

Antonio Lanzavecchia

CURRICULUM VITAE

Antonio Lanzavecchia is an immunologist recognized for his work on antigen presentation by B cells and dendritic cells, for his studies on T cell activation and on the cellular basis of immunological memory, and for the development of novel methods to isolate human monoclonal antibodies. Lanzavecchia was born in Italy and obtained a medical degree from the University of Pavia, where he specialized in pediatrics and in infectious diseases. From 1983 to 1999 he worked at the Basel Institute for Immunology and since 2000 is the founding director of the Institute for Research in Biomedicine, Università della Svizzera italiana, in Bellinzona, Switzerland. He is also professor of Human Immunology at the Swiss Federal Institute of Technology, ETH Zürich. He received the EMBO Gold Medal and the Cloetta Prize and is a member of the EMBO, of the Swiss Academy of Medical Sciences and of the US National Academy of Sciences.

Research interests

Antonio Lanzavecchia's laboratory investigates the mechanisms of antibody-mediated resistance to infectious diseases. Using high-throughput cellular screens, they interrogate with high efficiency the repertoires of human memory B cells and plasma cells and isolate potent and broadly neutralizing antibodies against a variety of targets, ranging from common pathogens such as influenza, CMV and RSV, to emerging viruses such as SARS, MERS, Ebola and Zika. These antibodies are characterized as candidates for prophylaxis and treatment of infectious diseases and are used as tools to identify and produce optimal vaccine components in a process of antibody-guided vaccine design. Besides these translational studies, the laboratory addresses fundamental aspects of the antibody response, such as the role of somatic mutations in affinity maturation and in the generation of broadly neutralizing antibodies, as well as the relationship between infection and autoimmunity. The laboratory is also studying a new mechanism of antibody diversification through DNA transposition that was recently discovered in the context of the antibody response to malaria parasites.