

Immune memory resilience, a new way of evaluating adjuvants

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Adjuvants are traditionally assessed for their ability to enhance or modulate immune responses to a vaccine antigen, as measured by their capacity to induce strong primary immune responses, both cellular and humoral. More recently, the faculty of adjuvants to induce immune memory responses that are long-lived and can effectively be boosted has also been assessed. Here we propose a novel way of evaluating adjuvants, based on their ability to induce immune memory responses that are resilient to manipulation by pathogens. In most cases vaccines rely on the induction of immune memory responses, which are subsequently recalled during the early stages of infection. For many pathogens the recall of immune memory responses represents a real challenge to their survival resulting in significant evolutionary pressures on pathogens. As a result some pathogens have developed immuno-modulatory properties in an attempt to circumvent immune destruction. These mechanisms include manipulation of the recall response away from protective immunity. Hence there is a need to assess and optimize adjuvants for their ability to induce resilient immune memory responses, able to withstand such manipulation. Using a combination of adjuvants and model antigens we are developing ways of measuring immune memory resilience and propose that the induction of resilient immune responses should be a major consideration in designing novel vaccines.

Biography

Jean-Pierre Y Scheerlinck has obtained PhD from the Free University of Brussels (VUB, Belgium) and Postdoctoral studies at the ILRI (Nairobi, Kenya), and WEHI (Melbourne, Australia). He then joined CSIRO (Australia) as a project leader and later moved to The University of Melbourne, where he currently holds the position of Director, Centre for Animal Biotechnology (CAB). The CAB is a Research Centre dedicated to developing and using animal models for biotechnological and biomedical exploration. He has published more than 70 papers and serving is an editorial board member of 4 peer-reviewed journals.

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