massachusetts Institute of Technology from 1954 to 1956.
Research Triangle Park in North Carolina will house NIH's newest component. Three universities, all about equidistant, provide a fitting academic and scientific setting.

That mission is to identify the factors to man's health, and determine ways to eradicate such hazards.

These studies utilize disciplines ranging from chemistry, clinical medicine, epidemiology, pathology, and other scientific skills.

The National Environmental Health Institute's intramural research contributes to understanding the effects of polymer dusts, alpha rays, and other environmental hazards—this is just a small part of what NIEHS contributes.

NIEHS cooperates and collaborates with the University of North Carolina.

The new Institute fosters such research and development efforts for the health, longevity, and productivity of all Americans.
Environmental Health Sciences

North Carolina is headquarters for Environmental Health Sciences, a vital distance to the Park, providing a scenic setting for the Institute's goals.

The hazards of environmental factors determine the factors that would encompass biochemistry, pharmacology, veterinary sciences, and environmental science. Health Sciences Center, the Institute's component, conducts research on radiation, and tobacco smoke as part of its probings.

In collaboration with the medical centers at UNC and Duke University, research that will contribute to the activity of human beings.

Infant incubators generally used for premature human babies are required to provide a proper controlled environment for newborn litters of research animals.

Vegetable material is produced in hydroponic solutions in controlled environmental chambers that are free of pesticide residues for comparison studies with field-grown crops.

Christina Coltrane, technician, adjusts controls for heat, humidity, and light to environmental room in NIEHS animal building.

Housed in these mobile units at the Park are the information-storage-and-retrieval system, the library, and offices for research branch chiefs, administrative and support personnel.
Henry Juenemann Named
Asst. Director, DCRT

Appointment of Henry J. Juenemann as assistant director of the Division of Computer Research and Technology has been announced by Dr. Arnold W. Pratt, Director of DCRT.

Mr. Juenemann came to NIH in December 1961 as deputy chief of the Computation and Data Processing Branch of DRS. In April 1962 he was made acting chief.

The Branch he headed was transferred in October 1965 from DRS to form the nucleus of DCRT.

A 1949 graduate of Georgetown University, Mr. Juenemann began his career as a mathematician with the Computation Laboratory of the National Bureau of Standards, where he participated in some of the earliest efforts to use machines for mathematical calculations.

He transferred in 1950 to Headquarters, USAF, where he was involved in the installation and operation of the first commercial electronic computer ever to be moved from the factory and installed in a user's site.

In 1955 Mr. Juenemann received the Meritorious Civilian Service Award for work in the development of computational methods for predicting the economic impact of possible nuclear conflict.

In his new position, he will represent NIH on the DHEW Career Service Board for Automatic Data Processing.

Mr. Juenemann headed the Computation and Data Processing Branch when it became a part of DRS and continued to head it after it became the nucleus of DCRT.

Blood Bank at CC Reports
123 Units Donated in Dec.

The Clinical Center Blood Bank reports that 123 units of blood were received from NIH donors in December, and CC patients received 1,796 units of blood.

Three donors joined the Galen Donor Club: David B. Coffey, DDS; Dr. Thomas F. Dutcher, CC; and Chaplain Robert B. Robey.

Donors are needed for blood have resulted in shorter supplies. Your help is needed now.

Make an appointment to donate by calling the Blood Bank, Ext. 45496.
after injections of poly I:C were stopped.

In another study, delayed treatment of established tumors caused a virtual disappearance of this growth in 10 days.

Presently, Dr. Levy and his colleagues only speculate on the mechanism through which poly I:C causes tumor regression. They do not believe that the effect is attributable solely, if at all, to the antiviral action of the interferon induced, particularly since only two of the tumors tested are of viral origin.

Dr. Levy said, "We decided to test the effect of poly I:C on tumors after noting its apparent ability in interferon experiments to enable a cell to distinguish between viral RNA and normal RNA.

May Reject Tumor Cell RNA

"We theorized that the drug might also be useful in controlling tumor growth by making the host cell reject tumor cell RNA. Yet, although we have observed an effect on protein and RNA synthesis in treated cells, we do not understand the implications of this."

Further elucidation of these effects and other aspects of poly I:C's action will be needed. However, for the moment, the exciting thing is that it does show definite activity against a variety of tumors, particularly slow-developing ones.

Infectious, tumor-inducing virus has not been found in any of the tumors used, although adenovirus 12-specific T antigen is present in the adenovirus-induced tumor. However, since T-antigen of transformed cells are not affected by interferon and even the adenovirus itself is relatively resistant to interferon action, not much antiviral action would be expected in this system.

The antitumor action might be related to a general enhancement of the body's immunological response; or the drug may act directly on the tumor. In support of the latter hypothesis, there is the preliminary evidence mentioned by Dr. Levy that treatment of mouse cells with poly I:C does modify RNA and protein synthesis.

A third possibility is that poly I:C produces changes in the blood supply to the tumor, leading to tissue death.

Examination of these possibilities is now in progress. Meanwhile, preliminary plans are under way to develop a dosage schedule for trials of poly I:C in treating human cancer.

Seeks Non-Toxic Human Dosage

Although the animal tests have been encouraging, these successes are no guarantee that the drug will be useful in treating human tumors. A major problem to be solved is determining whether a dose large enough to be effective in humans will be non-toxic as well.

Nevertheless, the National Cancer Institute is hopeful that a non-toxic human dosage can be formulated because of the drug's promise in treating slow-growing tumors. If the drug is determined to be safe for human use, it could possibly be used against such tumors as cancer of the lung and breast which have not responded well to other drugs.

Medical History Society
To Meet January 23

The Washington Society for the History of Medicine will meet on Thursday, Jan. 23, at 8:30 p.m., in the Billings Auditorium of the National Library of Medicine. The meeting is open to visitors.

Speakers and their topics are: Dr. Jane M. Oppenheimer, professor of biology, Bryn Mawr College, "Some International Aspects of Late 19th Century Experimental Embryology," and Dr. David L. Cowen, chairman, Department of History, Rutgers University, "Medical Science and Medical Practice in the 19th Century."
Computerized Analysis for NCI Research Programs Now Being Used—First at NIH

A new type of computerized analysis, the only analysis of its kind at NIH, is used by the National Cancer Institute for its research programs.

The computerized analysis relates each research project to NCI’s entire support program for cancer research.

The breakdown is based on 2,138 abstracts describing individual grants, contracts, transfers of funds and intramural programs.

These abstracts are grouped together into 227 research categories, 28 sub-areas, and 4 major areas of cancer research to form a “Multi-Level Analysis of Projects Supported by NCI in Fiscal Year 1968.”

Final camera-ready copy of the 252 pages of abstracts with page numbers, table headings, underlined titles, and subtitles was computer-organized in 4.8 minutes.

It was printed from magnetic tape in 29 minutes of off-line printing on a high-speed, computer-driven printer in the Division of Computer Research and Technology.

Summary boxes showing the number of grants, contracts, and intramural projects and funding for each of the 227 research categories were also calculated and printed automatically by the computer.

The analysis was prepared by Dr. John H. Schneider, scientific and technical information officer, Office of the Associate Director for Program, for use by NCI program directors, and other staff members.

Paul Kelly Joins NLM
Pub. Information Office

Paul Kelly has been appointed deputy chief of the Office of Public Information & Publications Management, National Library of Medicine.

He was previously with the Military Traffic Management and Terminal Service, Bailey’s Crossroads, Va., where he served as deputy chief of the Information Office.

Mr. Kelly, a former Boston Post reporter, served as Information Officer for the U.S. Army Combat Developments Command at Ft. Belvoir prior to his retirement from the Army in 1966 as a Colonel.

Heads ‘Stars and Stripes’

During his military career he was also Office in Charge of Pacific STARS and STRIPES in Tokyo.

As a free lance writer, Mr. Kelly has had numerous articles published.

A native of Boston, Mass., he attended Holy Cross College and received a B.S. degree from the University of Maryland. He is also a graduate of the Army Command and General Staff College, Ft. Leavenworth, Kan.