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Jerome Horwitz, AZT Creator, Dies at 93

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Jerome P. Horwitz, a scientific researcher who created AZT in 1964 in the hope that it would cure <u>cancer</u> but who entered the medical pantheon decades later when AZT became the first successful drug treatment for people with <u>AIDS</u>, died on Sept. 6 in Bloomfield Township, Mich. He was 93.

Courtesy of Walter P. Reuther Library, Wayne State University

Jerome P. Horwitz developed AZT as a cure for cancer.

His wife, Sharon Horwitz, confirmed his death, which had not been widely reported until this week.

Dr. Horwitz never achieved much fame and did not earn a penny for making the AZT compound. The riches — billions of dollars eventually — went to the drug company that tested it, patented it and, in 1986, won federal approval for it as the first treatment proven to prolong AIDS patients' lives.

Dr. Horwitz told interviewers that when AZT (short for azidothymidine) had failed as a cancer drug, he literally put it away on a shelf in disappointment and moved on to explore other ideas, never bothering to patent it.

To console himself, he half-kiddingly told colleagues at Wayne State University's cancer research center in Detroit that AZT and several similar drugs he had developed were "a very interesting set of compounds that were waiting for the right disease."

That set of compounds not only proved useful 22 years later in combating full-blown AIDS, it also defined a new approach to attacking disease by stealth.

Dr. Horwitz called the family of compounds he and his colleagues had developed "dideoxythymidines." All were synthetic forms of components of DNA known as nucleosides, a building block of genetic material. The researchers had injected AZT into cancer cells, hoping it would act like a Trojan horse to hinder cell growth by confusing the DNA's real nucleosides.

The stealth approach did not work against cancer, but it provided the foundation for the development of antiviral drugs now used in treating the human immunodeficiency virus, as well as <u>hepatitis</u> and <u>herpes</u>.

"It would be hard to put a number on how many lives have been saved because of these three drugs," said Nathalia Holt, an AIDS research fellow at the Ragon Institute of Massachusetts General Hospital, M.I.T. and Harvard. She referred to AZT and two other compounds that Dr. Horwitz created, known as didanosine and stauvidine. "They form the basis for the antiviral therapy we use today."

AZT collected dust on the shelf until the mid-1980s, when public awareness of the growing death toll from AIDS prompted a widespread search for treatments. Along with thousands of other drugs being tried in laboratories, the pharmaceutical company Burroughs Wellcome asked the National Cancer Institute to determine whether AZT might be effective in treating people with AIDS.

When a group of scientists financed by the institute found that it was effective, the drug company filed for and received a patent. (The company later became GlaxoSmithKline in a merger.)

The approval of AZT for treating AIDS made Dr. Horwitz briefly famous. Newspapers wrote about him and "ABC World News Tonight" profiled him as a "Person of the Week." But for Dr. Horwitz, the publicity was soured by the loss of potential income — both for him and for his research center — because of their failure to secure a patent.

Dr. Horwitz told interviewers that Burroughs Wellcome had donated money to the Karmanos Cancer Institute, the research center affiliated with Wayne State, to establish a chair in his name. But the gift — \$100,000 — was not enough to cover the cost of an endowed professorship. He said the size of the gift, given the profits earned, made him angry for a while.

But he got over it, he said. "If I was ever bitter, it's long since passed," he told The Chronicle of Higher Education in 2005.

Jerome Phillip Horwitz was born in Detroit on Jan. 16, 1919, one of three children of Louis and Belle Horwitz. His father was in the wholesale poultry business. He received his bachelor's degree in chemistry at the University of Detroit in 1942 and a master's degree there two years later. He earned his Ph.D. in chemistry in 1948 at the University of Michigan.

After working in the field of rocket fuel science at the Illinois Institute of Technology, he became a cancer researcher in the mid-1950s at the Michigan Cancer Foundation and a professor at the Wayne State Medical School. (The Cancer Foundation was renamed the Barbara Ann Karmanos Cancer Institute in 1995.) He remained with those institutions until retiring in 2005.

One of his last projects involved developing drugs for treating solid <u>tumors</u>. The research led Wayne State to obtain a patent, which it licensed in 2003 to a pharmaceutical company. While clinical trials were taking place, the company paid the school a hefty licensing fee, which it shared with Dr. Horwitz. At 86, he received the first royalty check of his career.

Besides his wife, his survivors include two daughters, Carol Kastan and Suzanne Gross, and five grandchildren.

"He never did it for the money," Ms. Horwitz said. "He went into science because he wanted to make a difference." After a pause she added, "He also went into science because he didn't want to go into the poultry business with his father."

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