**Role of Non-Classical T cells in mucosal Immunity**

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The immune network controls homeostasis and inflammation of the mucosal barriers. Immune cells use their antigen receptors to respond to a wide range of insults originating from microbes and allergens. T cells, which are key effector cells in the immune system, engage their T cell receptors (TCRs) to recognize self and foreign antigens in the context of classical major histocompatibility complex (MHC) molecules, non-MHC MHC-like CD1 proteins, or MHC class I-related molecules. Recently, increasing evidence has demonstrated that T cells activated by non-canonical antigens are important in inflammatory diseases. This lecture focuses on recent studies examining the roles of non-classical antigen-presenting molecules and their reactive T cells in the immune system. Additionally, we describe the types of ligands that activate these unconventional T cells through the non-classical MHC pathway. Finally, we highlight recent advances in the understanding of the physiological functions of non-classical T cells in the mucosal organs such as skin and lung. Further investigation may result in the development of new therapeutic strategies for treating immune-related diseases.