Baruj Benacerraf Biography

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Biography

Baruj Benacerraf's experience with asthma as a child sparked his interest in the body's immune reactions. He researched immunological hypersensitivity with American chemist, Elvin Kabat at the College of Physician's and Surgeons at Columbia University in 1948. Benacerraf went on to conduct research on immunity at the National Center for Scientific Research in Paris. Benacerraf returned to the United States in 1956, joining the faculty at the New York University School of Medicine. There, Benacerraf began his Nobel Prize-winning research on cells involved in immune reactions. Benacerraf continued these investigations at the National Institute of Allergy and Infectious Disease in Bethesda, Maryland from 1968 to 1970, and subsequently as chairman of the department of pathology at the Harvard University Medical School.

While attempting to produce uniform antibodies in test animals, Benacerraf noticed that some guinea pigs responded to antigens by producing antibodies, while others did not. Benacerraf demonstrated that the animals' responses were determined by genes he called immune-response (IR) genes. Other researchers found similar genes in mice, rats, and monkeys. In 1969, Benacerraf confirmed that the IR genes were located within the MHC, (major histocompatibility complex). In the 1940's, American geneticist George Snell along with British researcher Peter Gorer had discovered a group of genes that later became known as the MHC. The MHC is the main system by which a mammal distinguishes between self and non-self and determines whether or not the body launches an immune system response. The identification of self vs. non-self by the immune system depends on the characteristics of surface molecules on cells. Jean Baptiste Dausset, a French immunologist and hematologist, discovered that humans carry the MHC as well as other animals, and in humans it is called the HLA (human leukocyte antigen) system. Benacerraf shared the 1980 Nobel Prize in physiology or medicine with Snell and Dausset for their work on immunological reactions. In 1980, Benacerraf became president and chief executive officer of the Dana Farber Cancer Center in Boston, Massachusetts.

Baruj Benacerraf was born in Caracas, Venezuela, the son of a wealthy textile merchant. Benacerraf grew up in France, then attended Columbia University in New York, where he graduated in 1942. Benacerraf married and became a naturalized United States citizen in 1943. Benacerraf obtained a medical degree from the Virginia College of Medicine in 1945, then served a tour of duty with the United States Army Medical Corps stationed in Nancy, France.