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OBITUARY

ARTHUR KORNBERG

(1918–2007)

No matter how counterintuitive it may seem, basic research has proven over and over to be the lifeline of practical advances in medicine... Without advances, medicine regresses and reverts to witchcraft. A. Kornberg, 1977

Arthur Kornberg, the legendary biochemist, died of respiratory failure on October 26, 2007. He was 89.

Arthur Kornberg shared the 1959 Nobel Prize in Physiology or Medicine with Severo Ochoa for their fundamental contribution into how DNA is assembled. His discoveries established essential steps in genetic engineering and modern drug discoveries. He believed that an enzymologist, if persistent, could recreate in a test tube the kind of metabolic event that happens in a cell.

The Journal of Biological Chemistry initially rejected Arthur Kornberg's two classic papers. He said the journal told him that a peer had written "an exceedingly sarcastic letter" in assessing his findings. After a heated exchange with the journal, Dr. Kornberg finally decided to withdraw his papers, when, Dr. John Edsall, who was taking over as the new editor, saw the exchange and overruled the earlier decision. The papers were published immediately. That was in 1958, a year before Dr. Kornberg was awarded the Nobel Prize.

In 1967, Dr. Kornberg's team could successfully produce for the first time the active inner core of a virus in a laboratory. The announcement appeared with a headliner "creation of life in a test tube" to which Dr. Kornberg objected saying that he considered it as a part of a series of advances that had speeded up development of genetic engineering.

During last one and a half decade, Dr. Kornberg has been studying an enzyme that produces polyphosphate, a substance found in every bacterial, plant and animal cell. There is evidence that polyphosphate is involved in a number of significant functions in health and diseases, and it could be used for new drug development.

Arthur Kornberg was born in Brooklyn on March 3, 1918. At the age of 15, he entered the City College of New York and then earned a medical degree from the University of Rochester in 1941 and interned at Strong Memorial Hospital in Rochester. After medical school, he served as a commissioned officer in the U.S. Public Health Service, first being assigned to work as a Navy doctor.

His research career evolved from a paper that he published in 1942 about the mild jaundice that he noted among fellow medical students. Dr. Rolla Dyer, then the director of

the National Institutes of Health (NIH), read the paper and arranged Dr. Kornberg's transfer from sea duty in the Navy to the Institutes to do nutritional research involving vitamins and enzymes. Dr. Kornberg worked at the NIH for ten years during 1942 to 1952. In 1953, Dr. Kornberg left the NIH to become chairman of the Department of Microbiology at the Washington University in St. Louis. In 1959, he started a Department of Biochemistry at Stanford, where he remained as Chairman until 1969. In the 1980s, he helped found a research company, DNAX, which is now part of Schering-Plough. Kornberg accepted emeritus status at Stanford in 1988, but continued to run a laboratory until he was hospitalized.

Dr. Kornberg was one of six Nobel laureates whose sons also won Nobel Prizes. In 2006, Roger Kornberg received the Nobel chemistry laureate for creating the first pictures of how genes convey messages so that cells can make proteins.

Besides his son Roger, Arthur Kornberg is survived by his third wife, Carolyn Frey Dixon and two other sons and eight grandchildren. His first two wives, the former Sylvy Ruth Levy and the former Charlene Walsh Levering, predeceased him.

To honour Arthur Kornberg's contribution in science, donations may be sent to the Dr. Arthur Kornberg Memorial Fund at the Stanford School of Medicine, c/o Stanford, University Office of Medical Development, 2700 Sand Hill Road, Menlo Park, California 94025, USA.