NIAID TEAM FINDING

Identification of Specific Receptor for C3b May Explain Renal Disease Mechanisms

By Bobbi Plocinik

An NIAID team of scientists has identified a specific receptor for C3b—one of the series of interacting serum proteins known as complement—in the human kidney's tightly coiled blood vessels—the glomeruli.

This finding may lead to an understanding of the mechanisms of certain kidney diseases and may assist in the development of appropriate immunotherapy.

In glomerulonephritis, for example, the most common type of renal disease, aggregates of antigen-antibody and complement molecules—immune complexes—become trapped in the glomeruli.

This leads to immune injury due to the subsequent formation of activated cell-destroying complement proteins. The organ's function of purifying the blood is impaired, leading eventually to kidney failure.

In the study, Dr. Michael C. Gelbard of Georgetown University Medical Center, a guest worker in NIAID’s Laboratory of Immunology, collaborated with two NIAID scientists, Dr. Michael M. Krause, Laboratory of Clinical Investigation, and Dr. Ira Green, Laboratory of Immunology.

Until now, accumulation of immune complexes in the glomeruli was thought to be merely due to their size—larger than the glomeruli’s pores.

However, the discovery of this receptor for complement suggests that the complexes containing complement may be specifically bound to the glomerular blood vessels.

The presence of this receptor was discovered because it was observed that only those indicator sheep red blood cells coated with antibody plus C3 adhered to the glomeruli of sections of normal human kidney tissue.

Red blood cells coated with the same antibody and other components of complement system did not bind to the kidney tissue. Furthermore, the cells adhered only to the glomeruli and not to other areas of the kidney.

The investigators also found that only those cells which contained a certain portion of the C3 protein—known as the “b” fragment—would bind to the glomeruli.

Additional proof that the receptor is specific for C3b was obtained when binding of C3b coated red blood cells was evaluated.

In this section of normal kidney tissue, the ringed sheep red blood cells—which are coated with antibody and complement—are bound only to the clusters of blood vessels in a portion of a glomerulus shown on the right-hand side of the picture.

(Continued on Page 4)
Dr. Albert Szent-Gyorgyi Honored at Conference; Drs. Stetten, Laki Attend

A symposium entitled Search and Discovery was held Oct. 16 and 17 in honor of Dr. Albert Szent-Gyorgyi, Nobelist and former visiting scientist and NIH grantee.

The seven-session conference at the Boston University School of Medicine reflected the multidisciplinary research interests of Dr. Szent-Gyorgyi.

Noted speakers, including Nobel Prize winners Drs. Linus Pauling, George Wald, Hans A. Krebs, Fritz Lipman, and Hugo Theorell, discussed fields in which Dr. Szent-Gyorgyi has made significant contributions—tissue metabolism, vitamin C, bioenergetics, muscle contraction, and cancer.

Since 1947, Dr. Szent-Gyorgyi has served as Director of the Institute for Muscle Research at the Marine Biology Laboratory, Woods Hole, Mass. In 1937, he was awarded the Nobel Prize in Medicine for his discovery of vitamin C.

Continues Research

The 82-year-old investigator is currently engaged in cancer research, the subject of his presentation at the symposium.

Two NIH staff members participated in the honorary conference. Dr. DeWitt Stetten, Jr., Deputy Director for Science, NIH, chaired the session on cancer, Dr. Koloman Laki, chief of NIAMD's Laboratory of Biophysical Chemistry, a former student and co-worker of Dr. Szent-Gyorgyi, introduced the Nobelist who talked on Electronic Biology and Cancer.

Women Golfers Hold Banquet, Elect Officers, Award Prizes

More than 40 golfers attended the NIH Women's Golf Association annual banquet on Oct. 7 at the Naval Officers' Club.

Officers elected for next year are Lois Duggan, president; Susa Hamilton, secretary/treasurer, and Roberta Seward, recorder.

Over 200 matches were played this summer with an average of nearly 10 matches per golfer.

Prizes were awarded the winning teams as well as individual players in the fall outing at Needwood Golf Course.

Recipients of trophies, by flight, are as follows:

Low Gross: A, Jean Russell; B, Betty Jacobs; C, Susa Hamilton.

Low Net: A, Dorothy Viener; B, Joan Olson; C, Thelma Roback.

Frank Puttlitz, superintendent of Needwood Golf Course, was the Toastmaster of the day.

Open Season for Health Benefits Starts Nov. 15

An "Open Season" under the Federal Employees Health Benefits Program will be held Nov. 15-30. During this period, eligible employees may enroll in a plan.

Those already enrolled may change their plan, option, or type of enrollment or any combination.

Before Nov. 15, a packet entitled "Federal Employees Health Benefits Program" will be distributed to all employees. Registration procedures will be included with this information.

During the Open Season, registration assistants will help employees complete forms and answer questions. Their names and locations will be posted on official bulletin boards and will also be available in personnel offices.

A panel of experts from the four major health plans will answer questions on the 1976 contracts on Thursday, Nov. 20, at 2 p.m. in Bldg. 1, Wilson Hall.

Representatives Listed

Panel members will represent Group Health Association, Inc., of Washington, D.C., Blue Cross-Blue Shield, Aetna Life and Casualty Company, and University Affiliated Health Plans, Inc. of Washington, D.C.

This session, open to all employees, is sponsored by the Employee Relations and Recognition Branch.

NIH Toastmasters Are Hosts For Annual Contest Held Here

Several Washington Toastmasters clubs came to Wilson Hall, Bldg. 1, on Oct. 8 for the annual Area 13 Humorous Speech Contest.

The president of the NIH group, Jasper Cummings, chaired the contest, in which Jim Pomeroy represented NIH. Jim Brogan of the ABC was the winner.

John Belin of NIH, past governor of District 36, was the Toastmaster of the day.

New General Pay Schedule With 5 Percent Increase

- A $37,900 maximum limit is imposed on all career Federal salaries.
- The raise will be effective for the first pay period which begins after Oct. 1. At NIH this will be from Oct. 12 through Oct. 25.
- NIH employees—except those in special categories—will receive the increase in their Nov. 4 paychecks.

Vermeer String Quartet Plays in FAES Concert Series Nov. 2

The Vermeer String Quartet—a promising young American group despite their Dutch name—will play for the second time in the 1975-76 Chamber Music Series sponsored by the Foundation for Advanced Education in the Sciences.

Admission is by ticket only.

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Extra Caution Urged 
By Security Branch:
Help Stop Robberies

A robbery occurred in parking lot 21-B on Oct. 7 at 3:30 p.m. A NIH employee sitting in his car was approached by a man wearing a floppy hat who asked for a light for his cigarette. Shortly thereafter, the employee left his car and began walking toward Bldg. 1. As he approached a foot bridge, the man had talked to, and who was walking in the same direction, pulled a gun and demanded the employee’s wallet.

When the employee turned to see if the man really had a gun, he was wrestled to the ground. Another NIH employee walking through the parking lot at this time witnessed this part of the incident and notified the guards.

The holdup victim lost a substantial amount of cash and several credit cards. A suspect was arrested by D.C. police when he attempted to use one of the stolen credit cards.

To prevent thefts, the Security Management Branch of DAS recommends carrying as little cash as possible and leaving credit cards at home or in a safe place except when they are being used.

They further note that there have been a number of losses of cash left in desk drawers—sometimes locked but with the key left on the desk top or in easy access. Women are often careless about leaving their pocketbooks in plain view or in desk drawers while they leave the room or are busy in another part of an office.

EEO Advisory Council Calls Session to Hear Concerns of NIH’ers

The Equal Employment Opportunity Advisory Council called an open meeting for all NIH employees Thursday, Oct. 9, in Wilson Hall. The purpose of the meeting was to hear the concerns of NIH’ers that were related to the EEO program.

James S. Alexander, chairperson, NIH EEO Advisory Council, and EEO coordinator for the Clinical Center, explained the role of the council and the functions of its subcommittees.

Jean G. Oliver, executive board chairperson of the EEO Council, reported on the issues of each standing committee. Mrs. Oliver is also a pathologist for NCI/CDS. Will Report to Dr. Fredrickson.

A report on the “kind of concerns received from the NIH community” will be made to Dr. Donald S. Fredrickson, NIH Director. The Council will meet with Dr. Fredrickson and present the report at the end of the month.

A question-and-answer period followed the talks of Mr. Alexander and Mrs. Oliver. This part of the session was called by the council in order to hear concerns of employees that may not have been raised by the council.

NCI Assembly Panel Will Discuss Intramural Issues During Forum on Oct. 22

The NCI Assembly of Scientists will present a panel discussion of issues directly affecting Intramural Research at the NCI Fourth Wednesday Forum, to be held from noon to 1 p.m. in Conference Room 6, 6th floor of the C wing, Bldg. 31.

The NCI Assembly is a voluntary organization which seeks to improve the working environment of laboratory scientists.

Dr. Nelson A. Wivel, NCI Assembly president, will describe the current activities and aims of the Assembly.

Two Assembly Council members will also serve on the discussion panel. Dr. E. Brad Thompson will speak on peer review of intramural research, and Dr. Stephen O’Brien will discuss non-tenured positions at NCI.

Following the panel’s 30-minute presentation, the floor will be open for questions and comments.

The Forum is held monthly to exchange information and ideas among NCI staff. However, all interested NIH employees are invited to attend.

NIH Launches Drive to Surpass CFC Goal

The 1975 NIH Combined Federal Campaign was launched by Dr. Donald S. Fredrickson, NIH Director and chairman of the drive, with an address to campaign coordinators and key persons at the opening meeting on Oct. 14 in Wilson Hall.

Dr. Fredrickson urged the group to do everything possible to help NIH not only reach its quota of $100,000 but also to surpass its goal for the 3rd year in a row.

Last year NIH exceeded its goal, with 65 percent of 7,756 employees contributing $203,761. However, until the final days of the campaign, participation was below 50 percent.

This year emphasis will center on full participation as well as attaining the goal.

The CFC benefits three major charitable agencies. Three-fourths of the funds go to the United Way—105 local health and welfare agencies, including the United Black Fund.

Many Agencies Benefit

Almost 18 percent goes to the 11 national health organizations of the National Health Agencies, and about 7 percent is allotted to the five International Service Agencies.

The overall CFC theme for the Washington area is, “The Spirit of ’76....The giving of people, by people, for people.” Consistent with that slogan is the NIH theme, “Giving—An American Tradition.”

Dr. Carl Kupfer, NEI Director and CFC vice-chairman for NIH, commented, “During this short annual drive, we have the opportunity to help those less fortunate than we by making one gift that will work throughout the year.”

“We at NIH are involved in a Federal program where the improved health and well being of the American people is our primary objective. Now we have an opportunity to show in yet another way that we are concerned with achieving that goal,” Dr. Kupfer said.

Assisting Dr. Kupfer in the campaign activities are Dr. William L. Nusser, chief of NEI’s Scientific Programs Branch, Frank Goff, and Sally Richardson.

The CFC chairman for the National Capitol area is Frank Zasr, Administrator of the Federal Energy Administration. HEW Secretary David Mathews is serving as CFC chairman for the Department; HEW Assistant Secretary John Ottina is vice-chairman, and Martin T. Walsh, Special Projects Director, is managing the drive.

Last year, more than $9.7 million was donated in the Washington area drive, surpassing a $9.4 million goal. In that campaign, HEW led all Cabinet agencies in percentage over goal.

The present NIH goal is slightly higher than last year’s quota of $187,380, but is less than the $203,761 that NIH contributed at that time.

Last year, NIH participation was 65 percent, down from the previous year’s 71 percent. The average gift last year was $32 per person, $2 better than in 1973.

Transportation Foreman Ezekiel Z. Parker Dies

Ezekiel Z. Parker, transportation foreman, who has been at NIH since June 1957, died Oct. 7.

He is survived by his wife, Carrie Parker, who is in the Mail Services Section assigned to Bldg. 1; two daughters, Doris Pippins and Hester Jordan; a son, Charles H. Heghlett, Jr.; six grandchildren; his mother; two sisters, and three brothers.

His family requests that contributions be sent to the Clinical Center Patient Emergency Fund.
(Continued from Page 1)

fail to mature properly into normal white blood cells.

Earlier this year, Dr. Robert Gallagher and Dr. Gallo reported isolation of an RNA virus from the laboratory-grown cells of a 11-year-old woman with acute myelogenous leukemia.

Scientists from Dr. Gallo's laboratory, in collaboration with scientists from Litton Bionetics, Inc., Bethesda, Md., and two researchers from London, England, reported an additional isolation of the same virus from the same patient and showed the virus could infect cells of several animal species.

A number of scientists have been able to identify the presence of viral proteins, viral RNA, and virus-like particles in the blood cells of patients with the disease, but scientists thus far have been unable to identify complete virus in the genes of the human leukemic blood cells.

Lack Is Unusual

The apparent lack of complete viral information is unusual, because RNA viruses that cause cancer in animals are believed to insert their hereditary information into the animal cell genome. Genes are long chains of DNA (deoxyribonucleic acid), which control the function and reproduction of the cell. In this way, the viruses may cause a permanent change in the growth patterns of the cell, a change that in some cases may lead to cancer.

Dr. Gillespie and Gallo suggested that a small segment of the RNA of a virus is sufficient to cause leukemia when transcribed into DNA and inserted into genes of immature cells developing in white blood cell factories of the body such as bone marrow, thymus, or spleen.

The viral DNA infection may be helped by other factors such as chemicals or radiation.

The small piece of viral DNA may change the DNA of the developing cell permanently, blocking the cell's normal development into a mature white blood cell.

The genetically altered immature white blood cells then may reproduce in the uncontrolled manner characteristic of cancer cells.

Problem to Be Resolved

One major problem to be resolved is how the small piece of viral DNA can account for the viral proteins and particles found in leukemic patients.

Dr. Gillespie suggested that perhaps the virus infects the cell without a harmful effect, with infection of the blood cells occurring in only a rare person.

The proposed sequence of steps for viral infection predicts that scientists should find viral DNA in genes of some organs infected by the virus, or the segment of possibly altered viral DNA in genes of precursor cells of body organs producing the white blood cells, Dr. Gillespie said.

Other Tests Undertaken

So far, two scientists from Columbia University College of Physicians and Surgeons may have discovered the small piece of viral DNA in leukemic blood cells. However, tests of limited numbers of organs of leukemic patients by the NCI scientists have failed to show evidence of complete virus information.

The virus isolated by the NCI scientists from human leukemic cells has components similar to viral components in leukemic patients.

The virus also is similar, both biochemically and immunologically, to two viruses that cause cancer in primates other than man.

One of these viruses causes myelogenous leukemia in the gibbon ape, a close relative of man; the other, isolated from a woolly monkey, causes solid tumors in marmosets. The human virus is particularly similar—and may be identical—to the woolly monkey virus.

Dr. Gillespie and Gallo presented evidence that the patient herself may have induced the type of RNA to produce the virus isolated from the patient's laboratory-grown cells.

Other scientists have very recently reported the isolation of similar viruses from both normal and cancerous human tissues.

Dr. Richard H. Adamson reported on the toxicology and pharmacology of the naturally occurring anticancer agent—maytansine—a compound originally isolated from an East African shrub.

Lectures will include the history of laboratory-acquired infections, a current assessment of biohazards in biomedical research, the proper use of biological safety equipment, animal containment methods, disinfection and sterilization procedures, and radiological hazards.

To register for the course, send name, position, laboratory, building and room number to the Office of Research Safety, Bldg. 41, Rm. A-114, or call Ext. 63647.

The registration deadline is Nov. 21.
LEUKEMIA

(Continued from Page 4)

in mice with leukemia P388, mast cell P815, or plasma cell YPC-1 cancers, and in rats with Walker 256 carcino-sarcoma.

Maytansine was extremely potent against the animal cancers, the NCI scientist said. Doses in the range of 25 micrograms (a millionth of a gram) per kilogram (1000 grams) of body weight were effective in inhibiting tumor growth in rats.

This activity on a weight basis was 10 times that of the vinca alkaloids, vincristine and vinblastine, two clinically proven anticancer drugs that may have a mechanism of action similar to that of maytansine.

Studies Suggest Suppression

Studies of the undesirable side effects of the drug suggested that suppression of red and white blood cell formation in the bone marrow may determine the highest doses that cancer patients will be able to tolerate, Dr. Adamson said.

Maytansine also caused slight hind limb paralysis and muscular weakness in mice—a clue that suggests the compound may interfere with nerve function. Experiments with pregnant Swiss mice indicated that the compound can cause birth defects.

Dr. Adamson explained that experiments at the University of Virginia with dividing sea urchin and clam eggs suggested that maytansine exerts its anticancer effect by inhibiting cell division.

The compound interfered with formation of the mitotic spindles, thread-like projections that form in a cell during division and may be essential for preservation of the cell’s hereditary material. Vincristine and vinblastine, originally derived from the periwinkle plant, act in a similar manner. However, maytansine is 100 times more effective than the periwinkle alkaloids in inhibiting cell division, the NCI scientist reported.

When administered to animals, maytansine arrested cell division in a number of organs. It was particularly active in inhibiting dividing pancreatic cells.

This finding is intriguing, Dr. Adamson said, because no drug now available is very active against pancreatic cancer.

Maytansine is one of a group of chemical compounds called ansa macrolides. Other biologically active ansa macrolides include the antibiotics streptovaricin, an antituberculosis drug, and rifamycin, an inhibitor of a tumor virus enzyme called reverse transcriptase.

Maytansine is the only member of this chemical class to show anticancer activity. Physicians hope that the novel chemical structure will endow maytansine with an activity against human cancers that is different from the approximately 50 known anticancer drugs.

Dr. Bruce A. Chabner discussed a biochemical test that may predict how a patient with acute myelogenous leukemia will respond to standard chemotherapy.

He is head of the Biochemical Pharmacology Section of NCI’s Laboratory of Chemical Pharmacology.

The test compares the activities of enzymes in the abnormal white blood cells of AML patients. Enzyme activity of one type, called kinases, converts two antileukemic agents to their active form.

A second type of enzyme, called a deaminase, converts the drugs to an inactive form. AML patients with a high level of a cell's dividing enzyme and low levels of deactivating enzyme conceivably would have a better response to drug therapy, the NCI scientist suggested.

Acute myelogenous leukemia is a rare form of cancer that occurs primarily in adults and is characterized by the inability of white blood cells in the bone marrow to mature.

The result is a marrow packed with abnormal, non-functioning white blood cells called "blasts." Two anticancer drugs used for inducing remission—partial or complete disappearance of clinical evidence of disease—in AML patients are cytosine arabinoside (ara-C) and 5-azacytidine (5-aza-C).

Ara-C and 5-aza-C are similar in chemical structure to the naturally occurring nucleosides, the building blocks of deoxyribonucleic acid (DNA), the cell’s hereditary material.

The drugs exert their anticancer effect by competing with the natural nucleosides for enzymes critical for the synthesis of DNA, thus blocking cell division.

Patients’ Enzymes Studied

In the study, conducted by Dr. Chabner and his co-workers, blast cells from previously untreated AML patients were tested for activity of kinase and deaminase enzymes.

Three enzymes were measured: deoxyxycytidine kinase, the enzyme that activates ara-C; uridine-cytidine kinase, the enzyme that may activate 5-aza-C; and cytidine deaminase, the enzyme that converts both drugs to inactive products.

Enzyme activities for each patient were expressed as a ratio of activating to deactivating enzyme.

Forty-four patients with various forms or subclasses of AML took part in the study. The patients had very different potentials for activating and degrading ara-C and 5-aza-C, the NCI scientist found.

The enzyme levels varied independently and with no apparent relationship to the subclass of AML or the sex of the patient.

The activity of each enzyme was independent of the activity of the other two. Some patients whose cells failed to activate one drug were able to activate the other drug instead.

The study showed that it is necessary to measure activities for both activating and deactivating enzymes in order to determine an individual's potential for response to ara-C or 5-aza-C chemotherapy, Dr. Chabner said.

The biochemical test may be useful in selecting which of the two drugs to use for each AML patient and tell whether the patient is likely to respond to either drug.

A clinical trial with AML patients is under way in cooperation with Dr. David Frankel and Dr. Alice Chang at NCI’s Baltimore Cancer Research Center to determine whether this test accurately predicts responses to chemotherapy.

Research on Biomaterials Discussed by Dr. Bruck

At German Conference

The present status of biomaterials research and development in the U.S. is the subject of the presentation being made by Dr. Stephen D. Bruck at the 8th Conference of the Association of German Research Scientists and Physicians, Rottach-Egern, Germany, today (Oct. 21).

Dr. Bruck is program manager of the Biomaterials Program, Division of Blood Diseases and Resources, National Heart and Lung Institute.

Synthetic or composite materials are for use within the body, as artificial blood vessels, heart valves, heart-assist and heart replacement devices, and extra-corporeally in artificial kidneys, blood oxygenators, catheters and blood tubing, among other applications.

Describes Desirable Properties

Such biocompatible materials must neither damage delicate blood cells, proteins, and other blood components, nor cause the blood to clot; and they must retain various intrinsic properties such as strength and elasticity for prolonged periods—for years if implanted within the body—without allergic, toxic, or carcinogenic effects.

"Obviously, no single material can serve these diverse applications.

"Furthermore, though a number of materials have proven useful for such applications as artificial heart valves, blood vessels, heart-lung machines, hemodialyzers, and other devices for short-term use, the 'ideal' biomaterial for any specific category of devices has yet to be developed," he will say.

Dr. Bruck will cite the following promising areas of biomaterials research under study.

• Fundamental studies of the cellular and biochemical components of the blood vessel wall and their interactions with blood to provide design-criteria for biomaterials.

• Synthesis and evaluation of new polymers as membranes providing the blood/gas interface in membrane blood-oxygenators (artificial lungs).

Compared to membranes now in clinical use, the new materials are more compatible with blood and feature improved gas-exchange capacities.

• Hydrogels and other surface modifications of existing polymers to combine the advantages and minimize or eliminate the disadvantages of different materials in combination.

The soft, gelatinous hydrogels, containing from 30 to 90 percent water, resemble the inner surfaces of normal blood vessels but lack mechanical strength and toughness.

However, this disadvantage is overcome by the use of radiation, chemical, or atomic grafting techniques to apply a thin surface coating of a hydrogel on a substrate polymer possessing the other desired characteristics.

Promising Investigations Listed

Other surface-modification procedures under study include the use of microwave discharge techniques to alter the surface energy characteristics of polymers.

• Specially prepared segmented polyurethanes and “springy” polypropylenes whose mechanical properties, resiliency, and strength resemble those of living tissues.

• A substrate surface on which synthetic microfibers serve as a scaffold for the attachment of living cells that, when formed, present a surface of living tissue to the blood.
NIH Visiting Scientists Program Participants

9/28—Dr. Chi Chiang Mao, Taiwan, Laboratory of Preclinical Pharmacology. Sponsor: Dr. Emanino Costa, NIMH, St. Elizabeth's Hospital, WAW Bg., Rm. 101, Washington, D.C.

9/28—Dr. Teruhiko Nakada, Japan, Hypertension-Endocrine Branch. Sponsor: Dr. Frederic C. Bartter, NHLI, Bg. 10, Rm. 7N200.

9/28—Dr. Geoffrey Watterson, Australia, Environmental Biometry Branch. Sponsor: Dr. David G. Hoel, NIEHS, Research Triangle Park, N.C.

9/28—Dr. Avinash M. Joshi, India, Laboratory of Physiology. Sponsor: Dr. Peter Riesz, NCI, Bg. 10, Rm. B150.

Others Visit From Asia

9/28—Dr. Chikuro Kabuto, Japan, Laboratory of Chemistry. Sponsor: Dr. James V. Silverton, NHLI, Bg. 10, Rm. 7N316.

9/29—Dr. Jayaraman Lakshmanan, India, Laboratory of Biomedical Sciences. Sponsor: Dr. Gordon Guroff, NICHD, Bg. 6, Rm. 310.

9/29—Dr. Hanumantharao G. Raj, India, Carcinogen Metabolism and Toxicology Branch. Sponsor: Dr. Elizabeth Weisburger, NCI, Bg. 37, Rm. 3R26.

9/29—Dr. Kazufumi Shimizu, Japan, Laboratory of Infectious Diseases. Sponsor: Dr. Robert Chanock, NIAID, Bg. 7, Rm. 301.

9/28—Dr. Yohko Koshi Shimizu, Japan, Laboratory of Infectious Diseases. Sponsor: Dr. Robert Chanock, NIAID, Bg. 7, Rm. 301.

9/29—Dr. Peter Ronald Stone, United Kingdom, Laboratory of Pathophysiology. Sponsor: Dr. William Kidwell, NCI, Bg. 10, Rm. 8B39.

9/30—Dr. Evelyne May, France, Laboratory of Biology of Viruses. Sponsor: Dr. Norman F. Salzman, NIAID, Bg. 5, Rm. 324.

9/29—Dr. Yohko Koshi Shimizu, Japan, Laboratory of Infectious Diseases. Sponsor: Dr. Alfred Steinberg, NIAMDD, Bg. 10, Rm. 8D19.

9/29—Dr. Jenny Corthorn, Chile, Laboratory of Chemistry. Sponsor: Dr. John J. Pisano, NHLI, Bg. 10, Rm. 7N260.

9/29—Dr. Theresa Nong Lo, United Kingdom, Pulmonary Branch. Sponsor: Dr. Elwood O. Titus, NHLI, Bg. 10, Rm. 5N321.

9/29—Dr. Felix Peter Mettler, Switzerland, Laboratory of Toxicology. Sponsor: Dr. David M. Young, NCI, Bg. 37, Rm. 5B22.

9/29—Dr. Marcel Rozencweig, Belgium, Cancer Therapy Evaluation Branch. Sponsor: Dr. Stephen K. Carter, NCI, Bg. 31, Rm. 3A51.

9/29—Dr. M. Sivaranjan, India, Laboratory of Biochemistry. Sponsor: Dr. Samuel H. Wilson, NCI, Bg. 37, Rm. 4D25.

9/30—Dr. Evelyne May, France, Laboratory of Biology of Viruses. Sponsor: Dr. Norman F. Salzman, NIAID, Bg. 5, Rm. 324.

Other seminar programs—to stimulate 261 National Cancer Institute summer employees to become involved in their Government jobs—was so successful that the NCI Training Office is planning to continue it in the future. At the first seminar in mid-July Sharon Bob (standing), Montgomery College, and Frederick Brigham, D.C. Teachers College, spoke on scholarships and financial aid. Kinesics, the science/ art of body language, was the topic of the second seminar, and Dr. James A. Peters, NCI, spoke on Cancer: Facts and Fallacies at the final seminar.

cells could be almost completely blocked by prior incubation of the kidney tissue with a C3b solution.

The scientists have not yet found the C3b receptor's exact location within the glomeruli but it has been suggested that it is located on the surface of the endothelial cell that forms the inside lining of the glomerular blood vessels.

This binding of C3b was observed in all apparently normal kidney tissue examined, including that of a one-day-old child. The presence of this receptor in kidney tissue from patients with various renal diseases is now being studied.

These findings were reported in the October issue of the Journal of Experimental Medicine.

Increasingly aware that genetic control of the antibody response to bacteria and viruses is important in health and disease, for example, in determining susceptibility or resistance to infections.

However, Dr. Krause has stated that "genetically determined immune responses may also have other, far less predictable influences. Genetic control of the immune response might explain the emergence of abnormal antibodies, such as those implicated in rheumatoid arthritis and nephritis."

Although basic studies on immunology have been his primary concern, he has maintained an interest in the practical application of new knowledge to the prevention and control of diseases.

He has, for example, identified the patterns of the spread of streptococci in families and communities, and he is one of the leaders who sparked a renewed interest in the problems of sexually transmitted diseases.

Career Detailed

Dr. Krause received his A.B. degree from Marietta College in 1947 and an M.D. degree from the Case Western Reserve University School of Medicine in 1952.

Dr. Krause joined The Rockefeller Institute—as the University was then called—after his internship and residency in internal medicine at Barnes Hospital, St. Louis.

In 1962 he joined the staff of Washington University School of Medicine, St. Louis. He was professor of epidemiology and professor of medicine there when he returned to Rockefeller in 1966. In 1968 he became professor and senior physician.

Dr. Krause is a member of numerous scientific groups, including the Association of American Physicians, American Society of Clinical Investigation, American Association of Immunologists, American Society for Microbiology, American Association for the Advancement of Science, and Infectious Diseases Society of America.

He is on the board of the Royal Society of Medicine, Inc., and the Directors Council of the New York Heart Association.

Dr. Krause has been a consultant and member of the World Health Organization's Cocal Ex."

"RUN FOR YOUR LIFE, that's what got me started," says Jay Miller of NIAMDD who is co-president of the NIH Joggers Club, referring to the campaign that began the physical fitness of Americans. He clearly remembers when he started jogging—on his first wedding anniversary in 1964 a friend who was president of the D.C. Road Runners' club challenged him to participate in a 2-mile run. That first time it took him 21½ minutes to finish that course. Now that distance is barely a warm-up, and he has the time down to 12½ minutes. And he has run nine marathons.

On Friday, Oct. 10, the NIH club sponsored a One Mile Plus Event that attracted more than 20 joggers—and walkers—who completed 1 to 6 miles during the noon hour.

Future Events Scheduled

A ballot box was filled with suggestions for a name for the group in the future, including One Mile Plus events to be held the first Friday of every month.

The next, on Nov. 7, will again start from the Cell Exhibit in front of Bldg. 1 and circle the Clinical Center. For further information call Dr. Young, Ext. 65435, or Jay Miller, Ext. 66941.

NIH joggers will also participate in inter-agency meets held in the Washington area. The next, to be held in the late afternoon on Wednesday, Nov. 19, features one- and two-lap contests on a 1.8-mile course around the Tidal Basin.

Role of Speech in Language

How did all these people get interested in what looks like a grueling, but obviously exhilarating, way of keeping fit? Edward J. "Hap" Soban of NCI wears the layered look—a snappy green and gold warm-up outfit over a track suit emblazoned "Potomac Valley Seniors."

He has been running for 3 years, ever since attending festivities in Columbia, Md., where he saw others in similar garb. The group is limited to persons 39 years of age and above.

"It looked like a lot of fun, and it is!" he says, grinning. "Since I started, I require less sleep, feel happier, the more I run, and have never been in bad shape since."

Richard Shrager of DCRT has been running 2 miles a day at home for a year and was pleased to join a group on this occasion. He runs in the afternoon in winter and in the morning in summer to take advantage of the coolness.

He was planning on relaxing over the weekend with a 5½-mile run. He admits however, that his 9-year-old now runs faster and longer than he does.

Another jogger recalled that the 7-year-old son of NIH'er Ron Huss finished the Palos Verde, Calif., marathon last year in less than 4 hours—very good time for the 26-mile distance.

Other Contests Recalled

Dr. Robert A. R. Pearce, a British Visiting Fellow who has been a physical chemist with NIAMDD for the past 3 years, has run three marathons, including the Boston classic.

He was wearing an embroidered patch as one of the first 50 runners who completed a 20 km championship race this year sponsored by the D.C. Road Runners.

Last year that group had 700 members; this year they have nearly doubled their numbers to 1200, attesting to the popularity of jogging.

One might say that Allen Lewis, a research biologist in the Clinical Center Blood Bank, was only ¾ present—he has lost more than 55 pounds since March, when he weighed 220 before taking up jogging.

He decided to get in shape and could run a mile in 7½ minutes. Then he heard that Dr. David Young of NCI, his instructor in an FAES class, had run a 26-mile marathon at the same pace.

"I couldn't believe it—but I wanted to do it, too," says Allen. And he's getting closer. Last weekend he ran 16 miles on the C&O Canal towpath.

"It's relaxing, not boring, as long as you have good scenery—much better than running on a track," he adds. "It's good competition, with yourself, really, and with the clock and with others."

Benefits Cited

"It's great when you find someone else who runs the same pace as you do yourself. It's like playing games with yourself for timing and distance. It's a real accomplishment." Dr. Young—co-president of the NIH R&W-sponsored Joggers—also encouraged Dr. Felix Mettler, a Visiting Scientist in his toxicology laboratory, to join the One Mile Plus event just 10 days after arriving on campus.

Linda Carter of NIH started running when she couldn't play tennis regularly enough to stay in shape. Now she runs at least a mile every evening and has her time down to 8 minutes, 10 seconds.

After really working up a sweat, the joggers sociably raised their Dixie cups around a jug of E.R.G.—electrolytic Replacement and Glucose—an orange liquid likened to "sweetened sweat" that was originated by a chemist-runner to supply energy and the substance lost in heavy sweating.

Cloudy skies and a cool day were really perfect conditions for the first One Mile Plus jogging event on Oct. 10. Co-president Jay Miller explained the course and signed up new members before the group stripped for action.

Dr. Felix Mettler, a Visiting Scientist who began working with Joggers Club co-president Dr. David Young on Oct. 1, found the 5 miles easy compared to Swiss topography. Still smiling after 3 miles and a mile sprint, Dr. Robert Pearce, a Visiting Fellow from England, cools off with a scientifically formulated sweat replacement, called E.R.G.
Leading Russian Eye Specialist Visits NIH And Observes NEI’s Q-switched Laser

Dr. Mikhail M. Krasnov, Director of the State Institute of Ophthalmology in Moscow, visited the National Eye Institute Sept. 25-26 under the auspices of the United States-Union of Soviet Socialist Republics Health Exchange Program.

This program is administered by the Fogarty International Center, where Dr. Krasnov spent a day prior to visiting NEI. Dr. Krasnov, a professor and leading ophthalmologist in the treatment of glaucoma and ocular microsurgery, collaborated with Dr. Aleksander M. Prokhorov, a Soviet Nobel prize-winning physicist, in developing the new Q-switched ruby laser, used in the Soviet Union for treating cases of glaucoma that cannot be adequately controlled by medical means.

In 1964 Dr. Prokhorov shared the Nobel prize for the laser’s development with an American, Charles H. Townes.

Dr. Krasnov was interested in observing the Eye Institute’s research, clinical, and administrative activities. Dr. Carl Kupfer, NEI Director, paid a similar visit to Dr. Krasnov in Moscow in 1973.

*Gives Laser Seminar*

In addition to touring NEI’s Laboratory of Vision Research and participating in Clinical Branch Grand Rounds, Dr. Krasnov presented a seminar on The Use of Lasers in Clinical Ophthalmology.

In a visit to the eye clinic, he observed glaucoma studies by Dr. Elmer J. Ballintine, NEI clinical director, and Drs. Douglas Gaasterland and Frank Macri.

Dr. Krasnov also inspected the Q-switched laser which NEI is developing for use in animals to assist in Glaucoma – the most common form, there is no gross anatomical evidence of an obstruction to fluid outflow. Elevated pressure can usually be medically controlled, but for those patients in which it cannot, surgery may be required to provide new outflow channels.

Conventional glaucoma surgery is usually recommended only as a last resort because it is both complicated and costly. It is not always effective, nor are all glaucoma patients suitable candidates for this procedure.

The use of lasers in place of, or to delay, conventional surgery is relatively new in glaucoma therapy, although lasers have been used for treating other eye disorders, such as diabetic retinopathy.

Dr. Krasnov said that several years’ follow-up and extensive studies will be needed to assess the real clinical value of Q-switched laser therapy in glaucoma.

He reported that 60 percent of the 140 patients he has treated in the past 5 years for open angle glaucoma have thus far avoided surgery. Laser therapy, used in conjunction with medication, usually must be repeated every few months.

**US-USSR**

(Continued from Page 1)

The Soviet Union is represented by Dr. Mikhail Saveliev, Deputy Chief of the Department of Foreign Relations, USSR Ministry of Health, and Dr. Aleksandr Glotov, also with the Department of Foreign Relations.

The first meeting of the US-USSR Joint Committee for Health Cooperation was held in March 1972 in Moscow. The Memorandum of Understanding signed at that meeting provided for direct collaboration in heart disease, cancer and environmental health.

The Memorandum also spelled out the forms that this collaboration would take, including the exchange of scientists and delegations, joint scientific symposia in the problem areas, the exchange of publications, other scientific information, research techniques and equipment, the conduct of joint research studies, and the exchange of drugs, reagents, and biological materials.

Since the signing of the Memorandum, US-USSR cooperation has been expanded to encompass two more problem areas: arthritis, and influenza and acute respiratory diseases.

In addition to evaluating the courses of work in the five major...