

BIOLS SEMINAR SERIES

北京生命科学研究院精品讲座

报告时间：2013年8月5日（星期一）上午10:00

报告地点：中国科学院微生物研究所A203会议室

报告题目：Understanding the role of peptide promiscuity and expression level of MHC class I molecules in resistance to infectious disease.

报告人：Jim Kaufman. Professor, Department of Pathology and Department of Veterinary Medicine, University of Cambridge.

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Prof. Jim Kaufman's undergraduate studies were in chemistry at the University of Washington, and PhD studies with Jack Strominger at Harvard University. He joined the Basel Institute for Immunology for 14 years, working on a range of animals. Moving to the Institute for Animal Health at Compton UK for 12 years, his lab continued to examine the chicken MHC, now extended in Cambridge these last 7 years to other birds and the Tasmanian devil. Prof. Kaufman is the Member of American Association of Immunology, British Society of Immunology, Cambridge Immunology steering committee and so on. He is also the Hughes Hall and Society of Biology. At present, he is also the Reviewer for *Nature*, *Nat. immunol.*, *Science*, *EMBO J.* and *PNAS*, etc.

Prof. Kaufman was one of the people who identified and characterized the class II molecule HLA-DR encoded in the human MHC. Now he focus on Comparative Immunogenetics, and develops plausible scenarios for the origin and evolution of the adaptive immune system of jawed vertebrates. He continues to study the mechanisms of immunity in a variety of organisms, including chickens and the Tasmanian devil which is threatened with extinction by a transmissible tumour.

Key Publications:

- 2013. Reversible epigenetic down-regulation of MHC molecules by Devil Facial Tumour Disease illustrates immune escape by a contagious cancer, *Proc. Natl. Acad. Sci. USA* 110: 5103-8.
- 2011. The dominantly-expressed class I molecule of the chicken MHC is explained by co-evolution with the polymorphic peptide transporter (TAP) genes. *Proc. Natl. Acad. Sci. USA* 108: 8396-8401.
- 2007. Structures of an MHC class I molecule from B21 chickens illustrate promiscuous peptide binding. *Immunity* 27: 885-899.
- 2006. Peptide motifs of the single dominantly-expressed class I molecule can explain the striking MHC-determined response to Rous sarcoma virus in chickens. *Proc. Natl. Acad. Sci. USA* 103: 1434-1439
- 2004. Sequencing and comparative analysis of the chicken genome. *Nature* 432: 695-716.
- 2002. The origins of the adaptive immune system: whatever next? *Nature Immunology* 3: 1124-1125.
- 1999. The chicken B locus is a minimal essential major histocompatibility complex. *Nature* 401: 923-925..
- 1991. Mice lacking class II molecules. *Cell* 66: 1051-1066.
- 1991. Surface expression of the T cell receptor (TCR) chain in the absence of other TCR or CD3 proteins on immature T cells. *EMBO J.* 10: 93-100.
- 1989. The major histocompatibility complex of the chicken. *Trends Genetics* 57: 300-304.
- 1984. The class II molecules of the human and murine major histocompatibility complex. *Cell* 36: 1-13.
- 1982. HLA-DR light chain has a polymorphic N-terminal region and a conserved Ig-like C-terminal region. *Nature* 297: 694-696.
- 1980. The HLA-DR antigens have polymorphic light chains and invariant heavy chains as assessed by lysine-containing tryptic peptide analysis. *J. Exp. Med.* 152: 37s-53s.
- 1980. Induction of secondary cytotoxic T lymphocytes by liposomes containing HLA-DR antigens. *Nature* 283: 495-497.
- 1977. Purification and structural characterization of human HLA-linked B-cell antigens. *Nature* 268: 213-218.

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