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Proteomic and microarray analyses to understand protective role of surfactant protein SP-D in allergy and inflammation

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Abstract

Pulmonary surfactant protein SP-D is a carbohydrate and charge pattern recognition molecule that is a potent link between innate and adaptive immunity. We have shown previously that a recombinant fragment of human SP-D (rhSP-D) can down regulate immunological characteristics of allergy in murine model. The protective mechanisms include lowering the levels of IgE, suppression of eosinophilia and lung infiltration, reduction in airway hyperreactivity, and polarization of Th2 to Th1 immune response. We have now used in vitro, in vivo and ex vivo systems to dissect the underlying mechanisms through which SP-D offers resistance against allergenic challenge. We have recently also used proteomic and microarray profiling to characterize molecular mechanisms and pathways that are modulated by SP-D. These data will be discussed.

Biography

Uday Kishore carried out his PhD research from Delhi University, India and post-doctoral training at the Salk Institute, California and the University of Oxford, UK. He has been the recipient of fellowships/awards from the NASA, Wellcome Trust, Humboldt Foundation, Medical Research Council and European Commission. He has authored over 80 peer-reviewed research papers, 10 book chapters, 2 International patents, edited two books, and is currently writing a text book on host-pathogen interaction (Wiley-Blackwell). His research interests include understanding the roles of innate immunity (including complement system) in allergy, host-pathogen interaction, pregnancy, neuroinflammation and neurodegeneration, and autoimmunity.