



LA NOSTRA VOCE WOMEN

Dr. Rita Levi-Montalcini

Contributing Editor Tony Traficante shares the story of the remarkable woman known as "The Lady of the Cells."



This article is written by Contributing Editor and former ISDA President Tony Traficante.

Italy's "Lady of the Cells," Dr. Rita Levi-Montalcini

In spite of historical obstacles, women in general, and Italian women in particular, found their way to and excelled across the professional gamut – the sciences, mathematics, medicine, politics, arts and the humanities. Such was the case with the remarkable Dr. Rita Levi-Montalcini, making history in the complex field of neural development. Her forte in neurobiology made her a leading protagonist in the discovery of critical chemical tools in the body that regulate cell growth and build nerve networks.

Rita Levi-Montalcini was born in Turin, Italy April 22, 1909. Her father Adamo Levi was an electrical engineer and a respected mathematician; her mother Adele Montalcini was a talented artist. As was the mentality of many Italian men of the time, Rita's father tried to discourage her from attending college. It was not woman's "*destino*" (destiny) to have a professional career. However, Rita, a tolerant soul, defended her father, saying, "He...had a great respect for women, but he believed that a professional career would interfere with the duties of a wife and mother". Rita persisted and, indeed, enrolled at the University of Turin.

Graduating *summa cum laude*, in 1936, with a degree in medicine and surgery, the University invited Rita to remain as a research assistant in neurobiology. It certainly was a great opportunity for Rita; it should have been a time to celebrate a career launch, and yet it was not to be. In 1938, Mussolini executed his infamous "*Manifesto per la Difesa della Razza*". A "manifesto" designed, in part, to forbid non-Aryan Italian citizens from academic and professional careers; as a result, Turin University terminated Rita's employment, in 1938.

Mussolini's edict might have been a serious setback for some but not for Levi-Montalcini; she was not a quitter. Determined to continue with her important medical research, she set up a makeshift lab in her bedroom. She forged surgical instruments from sewing needles to continue her vital experiments, while bombs burst around her. As the war intensified, and fearing for their lives by the invading Germans, the family fled to Florence, in 1943, where they lived underground until the end of the war. In August of 1944, the US allies having freed Florence from the Nazis, hired Rita as a medical doctor to work in the Italian refugee camps.

Dr. Levi-Montalcini's work revolutionized the study of neural development by isolating the nerve growth factor (NGF) from cancerous tissues that caused the rapid growth of nerve cells. She did these initial discoveries, in the temporary lab of her bedroom, using pieces of tumors in chick embryos. So impressed with the results of her experiments, Dr. Viktor Hamburger, an imminent American embryologist and professor, persuaded Dr. Levi-Montalcini to join him as an associate professor at the Washington University of St. Louis, in 1947.

While at the University, Levi-Montalcini joined with fellow faculty member, biochemist Stanley Cohen, to further her research with the nerve growth factor. At first, the scientific community did not appreciate, or perhaps did not understand, the relational aspects of the nerve growth factor. The importance of their work only became evident when understood their research could be the basis for developing critical medical drugs to treat diseases such as Alzheimer, Parkinson, cancer, muscular dystrophy and other like medical conditions. For their research efforts, Dr.

Levi-Montalcini and Stanley Cohen received the coveted Nobel Prize in Medicine or Physiology, in 1986.

Dr. Levi-Montalcini's career did not end with the Nobel Prize – “It's not enough what I did in the past – there is also the future.” She had many other accomplishments, too numerous to mention. For example, in 1962, she founded the Institute of Cell Biology in Rome. In 1968, she became the tenth woman elected to the United States National Academy of Sciences. She wrote her autobiography, in 1988, *Elogio dell'Imperfezione (In Praise of Imperfection)*. She created a foundation in 1992, promoting academic educational programs for thousands of women. In 2001, Italy recognized her as one of their most prominent, talented citizens and awarded her one of its highest honors – Senator for Life. In 2002, she founded the important European Brain Research Institute, dedicated to researching new therapies against Alzheimer and Parkinson's diseases and other neurological pathologies.

Finally, time caught up with Dr. Rita Levi-Montalcini and on December 30, 2012, and she died in Rome, Italy at the age of 103...but not without leaving an enormous legacy in her wake. Her motto:

“Above all, don't fear difficult moments. The best comes from them.”

