Prof. Ada E. Yonath
Professor, Nobel Laureate in Chemistry, 2009

Most important awards, prizes and academies

Dr Yonath has won the following awards: Prakash S. Datta medal, FEBS, Sevilla 2012; Academia Sinica Award, Taiwan 2012; City of Florence Award 2011; President of Panama Award 2011; Maria Sklodowska-Curie Medal of the Polish Chemical Society 2011; Gold Medal of Distinction from India's Prime Minister 2011; Erna Hamburger Prize EFEL-WISH Foundation, Lausanne 2011; Wilhelm-Exner-Medaille, Vienna, Austria 2010; The Golden DESY Pin, Hamburg, Germany 2009; Nobel Prize for Chemistry, Stockholm, Sweden 2009; Erice Prize for Peace, Rome, the Vatican 2009; Albert Einstein World Award of science, Princeton University, NJ, USA 2008; The UNESCO-L'Oréal Award for European Woman in Life science, Paris 2008; The George E. Palade Gold Medal, Wayne State U. Medical School, Detroit, USA 2008; The Linus Pauling Gold Medal – Stanford, USA 2008; The American Chemical Society Luncheon in honor the Wolf Prize, Boston, USA 2007; The Wolf Prize, Jerusalem, Israel 2007; The Paul Ehrlich-Ludwig Darmstaedter Medal, Germany 2007; The Otto Loewy Lecture of the David Herzog Fund Medal, Graz, Austria 2006: The Israel Prime Minister EMET award 2006; The Rothschild Prize for Life Sciences 2006; Louisa Gross Horwitz Prize of Columbia University, NYC 2005; The Fritz Lipmann Lectureship, the German Biochemical Society, Berlin 2005; The Datta Lectureship Award, IUBMB, Budapest Hungary 2005; The Massry Foundation International Award and Medal for Ribosome Research

2004; The Paul Karrer Gold Medal, Zurich, Switzerland 2004; The Anfinsen Prize of the Protein Society, Boston, USA 2003; Medal of distinction, Israeli Chemical Society 2003; Harvey Prize for Natural Sciences, the Technion, Israel 2002; The Israel Prize for Chemical Research 2002; The F.A. Cotton Medal, the USA Chemical Society, USA; National Institutes of Health (NIH) Certificate of Distinction, USA 2002; The Kilby International Award, USA 2000; The First European Crystallography Prize, Nancy, France 2000; Kolthof Award for outstanding research in Chemistry, Haifa, Israel 1990; Holder of Martin A. Kimmel Professorial Chair, Weizmann Inst., Israel 1989; Somach Sachs Award for Outstanding Work in Biochemistry 1974; Miphal Hapais Prize for Outstanding Graduate Studies 1967.

Dr Yonath is a member of the USA National Academy of Sciences, the Israeli Academy of Sciences and Humanities, the European Academy of Sciences and Art, Leopoldina – the German Academy for Sciences, the European Molecular Biology Organization (EMBO), the American Academy of Art and Sciences; the Korean Academy of Sciences and Technology, the International Academy of Astronautics (IAA), the International Academy for Microbiology, and Fellow of the UK Royal Society for Chemistry.

Dr Yonath is also a member of the following committees: Scientific Advisory Board of the UN Secretary-General, Mr. Ban Ki-moon; EC President's Science and Technology Advisory Council; Center of Excellence (I-CORE), Israel; Davidson Institute for Scientific Education; RNA Institute, Albany, New York; The National Supreme Committee High Education, MALAG, & Vision of Science, Israel; The Advisory Committees: Life 2000, Finland; Biophysics and Nanosystems (Austria); The International Committees & Principal Users Groups at Synchrotron Radiation ESRF, France; APS/Argonne Nat Lab, USA; Cornell High Energy Synchrotron Source (CHESS), USA; The Israeli Academy Committees for Synchrotron Radiation, Microgravity and Bikura (First).

Summary of scientific research

Dr Yonath is the The Martin S. and Helen Kimmel Professor of Structural Biology and the Director of The Helen and Milton A. Kimmelman Center for Biomolecular Structure and Assembly. She focuses on genetic code translation, ribosome structure and function, modes of action, selectivity and resistance of antibiotics.

Main publications

M. Krupkin, D. Matzov, H. Tang, M. Metz, R. Kalaora, M.J. Belousoff, E. Zimmerman, A. Bashan and A.Yonath. A vestige of a prebiotic bonding machine is functioning within the contemporary ribosome. *Philos Trans R Soc Lond B Biol Sci* 366, 2972-2978 (2011); M.J. Belousoff, T. Shapira, A. Bashan, E. Zimmerman, H. Rozenberg, K. Arakawa, H. Kinashi and A. Yonath, Crystal structure of the synergistic antibiotic pair, lankamycin and lankacidin, in complex with the large ribosomal subunit. *Proc Natl Acad Sci USA* 108, 2717-2722 (2011); C. Davidovich, A. Bashan and A. Yonath, Structural basis for cross resistance to ribosomal PTC antibiotics, *Proc Natl Acad Sci USA*, 105, 20665-70 (2008); A. Bashan, and A. Yonath, The linkage between ribosomal crystallography, metal ions, heteropolytungstates and functional flexibility, *J Mol Struct*, 890, 289-

294 (2008); C. Davidovich, A. Bashan, T. Auerbach-Nevo, R.D. Yaggie, R.R. Gontarek & A. Yonath, Induced-fit tightens pleuromutilins binding to ribosomes and remote interactions enable their selectivity, *Proc Natl Acad Sci USA*, 104, 4291-4296 (2007); N.S. Sato, N. Hirabayashi, I. Agmon, A. Yonath and T. Suzuki, Comprehensive genetic selection revealed bases essential for protein synthesis in the peptidyl-transferase center, *Proc Natl Acad Sci USA*, 193, 15386-91 (2006); D. Baram, E. Pyetan, A. Sittner, T. Auerbach-Nevo, A. Bashan and A. Yonath, Structure of trigger factor binding domain in biologically homologous complex with eubacterial ribosome revealed its chaperone action, *Proc Natl Acad Sci USA*, 102, 2017-22 (2005); J. Harms, F. Schluenzen, P. Fucini, H. Bartels and A. Yonath, Alterations at the peptidyl transferase center of the ribosome induced by the synergistic action of the streptogramins dalfopristin and quinupristin, *BMC Biol*, 2, 1-10 (2004); R. Berisio, F. Schluenzen, J. Harms, A. Bashan, T. Auerbach, D. Baram and A. Yonath, Structural insight into the role of the ribosomal tunnel in cellular regulation, *Nat Struct Biol*, 10, 366-70 (2003); A. Bashan, I. Agmon, R. Zarivach, F. Schluenzen, J. Harms, R. Berisio, H. Bartels, F. Franceschi, T. Auerbach, H.A.S. Hansen, E. Kossoy, M. Kessler and A. Yonath, Structural basis of the ribosomal machinery for peptide bond formation, translocation, and nascent chain progression, *Mol Cell*, 11, 91-102 (2003); F. Schluenzen, R. Zarivach, J. Harms, A. Bashan, A. Tocilj, R. Albrecht, A. Yonath and F. Franceschi, Structural basis for the interaction of antibiotics with the peptidyl transferase centre in eubacteria, *Nature*, 413, 814-21 (2001); J. Harms, F. Schluenzen, R. Zarivach, A. Bashan, S. Gat, I. Agmon, H. Bartels, F. Franceschi and A. Yonath, High resolution structure of the large ribosomal subunit from a mesophilic eubacterium, *Cell*, 107, 679-88 (2001); F. Schluenzen, A. Tocilj, R. Zarivach, J. Harms, M. Gluehmann, D. Janell, A. Bashan, H. Bartels, I. Agmon, F. Franceschi and A. Yonath, Structure of functionally activated small ribosomal subunit at 3.3 A resolution, *Cell*, 102, 615-23 (2000); A. Tocilj, F. Schluenzen, H.A. Hansen, A. Bashan, D. Janell, M. Gluehmann, H. Bartels, J. Harms, I. Agmon, F. Franceschi and A. Yonath, *The small ribosomal subunit from Thermus thermophilus at 4.5 A*; K. von Bohlen, I. Makowski, H.A. Hansen, H. Bartels, Z. Berkovitch-Yellin, A. Bashan, S. Meyer, C. Paulke, F. Franceschi & A. Yonath, Characterization and preliminary attempts for derivatization of crystals of large ribosomal subunits from Haloarcula marismortui diffracting to 3 A resolution, *J Mol Biol*, 222, 11-5 (1991); H. Hope, F. Frolow, K. von Boehlen, I. Makowski, C. Kratky, Y. Halfon, H. Danz, P. Webster, K. Bartels, H.G. Wittmann and A. Yonath, Cryocrystallography of Ribosomal Particles, *Acta Crystallogr B*, 45, 190-99 (1989); A. Yonath, K.R. Leonard & H.G. Wittmann, A tunnel in the large ribosomal subunit revealed by three-dimensional image reconstruction, *Science*, 236, 813-6 (1987); I. Makowski, F. Frolow, M.A. Saper, M. Shoham, H.G. Wittmann and A. Yonath, Single crystals of large ribosomal particles from Halobacterium marismortui diffract to 6 A, *J Mol Biol*, 193, 819-22 (1987); A. Yonath, J. Muessig, B. Tesche, S. Lorenz, V.A. Erdmann and H.G. Wittmann, Crystallization of the large ribosomal subunit from B. stearothermophilus, *Biochem Int*, 1, 428-35 (1980); W. Traub, A. Yonath and D.M. Segal, On the molecular structure of collagen, *Nature*, 221, 914-7 (1969).

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