

BIOGRAPHICAL SKETCH

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NAME Walker, Christopher M.	POSITION TITLE Professor		
eRA COMMONS USER NAME WalkerC1			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Guelph, Ontario Canada	B.Sc.	1976-1981	Microbiol and Immunology
McMaster University, Hamilton, Ontario, Canada	Ph.D.	1981-1985	Virology and Immunology
Univ of California at San Francisco, San Francisco,	Fellow	1985-1989	Virology and Immunology

EMPLOYMENT

- 1989 – 1992: Principal Scientist, Virology and Vaccine Development, Chiron Corporation Emeryville, CA.
1993 – 1994: Senior Scientist, Chiron Corporation.
1994 – 1996: Associate Director, Chiron Corporation.
1996 – 1998: Director, Chiron Corporation.
1998 – 2002: Associate Professor, Department s of Pediatrics and Molecular Virology, Immunology, and Medical
2002 – Present: Director, Center for Vaccines and Immunity, Children’s Research Institute, Columbus, OH.
Genetics, The Ohio State University, Columbus, OH.
2002 – Present: Professor, Departments of Pediatrics and Molecular Virology, Immunology, and Medical Genetics, The
Ohio State University, Columbus, OH.
2005 – Present: The Wilby S.Cowan Endowed Chair in Pediatric Research, College of Medicine and Public Health, The
Ohio State University, Columbus, OH.

COMMITTEES and HONORS

- 1993 – 1997: Study Section Member, NIAID Study Section (ARR-A) on AIDS and Related Research
1997 – 2000: Editorial Board, Hepatology
2000 – 2002: National Scientific Advisory Committee, Southwest Foundation for Biomedical Research
2000 – 2003: Study Section Member, NIAID Study Section (ARR-A) on AIDS and Related Research
2003 – 2007: Section Editor, Journal of Immunology
2003 –
Editorial Board Member, Journal of Virology
2004 –
Editorial Board Member, Hepatology
2004 – 2006: Chair, Hepatology Panel, United States-Japan Co-operative Medical Sciences Program
2005 –
R37 MERIT (Method to Extend Research in Time) Award, NIAID, NIH
2006 –
Fellow, American Association for the Advancement of Science
2006 –
Editorial Advisory Board, Journal of Experimental Medicine
2008-2012 Member, National Advisory Allergy and Infectious Diseases Council, NIH

Ad Hoc Reviewer: Journal Immunol, Cell, AIDS, Journal Infectious Dis, Journal of Virology, Science, Nature Medicine,
Clin Diag Laboratory Immunology, Proc Natl Acad Science, Gastroenterology, Hepatology, Virology, Am J of Pathol

SELECTED PUBLICATIONS IN PEER REVIEW JOURNALS

1. Doe B, Selby M, Barnett S, Baenziger J, and **Walker CM**. 1996. Induction of cytotoxic T lymphocytes by intramuscular immunization with plasmid DNA is facilitated by bone marrow-derived cells. Proc Natl Acad Sci 93:8578-8583.
2. Selby M, Doe B and **Walker CM**. 1997. Virus-specific CTL activity elicited by co-immunization with HIV-1 genes regulated by the bacteriophage T7 promoter and T7 RNA polymerase protein. J. Virol 71:7827-7831.
3. Manning WC, Pallard X, Zhou SZ, Bland MP, Lee AY, Hong K, **Walker CM**, Escobedo JA and Dwarki V. 1997. Genetic immunization with adeno-associated virus vectors expressing herpes simplex virus type 2 glycoproteins B and D. J. Virol. 71:7960-7962.
4. Selby M, Erickson A, Dong C, Cooper S, Parham P, Houghton M and **Walker CM**. 1999. Hepatitis C Virus Envelope Glycoprotein E1 Originates in the Endoplasmic Reticulum and Requires Cytoplasmic Processing for Presentation by Class I MHC Molecules. J Immunol 162:669-676.

5. Cooper S, Erickson AL, Adams E, Kansopon J, Weiner A, Chien D, Houghton M, Parham P and **Walker CM**. 1999. Analysis of a Successful Immune Response against Hepatitis C Virus. *Immunity* 10:439-449.
6. Furchner M, Erickson AL, Allen T, Watkins D, Sette A, Johnson PR and **Walker CM**. 1999. The simian Immunodeficiency Virus Envelope Glycoprotein Contains Two Epitopes Presented by the Manu-A*01 Class I Molecule. *J Virol*. 73 (10):8035-8039.
7. Paliard X, Liu Y, Wagner R, Wolf H, Baenzinger J and **Walker CM**. 2000. Priming of strong broad and long-lived HIV-1p55gag-specific CTL following administration of a virus-like particle vaccine in rhesus macaques. *AIDS Res. Hum. Retro.* 16(3):273-282.
8. Sidney J, Dzuris JL, Newman MJ, Johnson RP, Amitinder K, **Walker CM**, Appella E, Mothe B, Watkins DI, Sette A. 2000. Definition of the mamu A*01 peptide binding specificity: application to the identification of wild-type and optimized ligands from simian immunodeficiency virus regulatory. *J Immunol* 165:6387-6399.
9. McKinney DM, Erickson AL, **Walker CM**, Thimme R, Chisari FV, Sidney J and Sette A. 2000. Identification of five different patr class I molecules that bind HLA supertype peptides and definition of their peptide binding motifs. *J Immunol* 165:4414-4422.
10. Erickson AL, Kimura Y, Igarashi S, Eichelberger J, Houghton M, Sidney J, McKinney D, Sette A, Hughes AL and **Walker CM**. 2001. The outcome of hepatitis C virus infection is predicted by escape mutations in epitopes targeted by cytotoxic T lymphocytes. *Immunity* 15:883-895.
11. Paliard X, Doe B, Selby MJ, Hartog K, Lee AY, Burke RL and **Walker CM** 2001. Induction of Herpes Simplex Virus (HSV) gB-specific cytotoxic T lymphocytes in TAP1-deficient mice by genetic immunization but not HSV infection. *Virology* 282:56-64.
12. Buck CB, Shen X, Egan MA, Pierson TC, **Walker CM**, Siliciano RF. 2001. The human immunodeficiency virus type 1 gag gene encodes an internal ribosome entry site. *J Virol* 75:181-191.
13. **Walker CW**. Cell-mediated immunity & the outcome of HCV infection in chimpanzees. 2002. *Front Viral Hepatitis*, 59-70.
14. Davis NL, West A, Reap E, MacDonald G, Collier M, Dryga S, Maughan M, Connell M, **Walker CM**, McGrath K, Cecil C, Ping LH, Frelinger J, Olmsted R, Keith P, Swanstrom R, Williamson C, Johnson P, Montefiori D, Johnston RE. 2002. Alphavirus replicon particles as candidate HIV vaccines. *IUBMB Life* 53:209-211.
15. Meyer-Olson D, Brady KW, Blackard JT, Allen TM, Islam S, Shoukry NH, Hartman K, **Walker CM**, and Kalams SA. 2003. Analysis of the TCRb variable gene repertoire in chimpanzees: identification of functional monologs to human pseudogenes. *J Immunol* 170:4161-4169.
16. Shoukry NH, Grakoui A, Houghton M, Chien DY, Ghayeb J, Reimann KA, and **Walker CM**. 2003. Memory CD8+ T-cells are required for protection from persistent hepatitis C virus infection. *J Exp Med* 197:1645-1655.
17. Woollard DJ, Shoukry NH, Murthy KK, Campbell KJ, Grakoui R and **Walker CM**. 2003. Characterization of HCV-specific Patr class II restricted CD4+ T-cell responses in an acutely infected chimpanzee. *Hepatology* 38:1297-1306.
18. Sundaram R, Sun Y, **Walker CM**, Lemonnier FA, Jacobson S, Kaumaya PT. 2003. A novel multivalent human CTL peptide construct elicits robust cellular immune responses in HLA-A*0201 transgenic mice: implications for HTLV-1 vaccine design. *Vaccine* 20:2767-81.
19. Grakoui A, Shoukry NH, Woollard D, Han J-H, Hanson HL, Ghayeb J, Murthy KK, Rice CM, and **Walker CM**. 2003. HCV persistence and immune evasion in the absence of memory T cell help. *Science* 302:659-662.
20. Sette A, Sidney J, Livingston BD, Dzuris JL, Crimi C, **Walker CM**, Southwood S, Collins EJ, Hughes AL. 2003. Class I molecules with similar peptide-binding specificities are the result of both common ancestry and convergent evolution. *Immunogenetics*. 54(12):830-841.
21. Shoukry NH, Sidney J, Sette A, and **Walker CM**. 2004. Conserved hierarchy of helper T cell responses in a chimpanzee during primary and secondary hepatitis C virus infections. *J Immunol* 172:483-492.
22. Shoukry NH, Cawthon AG and **Walker CM**. 2004. Cell-mediated immunity and the outcome of hepatitis C virus infection. *Ann Rev Microbiol* 58:391-424.
23. Larsson M, Babcock E, Grakoui A, Shoukry NH, Rice C, **Walker CM** and Bhardwaj N. 2004. Lack of phenotypic and functional impairment in dendritic cells from chimpanzees chronically infected with Hepatitis C virus. *J Virol* 78:6151-6161.
24. Meyer-Olson D, Shoukry NH, Brady KW, Kim H, Olson DP, Hartman K, Shintani AK, **Walker CM**, Kalams SA. 2004. Limited T cell receptor diversity of HCV-specific T cell responses is associated with CTL escape. *J Exp Med* 200:307-319.
25. Kimura Y, Gushima T, Rawale S, Kaumaya P, and **Walker CM**. Escape mutations alter proteasome processing of major histocompatibility complex class I-restricted epitopes in persistent hepatitis C virus infection. *J Virol* 79(8):4870-4876, 2005.
26. Bowen D and **Walker CM**. Mutational escape from CD8+ cell immunity: HCV evolution, from chimpanzees to man. *J Exp Med* 201:1709-1714, 2005. (Commentary Review)

27. Bowen D and **Walker CM**. Adaptive immune responses in acute and chronic hepatitis C virus infection. *Nature* 436:946-952, 2005.
28. Lemon SM, **Walker CM**, Alter MJ, and Yi M. Hepatitis C Viruses. *Fields Virology*. Chapter 35, 2006.
29. Grakoui A, Wherry EJ, Hanson HL, **Walker C**, Ahmed R. Turning on the off switch: Regulation of anti-viral T cell responses in the liver by the PD-1/PD-L1 pathway. *J Hepatol* 45(4):468-472, 2006.
30. Bowen D, Shoukry NH, Grakoui A, Fuller MJ, Cawthon AG, Dong C, Hasselschwert DL, Brasky KM, Freeman GJ, Seth NP, Wucherpennig KW, Houghton M, and **Walker CM**. Variable patterns of programmed death-1 expression on fully functional memory T cells after spontaneous resolution of hepatitis C virus infection. *J Virol* 82(10):5109-14, 2008.
31. Velazquez VM, Bowen DG, and **Walker CM**. Silencing of T lymphocytes by antigen-driven programmed death in recombinant adeno-associated virus vector (rAAV)-mediated gene therapy. *Blood* 2008 (in press).

RESEARCH SUPPORT

Ongoing Research Support

R37 AI47367 (RO1 AI47367) Walker (PI) 08/15/99 – 12/31/09

NIH
HCV-specific T cell responses in chimpanzees
The major goal of this project is to assess the role of intra-hepatic HCV-specific CTL responses in chimpanzees with chronic and resolved infections.
Role: PI

1 U19 AI48231 Walker (PI) 08/01/00 – 05/31/10

NIH
HCV replication and immunity in chimpanzees
The major goal of this project is to investigate the host-virus relationship in acute and chronic phase of HCV infection.
Role: PI

1 RO1 AI060388 Walker (PI) 03/01/03 – 02/28/08

NIH
AAV Vectors for Prevention and Therapy of HCV Infection
The major goal of this project is to adapt recombinant adeno-associated virus (rAAV) vectors for prevention and possibly treatment of persistent hepatitis C virus (HCV) infection in humans.
Role: PI

DK066916 Bhardwaj (PI) 07/01/04 – 06/30/09

NIH
Dendritic cell mediated induction of anti-HCV Immunity
The major goal of this application is to define conditions of sensitizing chimpanzee dendritic cells with hepatitis C virus proteins and to determine if they can prime T lymphocytes in persistently infected animals.
Role: Co-PI

Ahmed (PI) 10/01/05 – 09/30/10

Gates Grand Challenge (NIH)
Immunological strategies for curing chronic hepatitis virus infection
The major goal of Project 2 of the proposed studies is the animal model will provide a direct test of whether inhibitory signals are delivered to HCV-specific T cells through the CD28-like molecules CTLA-4, PD-1, or BTLA.
Role: Co-PI

1 U54 NS055958-01 (Mendell)

07/01/07 – 06/30/11

NIH

Diverse strategies to correct the dystrophin gene using vascular delivery. Core D: Immunology Core

The major goal of this core is to function as the central facility for quantifying adaptive cellular and humoral immunity to AAV capsid and encoded transgene proteins in murine and monkey models of vector-mediated gene delivery.

RO1 HL081527-01A2 (Schaffer)

06/08/07 – 05/31/08

NIH

Engineering AAV vectors to evade antibody neutralization

The major goal of this project is to improve safety, efficiency, and expression stability of gene delivery technology.

NO1 AI 50008 (Clark)

09/01/07 – 08/31/09

NIH

HIV Vaccine Design and Development Teams

The major goal of this project is to develop and test a novel prophylactic HIV-1 vaccine based on recombinant adeno-associated virus vectors (rAAV).

Completed Research Support

PO1-AI 46023 Johnson (PI)

07/01/99 – 07/31/05

NIH

Correlates of efficacy of VEE-based SIV vaccines

The major goal of this project is to elucidate the immune correlates of efficacy in macaques immunized with SIV vaccines derived from the elegant Venezuelan Equine Encephalitis (VEE) virus replicon system (SIV-VRP).

Role: Co-PI

RO1 AI47226 Durbin (PI)

03/01/01 – 02/28/05

NIH

The role of interferon in respiratory syncytial virus pathogenesis

The major goals of this project are to 1) characterize respiratory syncytial virus (RSV) infection in knock-out mice lacking interferon (IFN) responsiveness; 2) to characterize cytokine profiles of immune cells mediating RSV protection/immunopathology in the presence and absence of IFN signaling, 3) to modify pathologic RSV vaccine responses by IFN- α/β ; and 4) to develop a vaccine strategy promoting strong induction of IFN- α/β .

Role: Co-PI