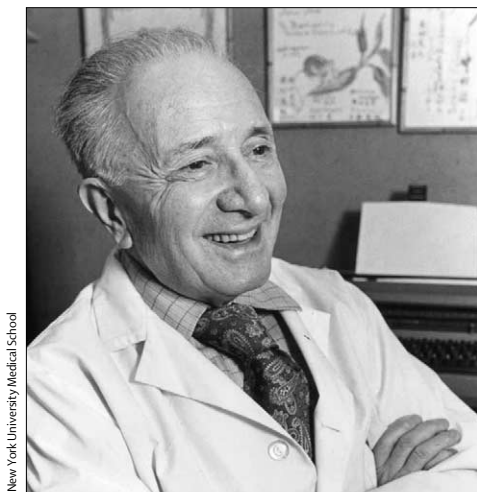




New York University Medical School

Zoltan Ovary

Immunologist who described technique for measuring functional antibodies and studied different classes of immunoglobulins. Born on April 13, 1907, in Kolozsvár, Hungary (now Romania). He died in New York, NY, USA, on June 12, 2005, of pneumonia, aged 98 years.

Zoltan Ovary's first major contribution to immunology came in the early 1950s when, working with Guido Bionzi at the Pasteur Institute and the University of Rome, he developed the technique in guinea pigs that would become known as passive cutaneous anaphylaxis. After the intradermal injection of antibody-containing serum and the passage of the sensitisation period, the researchers intravenously injected blue dye into the animals, and administered an antigen challenge. Wherever they had injected antibodies, blue spots appeared, signalling that histamine had been released as a result of the antigen-antibody complex formation and ensuing immune reaction. "I will never forget the excitement when, for the first time, I saw at the site of the injection a pale spot emerge within the first few minutes", Ovary would later recount in his memoirs, *Souvenirs: Around the World in 90 Years* (1999). "Then within a few seconds, it increased in intensity and became a bright blue spot. The experiment fascinated me even though I did not immediately realize what an essential role this blue spot would come to play in countless experiments around the world."

That method made it possible to measure functional antibodies better than any test previously devised, said Susan Zolla-Pazner, a professor of pathology at New York University, New York, USA, where Ovary was a member of the faculty from 1959. "His contributions were very important in the field of allergy and anaphylaxis", said

Baruj Benacerraf, who worked with Ovary at New York University and would go on to win the Nobel Prize in Medicine or Physiology in 1980. "He created a very important technique for identifying antibodies in guinea pigs, in order to identify those involved in anaphylaxis and compare them with others," Benacerraf told *The Lancet*.

Ovary made several contributions of that magnitude, said Zolla-Pazner, who directs the Immunology Research Laboratory at the Veterans Affairs Medical Center in New York. "He was among the first group of people to recognise there were different classes of antibodies", she said. "It was controversial at the time, but was eventually proven correct. What we all take for granted now is something he was very much responsible for."

Ovary was also known, along with Benacerraf, for the discovery of the carrier effect. Scientists at the time knew that antigens required a larger carrier segment and smaller segments known as the determinant, and that when an antigen was "injected a second time into the organism, a greater amount of antibody is produced than in the primary response", Ovary would later write. "With the carrier effect, Baruj and I showed that in order to have this secondary response, the same carrier must be used in both the primary and secondary injections. Our experiments also showed that the antibody-producing lymphocytes needed some sort of help in order to produce antibody." He and Benacerraf also discovered the bridging effect. "He realised that one antibody on the surface of a cell was not sufficient to activate that cell", Zolla-Pazner said. "It required at least two antibodies, bridging the antigen and the surface of the cell." Ovary's findings were impressive, according to Zolla-Pazner, "In an academic career, you can judge your impact if you get one fundamental finding in a textbook. He had four."

Ovary was "an extraordinarily generous, warm, giving, and involved person and mentor" whose colleagues were "absolutely and utterly devoted to him", Zolla-Pazner said. Every year, those who trained with him would travel back to New York University for a symposium in his honour.

Zolla-Pazner, who first met Ovary when she came to New York University as a postdoctoral fellow in pathology in 1967, never worked with him directly. But it was his strong non-scientific interests that drew the two together. "I began to realise that every time I went to the ballet, he was there", she said. Ovary directed an artist in residence programme at New York University, and his memoirs are equal parts science, history, and the arts. "Those of us who were close to him saw that there was this continuum in his life, between science, music, and art. He understood creativity in science, and science in creativity as well", Zolla-Pazner said. He is not survived by any immediate family members.

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