

Professor Martin Rowe PhD, FSB

Professor of Tumour Virology

Contact details

Telephone **+44 (0) 121 414 7144** (tel: **+44 121 414 7144**)

Email **m.rowe@bham.ac.uk** (mailto: **m.rowe@bham.ac.uk**)

School of Cancer Sciences



About

Martin Rowe is Professor of Tumour Virology and heads the Viral Oncology Research Theme within the College of Medical and Dental Sciences.

Martin has published more than 160 research papers in scientific journals as well as reviews and book chapters in the fields of virology, cancer and tumour immunology. He has received major grants from Cancer Research UK, Leukaemia Lymphoma Research, the Wellcome Trust and the Medical Research Council.

Qualifications

- PhD Immunology 1980
- BSc (Hons) Biochemistry 1976

Biography

Martin Rowe graduated with a BSc (Hons) in Biochemistry from London University in 1976. He went on to study for a PhD in Immunology at the MRC Clinical Research Centre at Northwick Park Hospital before taking up his first Postdoctoral position in 1979 with Professor Anthony Epstein in Bristol. This marked the start of Martin's research on the Epstein-Barr virus (EBV).

Martin first moved to Birmingham in 1984, joining the new Institute of Cancer Studies. Following a year at the Karolinska Institute in Stockholm, Martin became one of the first recipients of the new Wellcome Trust Senior Research Fellowship in Basic Biomedical Sciences. In 1995 Martin relocated from Birmingham to the Wales College of Medicine in Cardiff as Professor of Cell Biology; this period included 5 years as Head of the Department of Infection & Immunity. Finally, in 2005 Martin returned once more to Birmingham to a Chair of Tumour Virology, where he has re-established an active research group continuing his work on EBV.

Postgraduate supervision

Martin has supervised 16 non-clinical PhD students and 3 Clinical Research Training Fellows studying for PhD.

Research

Research Themes

Viral Oncology, Tumour Immunology

Research Activity

Epstein-Barr virus (EBV)

The consistent themes of Martin's research since 1980 has been the role of EBV in pathogenesis of lymphoma, and the mechanisms by which this pathogen is normally carried for life as an asymptomatic infection by the vast majority of adults worldwide. Most recently, his work has included a more translational element with the aim of applying the acquired knowledge of EBV biology and pathogenesis to the design of rational therapies.

Much of the Rowe-group's earlier work was focused on the virus-host interactions with B lymphocytes, in which the virus establishes latent infection in the persistent infected host. This work laid the foundations for understanding of the pathogenesis of Burkitt's lymphoma, Hodgkin's lymphoma and lymphomas of immunosuppressed patients. More recently, the group has also been investigating EBV-associated lymphomas of NK cell and T cell origin.

Key research achievements include:

- First identification of a restricted pattern of latent gene expression in an Epstein-Barr virus (EBV) associated malignancies
- Demonstration that the viral and cellular phenotype combine to evade immune responses in an EBV-associated tumour, Burkitt's lymphoma.
- The role of the EBV oncogene product, LMP1, in regulating cell survival and antigen presentation
- Structure-function analysis of LMP1, resulting in the first identification of two functional domains of the molecule responsible for signal transduction via NF- κ B.
- Identification and characterisation of mechanisms by which EBV interferes with antigen presentation during lytic cycle
- The identification of novel LMP2A transcripts encoding targets for immunotherapy

Martin's work is highly cited, with an average of around 83 citations per article (ResearcherID B-2880-2009)

Publications

Fox CP, Shannon-Lowe C, Rowe M (2011) Deciphering the role of Epstein-Barr virus in the pathogenesis of T and NK cell lymphoproliferations. *Hepesviridae* 2: 8

Shannon-Lowe C, Rowe M (2011) Epstein-Barr virus infection of polarized epithelial cells via the basolateral surface by memory B cell-mediated transfer infection. *PLoS*

Zuo J, Quinn LL, Tamblyn J, Thomas WA, Feederle R, Delecluse HJ, Hislop AD, and Rowe M. (2011) The Epstein-Barr virus-encoded BILF1 protein modulates immune recognition of endogenously processed antigen by targeting MHC class I molecules trafficking on both the exocytic and endocytic pathways. **J Virol.** 85:1604-1614

Amoroso R, Fitzsimmons L, Thomas WA, Kelly GL, Rowe M, and Bell AI. (2011) Quantitative Studies of Epstein-Barr Virus-Encoded MicroRNAs Provide Novel Insights into Their Regulation. **J Virol.** 85:996-1010

Anderton JA, Bose S, Vockerodt M, Vrzalikova K, Wei W, Kuo M, Helin K, Christensen J, Rowe M, Murray PG, Woodman CB (2011) The H3K27me3 demethylase, KDM6B, is induced by Epstein-Barr virus and over-expressed in Hodgkin's Lymphoma. **Oncogene** 30: 2037-43

Dellis O, Arbabian A, Papp B, Rowe M, Joab I, Chomienne C (2011) Epstein-Barr virus latent membrane protein 1 increases calcium influx through store-operated channels in B lymphoid cells. **J Biol Chem** 286: 18583-18592

Leonard S, Wei W, Anderton J, Vockerodt M, Rowe M, Murray PG, Woodman CB (2011) Epigenetic and transcriptional changes which follow Epstein-Barr Virus infection of germinal center B cells and their relevance to the pathogenesis of Hodgkin's lymphoma. **J Virol.** 85: 9568-77

Vrzalikova K, Vockerodt M, Leonard S, Bell A, Wei W, Schrader A, Wright KL, Kube D, Rowe M, Woodman CB, Murray PG (2011) Downregulation of BLIMP1-alpha by the EBV oncogene, LMP1, disrupts the plasma cell differentiation program and prevents viral replication in B cells: implications for the pathogenesis of EBV-associated B cell lymphomas. **Blood** 117: 5907-5917

Fox CP, Haigh TA, Taylor GS, Long HM, Lee SP, Shannon-Lowe C, O'Connor S, Bollard CM, Iqbal J, Chan WC, Rickinson AB, Bell AI, and Rowe M. (2010) A novel latent membrane 2 transcript expressed in Epstein-Barr virus-positive NK- and T-cell lymphoproliferative disease encodes a target for cellular immunotherapy. **Blood.** 116:3695-3704

Fox CP, Shannon-Lowe C, Gothard P, Kishore B, Neilson J, O'Connor N, and Rowe M. (2010) Epstein-Barr virus-associated hemophagocytic lymphohistiocytosis in adults characterized by high viral genome load within circulating natural killer cells. **Clin Infect Dis.** 51:66-69

Zuo J, Currin A, Griffin BD, Shannon-Lowe C, Thomas WA, Rensing ME, Wiertz EJ, and Rowe M. (2009) The Epstein-Barr virus G-protein-coupled receptor contributes to immune evasion by targeting MHC class I molecules for degradation. **PLoS Pathog.** 5:e1000255

Kelly GL, Long HM, Stylianou J, Thomas WA, Leese A, Bell AI, Bornkamm GW, Mautner J, Rickinson AB, and Rowe M. (2009) An Epstein-Barr virus anti-apoptotic protein constitutively expressed in transformed cells and implicated in burkitt lymphomagenesis: the Wp/BHRF1 link. **PLoS Pathog.** 5:e1000341

Shannon-Lowe C, Adland E, Bell AI, Delecluse HJ, Rickinson AB, and Rowe M. (2009) Features distinguishing Epstein Barr virus infections of epithelial cells and B cells: Viral genome expression, genome maintenance, and genome amplification. **J Virol.** 83:7749-7760

