**Curiosity and its Fruits: From Basic Science to Advanced Medicine**

**Ada E. Yonath Nobel Laureate in Chemistry *2009***

Ribosomes, the universal cellular machines that translate the genetic code into proteins, are targeted by many antibiotics that paralyze them by binding to their functional sites. Antibiotics binding modes, inhibitory actions and synergism pathways have been determined for almost all ribosomal antibiotics. These indicated the principles of differentiation between patients and pathogens, suggested mechanisms leading to bacterial resistance and paved ways for improvement of existing antibiotics as well as for the design of advanced therapeutics capable of minimizing antibiotics resistance.