ADA YONATH

Nobel Laureate in Chemistry 2009, Weizmann Institute, Rehovot, Israel

Ada Yonath, graduated the Hebrew University, earned Ph.D. from Weizmann Institute (WIS) and postdoced at Mellon Institute and MIT, USA. In the seventies she established the first laboratory for structural biology in Israel, the only laboratory of this kind in the country for almost a decade. She is WIS Kimmel Professor and the Director of Kimmelman Center for Biomolecular Structure. In parallel, during 1986-2004 she headed Max-Planck-Research-Unit for Ribosome Structure in Hamburg. She is a member of the US National Academy of Sciences (NAS); the American Academy of Arts and Sciences; the Israel Academy of Sciences and Humanities; the German Science Academy (Leopoldina); the European Academy of Sciences and Art; the Korean Academy for Science and Technology; the European Molecular Biology Organization (EMBO); the Microbiology Academy; the International Academy of Astronautics and the UK Royal Society for Chemistry. She holds honorary doctorates from Oslo, NYU, Mount Sinai, Oxford, Cambridge, Hamburg, Berlin-Technical, Patras, Greece and most Israeli Universities. Her awards include the Israel Prize; Paul-Karrer Medal; Louisa-Gross-Horwitz Prize; Ehrlich-Ludwig Medal; Linus Pauling Gold Medal; Anfinsen Prize; Wolf Prize; UNESCO/L'Oreal Award; Albert-Einstein World Award for Excellence; DESY pin; KEK distinction; Erice Peace Prize; Florence Cite Medal; Maria Sklodowska-Curie Medal; Nobel Prize for Chemistry.

Beauty, Symmetry, Complexity, Origin of Life & Species Specificity in Antibiotics Resistance

Ribosomes, the universal cellular machines for the translation of the genetic code into proteins, possess spectacular architecture accompanied by inherent mobility, allowing for their smooth performance as polymerases. These extremely complex entities form peptide bonds within a universal semi symmetric region that seems to exist irrespective of environmental conditions. Hence, indicating that it may represent a remnant of a prebiotic chemical apparatus, namely the kernel around which life originated. The mechanistic, evolutionary and genetic applications of this finding will be discussed.