

Werner Arber

Werner Arber, (born June 3, 1929, Gränichen, Switzerland), Swiss microbiologist, corecipient with Daniel Nathans and Hamilton Othanel Smith of the United States of the Nobel Prize for Physiology or Medicine for 1978. All three were cited for their work in molecular genetics, specifically the discovery and application of enzymes that break the giant molecules of deoxyribonucleic acid (DNA) into manageable pieces, small enough to be separated for individual study but large enough to retain bits of the genetic information inherent in the sequence of units that make up the original substance.

Arber studied at the Swiss Federal Institute of Technology in Zürich, the University of Geneva, and the University of Southern California. He served on the faculty at Geneva from 1960 to 1970 and later was professor of microbiology at the University of Basel (1971–96). In 2010 Pope Benedict XVI named Arber president of the Pontifical Academy of Sciences; he held the post until 2017.

During the late 1950s and early '60s Arber and several others extended the work of an earlier Nobel laureate, Salvador Luria, who had observed that bacteriophages (viruses that infect bacteria) not only induce hereditary mutations in their bacterial hosts but at the same time undergo hereditary mutations themselves. Arber's research was concentrated on the action of protective enzymes present in the bacteria, which modify the DNA of the infecting virus—e.g., the restriction enzyme, so-called for its ability to restrict the growth of the bacteriophage by cutting the molecule of its DNA to pieces.

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