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Ideal adjuvants for enhanced vaccine efficacy. Innate immune activation; A blessing or a curse?

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Abstract

Hghly purified antigens suffer from poor immunogenicity. Current paradigms suggest the way to address this problem is with adjuvants based on potent innate immune activators, thereby mimicking natural infection. The key question is whether vaccine immunogenicity and reactogenicity are inseparable? Are pro-inflammatory danger signals really needed to make modern vaccines effective? Using examples of vaccines against influenza, West Nile virus, Japanese encephalitis virus and other important biodefense pathogens, data will be provided to show that bigger is not always better when it comes to vaccine adjuvants, thereby explaining how adjuvants such as delta inulin (Advax™) with more subtle immune effects may surprisingly provide the best long-term immune memory responses and vaccine protection

Biography

Nikolai Petrovsky MBBS, FRACP, PhD is an active hospital clinician, research professor at Flinders Medical Centre, Adelaide Australia and research director of Vaxine, an Australian vaccine development company. He is Secretary-General of the International Immunomics Society and has received major funding from the US National Institutes of Health to develop novel biodefense vaccines and adjuvants. He has won prestigious awards including the AMP Innovation Award at the 2009 Telstra Business Awards and an Ernst & Young Entrepreneur of the Year in 2010. He has taken four vaccines to the clinic and has authored over 100 scientific papers and book chapters.