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EDUCATION

POST-DOCTORAL FELLOWSHIP, CURRENT

University of California, Berkeley
Sponsor: Richard S. Stephens, Ph.D., M.P.H.
Project focus: Mechanisms of Gene Regulation in
Chlamydia (AI-058490)

PH.D. MICROBIOLOGY AND IMMUNOLOGY, 2001

University of Oklahoma Health Sciences Center
Graduate Advisor: Darrin R. Akins, Ph.D.
Dissertation Title: *Identification and Characterization of Surface-Exposed Lipoproteins in the Lyme Disease Spirochete, Borrelia burgdorferi*

M.S. MICROBIOLOGY AND IMMUNOLOGY, 1998

University of Oklahoma Health Sciences Center
Graduate Advisor: Ronald C. Kennedy, Ph.D.
Identification of Immunogenic Epitopes of Hepatitis G Virus

B.S. MICROBIOLOGY, MINOR IN CHEMISTRY, 1994

University of Oklahoma

PROFESSIONAL EXPERIENCE

Research Associate

Oklahoma Blood Institute (1992-96), Oklahoma City, Oklahoma
Multiple Projects including;

- Development and implementation of nucleic acid based diagnostic assay for HIV and HCV
- Development and implementation of processing protocol for cryopreservation of peripheral pleripotent stem cells
- Direct and perform clinical trial of HIV and HCV serologic assay for Organon Teknika (Netherlands)

Research Associate

UroCor, Inc. (1996), Oklahoma City, Oklahoma
Project focus, "Characterization of Gene Markers for Metastatic Prostate Cancer."

TEACHING EXPERIENCE AND DEPARTMENTAL ACTIVITIES

Special Topics Instructor	Integrity in Science (2002), University of California, Berkeley
Teaching Instructor	University of Oklahoma HSC (1996-2001), Medical Microbiology and Immunology (module instructor for 2 nd year medical students)
Coordinator	Graduate Student Journal Club (2001), University of Oklahoma HSC, Department of Microbiology and Immunology
Coordinator	Christina Noble Memorial Lecture (1999)
Board Member	University of Oklahoma HSC Student Appeals Board and Academic Misconduct (1997-99)
Instructor	Introduction to Human Genetics (1998), University of Oklahoma HSC Summer Academy

AWARDS AND PROFESSIONAL MEMBERSHIPS

Post-Doctoral Fellowship	Ruth L. Kirschstein Individual National Research Service Award National Institutes of Health (2004-6) (AI-058490)
<i>Chlamydia</i> Microarray Award	NIAID, Pathogen Functional Genomics Resource Center
Outstanding Graduate Student	University of Oklahoma HSC (2001), Department of Microbiology and Immunology
Pre-Doctoral Fellowship	National Institutes of Health (1997-2001) Molecular Pathogenesis Training Grant (AI-07364)
Outstanding Oral Presentation	Oklahoma Medical Research Foundation Award (2000) Graduate Research Education and Technology Symposium, Oklahoma City, OK
Graduate Student Travel Award	Wind River Conference on Prokaryotic Biology (2000), Estes Park, Colorado
Graduate Student Travel Award	American Society of Virology (1999), Vancouver, Canada
Undergraduate Fellowship	University of Oklahoma (1993), Norman, OK
Member	American Society for Microbiology

PUBLICATIONS

Hefty, P.S. and R.C. Kennedy. 1999. Immunoglobulin variable regions as idiotype vaccines. *Infectious Disease Clinics of North America*. 13:3.1-3.9.

Watts, A.M., J.R. Stanley, M.H. Shearer, **P.S. Hefty**, and R.C. Kennedy. 1999. Fetal immunization of baboons induces a fetal specific antibody response. *Nature Medicine*. 5:427-430.

Hefty, P.S., S.A. Jolliff, M.J. Caimano, S.K. Wikel, J.D. Radolf and D.R. Akins. 2001. Regulation of the OspE-related, OspF-related, and Elp lipoproteins of *Borrelia burgdorferi* strain 297 by mammalian host-specific signals. *Inf. Immun.* 69(6):3618-3627.

Hefty, P.S., S.A. Jolliff, M.J. Caimano, S.K. Wikel, and D.R. Akins. 2002. Population heterogeneity and antigenic diversity of *B. burgdorferi* is generated by both temporal and spatial patterns of protein expression. *Inf. Immun.* 70 (7):3468-78.

Alitalo, A., T. Meri, H. Lankinen, I. Seppala, P. Lahdenne, **P. S. Hefty**, D. Akins, and S.Meri. 2002. Complement factor H binding in Lyme disease spirochetes is mediated by inducible expression of multiple plasmid-encoded OspE paralogs. *J. Immun.* 169 (7):3847-53

Hefty, P.S., C.S. Brooks, S.A. Jolliff, A.M Jett, G.A. White, R.C. Kennedy, D.R. Akins. 2002. The OspE-related, OspF-related and Elp lipoproteins are immunogenic in human Lyme disease patients and baboons experimentally infected with *B. burgdorferi*. *J. Clin. Micro.* 40 (11):4256-65

Brooks, C.S., **P.S. Hefty**, S.A. Jolliff, and D.R. Akins. 2003. Global analysis of *Borrelia burgdorferi* genes regulated by mammalian host-specific signals. *Inf. Immun.* 71 (6):3371-83

Alitalo, A., T. Meri, T. Chen, H. Lankinen, Z. Cheng, T.S. Jokiranta, I. Seppälä, P. Lahdenne, **P.S. Hefty**, D. Akins, and S.Meri. 2004. Lysine-dependent multipoint binding of the *Borrelia burgdorferi* virulence factor outer surface protein E to the C terminus of Factor H. *J. Immun.* 172: 6195-6201

Koo I.C., D. Walthers, **P.S. Hefty**, L.J. Kenney, and R.S. Stephens. 2005. ChxR is a novel transcriptional activator in *Chlamydia*. In Press. *Proc. Natl. Acad. Sci. U.S.A.*

Hua, L, **P.S. Hefty**, Y.J. Lee, Y.M. Lee, R.S. Stephens, and C. W. Price. 2005. Core of the partner switching signaling mechanism is conserved in the obligate intracellular pathogen *Chlamydia trachomatis*. In Press. *Mol. Micro.*

Hefty, P.S. and R. S. Stephens. 2005. Operon structure and cis-acting elements of the chlamydial type III secretion system. Submitted.

Hefty, P.S. and R.S. Stephens. 2005. σ^{28} RNA polymerase regulates expression of the tail-specific protease in Chlamydia. In preparation.

PRESENTATIONS

Hefty, P.S., P.A. Benton and R.C. Kennedy. 1998. Humoral immune response to an immunodominant HCV core epitope in HCV/HGV co-infected patients. Poster, Federation of American Scientists in Experimental Biology Annual Meeting. San Francisco, CA.

Hefty, P.S., P.A. Benton and R.C. Kennedy. 1998. Prediction of structural HGV immunogenic epitopes and prevalence of HGV viremia among patients with chronic hepatitis disease. Poster, American Society for Virology. Bozeman, MT.

Zamora, M., **P.S. Hefty**, W. Gan, R.E. Rhoads, R.E. Lloyd. 1998. Internal ribosomal entry sequence of eIF4G mRNA promotes *in vitro* translation in poliovirus-infected HeLa cells. Poster, Translational Control Symposium. Cold Spring Harbor, NY.

Hefty, P.S., S.E. Jolliff, M.J. Caimano, S.K. Wikel, J.D. Radolf, and D.R. Akins. 2000. Differential expression patterns of the OspE-related, OspF-related and Elp proteins of *Borrelia burgdorferi* strain 297. Poster, Gordon Research Conference of the Biology of Spirochetes. Ventura, CA.

Hefty, P.S., S.E. Jolliff, M.J. Caimano, S.K. Wikel, J.D. Radolf, and D.R. Akins. 2000. Differential expression patterns of plasmid-encoded lipoproteins of the Lyme Disease spirochete, *Borrelia burgdorferi*. Oral presentation, Graduate Research Education and Technology Symposium. Oklahoma City, OK.

Hefty, P.S., S.E. Jolliff, M.J. Caimano, S.K. Wikel, J.D. Radolf, and D.R. Akins. 2000. Differential expression patterns of OspE-related, OspF-related and Elp lipoproteins in the Lyme Disease spirochete, *Borrelia burgdorferi*. Oral presentation, Wind River Conference on Prokaryotic Biology. Estes Park, CO.

Hefty, P.S., M.J. Caimano, S.K., S.K. Wikel, and D.R. Akins. 2001. Host-dependent expression and cellular localization of the OspE-Related, OspF-related, and Elp lipoproteins in *Borrelia burgdorferi* strain 297. Poster, Microbial Pathogenesis and Host Response. Cold Spring Harbor, NY.

Hefty, P.S., S.E. Jolliff, M.J. Caimano, S.K. Wikel, and D.R. Akins. 2002. Population heterogeneity and antigenic diversity of *B. burgdorferi* is generated by both temporal and spatial patterns of protein expression. Poster, Gordon Research Conference of the Biology of Spirochetes. Ventura, CA.

Alitalo A, T. Meri, H. Lankinen, H. Seppälä H, P. Lahdenne, **P.S. Hefty**, D. Akins, and S. Meri. 2002. Complement resistance in Lyme disease spirochetes is mediated by plasmids encoding OspE paralogs. Poster, Scandinavian Society of Immunology, Bergen, Norway

Hefty, P.S. and R.S. Stephens. 2004. Genomic Profile of σ^{28} Regulated Transcription in *Chlamydia*. Poster, American Society of Microbiology, New Orleans, LA

Hefty, P.S. and R. S. Stephens. 2005. Operon structure and cis-acting elements of the chlamydial type III secretion system. Poster, Microbial Pathogenesis and Host Response. Cold Spring Harbor, NY.

Requested References:

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