Rosalyn S. Yalow Biography

Rosalyn S. Yalow

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Biography

Rosalyn S. Yalow is the co-developer of radioimmunoassay (RIA), an extremely sensitive isotopic method of measuring hormones and other substances in blood. Her work earned her part of the 1977 Nobel prize in physiology or medicine.

Rosalyn Sussman was born in New York City where her father owned a small paper and twine business. Neither of her parents had attended high school, but they encouraged her studies. Interested in mathematics from childhood, she graduated from Hunter College in 1941, the first woman to receive a degree in their recently-established physics department, and was the only woman in her entering class of 400 at the University of Illinois College of Engineering, earning her Ph.D. in nuclear physics there in 1945. There, also, she met her future husband, fellow physics student Aaron Yalow.

In 1947, Yalow established the radioisotope laboratory at the Bronx (New York) Veterans Administration Hospital, where she spent her entire career. Until 1950, she also taught physics full-time at Hunter College. That year, Solomon A. Berson, a resident in internal medicine at the hospital, became interested in her work. They worked together for twenty-two years, until his untimely death in 1972 (making him ineligible to share the Nobel prize). Their first research was using isotopes to study blood volume and diagnose thyroid diseases by measuring iodine metabolism. Yalow and Berson then adapted the same method to hormones, including insulin, which was widely available. By 1959 they had perfected their method, which they called *radioimmunoassay* (RIA), so that it was sensitive enough to detect one thousand billionths of a gram of material per milliliter of blood. In the process, they discovered that hormones bind with antibodies and also that, contrary to the prevailing theory, Type II (adult onset) diabetes is caused by the body's inefficient use of insulin, not by failure to produce the hormone.

RIA rapidly became a standard laboratory technique. Medical uses include diagnosis of cancer and measurement of blood levels of hormones, vitamins, and other substances. It is also used in forensic work, for example, to determine narcotics and poison levels in blood.

Besides being a pioneer in her own field, Yalow is a strong supporter of women in science. Among her honors is the 1976 Albert Lasker Basic Medical Research Award, of which she was the first woman recipient.