Leopoldina
Nationale Akademie
der Wissenschaften

# Curriculum Vitae Prof. Dr. Pascale Cossart

Photo: Micheline Pelletier

**Name:** **Pascale Cossart**
**Born:** **21 March 1948**

**Research priorities: Cellular Microbiology, Bacterial-Cell Interactions, Molecular Biology and Cell Biology of the Pathogenic Bacterium Listeria monocytogenes**

Pascale Cossart is a French microbiologist who pioneered cellular microbiology. Her work focuses on the interactions of bacteria and cells. In particular, she conducted research on the cellular and molecular biology of the bacterium Listeria monoctogenes.

**Academic and professional career**

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| since 2006 | Professor “de Classe Exceptionnelle”, Institut Pasteur, Paris, France |
| 1997 - 2005 | Professor, Institut Pasteur, Paris, France |
| since 1991 | Head of the “Unité des Interactions Bactéries-Cellules”, Institut Pasteur, Paris, France |
| 1988 - 1996 | Head of Laboratory at the Institut Pasteur, Paris, France |
| 1980 - 1987 | Research Fellow at the Institut Pasteur, Paris, France |
| 1977 | Ph.D. in biochemistry, University of Paris VII, France |
| 1976 - 1979 | Assistant at the Institut Pasteur, Paris, France |
| 1974 - 1975 | Professor of Biochemistry at the Royal Medical School, Vientiane, Laos |
| 1971 | M.S. in chemistry, Georgetown University, Washington, D.C., USA |
| 1970 - 1971 | Fellow at the Georgetown University, Washington D. C., USA |
| 1969 - 1970 | Assistant at the IUT of Applied Biology of Lille, France |
| 1968 | M.S. in chemistry, Lille University, France |

**Functions in scientific societies and committees**

since 2016 Secrétaire Perpétuel de l'Académie des Sciences

**Honours and awarded memberships**

2021 Selman A. Waksman Award in Microbiology, US-National Academy of Science

2020 Grand officier of the Legion of Honor

2020 Honorary Doctorate, Karolinska Institute, Stockholm, Sweden

2019 FEMS Lwoff Award, Federation of European Microbiological Societies

2018 Heinrich Wieland Prize

2018 René and Andre Duquesne Prize

2017 Ernst Jung Gold Medal for Medicine

2015 Doctor honoris causa of the University of Birmingham, UK

2015 ERC advanced grant

2014 FEBS/EMBO Women in Science Award

since 2014 Foreign Member of the US National Academy of Medicine (NAM)

2013 Seeliger Award

2013 Balzan Prize

2011 Van Deenen Medal

2010 Commandeur of the Ordre national du Mérite

since 2010 Fellow of the Royal Society

2009 Doctor honoris causa, EPFL, Lausanne

since 2009 Foreign Member of the US National Academy of Sciences (NAS)

2008 René Descartes Prize

2008 Louis Jeantet Prize for Medicine

2008 ERC Advanced Grant Award

2007 Robert Koch Prize

2007 Officier de la Legion d'honneur

since 2002 Member of the "Académie des Sciences"

since 2001 Member of the German National Academy of Sciences Leopoldina

2005 INSERM Prize of Fundamental Research

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| 2000 - 2017 | Howard Hughes Medical Institute international Research Scholar |
| since 2004 | Member of the Academy of Microbiology |
| 2000 | Louis Pasteur Gold Medal |
| 1998 | L'Oreal/Unesco Prize for Women in Science |
| 1998 | Richard Lounsbery Prize |
| since 1998 | Member of the Academia Europae |
| 1997 | Louis Rapkine Award |
| since 1996 | Member of the European Molecular Biology Organization (EMBO) |
| 1995 | Carlos J. Finlay Prize for Microbiology |

**Research priorities**

Pascale Cossart is a French microbiologist specialized in cellular microbiology. Her work focuses on the interactions of bacteria and cells. In particular, she conducted research on the cellular and molecular biology of the bacterium Listeria monoctogenes.

Pascale Cossart is considered a pioneer within the field of "cellular microbiology ", which emerged in the 1990s when molecular and cellular biology approaches converged.

Pathogenic bacteria enter the host organism via the gastrointestinal tract, the respiratory or urinary tract, and, in the case of injuries, through the skin. They can induce a wide variety of diseases and may even lead to death. Pascale Cossart sought answers to questions such as: How does a bacterium select its host, how does it attack it, and how does it ultimately succeed in colonizing it?

She also aimed to identify a variety of bacterial virulence factors and strategies and therefore was able to explain complicated mechanisms that enable bacteria to enter cells and tissues, survive inside them, and spread.

For example, Pascale Cossart showed how a bacterium targets and crosses the body barrier. She also discovered new mechanisms that allow bacteria to downregulate the host's innate immune response. Pascale Cossart also revealed new mechanisms of gene regulation via RNA in particular an RNA thermosensor regulating virulence. Pascale Cossart's research has established the pathogen Listeria as one of the most extensively studied microorganisms and a benchmark reference for infection biology. Her discoveries on this organism revealed mechanisms that other microbes also exhibit and allowed to solve important questions in cell biology.

New techniques and creative approaches, chosen by Pascale Cossart, allowed us to unravel many mysteries concerning the pathways and mechanisms pathogens choose to produce infection. Her groundbreaking discoveries in the field of molecular biology have significantly improved the

understanding of the basic mechanisms of infectious diseases and indicated new ways to combat them.