



Curriculum Vitae Professor Dr Alice Dautry



Image: Institut Pasteur Paris

Name: Alice Dautry

Date of birth: 1950

Research Priorities: Medicine, cell biology, immunology, receptors, infectious diseases

Alice Dautry is a French cell biologist. She has made pioneering advances in her research in such subjects as receptor-mediated endocytosis and cell signaling in the immune system. Her studies of intracellular pathogens and their hosts have helped to explain key aspects of host pathogen interactions. She has also participated in the global fight against infectious diseases.

Academic and Professional Career

- 2015 - 2021 Independent Member, Board of Directors, Union Chimique Belge (UCB), Société Anonyme, Anderlecht, Belgium
- 2005 - 2013 President, Institut Pasteur, Paris, France
- 1992 - 2005 Head, Research Department of Cell Biology, Institut Pasteur, Paris, France
- Director, École Polytechnique, Palaiseau, France
- Director, Institut Curie, Paris, France
- Director, École normale supérieure de Cachan, France
- Director, Institut Pasteur, Dakar, Senegal
- Director, Institut Pasteur, Montevideo, Uruguay
- Director, Institut Pasteur, Hong Kong, China
- Director, Institut Pasteur, Shanghai, China
- Director, Institut Pasteur, Seoul, South Korea
- 1977 - 2013 Professor, Institut Pasteur, Paris, France

- 1981-1983 Visiting Scientist, Massachusetts Institute of Technology (MIT), Cambridge, USA
- 1978 Doctorate, University of Paris, Paris, France
- 1977 Visitor National Institute of Health, Bethesda, USA
- 1974 Master of Science in Molecular Biology, Stony Brook University, New York City, USA
and National Institute of Health, Bethesda, USA
- 1972 Master in Solid-state Physics, University of Paris, Paris, France

Functions in Scientific Societies and Committees

She has served on many boards and scientific councils of higher education and research institutions, international organizations, and corporations, including the External Reference Group for Health Research Strategy of The World Health Organization and the High Level Group of scientists advising the European Commission for the choice of European Research Council members French Council of Foreign Affairs

Trustee, Institute of Science and Technology Austria (IST Austria), Austria

Project Coordination, Membership in Collaborative Research Projects

- 2003-2013 Member, Drugs for Neglected Diseases Initiative, Geneva, Switzerland
- Member several EU and HFSP projects

Honours and Awarded Memberships

Member, German National Academy of Sciences Leopoldina, Germany

Honorary Doctorate, Rockefeller University, New York City, USA

Member, French Academy of Technologies, Paris, France

Officer, National Order of the Legion of Honour, France

Research Priorities

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Alice Dautry is one of the leading scientists in European cell biology research. In her own research programme at the Institut Pasteur, she studied the key to successfully understanding the immune response: receptors on the surface of over a trillion immune cells in the human body. These receptors use the lock and key principle to identify pathogens or pathogenically changed cell components and render them harmless.

Dautry discovered hitherto unknown facets of the role of receptors in cell communication and of material transport through the cell membrane. For example, she provided a new description of a process with which animal cells take in substances such as iron in a targeted and controlled manner, rather than randomly, from their surroundings. During this so-called receptor-mediated endocytosis, the necessary material which is to be transported to the inside of the cell binds to certain receptors embedded in the cell membrane via proteins.

Her working group transferred these questions to intracellular pathogens such as chlamydia. These pathogens are tiny bacteria which, as parasites, can only reproduce inside foreign cells. To do so, however, they have to “reprogram” their host cells, which might be human mucous membrane cells, for example. Dautry and her team used different cell biology and immunology techniques to research which signal materials and which receptors the bacteria use to redirect the metabolism of the host cell. They were then able to describe the exact process of the infection by these widespread pathogens. Alice Dautry also succeeded in characterising infectious bacterial proteins which, during infection, inject chlamydia into the host cell from the outside using a sort of needle. Furthermore, she studies the programmed cell death of the host cell which chlamydia triggers in a targeted manner. The tiny parasites reprogram the metabolism of the host cell such that the latter actively dies a controlled death.

In a further area of her research, Dautry was part of the “Drugs for Neglected Diseases Initiative” in Switzerland and worked to combat diseases affecting such a small number of infected persons that the development of medicine for them is financially unattractive for many companies.