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Development of lipid based oral vaccine formulations

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Oral administration of vaccines is limited to whole cell vaccines which can survive the harsh conditions found in the gastrointestinal tract, while subunit vaccines, which consist of peptide or protein antigens, must be given by injection. The oral route of administration is obviously much preferred in terms of ease and acceptability of administration. Particulate lipid based formulations such as liposomes and emulsions have been of interest in pharmaceutical research due to the capacity to improve both stability and immunogenicity of vaccine formulations incorporating immunostimulating components. However the effects of formulations delivered through the oral route may not necessarily correlate to those resulting from delivery via the parenteral route. The aim of this study was to develop and characterize a number of lipid based subunit vaccines and then to evaluate the local and systemic immune responses in mice. Liposomal and emulsion type formulations were found to increase the stability of peptide vaccines to modify antigen release and to enhance both cellular and humoral responses.

Biography

Sarah Margaret Hook is a Professor of Biopharmaceutics at the School of Pharmacy at the University of Otago in Dunedin, New Zealand. She has received her PhD in 1996 from the Department of Microbiology and Immunology and joined the faculty of the School of Pharmacy in 2001. Her research interests include the development of one shot sustained release, particulate and needle free formulations for the delivery of small and large molecule therapeutics. She has published more than 75 papers in pharmacy and immunology journals.

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