

Obituary

DR. ABRAHAM GOLDIN

Abraham Goldin, Ph.D., a Scientist Emeritus with the National Cancer Institute and one of the fathers of cancer chemotherapy, died of cancer in August at the age of 76. During his four decades of service at the National Cancer Institute, he was internationally recognized as a leader in the development of experimental models of human malignancy. He used those models to design effective drug regimens that are now used with success in clinical medicine.

Vincent DeVita, Jr., M.D., Director of the National Cancer Institute, said of Dr. Goldin, "We are saddened by this loss. Dr. Goldin's life was a life of service to science. His contributions to the development of cancer chemotherapy have earned him a permanent place in the history of cancer research. In a sense, the patients who benefitted from his dedicated research are his best memorial."

Dr Goldin was born in New York City and received his Bachelor's degree in biology from Brooklyn College in 1933. He did graduate work at Columbia University and received a Doctorate in zoology from Columbia in 1942.

Following military service in World War II, Dr. Goldin served as a laboratory instructor at Queens College and at Brooklyn College. In 1946, he joined the staff of the Army Chemical Center at Edgewood, Maryland, and also served as research associate in the Department of Preventive Medicine at The Johns Hopkins University in Baltimore.

In 1949, Dr. Goldin joined the National Cancer Institute at the U.S. Public Health Service Hospital in Baltimore, where he headed the Biology Group and later the Pharmacology Section. When the NIH Clinical Center was completed in 1954, he moved to the Bethesda campus as a biologist in the Laboratory of Chemical Pharmacology. Here, under the tutelage of Dr. Murray Shear, he began investigation of the effects of intermittent schedules on experimental drug therapy. This work led to considerations of the optimum doses and schedules in treatment with the use of two or more drugs.

After the discovery of L1210 leukemia, which was induced in mice with a carcinogen, Dr. Goldin developed the L1210 murine model into a qualitative tool for studying antileukemia drugs. Most currently useful anti-cancer drugs were developed in this system. His observations on the intermittent administration of methotrexate were an important contribution to the use of this drug and illustrate the importance of scheduling and pharmacokinetics on the outcome of treatment in leukemias and lymphomas. He is credited with developing the concept of leucovorin rescue following methotrexate therapy, a widely used regimen in clinical cancer treatment.

In 1963, Dr. Goldin was appointed Chief of the Drug Evaluation Branch of the Cancer Chemotherapy National Service Center. Later known as the Developmental Therapeutics Program, this organization has evaluated more than 400,000 synthetic compounds and pure natural products for anticancer activity against a variety of animal tumor models.

In 1966, Dr. Goldin became Associate Chief of Laboratory Research, Drug Research and Development, in the Division of Cancer Treatment. From 1977 to 1979, he served as Assistant Director for International Affairs, and from 1979 to his retirement in 1982, Dr. Goldin was Assistant Director for International Treatment Research in the Division of Cancer Treatment.

He was appointed Scientist Emeritus at the National Cancer Institute in 1983. He served as Adjunct Professor on the staff of the Lombardi Cancer Research Center of Georgetown University in Washington, DC, beginning in 1981. Dr. Goldin had also been an Adjunct Professor of biochemistry at Brandeis University in Massachusetts and was a research consultant in pharmacology to the George Washington University School of Medicine in Washington, DC.

Henri Tagnon, M.D., Editor of the *European Journal of Cancer & Clinical Oncology*, said: "We at the Journal and the Institut Jules Bordet have many reasons to remember Abraham Goldin. He was the main inspiration for the creation of the laboratory for drug development in Brussels, and his participation in the activities of the EORTC was important and effective. He proposed the creation of the NCI-EORTC Liaison Office and

remained closely associated with its development. He was an active member of the Editorial Board of the *European Journal of Cancer & Clinical Oncology* and acted as an expert referee wherever exceptional competence in experimental chemotherapy was needed. His friendly association with foreign cancer research was acknowledged in Belgium and he was made a Doctor *honoris causa* of the Faculty of Medicine of the University of Brussels in 1979.

Abraham Goldin was not only a man of courage and vision, a great scientist, he was also a man of great sensibility and a faithful friend. He as well as his wife Jessica had as many friends on this side of the Atlantic as in the United States. We all share in the sadness of his demise."