

Inventing a Vaccine to Save the World

Katalin Kariko and the story of mRNA

Read the article and answer the questions.

“Never give up,” seems to be the motto of Katalin Kariko’s life. Now a hero and one of the creators of a coronavirus vaccine, her life has been anything but an easy road to success. Born in Hungary, she always wanted to be a scientist when she was young, even though she had never met one. She grew up, the daughter of a butcher, in a small town in Hungary. Her love of nature and biology took her to the University of Szeged where she studied and then worked as a researcher at its Biological Research Center.



Unfortunately, in 1985, Dr Kariko’s university’s research program ran out of money. Dr. Kariko, her husband, and their 2 year old daughter moved to America for her new job at a university in Philadelphia. Because the Hungarian government only let them take \$100 out of the country, she and her husband hid some money in their daughter’s teddy bear.

Dr. Kariko has spent her whole life trying to figure out how to use a person's own cells to cure and prevent illness. She focused on mRNA, or messenger RNA, which could be used to instruct cells to make their own medicines, including vaccines. In the 1990’s, Dr Karikó tried to get money from the US government and big companies to do her experiments. No one would give her money because her ideas about mRNA were too unbelievable at the time. Every night she wrote letters asking for money to help her continue to research mRNA. “And it came back always no, no, no”, she said about the replies.



“I thought of going somewhere else, or doing something else,” Dr Karikó said. “I also thought maybe I’m not good enough, not smart enough. I tried to imagine: Everything is here, and I just have to do better experiments.”

Fortunately, a meeting at a university photocopying machine changed her life. She met another researcher, Dr Drew Weissman. She told him, “I am an RNA scientist — I can make anything with mRNA.” Dr. Weissman told her he wanted to make a vaccine against HIV. Dr. Kariko said, “Yeah, yeah, I can do it.” After that encounter, Dr Weissman and Dr Kariko worked together for many years exploring the possibilities of mRNA. This led to the development of a vaccine for the coronavirus.



Finally, two biotech companies took notice of the work: Moderna, in the United States, and BioNTech, in Germany. The two companies provided money to support Dr. Weissman’s lab. Now, Dr Kariko and Dr Weissman have emerged as heroes of Covid-19 vaccine development. Their work contributed to the successful vaccines that are saving people’s lives around the world.

1. Why did Dr Kariko’s family move to America?

2. What can mRNA do?

3. What did Katalin Kariko want to do with mRNA?

4. How did she try to get money for her research?

5. Why is mRNA important now?

6. Why might “Never give up!” be the motto of Katalin’s life?

Answers

1. Because her university in Hungary ran out of money for her research. She found a new job in the United States where she could continue her research.
2. It can instruct cells to do things, for example, create medicines and vaccines.
3. She wanted to use a person's own cells to cure and prevent illness.
4. She wrote letters every night asking for money to the government and companies.
5. It is used in coronavirus vaccines.
6. She had problems getting money for her research, and people thought that she was trying to do something that was impossible.