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Mucosal immunization via conjunctiva: Where do we stand?

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The ocular surface is recognized as part of the mucosal immune system as conjunctiva-associated lymphoid tissue (CALT). This lymphoid tissue consists of intraepithelial lymphocytes, sub-epithelial lymphoid follicles (conjunctival follicles) and adjacent lymphatic and blood vessels. Furthermore, together with lacrimal drainage-associated lymphoid tissue (LDALT), CALT forms the eye-associated lymphoid tissue (EALT). All these components have a key role in the protection of the ocular surface by initiating and regulating immune responses. In the context of needle-free delivery approach, the conjunctiva and its underlying CALT, with its possibility to detect antigens, taken up at the ocular surface, present them, and generate specific and nonspecific effector cells, would be an attractive choice for mucosal immunization, particularly against ocular infections. As the conjunctiva and CALT are interconnected with the nasal mucosa via the draining tear duct, antigens would additionally drain to nasal-associated lymphoid tissue (NALT). Actual developments and outlooks for conjunctival immunization will be presented.

Biography

Talin Barisani Asenbauer is an Associate Professor of Ophthalmology at Medical University of Vienna. She succeeded to obtain one of eight highly competitive peer-reviewed Laura Bassi Centre of Expertise grants from the Austrian Ministry of Economics allowing her to establish in 2010 with her industrial partners the Laura Bassi Centre of Expertise OCUVAC at the Center of Pathophysiology, Immunology and Infectiology, Medical University of Vienna. OCUVAC aims at achieving a multidisciplinary understanding of trachoma and ocular immunity that underpins the more translational research in the centre, while having the potential for the discovery of innovative drug-delivery systems and ocular vaccines. Her research interests include “Rare and neglected ocular diseases, uveitis, ocular immunology, inflammation & infection, drug delivery to ocular tissues and ocular vaccine development.

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