Harnessing the Immune Systems Mechanisms for Novel Treatments

John Kappler
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CURRENT RESEARCH

Translating fundamental research to treatments for autoimmune diseases and cancer

Many of the most common autoimmune diseases result from T cell attacks via self-antigens expressed in specific organs. Likewise, in many cancers, it is common to identify T cells that recognize self-antigens over-expressed in tumor cells. Therefore, understanding the biological mechanisms that determine how self-peptide/MHC complexes drive the immune response of T cells, may help to uncover therapeutics for treating these devastating diseases. Dr. John Kappler, Distinguished Professor for National Jewish Health and the University of Colorado, Denver, studies the way in which T cells recognize self-antigens in order to translate fundamental research into translational projects that identify how T cells participate in a number of diseases. His knowledge and experience with how peptide and MHC complexes drive the immune response of T cells, allow him and his team to design novel ways to harness the immune system in the treatment of autoimmune diseases and cancer.

Recently awarded the Wolf Award alongside his wife and long term collaborator, Dr. Kappler is a leader in the field having contributed to seminal knowledge about T cells and the immune system. With over thirty years of experience in studying T cell receptor and MHC-peptide structure and function, Dr. Kappler and his team have accumulated a wide set of tools that allow them to address any aspect of this area -- all the way from the in vivo immune responses to the atomic x-ray structures of T cell receptors and MHC/peptide complexes. Their groundbreaking findings, including the discovery of the nature of T cell antigen receptor, the role of antigen processing in generating the peptides required for creating MHC/peptide complexes, and the phenomenon...

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AFFILIATION

National Jewish Health

EDUCATION

- B.A., in Chemistry, 1965 , Lehigh University
- Ph.D., in Biochemistry, 1969 , Brandeis University

AWARDS

- The Novartis Prize in Immunology, 2016
- Royal Society Welcome Foundation Prize Winner and Lecturer
- The Ernst W. Bertner Memorial Award, MD Anderson Cancer Center
- The Paul Ehrlich and Ludwig Darmstädter Prize, Germany
- The Louisa Gross Horwitz Prize, Columbia University
- and 1 more...

RESEARCH AREAS

Life Science, Immunology / Inflammatory, Metabolic / Diabetes, Oncology / Cancer

FUNDING REQUEST

Your contributions will support the continued research of Dr. John Kappler at National Jewish Health and the Barbara Davis Center for Childhood Diabetes of the University of Colorado, Denver, as he designs novel ways to harness the immune system in the treatment of autoimmune diseases and cancer. Donations of $250K will fund projects supporting the salaries and benefits for fellows and technicians in addition to lab supplies, services, small equipment, and animal costs. In choosing to donate, you will be a part of creating the medical tools for the future of treatment for autoimmune diseases and cancer.