

# Portraits

Highlighting the exceptional contribution  
of European Jewish Women

## Ada Yonath

Crystallographer, chemist  
(1939)

Ada Yonath, née Lifshitz, was born in the Geula district of Jerusalem in 1939. Her parents, Rabbi Hillel Lifshitz and his wife Esther, were Zionist Jews who emigrated to what was then Palestine in 1933. After her father's death, Ada and her mother moved to Tel Aviv, where she was accepted at the prestigious Tichon Hadash school. Ada was obliged to give tutoring maths lessons to cover the school fees. From 1964 she earned a doctorate from the Weizmann Institute in Rehovot on the structural analysis of collagen with X-rays. By determining the 3D structure of the ribosomes of bacteria, Ada Yonath was able to elucidate the mechanism of action of 20 antibiotics, clearing the way for the determination of the necessary chemical modifications to antibiotics when confronted with resistant bacteria.

In 2009, Ada Yonath from the Weizmann Institute in Rehovot (Israel) received the Nobel Prize in Chemistry together with her US-based colleagues Venkatraman Ramakrishnan and Thomas Steitz Prize They were rewarded "for the studies on the structure and function of the ribosome".



Her studies were targeted at precisely determining the structure and working method of ribosomes by observing their three-dimensional molecular structure. She focused on bacterial ribosomes and wanted to understand and counteract the problem of antibiotic resistance.

Another achievement of Ada Yonath and her colleagues was the production of "snapshots" during the machine-like work of the ribosomes. In this way, they were able to reconstruct the mechanism of protein production.