



巴斯德讲坛-精英系列

Pasteur Colloquium-Elite

Temperature-induced peptide exchange on MHC I multimers for antigen specific T cell detection



[Speaker] Prof. MALGORZATA ANNA GARSTKA

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[Host] Prof. Qibin Leng

[Venue] A0201, Life Science Research Building

[Speaker Introduction]

09/2016 – present **Professor**, Xi'an Jiaotong University, Xi'an, China
 05/2009 – 08/2016 **Post-doctoral scientist**, laboratory of Prof. Jacques Neefjes, The Netherlands
 Cancer
 10/2008 – 04/2009 **Post-doctoral scientist**, laboratory of Prof. Sebastian Springer, Jacobs University
 09/2007 – 09/2008 **Post-doctoral scientist**, laboratory of Prof. Emmanuel Wiertz, Leiden University
 Medical Center
 04/2004 - 08/2007 **PhD in Biochemistry, 29/08/2007**, laboratory of Prof. Sebastian Springer, Jacobs
 University Bremen

[Abstract]

MHC multimers have been used for detection of antigen-specific T cells in infection, autoimmunity and cancer. However, traditional multimers are labor-intensive, and even multimers produced with the UV-exchanged MHC class I ligand present certain limitations. We developed temperature-mediated peptide exchange on MHC class I multimers as a "next generation" technology that provides more efficient, rapid and cost-effective alternative to conventional or UV-exchanged MHC class I multimers for the detection of antigen-specific T cells. We have designed MHC ligands that form stable complexes with MHC class I molecules at low temperatures, but degrade by exposure to a defined elevated temperature. Empty MHC molecules generated in such way can be loaded with different peptides. We demonstrate the value of this approach by staining CD8+ T cells specific for viral epitopes in mice infected with lymphocytic choriomeningitis virus or cytomegalovirus or by monitoring the viral immune constitution in an allogeneic stem cell transplantation patient.



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