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About

Peter Lane is Professor of Clinical Immunology and a Theme Lead in the MRC Centre for Immune Regulation.

CD4 T cells play a pivotal role regulating both protective but also pathogenic immune responses. Peter Lane's research focuses cellular and molecular mechanisms that control the development of CD4 effector and memory T cells. Major grant funding comes in the form of Programme Grants from MRC and The Wellcome Trust.

Qualifications

- FRCP (2004)
- FRCPath (Immunology) 1997
- PhD (Birmingham) 1987
- MBChB (Edinburgh) 1980

Biography

Peter Lane studied medicine at Edinburgh University. After receiving his MRCP in 1983, he was supported by a Wellcome Trust Clinical Fellowship to do a PhD with Ian Maclennan. Between 1988 and 1990 he spent two years in Seattle, USA at the University of Washington with Ed Clark and Jeff Leadbetter, and then a further six years as a member of the Basel Institute for Immunology in Switzerland, before returning to Birmingham in 1997. Following project grant and then programme grant support from the Wellcome Trust, support from Peter was appointed to a Chair in Clinical Immunology in 2005.

He has been an invited participant in the MRC clinical research training fellowship committee, and also the Academy of Finland grants review panels.

Teaching

- **BMedSci (/undergraduate/courses/med/medical-sci.aspx)**
- **2nd MBChB (/undergraduate/courses/med/medicine.aspx)**
- **3rd MBChB Module Co-ordinator in immunology (/undergraduate/courses/med/medical-sci.aspx)**
- **Intercalated BMedSci Co-ordinator immunology (/undergraduate/courses/med/medical-sci.aspx)**

Postgraduate supervision

Peter supervises doctoral and post doctoral research students in the areas of CD4 T cell biology.

If you are interesting in studying any of these subject areas please contact Peter on the contact details above, or for any general doctoral research enquiries, please email: **dr@contacts.bham.ac.uk (mailto:dr@contacts.bham.ac.uk)** or call +44 (0)121 414 5005.

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Research

RESEARCH THEMES

T-cell biology, CD4 T-cell Tolerance and Immunity.

RESEARCH ACTIVITY

Overview

With Graham Anderson, our groups focus on the molecular and cellular basis of CD4 T cell responses in particular. Although are respective focuses are on the generation of tolerance in thymus versus protective CD4 responses in the periphery, it has been highly synergistic to have an integrated approach as tolerance and immunity go hand in hand. In particular it has been extremely fruitful to study the role of lymphoid tissue inducer cells in that are important for the generation of CD4 memory in secondary lymphoid organs, I thymus where they are implicated tolerance induction.

Key findings are:

(1) The critical role of the TNF receptors, OX40 and CD30 is CD4 effector and memory T cells

(2) The critical role of lymphoid tissue inducer cells in maintaining CD4 T cell memory

(3) The critical role of thymic lymphoid tissue inducer cells in the induction of AIRE in the embryonic thymus.

Key Publications

Kim, M.Y., F.M. Gaspal, H.E. Wiggett, F.M. McConnell, A. Gulbranson-Judge, C. Raykundalia, L.S. Walker, M.D. Goodall, and P.J. Lane. 2003. CD4(+)CD3(-) accessory cells costimulate primed CD4 T cells through OX40 and CD30 at sites where T cells collaborate with B cells. Immunity 18:643-654.

Gaspal, F.M., M.Y. Kim, F.M. McConnell, C. Raykundalia, V. Bekiaris, and P.J. Lane. 2005. Mice deficient in OX40 and CD30 signals lack memory antibody responses because of deficient CD4 T cell memory. J. Immunol. 174:3891-3896.

Gaspal, F., V. Bekiaris, M. Kim, D. Withers, S. Bobat, I. MacLennan, G. Anderson, P.J. Lane, and A.F. Cunningham. 2008. Critical Synergy of CD30 and OX40 Signals in CD4 T Cell Homeostasis and Th1 Immunity to Salmonella. J. Immunol. 180:2824–2829.

Withers, D.R., E. Jaensson, F. Gaspal, F.M. McConnell, B. Eksteen, G. Anderson, W.W. Agace, and P.J. Lane. 2009. The survival of memory CD4+ T cells within the gut lamina propria requires OX40 and CD30 signals. J. Immunol. 183:5079-5084.

Other activities

Peter is a clinical immunologist that sees patients with immunodeficiency, allergy and autoimmunity at the UHB and Heartlands Trust

He has served on the Grants review panel of Asthma UK, MRC and the Academy of Finland.

Publications

Glanville, S.H., V. Bekiaris, E.J. Jenkinson, P.J. Lane, G. Anderson, and D.R. Withers. 2009. Transplantation of embryonic spleen tissue reveals a role for adult non-lymphoid cells in initiating lymphoid tissue organization. Eur. J. Immunol. 39:280-289.

Lane, P.J., F.M. McConnell, D. Withers, F. Gaspal, M. Saini, and G. Anderson. 2009. Lymphoid tissue inducer cells: bridges between the ancient innate and the modern adaptive immune systems. Mucosal Immunol 2:472-477.

Roberts, N.A., G.E. Desanti, D.R. Withers, H.R. Scott, W.E. Jenkinson, P.J. Lane, E.J. Jenkinson, and G. Anderson. 2009. Absence of thymus crosstalk in the fetus does not preclude hematopoietic induction of a functional thymus in the adult. Eur. J. Immunol. 39:2395-2402.

Withers, D.R., E. Jaensson, F. Gaspal, F.M. McConnell, B. Eksteen, G. Anderson, W.W. Agace, and P.J. Lane. 2009. The survival of memory CD4+ T cells within the gut lamina propria requires OX40 and CD30 signals. J. Immunol. 183:5079-5084.

Hou, T.Z., M.Z. Mustafa, S.J. Flavell, F. Barrington, E.J. Jenkinson, G. Anderson, P.J. Lane, D.R. Withers, and C.D. Buckley. 2010. Splenic stromal cells mediate IL-7 independent adult lymphoid tissue inducer cell survival. Eur. J. Immunol. 40:359-365.

Lane, P.J.L., F.M. McConnell, D. Withers, F. Gaspal, M. Saini, and G. Anderson, editors. 2010. Lymphoid Tissue Inducer Cells and the Evolution of CD4 Dependent High-Affinity Antibody Responses. Academic Press, Burlington. 159-176 pp.

Serre, K., E. Mohr, F. Gaspal, P.J. Lane, R. Bird, A.F. Cunningham, and I.C. Maclennan. 2010. IL-4 directs both CD4 and CD8 T cells to produce Th2 cytokines in vitro, but only CD4 T cells produce these cytokines in response to alum-precipitated protein in vivo. Mol. Immunol. 47:1914-1922.

White, A.J., K. Nakamura, W.E. Jenkinson, M. Saini, A.J. Sinclair, B. Seddon, P. Narendran, K. Pfeffer, T. Nitta, Y. Takahama, J.H. Caamano, P.J.L. Lane, E.J. Jenkinson, and G. Anderson. 2010. Lymphotoxin Signals from Positively Selected Thymocytes Regulate the Terminal Differentiation of Medullary Thymic Epithelial Cells. J. Immunol. 185:

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