

Professor Jane McKeating B.Sc. PhD

Professor of Molecular Virology
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About

Jane McKeating is the Professor of Molecular Virology and Deputy Head of the School of Immunity and Infection.

She set up the HCV group at the Medical School in January 2005. The group occupies 3 adjoining labs on the 5th floor of the IBR, 2 cat 3 labs and have shared access to all of the facilities in the MRC Centre for Immune Regulation. The group is involved in a wide range of local and international collaborative studies.

Qualifications

- PhD 1987
- BSc (Hons) 1982

Teaching

TEACHING PROGRAMMES

- [Medical Science BMedSc \(/undergraduate/courses/med/biomedical-science.aspx\)](#)

Postgraduate supervision

The HCV group is actively involved in the supervision and mentoring of doctoral research (Ph.D.) students in the all areas of clinically relevant HCV disease.

If you are interesting in studying in this area please contact us using the contact details above, or for more general doctoral research enquiries, please email: dr@contacts.bham.ac.uk (mailto: dr@contacts.bham.ac.uk) or call +44 (0)121 414 5005.

For a full list of available Doctoral Research opportunities, please visit our [Doctoral Research programme listings \(http://www.bham.findaphd.com/?es=y&apl=y&aplt=&show\)](http://www.bham.findaphd.com/?es=y&apl=y&aplt=&show)

Research

RESEARCH THEMES

Viral hepatitis, virus entry and viral Oncology

RESEARCH ACTIVITY

Our research focuses on understanding the mechanism of hepatitis C virus (HCV) entry into the liver and how the virus persists to evade the innate and adaptive immune responses. Development of multi-cellular systems comprising hepatocytes and non-parenchymal liver cells have enabled us to uncover new pathways that regulate viral replication. We are exploring the impact of viral and bacterial co-infection on HCV pathogenesis and the role persistent HCV replication plays in the development of hepatocellular carcinoma.

Other activities

Awards and Distinctions:

Herpes Vaccine Research Trust Prize, Society of General Microbiology - 1988.

Medical Research Council Senior AIDS Research Fellowship -1990

Research Fellowship of the Lister Institute of Preventive Medicine - 1994

Fleming Award, Society of General Microbiology - 1995.

Royal Society Wolfson Merit Award 2006

Australian ACH2 Invited Lecture 2009

Oxford University Distinguished Virology Lecture 2010

Membership of committees & boards:

NIH special study section on Virology

Veterans Administration Merit Review Subcommittee.

Editorial boards for Virology, Virology Journal, PLoS One, Hepatology

Scientific Advisory Boards for University of Essen, Astex Pharmaceuticals and Arrow Pharmaceuticals

Publications

- **Paracrine signals from liver sinusoidal endothelium regulate hepatitis C virus replication.** (<http://www.ncbi.nlm.nih.gov/pubmed/23775568>) Rowe IA, Galsin SK, Wilson GK, Parker R, Durant S, Lazar C, Branza-Nichita N, Bicknell R, Adams DH, Balfe P, McKeating JA. Hepatology (Baltimore, Md.) 2013:
- **An alpaca nanobody inhibits hepatitis C virus entry and cell-to-cell transmission.** (<http://www.ncbi.nlm.nih.gov/pubmed/23553604>) Tarr AW, Lafaye P, Meredith L, Damier-Piolle L, Urbanowicz RA, Meola A, Jestin JL, Brown RJ, McKeating JA, Rey FA, Ball JK, Krey T. Hepatology (Baltimore, Md.) 2013:
- **HRas signal transduction promotes hepatitis C virus cell entry by triggering assembly of the host tetraspanin receptor complex.** (<http://www.ncbi.nlm.nih.gov/pubmed/23498955>) Zona L, Lupberger J, Sidahmed-Adrar N, Thumann C, Harris HJ, Barnes A, Florentin J, Tawar RG, Xiao F, Turek M, Durand SC, Duong FH, Heim MH, Cosset FL, Hirsch I, Samuel D, Brino L, Zeisel MB, Le Naour F, McKeating JA, Baumert TF. Cell host & microbe 2013 13: 302-13
- **A bile acid transporter as a candidate receptor for hepatitis B and D virus entry.** (<http://www.ncbi.nlm.nih.gov/pubmed/23453223>) Xiao F, McKeating JA, Baumert TF. Journal of hepatology 2013 58: 1246-8
- **Early infection events highlight the limited transmissibility of hepatitis C virus in vitro.** (<http://www.ncbi.nlm.nih.gov/pubmed/23353869>) Meredith LW, Harris HJ, Wilson GK, Fletcher NF, Balfe P, McKeating JA. Journal of hepatology 2013 58: 1074-80
- **Hepatoma polarization limits CD81 and hepatitis C virus dynamics.** (<http://www.ncbi.nlm.nih.gov/pubmed/23126643>) Harris HJ, Clerte C, Farquhar MJ, Goodall M, Hu K, Rassam P, Dosset P, Wilson GK, Balfe P, Ijzendoorn SC, Milhiet PE, McKeating JA. Cellular microbiology 2013 15: 430-45
- **In silico directed mutagenesis identifies the CD81/claudin-1 hepatitis C virus receptor interface.** (<http://www.ncbi.nlm.nih.gov/pubmed/22897233>) Davis C, Harris HJ, Hu K, Drummer HE, McKeating JA, Mullins JG, Balfe P. Cellular microbiology 2012 14: 1892-903
- **Heterogeneous claudin-1 expression in human liver.** (<http://www.ncbi.nlm.nih.gov/pubmed/22807091>) Harris HJ, Wilson GK, Hübscher SG, McKeating JA. Hepatology (Baltimore, Md.) 2013 57: 854-5
- **Hepatitis C virus and the brain.** (<http://www.ncbi.nlm.nih.gov/pubmed/22497808>) Fletcher NF, McKeating JA. Journal of viral hepatitis 2012 19: 301-6
- **Over the fence or through the gate: how viruses infect polarized cells.** (<http://www.ncbi.nlm.nih.gov/pubmed/22401628>) Fletcher NF, Howard C, McKeating JA. Immunotherapy 2012 4: 249-51
- **Hepatitis C virus entry: beyond receptors.** (<http://www.ncbi.nlm.nih.gov/pubmed/22392805>) Meredith LW, Wilson GK, Fletcher NF, McKeating JA. Reviews in medical virology 2012 22: 182-93
- **Hepatitis C virus induces CD81 and claudin-1 endocytosis.** (<http://www.ncbi.nlm.nih.gov/pubmed/22318146>) Farquhar MJ, Hu K, Harris HJ, Davis C, Brimacombe CL, Fletcher SJ, Baumert TF, Rappoport JZ, Balfe P, McKeating JA. Journal of virology 2012 86: 4305-16
- **A dual role for hypoxia inducible factor-1 α in the hepatitis C virus lifecycle and hepatoma migration.** (<http://www.ncbi.nlm.nih.gov/pubmed/22178269>) Wilson GK, Brimacombe CL, Rowe IA, Reynolds GM, Fletcher NF, Stamataki Z, Bhogal RH, Simões ML, Ashcroft M, Afford SC, Mitry RR, Dhawan A, Mee CJ, Hübscher SG, Balfe P, McKeating JA. Journal of hepatology 2012 56: 803-9
- **Hepatitis C virus infects the endothelial cells of the blood-brain barrier.** (<http://www.ncbi.nlm.nih.gov/pubmed/22138189>) Fletcher NF, Wilson GK, Murray J, Hu K, Lewis A, Reynolds GM, Stamataki Z, Meredith LW, Rowe IA, Luo G, Lopez-Ramirez MA, Baumert TF, Weksler B, Couraud PO, Kim KS, Romero IA, Jopling C, Morgello S, Balfe P, McKeating JA. Gastroenterology 2012 142: 634-643.e6
- **Rituximab treatment in hepatitis C infection: an in vitro model to study the impact of B cell depletion on virus infectivity.** (<http://www.ncbi.nlm.nih.gov/pubmed/21991396>) Stamataki Z, Tilakaratne S, Adams DH, McKeating JA. PLoS one 2011 6: e25789
- **Immunization of human volunteers with hepatitis C virus envelope glycoproteins elicits antibodies that cross-neutralize heterologous virus strains.** (<http://www.ncbi.nlm.nih.gov/pubmed/21788452>) Stamataki Z, Coates S, Abrignani S, Houghton M, McKeating JA. The Journal of infectious diseases 2011 204: 811-3
- **EGFR and EphA2 are host factors for hepatitis C virus entry and possible targets for antiviral therapy.** (<http://www.ncbi.nlm.nih.gov/pubmed/21516087>) Lupberger J, Zeisel MB, Xiao F, Thumann C, Fofana I, Zona L, Davis C, Mee CJ, Turek M, Gorke S, Royer C, Fischer B, Zahid MN, Lavillette D, Fresquet J, Cosset FL, Rothenberg SM, Pietschmann T, Patel AH, Pessaux P, Dofoël M, Raffelsberger W, Poch O, McKeating JA, Brino L, Baumert TF. Nature medicine 2011 17: 589-95
- **Neutralizing antibody-resistant hepatitis C virus cell-to-cell transmission.** (<http://www.ncbi.nlm.nih.gov/pubmed/20962076>) Brimacombe CL, Grove J, Meredith LW, Hu K, Syder AJ, Flores MV, Timpe JM, Krieger SE, Baumert TF, Tellinghuisen TL, Wong-Staal F, Balfe P, McKeating JA. Journal of virology 2011 85: 596-605
- **Small molecule scavenger receptor BI antagonists are potent HCV entry inhibitors.** (<http://www.ncbi.nlm.nih.gov/pubmed/20932595>) Syder AJ, Lee H, Zeisel MB, Grove J, Soulier E, Macdonald J, Chow S, Chang J, Baumert TF, McKeating JA, McKelvey J, Wong-Staal F. Journal of hepatology 2011 54: 48-55
- **Hepatitis C virus infection of neuroepithelioma cell lines.** (<http://www.ncbi.nlm.nih.gov/pubmed/20538002>) Fletcher NF, Yang JP, Farquhar MJ, Hu K, Davis C, He Q, Dowd K, Ray SC, Krieger SE, Neyts J, Baumert TF, Balfe P, McKeating JA, Wong-Staal F. Gastroenterology 2010 139: 1365-74
- **Mechanisms of viral entry: sneaking in the front door.** (<http://www.ncbi.nlm.nih.gov/pubmed/20446005>) Thorley JA, McKeating JA, Rappoport JZ. Protoplasma 2010 244: 15-24
- **Development of novel therapies for hepatitis C.** (<http://www.ncbi.nlm.nih.gov/pubmed/20417376>) Lemon SM, McKeating JA, Pietschmann T, Frick DN, Glenn JS, Tellinghuisen TL, Symons J, Furman PA. Antiviral research 2010 86: 79-92
- **Claudin association with CD81 defines hepatitis C virus entry.** (<http://www.ncbi.nlm.nih.gov/pubmed/20375010>) Harris HJ, Davis C, Mullins JG, Hu K, Goodall M, Farquhar MJ, Mee CJ, McCaffrey K, Young S, Drummer H, Balfe P, McKeating JA. The Journal of biological chemistry 2010 285: 21092-102
- **Hepatitis C virus infection reduces hepatocellular polarity in a vascular endothelial growth factor-dependent manner.** (<http://www.ncbi.nlm.nih.gov/pubmed/19944696>) Mee CJ, Farquhar MJ, Harris HJ, Hu K, Ramma W, Ahmed A, Maurel P, Bicknell R, Balfe P, McKeating JA. Gastroenterology 2010 138: 1134-42
- **Hepatoma cell density promotes claudin-1 and scavenger receptor BI expression and hepatitis C virus internalization.** (<http://www.ncbi.nlm.nih.gov/pubmed/19776133>) Schwarz AK, Grove J, Hu K, Mee CJ, Balfe P, McKeating JA. Journal of virology 2009 83: 12407-14
- **The complexities of hepatitis C virus entry.** (<http://www.ncbi.nlm.nih.gov/pubmed/19604595>) Balfe P, McKeating JA. Journal of hepatology 2009 51: 609-11
- **Polarization restricts hepatitis C virus entry into HepG2 hepatoma cells.** (<http://www.ncbi.nlm.nih.gov/pubmed/19357163>) Mee CJ, Harris HJ, Farquhar MJ, Wilson G, Reynolds G, Davis C, van IJzendoorn SC, Balfe P, McKeating JA. Journal of virology 2009 83: 6211-21
- **Hepatitis C virus association with peripheral blood B lymphocytes potentiates viral infection of liver-derived hepatoma cells.**

