

**CURRICULUM VITAE
CHRISTINE J. HARLING-BERG**

Current Position:

Assistant Professor of Pediatrics, Research
Brown Medical School and
Memorial Hospital of Rhode Island

Education

Undergraduate

1978 B. A. (biology major) Boston University, *cum laude*

1976 Year abroad at Bristol University (physics, zoology, medicine)

Graduate

1989 Ph.D.(defended 9/88) Brown University, Physiology Section, Div. Biology and Medicine

Dissertation:"The Humoral Immune Response to Human Serum Albumin Infused into Cerebrospinal Fluid in the Rat"

Post-Graduate Training

1988-1989 Post-Doctoral Research Associate in Medical Sciences, Div. Biology and Medicine, Brown University.

1989-1991 Post-Doctoral Research Associate/Research Fellow, Physiology Section, Div. Biology and Medicine, Brown University and Dept. Surgery, Rhode Island Hospital.

1994 Research Consultant, Dept. Molecular Microbiology and Immunology, Brown University

Academic Appointments

1992-1993 Visiting Instructor, Dept. Biology, Framingham State College.

1993-1994 Visiting Assistant Professor, Summer Studies Program, Brown University.

1994-1999 Assistant Professor of Immunology, Research, Dept. Molecular Microbiology and Immunology, Brown University.

1999-present Assistant Professor of Pediatrics, Research, Dept. of Pediatrics, Brown Medical School and Memorial Hospital of Rhode Island

Other Appointments

1999 to present Medical Research Committee, Progeria Research Foundation (PRF), Inc.. Mission is to find a cure for children with Hutchinson-Guilford Progeria syndrome (HGPS; often called "accelerated aging syndrome"). Advise on funding of grants submitted to PRF. Participant in NIH-sponsored Progeria Workshop (2001), Genetics Consortium (2002). Progeria gene identified and published in Nature-genetics.

2005 to present Co-Organizer HGPS International Workshop (11/05, Boston, MA), Assist in speaker selection and grant writing to fund workshop

Post Graduate Honors/Awards

1991 Participant at Woods Hole Marine Biological Laboratory Course, "Pathogenesis of Neuroimmunological Diseases"

2003 Lecturer at Woods Hole Marine Biological Laboratory Course, Woods Hole, MA "Pathogenesis of Neuroimmunological Diseases"

Peer Reviewed Publications

1. Apelgren, K.N., D.M. Frim, **C.J. Harling-Berg**, P.H. Gander, M.C. Moore-Ede. Effectiveness of cyclic intragastric feeding as a circadian zeitgeber. *Physiol. Behav.* 34, 335-340, 1985.
2. **Harling-Berg, C.J.**, P. Knopf, H. Cserr- Role of cervical lymph nodes in the systemic humoral immune response to human serum albumin microinfused into CSF. *J. Neuroimmunol.* 25:185-193, 1989.
3. **Harling-Berg, C.J.**, P.M. Knopf, H.F. Cserr. Myelin basic protein infused into cerebrospinal fluid suppresses experimental autoimmune encephalomyelitis in the Lewis rat. *J. Neuroimmunol.* 35:45-91, 1991.
4. Cserr, H.F., M. DePasquale, **C.J. Harling-Berg**, J.T. Park, P.M. Knopf afferent and efferent arms of the humoral immune response to CSF-administered albumin in a rat model with normal blood-brain-barrier permeability. *J. Neuroimmunol.* 44:195-202, 1992.
5. Cserr, H.F., **C.J. Harling-Berg**, P.M. Knopf. Drainage of brain extracellular fluid into blood and deep cervical lymph and its immunological significance. *Brain Path.* 2:269-276, 1992.
6. Knopf, P.M., H.F.Cserr, S.C. Nolan, T.-Y. Wu, **C.J. Harling-Berg**. Physiology and immunology of lymphatic drainage of interstitial and cerebrospinal fluid from the brain. *Neuropath. and Appl. Neurobio.* 21: 175 -180, 1995.
7. Gordon, L.B., S.C. Nolan, P.M. Knopf, **C.J. Harling-Berg**. Growth of P511 mastocytoma cells in Balb/c mouse brain elicits afferent arm of cytotoxic immunity in the periphery without tumor elimination. A new tumor model for regional CNS immunity. *J. Immunol.* 159:2399-2408, 1997.
8. Knopf, P.M., **Harling-Berg, C.J.**, Cserr, H.F., Basu, D., Sirulnick, E.J., Nolan, S.C., Park, J.T., Keir, G., Thompson, E.J., and Hickey, W.F. Intrathecal antibody synthesis in rats with a functionally intact blood-brain barrier: Tissue entry and local retention of antigen-specific. B cells *J. Immunol.* 161:692-701, 1998.
9. Gordon, L.B., S.C. Nolan, B. Ksander, P.M. Knopf and **C.J. Harling-Berg**. Normal cerebrospinal fluid suppresses the in vitro development of cytotoxic T cells: Role of the brain microenvironment in CNS immune regulation. *J. Neuroimmunol.* 88:77-84, 1998.
10. **C. J. Harling-Berg**, J.T. Park and P.M.Knopf. Invited Review: Role of the cervical lymphatics in the Th2-type hierarchy of CNS immune regulation. *J. Neuroimmunol.* 101:111-127, 1999.
11. Hallett, J.J., **C. J. Harling-Berg**, P. M. Knopf, E. G. Stopa, and L. S. Kiessling. Stereotypies and episodic utterances in rats after intrastriatal microinfusion of sera from children with Tourette Syndrome. *J. Neuroimmunol.* 111:195-202, 2000.

Publications in Preparation

1. Paul M. Knopf, **C. J. Harling-Berg**, D. J. Lee, J. J. Hallett, E.G. Stopa and F. Mokhtarian. Microinfusion into the rat brain of antibodies against Semliki Forest Virus produces long lasting changes in behavioral response to apomorphine.

2. Hallett, J.J., K.E. Poskanzer, F. Cardoso, P. M Knopf, and **C. J. Harling-Berg**. Serum from patients with Sydenham's Chorea induces altered behavioral response in rats following microinfusion into brain.
3. Park, J.T. II, S.C. Nolan, P.M. Knopf, and **C. J. Harling-Berg**. Regulation of the peripheral delayed-type hypersensitivity response to albumins infused into the cerebrospinal fluid in a rodent model with normal blood-brain-barrier permeability.
4. Park, J.T. II, J. Szmydynger-Chodobska, P.M. Knopf, and **C. J. Harling-Berg**. Immunological response to brain-administered albumins and rHIV (p24) in a murine model with normal permeability of the blood-brain barrier.

Other Publications

1. Cserr, H.F., **C. J. Harling-Berg**, T. Ichimura, P. Knopf, and S. Yamada. Chapter entitled: Drainage of cerebral extracellular fluids into cervical lymph: an afferent limb in brain/immune system interactions. In: Pathophysiology of the Blood-Brain Barrier: Long Term Consequences of Barrier Dysfunction for the Brain. Editors: B.B. Johansson C. Owman. Elsevier, Fernstrom Symposium Series, Amsterdam, Vol. 14, pp. 413-420, 1990.
2. Cserr, H.F., **C. J. Harling-Berg**, P.M. Knopf. Chapter entitled: Drainage of brain extracellular fluid into blood and deep cervical lymph and its immununological significance. In: Barrier Concepts and CSF Analysis, International Quincke Symposium, pp. 18-21, Sept. 1991.
3. **Harling-Berg, C. J.**, J.J. Hallett, J.T. Park, and P.M. Knopf. Chapter entitled: Hierarchy of immune responses to antigen in the normal brain. In: Current Topics in Microbiology and Immunology: Protective and Pathological and Immune Responses in the CNS. Editors: B. Dietzschold and Juergen Richt. Springer-Verlag, Berlin. pp. 1-22, 2002.
Also assisted in peer review of chapters.

Abstracts

1. **Harling-Berg, C. J.**, P.M. Knopf, and H.F. Cserr. Cervical lymph nodes secrete antibodies specific for human serum albumin (HSA) microinfused into cerebrospinal fluid (CSF). The Second World Congress of Neuroscience, Abstracts. Neuroscience Vol. 22, Supplement. 1697P, 1987.
2. **Harling-Berg, C. J.**, M. DePasquale, P. Knopf, and H.F. Cserr. Ratio of cerebrospinal fluid (CSF) to serum antibody titers are higher following central than systemic immunization in the normal rat. The Second World Congress of Neuroscience, Abstracts. Neuroscience Vol. 22, Supplement. 1698P, 1987.
3. **Harling-Berg, C. J.**, P.M.Knopf, and H.F. Cserr. Immune response to CSF-infused myelin basic protein (MBP) in the Lewis rat. Neuroscience Abstracts. 2:1209, 1990.
4. Knopf, P.M., **C.J. Harling-Berg**, L.B. Gordon, and H.F. Cserr. Immune responses to protein antigens infused into CSF. FASEB oral presentation, 1992.
5. **Harling-Berg, C.J.**, R.A. Sobel, P.M. Knopf, and H.F. Cserr. The role of immune cells in the suppression of EAE induced by CSF-infused MBP, Neuroscience Abstracts. 2: 1011, 1992.
6. Park, J.T., **C.J. Harling-Berg**, and P.M. Knopf. Characterization of the peripheral immune response to ovalbumin microinfused into the normal mouse brain. Society for Neuroscience, Abstracts 21: 1152, 1995.

7. Gordon, L.B., S.C. Nolan, **C. J. Harling-Berg**, and P. M. Knopf. Normal cerebrospinal fluid inhibits development of tumor-specific CTL activity from BALB/c mouse splenocytes following tumor infusion into brain. *FASEB J.*, 10: A1471, 1996.
8. Hallett, J.J., **C. J. Harling-Berg**, J. R. Agrawal, P. M. Knopf, and L. S. Kiessling, . Tic-like phonation and dyskinesia in rats after intracaudate microinfusion of serum from children with Tourette syndrome. *FASEB J.*, 10: A1357, 1996.
9. Nolan, S.C., **C. J. Harling-Berg**, and P. M. Knopf. CSF-infused protein elicits a DTH response in Lewis but not Sprague-Dawley rats. *FASEB J.*, 10:A1075, 1996.
10. Park, J.T., , **C. J. Harling-Berg**, and P.M. Knopf. CSF-administered albumins stimulate antibody but not DTH in Balb/c mice. *FASEB J.*, 10:A1075, 1996.
11. Szmydynger-Chodobska, J., S.C. Nolan, **C. J. Harling-Berg**, and P. M. Knopf. Trafficking of B and T lymphocytes to the brain following antigen infusion into caudate putamen of passively immunized Lewis rats. *Society for Neuroscience, Abstracts 22: 52.1996.*
12. Park, J.T., **C. J. Harling-Berg**, and P. M. Knopf. DTH kinetics to CSF-administered albumin in the Balb/c mouse. *Society for Neuroscience, Abstracts 22: 1792,1996.*
13. **Harling-Berg, C.J.**, Nguyen, L.H., Dale, J.B., Stopa, E., Knopf, P.M., and Hallett, J.J. Microinfusion of rat antisera specific for rheumatogenic streptococcal M protein into naive rat brain elicits abnormal motor behavior and IgG binding in ventral striatum. *Society for Neuroscience Abstract presented as poster at Neuroscience meeting Orlando, FL Nov. 2002.*

Grants

1. Principle Investigator, "Mechanism of Suppression Induced by CSF-Infused MBP", Rhode Island Foundation and the Rhode Island Community Foundation Grant (1990-1991), total budget \$4,800.
2. Co-Principle Investigator, "AIDS and the Th-2 Dominant Immunity of the Normal CNS, NIH R01 NS 33070-05 (1994-1999), total budget \$1,001,146
3. Co-Principle Investigator, "Effects of the Suppressive CNS Micro-Environment on Tumor Growth in the Brain"; Brain Tumor Society (1996-1998), total budget \$40,000.
4. Co-Principle Investigator, "Role of Anti-Neuronal Antibodies in Tourette Syndrome, a Disorder of the Central Nervous System: Development of an Animal Model for Antibody-Mediated Neurological Phenomenon" Rhode Island Foundation and the Rhode Island Community Foundation Grant (1997-1998), total budget \$5,000.
5. Consultant, "Neuroanatomical Correlates of Tourette Syndrome IgG Induced Dyskinesias in Rats" Tourette Society (1997-1998), total budget \$40,000.
6. Co-Principle Investigator, "CNS Antibody Synthesis Against Rat Neuronal Epitopes." NIH R01 NS38721-01, submitted 7/99, request for 3 yrs.support, total budget \$1,233,780 (grant was not funded).
7. Principle Investigator, "Induction of Subthalamic Dysfunction by Tourette Antibodies and Anti-rheumatogenic M -Protein Antibodies: Development of a Rodent Model of Neuronal Dysfunction." Tourette Society (5/00-9/01), total budget \$40,000.

8. Co-Investigator, "Immunocytochemical Localization of Dyskinesia-Inducing Tourette IgG in the Striatum." Tourette Society (9/01-9/02), total budget \$70,000.

9. Principle Investigator, "Rat model: Role of rheumatogenic streptococcal M protein antibodies and brain dysfunction" NIH grant (R01) (to be re-submitted)

University Teaching Role

1987 Graduate Student, Summer Studies Program, Brown University

Human Physiology class size 10 (incoming medical students)

1992-1993 Visiting Instructor, Dept. Biology, Framingham State College,

Human Physiology and Anatomy class size 50 (nursing students and undergraduates)

1993-1994 Visiting Assistant Professor, Summer Studies Program, Brown University

(I) *Principles of Immunology* class size 15 and 26 (yr 1 and 2).

(II) *Immunology: Principles and Case Studies* class size 6 and 12.

1994-2002 Thesis Advisor for:

7 Honors undergraduates

1 Masters

1 PLME undergraduate student (admitted to medical program) for independent study

2 graduates from M.D./Ph.D. program

Patent

1996 U.S. Patent (#Des.366,673) "Annie Antibody", a doll to teach immunology and vaccination to elementary and middle-school age children