Strategies For Rejuvenating Immunity During Ageing

Professor Arne N Akbar
Head of The Division of Infection and Immunity,
Head of Department of Immunology,
Professor of Immunology,
University College London

Abstract
Repeated antigenic stimulation throughout life may compromise specific T cells in two ways. First the cells may become functionally exhausted whereby memory T cells lose essential functional activity that is necessary for immune protection. Second, repeated T cell stimulation can lead to loss of replicative capacity of some antigen-specific populations through telomere erosion (replicative senescence)6-8. While there has been substantive progress in identifying the mechanisms that regulate both processes they are normally investigated independently of each other and it is not clear if exhausted T cells also exhibit proliferative arrest and other signs of senescence and vice versa. An exciting finding is that both exhaustion and senescence are not passive events but are controlled by active signalling processes. There is therefore the potential to manipulate specific signalling pathways to reverse either senescence and/or exhaustion to boost T cell function. In this talk I will discuss mechanisms for enhancing immunity in T cells with a view to boosting immune function during ageing.

Selected Publications


