Gertrude Belle Elion and George H. Hitchings Biography

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Biography

George H. Hitchings and Gertrude B. Elion developed the first drugs specifically designed for cancer therapy, as well as drugs to treat bacterial and viral infections and prevent rejection of transplanted organs. For their work, they received part of the 1988 Nobel prize in physiology or medicine.

George H. Hitchings, Jr., was born in Hoquiam, Washington, where his father was the manager of a shipbuilding yard and later a marine architect and master shipbuilder. His father's death when Hitchings was twelve made him decide to study medicine. He received his bachelor 's degree in 1927 and his Master's in 1928 from the University of Washington. He earned his Ph.D. at Harvard in 1933 and joined Wellcome Research Laboratories in 1942.

Gertrude Belle Elion was born in New York City. Her parents had come to the United States as children, her father from Lithuania and her mother from Poland. Elion's father was a dentist. When she was fifteen, her grandfather died of cancer and she decided to do something in her life to help find a cure for that disease. She graduated in 1937 from Hunter College, where she majored in chemistry. She earned her Master's degree in 1941 from New York University, doing her research at night and on weekends while teaching high school during the day. In 1944 she went to work for Wellcome Research Laboratories as George Hitchings's assistant. She also began working part-time on her Ph.D. at Brooklyn Polytechnic Institute. When school policy forced her to decide between full-time graduate study or full-time employment, she stayed with her job.

During the 1950s, Hitchings and his staff used newly discovered information about purines and pyrimidines (the active part of nucleic acids) to design new medications, Elion working mainly with purines. They used substances called antimetabolites, also known as false building blocks, to interrupt the growth of cancer cells, bacteria, and viruses, while leaving normal cells alone. Elion used this strategy to develop acyclovir, the first effective antiviral drug, as a treatment for herpes. In 1957, they developed azathioprine to inhibit the immune system; it was used over the next twenty years to prevent the rejection of transplanted kidneys in 20,000 people.

When they received the Nobel prize, Hitchings stated that his greatest satisfaction came from knowing that their efforts helped to save lives and relieve suffering.