

# Hilary Koprowski (1916–2013): Vaccine pioneer, art lover, and scientific leader

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Hilary Koprowski was born in Warsaw, Poland, on December 5, 1916 and obtained his medical degree from the University of Warsaw in 1939. That same year, after training in piano at the Accademia di Santa Cecilia in Rome, Koprowski moved to the Yellow Fever Research Service of Rockefeller Foundation in Rio de Janeiro, Brazil. In 1944 he joined the Section of Viral and Rickettsial Research at Lederle Laboratories of the American Cyanamid Company at Pearl River, New York.

In January 1948, at his laboratories at Lederle in Pearl River, Koprowski drank an aliquot of his vaccine against poliovirus. This was the first attempt to develop a safe vaccine against polio, a disease that by the 1950s would affect 10,000–60,000 individuals, mainly children, per year in the United States and many more around the world. This was also the first attempt to develop a live-virus polio vaccine and opened the way for the Sabin oral vaccine (introduced in stages in the early 1960s). Salk's injectable polio vaccine was introduced in 1955. In February 1950, Koprowski vaccinated 20 children in the United States in the first serious attempt to develop a polio vaccine. In 1958 Koprowski's vaccine was safely administered to ~250,000 individuals in the Belgian Congo. His brilliant, sometimes abrasive and forceful personality, and his affiliation to industry and not to academia, might have determined the future of his vaccine. Stanley Prusiner of University of California, San Francisco said, "Hilary was an extraordinary man in so many ways. His early work focused on live, oral polio vaccines was groundbreaking. Inexplicably, Koprowski, Salk, and Sabin never received the scientific accolades that this trio deserved. Their work reduced the untold suffering of children and young adults worldwide."

Somewhat later, he developed a safe rabies vaccine and his collaborator, Stanley Plotkin, developed a rubella vaccine, at the Wistar Institute, which Koprowski transformed from a moribund anatomic museum into a top biomedical institution. David Baltimore, the President Emeritus of the California Institute of Technology, remarked

that "Hilary was a special person. He was one of the pioneers in vaccine development, playing a key role in protecting our population against the ravages of virus diseases. But I will remember him most warmly for his intense passion, high culture, and musical skill. My wife, Alice, and I will always treasure the CDs we have of his piano playing."

Koprowski loved art, in particular music and old master pictures, and was an accomplished piano player, having been a graduate of the Accademia of Santa Cecilia in Rome. Every Christmas he played a piano concert for members of the Wistar Institute. The Institute became a stop for musicians around the world, including the Polish composer Krzysztof Penderecki. Koprowski also became a good friend of Riccardo Muti, at that time the conductor of the Philadelphia Orchestra. Often, on a Friday or Saturday night, we had dinner with maestro Muti at the Institute.

Although the original emphasis at the Wistar Institute was in vaccine development, Koprowski transformed it into a leading institute in fundamental biology, developmental biology, virology, immunology, cancer research, and aging. In the 1970s, scientists—including Koprowski—at the Wistar Institute were among the first to take advantage of the Milstein/Kohler discovery of monoclonal antibodies to develop antiviral and antitumor cell monoclonal antibodies. These developments allowed Koprowski to become one of the founders of Centocor, one of the earliest (1979) and most successful biotechnology companies in the United States. In the early 1980s, the Wistar Institute became a leader in the studies of human cancer genetics. Scientists from all over the world joined the Institute and felt they were welcome and at home there. Koprowski was able to create an exciting atmosphere that promoted discovery and facilitated interdisciplinary interactions and collaborations in a friendly environment. The administration of the Institute was small, efficient, and driven by scientists, not by administrators. Peter Doherty of the University of Melbourne said that "under Koprowski's leadership,



Dr. Hilary Koprowski. Reproduced with permission from The Wistar Institute.

the Wistar Institute functioned to minimize bureaucracy and facilitate the practice of science. Though at times outrageous, he was a life-enhancing figure and never boring. It was a privilege to know him." It is true, Koprowski liked to have his way, but he tolerated dissent, particularly from those he respected. When presented with opposing arguments, he was often able to change his mind.

During the last 20 years of his life, Koprowski began studying music composition and Maestro Muti directed one of his compositions at the Academy of Music of Philadelphia. A few years later at a Congress in Japan, Koprowski convinced the organizers to hire an orchestra to play his music to all of the participants. I can imagine how they felt! Throughout his life, Koprowski derived great pleasure in having his many friends and colleagues involved in what he loved. Through force of personality, he gained a large cadre of old and very loyal friends with many different interests, from science to music, painting to literature, all over the world.

We will all miss him!

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