



**SHIMON SAKAGUCHI, Ph.D.**

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Shimon Sakaguchi is a Distinguished Professor at the World Premier International Research Initiative (WPI)-Immunology Frontier Research Center (IFReC) at Osaka University, Japan. He is an immunologist recognized for his work on the control of immune responses. He is known particularly for his discovery of regulatory T cells, an indispensable constituent of the immune system for the maintenance of immune self-tolerance and homeostasis. Sakaguchi was born in Japan in 1951, obtained an M.D. in 1976 and a Ph.D. in 1982 from Kyoto University, Japan, where he was trained as a pathologist and immunologist. After performing postdoctoral studies at Johns Hopkins University and Stanford University as a Lucille P. Markey Scholar, he served as an Assistant Professor in the Department of Immunology at the Scripps Research Institute. He returned to Japan in 1991 and continued his immunology research at RIKEN Institute as an Investigator of the Japan Science and Technology Agency and subsequently as the Head of the Department of Immunopathology at Tokyo Metropolitan Institute of Gerontology, Tokyo. From 1998 to 2011, he was a Professor and the Chairman of the Department of Experimental Pathology, Institute for Frontier Medical Sciences Kyoto University and served as the Director of the Institute for several years. In 2011, his lab moved to Osaka University and he assumed the current position.

**Research Interests:**

Sakaguchi studies the molecular and cellular mechanisms of immunological tolerance and immune regulation. He has shown that a population of immunosuppressive T-lymphocytes, designated regulatory T cells, are present in the immune system and its deficiency or dysfunction is causative of a variety of immunological disorders including autoimmune diseases. He has investigated the molecular basis of regulatory T cell development and function. In addition, Sakaguchi and his laboratory have demonstrated that numerical expansion of regulatory T cells or strengthening of their suppressive activity is capable of preventing and treating autoimmune diseases and also establishing stable tolerance to transplanted organs, while their reduction in number or suppressive activity is able to provoke effective immunity against cancer. Sakaguchi is currently investigating how regulatory T cells can be targeted in humans to control a variety of physiological and pathological immune responses in clinical settings.