

Sylviane MULLER

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Team "Neuroimmunology and peptide therapy"



Education, responsibilities and honors

Professor Muller earned her doctorate in sciences at the University of Strasbourg (France) and focused on immune responses as a postdoctoral researcher at the Max Planck Institute for Immunobiology in Freiburg (Germany). She is Professor at the Institute of Advanced Studies of the Strasbourg University where she holds the chair in Therapeutic immunology. She is emeritus Research Director at the Centre National de la Recherche Scientifique; former Director of the CNRS Unit Immunopathology and therapeutic chemistry (2001-2017) and Director of the CNRS Institute of Molecular and Cellular Biology (2016-2017). She was the former Director of the Drug Discovery Center for cancer and inflammation Medalis awarded 'Laboratory of Excellence' (2011-2020) and in the continuity, of the Strasbourg Institute for drug development and discovery (2021-2028; 250 persons). She was a member of the "Comité analyse, recherche et expertise" (CARE) COVID-19 (2020). She is a member of the editorial board and ad hoc reviewer in several scientific journals; member of several international scientific Societies; expert in national and international selection boards and committees; member of several scientific academic and private advisory boards. She presented numerous lectures in Europe, US, Japan and India, and participated to numerous international meetings as an invited speaker. She co-organized of >10 international congresses in the field of autoimmunity. She acted as a partner of several European grants. She received several national and international awards (CNRS Silver Medal, CNRS Innovation Award, Léon Velluz Prize from the French Academy of Sciences, finalist of the 2017 European Inventor Award). She is a fellow of the European Academy of Sciences (2020) and Member of the Academia Europaea (2020). She is co-founder of Neosystem (today Polypeptide France) and ImmuPharma France. She has been awarded Chevalier de l'Ordre de la Légion d'Honneur (2010), Officier de l'Ordre National du Mérite (2016), and was promoted Officier de la Légion d'Honneur in 2021.

Scientific interests

S. Muller is interested in understanding the molecular and cellular pathways involved in autoreactive lymphocytes activation, the events leading to cell death/living phenomena that are central in auto-inflammatory diseases (e.g. Lupus), and in the fundamental mechanisms of therapeutic responses. With her team, she performs a multidisciplinary research associating chemistry, biochemistry, cellular immunology and pharmacology. Using synthetic peptides as tools, she published numerous papers describing the fine characterization of autoantibodies and autoreactive T lymphocytes, especially in human lupus, and the design of innovative vaccines to pathogens. Especially, combining her fundamental knowledge of Lupus with a long-lasting experience in peptide immunochemistry, S. Muller and her team were able to develop a very novel strategy, based on synthetic peptides, designed to modulate the aberrant immune response and restore immune system functions in model mice and patients with lupus. One of these peptides is currently evaluated worldwide in phase III clinical trials for Lupus, and in animal models mimicking other chronic inflammatory diseases (e.g., Sjögren's syndrome, CIDP, asthma, colitis, periodontitis). This peptide targets autophagy that is deregulated in numerous inflammatory conditions and, in lupus, autoreactive T cells. Professor Muller has filed over 30 patents and published more than 400 papers and reviews in peer-reviewed journals.

Key words: immunology • immunochemistry • inflammation • autoimmunity • molecular therapy • immunopeptide • peptide delivery • autophagy • cytokines/chemokines.

Recent papers (out of 275 original articles and 126 reviews/monographs)

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- Bonam, S.R., Partidos, C.D., Halmuthur, S.K.M. & Muller, S. (2017) An overview of novel adjuvants designed for improving vaccine efficacy. **Trends Pharmacol. Sci.** 9, 771-793
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