

BIOGRAPHICAL SKETCH

Name: **Paul Viktor Lehmann, M.D., Ph.D.**Position title: **CEO of CTL, Adj. Prof. Pathol. & Neurol. at CWRU****A. Education and Training:**

INSTITUTION AND LOCATION	DEGREE	DATE	FIELD OF STUDY
Gymnasium Kastl, Kastl, Oberpfalz, Germany	B.A.	1976	Arts and Sciences
Medical School, Univ. of Tübingen, Germany	M.D.	1983	Medicine
Doctoral thesis, "Immune regulation by lipoproteins" Internal Medicine, Univ. of Tübingen, Germany	Ph.D.	1988	Immunology

B. Personal Statement:

My entire research career revolved around immune monitoring. Initially I pursued this field entirely in the academic setting. In 1998 I founded a company around immune monitoring, CTL. At CTL we have been continuously refining methods, reagents and instrumentation for improving the ability to reliably detect rare antigen-specific T- and B cells in freshly isolated cell material, such as human blood. Not only have we been offering new developments to the scientific community, but we also have been the first ones to apply them in research, continuing to further the field. I personally have been trying to combine my new role as the head of a company that employs over 200 in the meantime, with directing research in our R&D department, and continued academic productivity in this field.

C. Positions:

1986-1989 **Postdoctoral Scholar in Immunology** at Preclinical Research, Sandoz Ltd.,
 1989-1993 **Senior Postdoctoral Scholar in Immunology** at (UCLA) with Dr. Eli E. Sercarz.
 1993-1998 **Assistant Professor**, (CWRU), Dept. of Pathology & Neurology, Cleveland, OH.
 1998-2002 **Associate Professor, Tenure** (CWRU), Dept. of Pathology & Neurology, Cleveland, OH.
 2002-2008 **Full Professor with Tenure**, CWRU
 2008-Present **CEO of CTL, Adjunct Professor** at CWRU

• **Peer-reviewed Publications ([Google Scholar](#): h-index 57, 316 publications, 16,294 citations):**

- Adorini L, Muller S, Cardinaux F, Lehmann PV, Falcioni F, Nagy ZA. *In vivo competition between self peptides and foreign antigens in T cell activation.* **Nature**, 1988, 334, 623-625. ([Link](#))
- Adorini L, Sette A, Buus S, Grey HM, Darsley M, Lehmann PV, Doria G, Nagy ZA, Appella E. *Interaction of an immunodominant epitope with Ia molecules in T cell activation.* **Proc. Natl. Acad. Sci. U.S.A.**, 1988, 85, 5181-5. ([Link](#))
- Lehmann PV, Cardinaux F, Appella E, Muller S, Falcioni F, Adorini L, Nagy ZA. *Inhibition of T cell response with peptides is influenced by both peptide-binding specificity of major histocompatibility complex molecules and susceptibility of T cells to blocking.* **Eur. J. Immunol.**, 1989, 19, 1071-1077. ([Link](#))
- Nagy ZA, Lehmann PV, Falcioni F, Muller S, Adorini L. *Why peptides? Their possible role in the evolution of MHC-restricted T cell recognition.* **Immunol. Today**, 1989, 10, 132-138. ([Link](#))
- Falcioni F, Dembic Z, Muller S, Lehmann PV, Nagy ZA. *Flexibility of the T cell repertoire. Self tolerance causes a shift of T cell receptor gene usage in response to insulin.* **J. Exp. Med.**, 1990, 171, 1665-1681. ([Link](#))
- Lehmann PV, Schumm G, Moon D, Hurtenbach U, Falcioni F, Muller S, Nagy ZA. *Acute lethal graft-versus-host reaction induced by major histocompatibility complex class II-reactive T helper cell clones.* **J. Exp. Med.**, 1990, 171, 1485-1496. ([Link](#))
- Tary-Lehmann M, Rolink AG, Lehmann PV, Nagy ZA, Hurtenbach U. *Induction of graft versus host-associated immunodeficiency by CD4+ T cell clones.* **J. Immunol.**, 1990, 145, 2092-2098. ([Link](#))
- Lehmann PV, Drexler K, Tary-Lehmann M, Falcioni F, Hurtenbach U, Nagy ZA. *Graft-versus-host resistance induced by class II major histocompatibility complex-specific T cell clones.* **J. Exp. Med.**, 1991, 173, 333-341. ([Link](#))
- Lehmann PV, Forsthuber T, Miller A, Sercarz EE. *Spreading of T cell autoimmunity to cryptic determinants of an autoantigen.* **Nature**, 1992, 358, 155-157. ([Link](#))
- Kaufman DL, Clare-Salzler M, Tian J, Forsthuber T, Ting GS, Robinson P, Atkinson MA, Sercarz EE, Tobin AJ, Lehmann PV. *Spontaneous Loss of T Cell Tolerance to Glutamic Acid Decarboxylase in Murine Insulin-dependent Diabetes.* **Nature**, 1993, 366, 69-72. ([Link](#))
- Lehmann PV, Sercarz EE, Forsthuber T, Dayan CM, Gammon G. *Determinant spreading and the dynamics of the autoimmune T cell repertoire.* **Immunol. Today**, 1993, 14, 203-208. ([Link](#))

- Sercarz EE, Lehmann PV, Ametani A, Benichou G, Miller A, Moudgil K. *Dominance and crypticity of T cell antigenic determinants.* **Annu. Rev. Immunol.**, 1993, 11, 729-766. ([Link](#))
- Benichou G, Fedoseyeva E, Lehmann PV, Olson CA, Geysen HM, McMillan M, Sercarz EE. *Limited T cell response to donor MHC peptides during allograft rejection. Implications for selective immune therapy in transplantation.* **J. Immunol.**, 1994, 153, 938-945. ([Link](#))
- Bhardwaj V, Kumar V, Grewal IS, Dao T, Lehmann PV, Geysen HM, Sercarz EE. *T cell determinant structure of myelin basic protein in B10.PL, SJL/J, and their F1S.* **J. Immunol.**, 1994, 152, 3711-3719. ([Link](#))
- Tary-Lehmann M, Lehmann PV, Schols D, Roncarolo MG, Saxon A. *Anti-SCID mouse reactivity shapes the human CD4+ T cell repertoire in hu-PBL-SCID chimeras.* **J. Exp. Med.**, 1994, 180, 1817-1827. ([Link](#))
- Ransohoff R, Tuohy VK, Lehmann PV. *The immunology of multiple sclerosis: new intricacies and new insights.* **Curr. Opin. Neurol.**, 1994, 7, 242-249. ([Link](#))
- Tian J, Lehmann PV, Kaufman DL. *T cell cross-reactivity between coxsackievirus and glutamate decarboxylase is associated with a murine diabetes susceptibility allele.* **J. Exp. Med.**, 1994, 180, 1979-1984. ([Link](#))
- Tary-Lehmann M, Saxon A, Lehmann PV. *The human immune System in hu-PBL-SCID Mice.* **Immunol. Today**, 1995, 16, 529-533. ([Link](#))
- Forsthuber T, Yip HC, Lehmann PV. *Induction of TH1 and TH2 immunity in neonatal mice.* **Science**, 1996, 271, 1728-1730. ([Link](#))
- Le Grice SF, Whalen CC, Hom DL, Lehmann PV, Walker CJ. *Perspective: research highlights at the Case Western Reserve University Center for AIDS Research. Learning from the past and looking toward the future.* **AIDS Res. Hum. Retroviruses**, 1996, 12, 1659-1666. ([Link](#))
- Lehmann PV. *Immunomodulation by proteolytic enzymes.* **Nephrol. Dial. Transplant.**, 1996, 11, 952-955. ([Link](#))
- Tian J, Atkinson MA, Clare-Salzler M, Herschenfeld A, Forsthuber T, Lehmann PV, Kaufman DL. *Nasal administration of glutamate decarboxylase (GAD65) peptides induces Th2 responses and prevents murine insulin-dependent diabetes.* **J. Exp. Med.**, 1996, 183, 1561-1567. ([Link](#))
- Tian J, Clare-Salzler M, Herschenfeld A, Middleton B, Newman D, Mueller R, Arita S, Evans C, Atkinson MA, Mullen Y, Sarvetnick N, Tobin AJ, Lehmann PV, Kaufman DL. *Modulating autoimmune responses to GAD inhibits disease progression and prolongs islet graft survival in diabetes-prone mice.* **Nat. Med.**, 1996, 2, 1348-1353. ([Link](#))
- Lehmann PV. *Immunological tolerance.* **Science**, 1996, 272, 1404-1406. ([Link](#))
- Chu RS, Targoni OS, Krieg AM, Lehmann PV, Harding CV. *CpG oligodeoxynucleotides act as adjuvants that switch on T helper 1 (Th1) immunity.* **J. Exp. Med.**, 1997, 186, 1623-1631. ([Link](#))
- Lehmann PV, Matesic D, Benichou G, Heeger PS. *Induction of T helper 2 immunity to an immunodominant allopeptide.* **Transplantation**, 1997, 64, 292-296. ([Link](#))
- Tian J, Lehmann PV, Kaufman DL. *Determinant spreading of T helper cell 2 (Th2) responses to pancreatic islet autoantigens.* **J. Exp. Med.**, 1997, 186, 2039-2043. ([Link](#))
- Birnbaum G, Kotilinek L, Miller SD, Raine CS, Gao YL, Lehmann PV, Gupta RS. *Heat shock proteins and experimental autoimmune encephalomyelitis. II: environmental infection and extra-neuraxial inflammation alter the course of chronic relapsing encephalomyelitis.* **J. Neuroimmunol.**, 1998, 90, 149-161. ([Link](#))
- Lehmann PV. *The fate of T cells in the brain: veni, vidi, vici and veni, mori.* **Am. J. Pathol.**, 1998, 153, 677-680. ([Link](#))
- Lehmann PV, Targoni OS, Forsthuber TG. *Shifting T cell activation thresholds in autoimmunity and determinant spreading.* **Immunol. Rev.**, 1998, 164, 53-61. ([Link](#))
- Matesic D, Lehmann PV, Heeger PS. *High-resolution characterization of cytokine-producing alloreactivity in naive and allograft-primed mice.* **Transplantation**, 1998, 65, 906-914. ([Link](#))
- Targoni OS, Lehmann PV. *Endogenous myelin basic protein inactivates the high avidity T cell repertoire.* **J. Exp. Med.**, 1998, 187, 2055-2063. ([Link](#))
- Targoni OS, Tary-Lehmann M, Lehmann PV. *Prevention of murine EAE by oral hydrolytic enzyme treatment.* **J. Autoimmun.**, 1999, 12, 191-198. ([Link](#))
- Yip HC, Karulin AY, Tary-Lehmann M, Hesse MD, Radeke H, Heeger PS, Trezza RP, Heinzel FP, Forsthuber T, Lehmann PV. *Adjuvant-guided type-1 and type-2 immunity: infectious/noninfectious dichotomy defines the class of response.* **J. Immunol.**, 1999, 162, 3942-3949. ([Link](#))
- Heeger PS, Forsthuber T, Shive C, Biekert E, Genain C, Hofstetter HH, Karulin AY, Lehmann PV. *Revisiting tolerance induced by autoantigen in incomplete Freund's adjuvant.* **J. Immunol.**, 2000, 164, 5771-5781. ([Link](#))

- Heeger PS, Valujskikh A, Lehmann PV. *Comprehensive assessment of determinant specificity, frequency, and cytokine signature of the primed CD8 cell repertoire induced by a minor transplantation antigen. J. Immunol.*, 2000, 165, 1278-1284. [\(Link\)](#)
- Helms T, Boehm BO, Asaad RJ, Trezza RP, Lehmann PV, Tary-Lehmann M. *Direct visualization of cytokine-producing recall antigen-specific CD4 memory T cells in healthy individuals and HIV patients. J. Immunol.*, 2000, 164, 3723-3732. [\(Link\)](#)
- Karulin AY, Hesse MD, Tary-Lehmann M, Lehmann PV. *Single-cytokine-producing CD4 memory cells predominate in type 1 and type 2 immunity. J. Immunol.*, 2000, 164, 1862-1872. [\(Link\)](#)
- Lehmann PV. *Selective peptidomimetic blockers of autoantigen presentation: a novel therapeutic approach to autoimmune disease. Trends Pharmacol. Sci.*, 2000, 21, 79-80. [\(Link\)](#)
- Pelfrey CM, Rudick RA, Coteleur AC, Lee JC, Tary-Lehmann M, Lehmann PV. *Quantification of self-recognition in multiple sclerosis by single-cell analysis of cytokine production. J. Immunol.*, 2000, 165, 1641-1651. [\(Link\)](#)
- Gottwein JM, Blanchard TG, Targoni OS, Eisenberg JC, Zagorski BM, Redline RW, Nedrud JG, Tary-Lehmann M, Lehmann PV, Czinn SJ. *Protective anti-helicobacter immunity is induced with aluminum hydroxide or complete freund's adjuvant by systemic immunization. J. Infect. Dis.*, 2001, 184, 308-314. [\(Link\)](#)
- Hesse MD, Karulin AY, Boehm BO, Lehmann PV, Tary-Lehmann M. *A T cell clone's avidity is a function of its activation state. J. Immunol.*, 2001, 167, 1353-1361. [\(Link\)](#)
- Targoni OS, Baus J, Hofstetter HH, Hesse MD, Karulin AY, Boehm BO, Forsthuber TG, Lehmann PV. *Frequencies of neuroantigen-specific T cells in the central nervous system versus the immune periphery during the course of experimental allergic encephalomyelitis. J. Immunol.*, 2001, 166, 4757-4764. [\(Link\)](#)
- Anthony DD, Valdez H, Post AB, Carlson NL, Heeger PS, Lehmann PV. *Comprehensive determinant mapping of the hepatitis C-specific CD8 Cell Repertoire Reveals Unpredicted Immune Hierarchy. Clin. Immunol.*, 2002, 103, 264-276. [\(Link\)](#)
- Karulin AY, Hesse MD, Yip HC, Lehmann PV. *Indirect IL-4 pathway in type 1 immunity. J. Immunol.*, 2002, 168, 545-553. [\(Link\)](#)
- Meierhoff G, Ott PA, Lehmann PV, Schloot NC. *Cytokine detection by ELISPOT: relevance for immunological studies in type 1 diabetes. Diabetes Metab. Res. Rev.*, 2002, 18, 367-380. [\(Link\)](#)
- Valdez H, Carlson NL, Post AB, Asaad R, Heeger PS, Lederman MM, Lehmann PV, Anthony DD. *HIV long-term non-progressors maintain brisk CD8 T cell responses to other viral antigens. AIDS*, 2002, 16, 1113-1118. [\(Link\)](#)
- Anthony DD, Lehmann PV. *T cell epitope mapping using the ELISPOT approach. Methods*, 2003, 29, 260-269. [\(Link\)](#)
- Eisenberg JC, Czinn SJ, Garhart CA, Redline RW, Bartholomae WC, Gottwein JM, Nedrud JG, Emancipator SE, Boehm BB, Lehmann PV, Blanchard TG. *Protective efficacy of anti-helicobacter pylori immunity following systemic immunization of neonatal mice. Infect. Immun.*, 2003, 71, 1820-1827. [\(Link\)](#)
- Guerkov RE, Targoni OS, Kreher CR, Boehm BO, Herrera MT, Tary-Lehmann M, Lehmann PV, Schwander SK. *Detection of low-frequency antigen-specific IL-10-producing CD4(+) T cells via ELISPOT in PBMC: cognate vs. nonspecific production of the cytokine. J. Immunol. Methods*, 2003, 279, 111-21. [\(Link\)](#)
- Hofstetter HH, Sewell DL, Liu F, Sandor M, Forsthuber T, Lehmann PV, Fabry Z. *Autoreactive T cells promote post-traumatic healing in the central nervous system. J. Neuroimmunol.*, 2003, 134, 25-34. [\(Link\)](#)
- Lonsdorf AS, Kuekrek H, Stern BV, Boehm BO, Lehmann PV, Tary-Lehmann M. *Intratumor CpG-oligodeoxynucleotide injection induces protective antitumor T cell immunity. J. Immunol.*, 2003, 171, 3941-6. [\(Link\)](#)
- Anthony DD, Yonkers NL, Post AB, Asaad R, Heinzel FP, Lederman MM, Lehmann PV, Valdez H. *Selective impairments in dendritic cell-associated function distinguish hepatitis C virus and HIV infection. J. Immunol.*, 2004, 172, 4907-4916. [\(Link\)](#)
- Bartholomae WC, Rininsland FH, Eisenberg JC, Boehm BO, Lehmann PV, Tary-Lehmann M. *T Cell immunity induced by live, necrotic, and apoptotic tumor cells. J. Immunol.*, 2004, 173, 1012-1022. [\(Link\)](#)
- Darabi K, Karulin AY, Boehm BO, Hofstetter HH, Fabry Z, LaManna JC, Chavez JC, Tary-Lehmann M, Lehmann PV. *The third signal in T cell-mediated autoimmune disease? J. Immunol.*, 2004, 173, 92-99. [\(Link\)](#)
- Herzog BA, Ott PA, Dittrich MT, Quast S, Karulin AY, Kalbacher H, Karges W, Tary-Lehmann M, Lehmann PV, Boehm BO, Durinovic-Bello I. *Increased in vivo frequency of IA-2 peptide-reactive IFN-gamma+/IL-4- T cells in type 1 diabetic subjects. J. Autoimmun.*, 2004, 23, 45-54. [\(Link\)](#)

- Ott PA, Berner BR, Herzog BA, Guerkov R, Yonkers NL, Durinovic-Bello I, Tary-Lehmann M, Lehmann PV, Anthony DD. *CD28 costimulation enhances the sensitivity of the ELISPOT assay for detection of antigen-specific memory effector CD4 and CD8 cell populations in human diseases. J. Immunol. Methods*, 2004, 285, 223-35. ([Link](#))
- Ott PA, Dittrich MT, Herzog BA, Guerkov R, Gottlieb PA, Putnam AL, Durinovic-Bello I, Boehm BO, Tary-Lehmann M, Lehmann PV. *T cells recognize multiple GAD65 and proinsulin epitopes in human type 1 diabetes, suggesting determinant spreading. J. Clin. Immunol.*, 2004, 24, 327-339. ([Link](#))
- Berner BR, Tary-Lehmann M, Yonkers NL, Askari AD, Lehmann PV, Anthony DD. *Phenotypic and functional analysis of EBV-specific memory CD8 cells in SLE. Cell. Immunol.*, 2005, 235, 29-38. ([Link](#))
- Hetherington VJ, Kawalec JS, Dockery DS, Targoni OS, Lehmann PV, Nadler D. *Immunologic testing of xeno-derived osteochondral grafts using peripheral blood mononuclear cells from healthy human donors. BMC. Musculoskelet. Disord.*, 2005, 6, 36. ([Link](#))
- Hofstetter HH, Karulin AY, Forsthuber TG, Ott PA, Tary-Lehmann M, Lehmann PV. *The cytokine signature of MOG-specific CD4 cells in the EAE of C57BL/6 mice. J. Neuroimmunol.*, 2005, 170, 105-14. ([Link](#))
- Hofstetter HH, Targoni OS, Karulin AY, Forsthuber TG, Tary-Lehmann M, Lehmann PV. *Does the frequency and avidity spectrum of the neuroantigen-specific T cells in the blood mirror the autoimmune process in the central nervous system of mice undergoing experimental allergic encephalomyelitis? J. Immunol.*, 2005, 174, 4598-605. ([Link](#))
- Kuekrek H, Schlingmann T, Valdez H, Boehm BO, Pollard RB, Mitsuyasu R, Goebel FD, Lederman MM, Lehmann PV, Tary-Lehmann M. *Differential effect of interleukin-2 treatment on primary and secondary immunizations in HIV-infected individuals. AIDS*, 2005, 19, 1967-1974. ([Link](#))
- Ott PA, Herzog BA, Quast S, Hofstetter HH, Boehm BO, Tary-Lehmann M, Durinovic-Bello I, Berner BR, Lehmann PV. *Islet-cell antigen-reactive T cells show different expansion rates and Th1/Th2 differentiation in type 1 diabetic patients and healthy controls. Clin. Immunol.*, 2005, 115, 102-14. ([Link](#))
- Ott PA, Anderson MR, Tary-Lehmann M, Lehmann PV. *CD4+CD25+ regulatory T cells control the progression from periinsulitis to destructive insulitis in murine autoimmune diabetes. Cell. Immunol.*, 2005, 235, 1-11. ([Link](#))
- Quast S, Zhang W, Shive C, Kovalovski D, Ott PA, Herzog BA, Boehm BO, Tary-Lehmann M, Karulin AY, Lehmann PV. *IL-2 Absorption Affects IFN-gamma and IL-5, but not IL-4-producing Memory T Cells in Double-color Cytokine ELISPOT Assays. Cell. Immunol.*, 2005, 237, 28-36. ([Link](#))
- Lehmann PV. *Image analysis and data management of ELISPOT assay results. Methods Mol. Biol.*, 2005, 302, 117-32. ([Link](#))
- Kawalec-Carroll JS, Hetherington VJ, Dockery DS, Shive C, Targoni OS, Lehmann PV, Nadler D, Prins D. *Immunogenicity of unprocessed and photooxidized bovine and human osteochondral grafts in collagen-sensitive mice. BMC. Musculoskelet. Disord.*, 2006, 7, 32. ([Link](#))
- Kuerten S, Lichtenegger FS, Faas S, Angelov DN, Tary-Lehmann M, Lehmann PV. *MBP-PLP fusion protein-induced EAE in C57BL/6 mice. J. Neuroimmunol.*, 2006, 177, 99-111. ([Link](#))
- Lichtenegger FS, Kuerten S, Faas S, Boehm BO, Tary-Lehmann M, Lehmann PV. *Dissociation of EAE protective effect and allergic side reactions in tolerization with neuroantigen. J. Immunol.*, 2006, 178, 4749-4756. ([Link](#))
- Yonkers NL, Rodriguez B, Post AB, Asaad R, Jones L, Lederman MM, Lehmann PV, Anthony DD. *HIV coinfection impairs CD28-mediated costimulation of hepatitis C virus-specific CD8 cells. J. Infect. Dis.*, 2006, 194, 391-400. ([Link](#))
- Hofstetter HH, Toyka KV, Tary-Lehmann M, Lehmann PV. *Kinetics and organ distribution of IL-17-producing CD4 cells in proteolipid protein 139–151 peptide-induced experimental autoimmune encephalomyelitis of SJL mice. J. Immunol.*, 2007, 178, 1372-1378. ([Link](#))
- Hofstetter HH, Kovalovski A, Shive C, Lehmann PV, Forsthuber TG. *Neonatal induction of myelin-specific Th1/Th17 immunity does not result in experimental autoimmune encephalomyelitis and can protect against the disease in adulthood. J. Neuroimmunol.*, 2007, 187, 20-30. ([Link](#))
- Ott PA, Tary-Lehmann M, Lehmann PV. *The Secretory IFN-γ response of single CD4 memory cells after activation on different antigen-presenting cell types. Clin. Immunol.*, 2007, 124, 267-276. ([Link](#))
- Kuerten S, Kostova-Bales DA, Frenzel LP, Tigno JT., Tary-Lehmann M, Angelov DN, Lehmann PV. *MP4- and MOG:35-55-induced EAE in C57BL/6 mice differentially targets brain, spinal cord and cerebellum. J. Neuroimmunol.*, 2007, 189, 31-40. ([Link](#))
- Nowacki TM, Kuerten S, Zhang W, Boehm BO, Lehmann PV, Tary-Lehmann M. *Granzyme B production, but not cytokine signatures, distinguish recently activated CD8 memory cells from resting memory cells. Cell. Immunol.*, 2007, 247, 36-48. ([Link](#))

- Kuerten S, Kleen TO, Assad RJ, Lehmann PV*, Tary-Lehmann M*. *Dissociated production of perforin, granzyme B and IFN- γ by HIV-specific CD8⁺ cells in HIV infection. **AIDS Research and Human Retroviruses**, 2007, 24, 62-71. (*contributed equally) ([Link](#))*
- Kuerten S, Schlingmann T, Rajasalu T, Angelov DN, Lehmann PV, Tary-Lehmann M. *Lack of disease specificity limits the usefulness of in vitro costimulation in HIV- and HCV-infected patients. **Clin. Dev. Immunol.**, 2008, 2008, 590941. ([Link](#))*
- Kuerten S, Asaad RJ, Schoenberger SP, Angelov DN, Lehmann PV, Tary-Lehmann M. *The TRAIL of helpless CD8⁺ T cells in HIV infection. **AIDS Res Hum Retroviruses**, 2008, 24, 1175-1183. ([Link](#))*
- Hattier T, Lehmann PV. *Making the jump to high-throughput microbial detection. **Medlab.**, 2008, 3, 30-32. ([Link](#))*
- Kuerten S, Javeri S, Tary-Lehmann M, Lehmann PV, Angelov DN. *Fundamental differences in the dynamics of CNS lesion development and composition in MP4- and MOG peptide 35-55-induced experimental autoimmune encephalomyelitis. **Clin. Immunol.**, 2008, 129, 256-267. ([Link](#))*
- Tary-Lehmann M, Hamm CD, Lehmann PV. *Validation of cell-based assays in the GLP setting*. Edited by Uma Prabhakar and Marian Kelley. **Chapter: Validating reference samples for comparison in a regulated ELISPOT assay**. 2008. ISBN: 97804700287662008. ([Link](#))
- Tigno JT, Lehmann PV, Tary-Lehmann M. *Dissociated induction of cytotoxicity and DTH by CFA and CpG. **J. Immunother.**, 2009, 32, 389. ([Link](#))*
- Schlingmann TR, Shive CL, Targoni OS, Tary-Lehmann M, Lehmann PV. *Increased per-cell IFN-gamma productivity indicates recent in vivo activation of T cells. **Cellular Immunology**, 2009, 258, 131-137. ([Link](#))*
- Schlingmann TR, Rininsland FH, Bartholomae WC, Kuekrek H, Lehmann PV, Tary-Lehmann M. *Vaccination with tumor cells pulsed with foreign peptide induces immunity to the tumor itself. **Clin. Immunol.** 2009, 133, 45-51. ([Link](#))*
- Tahara H, Sato M, Thurin M, Wang E, Lehmann PV, Marincola F. *Emerging concepts in biomarker discovery. **Journal of Translational Medicine**, 2009, 7, 45. ([Link](#))*
- Zhang W, Caspell R, Karulin AY, Ahmad M, Haicheur N, Abdelsalam A, Johannesen K, Vignard V, Dudzik P, Georgakopoulou K, Mihaylova A, Silina K, Aptsiauri N, Adams V, Lehmann PV, McArdle S. *ELISPOT assays provide reproducible results among different laboratories for T cell immune monitoring – even in hands of ELISPOT-inexperienced investigators. **J. Immunotoxicology**, 2009, 6, 227-34. ([Link](#))*
- Kuerten S, Rodi M, Javeri S, Gruppe TL, Tary-Lehmann M, Lehmann PV, Addicks K. *Delineating the impact of genetic diversity vs. neuroantigen in MP4-induced experimental autoimmune encephalomyelitis of C57BL/6 and B6.129 mice. **APMIS** 2009, 117, 923-935. ([Link](#))*
- Tigno JT, Jaini R, Tuohy VK, Lehmann PV, Tary-Lehmann M. *Encephalitogenicity of complete Freund's adjuvant relative to CpG is linked to induction of Th17 cells. **J. Immunol.**, 2009, 183, 5654-61. ([Link](#))*
- Kuerten S, Rottlaender A, Rodi M, Velasco VB Jr, Schroeter M, Kaiser C, Addicks K, Tary-Lehmann M, Lehmann PV. *The clinical course of EAE is reflected by the dynamics of the neuroantigen-specific T cell compartment in the blood. **Clin. Immunol.**, 2010, 137, 422-32. ([Link](#))*
- Loewenbrueck KF, Tigno-Aranjuez JT, Boehm BO, Lehmann PV, Tary-Lehmann M. *Th1 responses to beta-amyloid in young humans convert to regulatory IL-10 responses in Down's syndrome and Alzheimer's disease. **Neurobiol. Aging**, 2010, 31, 1732-42. ([Link](#))*
- Javeri S, Rodi S, Tary-Lehmann M, Lehmann PV, Addicks K, Kuerten S. *Involvement of brain-derived neurotrophic factor (BDNF) in MP4-induced autoimmune encephalomyelitis. **Clin. Immunol.**, 2010, 137, 181-9. ([Link](#))*
- Kuerten S, Rottlaender A, Rodi M, Schroeter M, Kaiser C, Addicks K, Tary-Lehmann M, Lehmann PV. *The TH1/TH17 reactivity to neuroantigen predicts disease onset and progression in murine autoimmune encephalomyelitis. **Clin. Immunol.**, 2010, 137, 422-432. ([Link](#))*
- Teng X, Cheng WC, Qi B, Yu TX, Ramachandran K, Hattier T, Lehmann PV, Pineda FJ, Hardwick JM. *Gene-dependent cell death in yeast. **Cell Death & Dis.**, 2011, 2, e188. ([Link](#))*
- Kuerten S, Addicks K, Lehmann PV. *Studies on the CNS histopathology of EAE and its correlation with clinical and immunological parameters. **Encephalomyelitis**, 2012, ISBN 978-953-51-0038-6 ([Link](#))*
- Zhang W, Lehmann PV. *Objective, user-independent ELISPOT data analysis based on scientifically-validated principles. **Methods Mol. Biol.**, 2011, 792, 155-171. ([Link](#))*
- Dittrich M, Lehmann PV. *Statistical analysis of ELISPOT assays. **Methods Mol. Biol.**, 2011, 792, 173-184. ([Link](#))*
- Karulin AY, Lehmann PV. *How ELISPOT morphology reflects on the productivity and kinetics of cells' secretory activity. **Methods Mol. Biol.**, 2011, 792, 125-144. ([Link](#))*

- Lehmann PV, Zhang W. *Unique strengths of ELISPOT for T cell diagnostics. Methods Mol. Biol.*, 2011, 792, 3-24. [\(Link\)](#)
- Kuerten S, Gruppe TL, Laurentius LM, Kirch C, Tary-Lehmann M, Lehmann PV, Addicks K. *Differential patterns of spinal cord pathology induced by MP4, MOG peptide 35-55, and PLP peptide 178-191 in C57BL/6 mice. APMIS*, 2011, 119, 336-46. [\(Link\)](#)
- Kuerten S, Pauly R, Rottlaender A, Rodi M, Gruppe TL, Addicks K, Tary-Lehmann M, Lehmann PV. *Myelin-reactive antibodies mediate the pathology of MBP-PLP fusion protein MP4-induced EAE. Clin. Immunol.*, 2011, 140, 54-62. [\(Link\)](#)
- Kuerten S, Lehmann PV. *The immune pathogenesis of experimental autoimmune encephalomyelitis – lessons learned for multiple sclerosis? Journal of Interferon & Cytokine Research*, 2011, 31, 907-916. [\(Link\)](#)
- Zhang W, Tan J, Liu Y, Li W, Gao Q, Lehmann PV. *Assessment of the innate and adaptive immune system in proliferative vitreoretinopathy. Eye*, 2012, 26, 872-881. [\(Link\)](#)
- Kuerten S, Schickel A, Kerkloh C, Addicks K, Ruddle NH, Lehmann PV. *Tertiary lymphoid organ development coincides with determinant spreading of the myelin-specific T cell response. Acta Neuropathologica*, 2012, 124, 861-873. [\(Link\)](#)
- Batoulis H, Uhl M, Addicks K, Lehmann PV, Kuerten S. *The magnitude of the antigen-specific T cell response is separated from the severity of spinal cord histopathology in remitting-relapsing experimental autoimmune encephalomyelitis. Glia*, 2012, 60, 794-805. [\(Link\)](#)
- Nowacki T, Bettenworth D, Ross M, Heidemann J, Lehmann PV, Lügering A. *Cytomegalovirus (CMV)-specific perforin and granzyme B ELISPOT assays detect reactivation of CMV infection in inflammatory bowel disease. Cells*, 2012, 1, 35-50. [\(Link\)](#)
- Ramachandran H, Laux J, Moldovan I, Caspell R, Lehmann PV, Subbramanian RA. *Optimal thawing of cryopreserved peripheral blood mononuclear cells for use in high-throughput human immune monitoring studies. Cells*, 2012, 1, 313-324. [\(Link\)](#)
- Kuerten S, Batoulis H, Recks MS, Karacsony E, Zhang W, Subbramanian RA, Lehmann PV. *Resting of cryopreserved PBMC does not in general benefit the performance of antigen-specific T cell ELISPOT assays. Cells*, 2012, 1, 409-427. [\(Link\)](#)
- Anthony D, Milkovich KA, Zhang W, Rodriguez B, Yonkers NL, Heeger PS, Tary-Lehmann M, Lehmann PV. *Dissecting the T cell response: proliferation assays vs. cytokine signatures by ELISPOT. Cells*, 2012, 1, 127-140. [\(Link\)](#)
- Karulin AY, Quast S, Hesse M, Lehmann PV. *Neuroantigen-specific CD4 cells expressing IFN- γ , IL-2 and IL-3 in a mutually exclusive manner prevail in EAE, representing independent Th1 sublineages. Cells*, 2012, 1, 576. [\(Link\)](#)
- Zhang W, Moldovan I, Targoni OS, Subbramanian R, Lehmann PV. *How much of virus-specific CD8 T cell reactivity is detected with a peptide pool when compared to individual peptides? Viruses*, 2012, 4, 2636-2649. [\(Link\)](#)
- Hundgeburth LC, Wunsch M, Rovituso D, Recks MS, Addicks K, Lehmann PV, Kuerten S. *The complement system contributes to the pathology of experimental autoimmune encephalomyelitis by triggering demyelination and modifying the antigen-specific T and B cell response. Clin. Immunol*, 2012, 146, 155-164. [\(Link\)](#)
- Kuerten S, Addicks K, Lehmann PV. *Studies on the CNS histopathology of EAE and its correlation with clinical and immunological parameters. In: Weissert R (Ed.), Experimental Autoimmune Encephalomyelitis - Models, Disease Biology and Experimental Therapy. Rijeka: Intech (2012). (Link)*
- Lehmann PV, Sundararaman S. *When results of T cell immune monitoring match / do not match clinical outcomes of tumor vaccine trials - what more could and should we measure? In: The Tumor ImmunoEnvironment*, ed. MR Shurin, V Umansky & AM Malyguine, 2013. Chapter 32, 725-740. [\(Link\)](#)
- Chenggang Jin, Roen Diana R, Lehmann PV, Kellermann Gottfried H. *An enhanced ELISPOT assay for sensitive detection of antigen-specific T cell responses to Borrelia burgdorferi. Cells*, 2013, 607-620. [\(Link\)](#)
- Kuerten S, Wunsch M, Lehmann PV. *Longitudinal T cell-derived IFN- γ /IL-17 balances do not correlate with the disease course in two mouse models of experimental autoimmune encephalomyelitis. J. Immunol. Methods*, 2013. 398-399, 68-75. [\(Link\)](#)
- Kuerten S, Pommerschein G, Barth SK, Hohmann C, Miles B, Sammer FW, Duffy CE, Wunsch M, Rovituso DM, Schroeter M, Addicks K, Kaiser CC, Lehmann PV. *Identification of a B cell-dependent subpopulation of multiple sclerosis by measurements of brain-reactive B cells in the blood. Clin. Immunol*, 2014, 152, 20-24. [\(Link\)](#)
- Chauvat A, Benhamouda N, Gey A, Lemoine FM, Paulie S, Carrat F, Gougeon ML, Rozenberg F, Krivine A, Cherai M, Lehmann P, Quintin-Colonna F, Launay O, Tartour E *Clinical validation of IFN γ /IL-10 and IFN γ /IL-2 FluoroSpot assays for*

*the detection of Tr1 T cells and influenza vaccine monitoring in humans. **Hum Vaccin Immunother.** 2014, 10, 104-13. [\(Link\)](#)*

- C.Hohmann,B.Milles, M.Schinke, M.Schroeter, J. Ulzheimer, P. Kraft, C. Kleinschnitz, P.V.Lehmann, S.Kuerten. *Categorization of multiple sclerosis relapse subtypes by B cell profiling in the blood. **Acta Neuropathol. Commun.** 2014, 2, 138. [\(Link\)](#)*
- P. V. Lehmann, A. Rottlaender and S. Kuerten. *The autoimmune pathogenesis of multiple sclerosis. **Pharmazie**, 2015, 70, 5-11. [\(Link\)](#)*
- Alexey Y. Karulin, Richard Caspell, Marcus Dittrich, and Paul V. Lehmann. *Normal distribution of CD8 cell derived ELISPOT counts within replicates justifies the reliance on parametric statistics for identifying positive responses. **Cells**, 2015, 4, 96-111. [\(Link\)](#)*
- Srividya Sundararaman, Alexey Y. Karulin, Tameem Ansari, Nadine BenHamouda, Judith Gottwein, Sreenivas Laxmanan, Steven M. Levine, John T. Loffredo, Stephanie McArdle, Christine Neudoerfl, Diana Roen, Karina Silina, Mackenzie Welch, and Paul V. Lehmann. *High reproducibility of ELISPOT counts from nine different laboratories. **Cells**, 2015, 4, 21-39. [\(Link\)](#)*
- Marie Wunsch, Richard Caspell, Stefanie Kuerten, Paul V. Lehmann, and Srividya Sundararaman. *Serial measurements of apoptotic cell numbers provide better acceptance criterion for PBMC quality than a single measurement prior to the T cell assay. **Cells**, 2015, 4, 40-55. [\(Link\)](#)*
- Jodi Hanson, Srividya Sundararaman, Richard Caspell, Edith Karacsony, Alexey Y. Karulin, and Paul V. Lehmann. *ELISPOT assays in 384-well format: up to 30 data points with 1 million cells. **Cells**, 2015, 4, 71-83. [\(Link\)](#)*
- Alexey Y. Karulin, Kinga Karacsony, Wenji Zhang, Oleg S. Targoni, Ioana Moldovan, Marcus Dittrich, Srividya Sundararaman, and Paul V. Lehmann. *ELISPOTs produced by CD8 and CD4 cells follow Log Normal size distribution permitting objective counting. **Cells**, 2015, 4, 56-70. [\(Link\)](#)*
- Marie Wunsch, Wenji Zhang, Jodi Hanson, Richard Caspell, Alexey Y. Karulin, Marscha S. Recks, Stefanie Kuerten, Srividya Sundararaman, and Paul V. Lehmann. *Characterization of the HCMV-specific CD4 T cell responses that are associated with protective immunity. **Viruses**, 2015, 7, 4414-4437. [\(Link\)](#)*
- Ioana Moldovan, Oleg Targoni, Wenji Zhang, and Paul V. Lehmann. *How frequently are predicted peptides actually recognized by CD8 cells? **Cancer Immunol., Immunotherapy** 2016, 65, 847-855. [\(Link\)](#)*
- Marie Wunsch, Christopher Hohmann, Bianca Milles, Christina Rostermund, Paul V. Lehmann, Michael Schroeter, Antonios Bayas, Süleyman Ergün, Stefanie Kürten. *The correlation between the virus- and brain antigen-specific B cell response in the blood of patients with multiple sclerosis. **Viruses**, 2016, 8, 105. [\(Link\)](#)*
- Marie Wunsch et al, Paul V. Lehmann and Stefanie Kuerten. *The enteric nervous system is a potenital autoimmune target in multiple sclerosis. **Acta Neuropathologica**, 2017,134, 281. [\(Link\)](#)*
- Andrea Duechting, A., Przybyla, A., Kuerten, S. and Lehmann, P.V. *Delayed activation kinetics of Th2 and Th17 vs. Th1 Cells. **Cells**, 2017, 6, 47. [\(Link\)](#)*
- Annemarie Schiller, Ting Zhang, Ruliang Li, Andrea Duechting, Srividya Sundararaman, Anna Przybyla, Stefanie Kuerten and Paul V. Lehmann. *A positive control for detection of functional CD4 T cells in PBMC: The CPI pool. **Cells**, 2017, 6, 47. [\(Link\)](#)*
- Tariq A. Bhat, Kalathil Suresh, Paul N. Bogner, Paul V. Lehmann, Thomas H. Thatcher, Richard P. Phipps, Patricia J. Sime and Yasmin Thanavala (2018) *Secondhand smoke impairs immune responses to respiratory infections. **J. Immunology**, 2018, 200, 2927-2940. [\(Link\)](#)*
- Megyesi, Z., Lehmann, P.V., and Karulin A.Y. *Multi-color FLUOROSPOT counting using the ImmunoSpot® Fluoro-X™ Suite. **Methods in Molecular Biology**, 2018, 1808, 115-131. [\(Link\)](#)*
- Alexey Y. Karulin*, Zoltán Megyesi, Richard Caspell, Jodi Hanson, and Paul V. Lehmann. *Multiplexing T- and B-cell FLUOROSPOT assays: Experimental validation of the multi-color ImmunoSpot® Software based on center of mass distance algorithm. **Methods in Molecular Biology**, 2018, 1808, 95-113. [\(Link\)](#)*
- Roen, D.R., Hanson J, and Lehmann, P.V. *Multiplex ImmunoSpot® Assays for the Study of Functional B Cell Subpopulations. **Methods in Molecular Biology**, 2018, 1808, 73-83. [\(Link\)](#)*
- Caspell, R., and Paul V. Lehmann. *Detecting all Immunoglobulin Classes and Subclasses in Multiplex 7 Color ImmunoSpot® Assay. **Methods in Molecular Biology**, 2018,1808, 85-94. [\(Link\)](#)*
- Hanson, J. and Lehmann, P.V. *Four color ELISPOT assay for the identification of T cell subpopulations. **Methods in Molecular Biology**, 2018,1808, 51-62. [\(Link\)](#)*
- Lehmann, A., Megyesi Z., Przybyla A., and P.V. Lehmann: *Reagent Tracker Dyes permit quality control for verifying plating accuracy in ELISPOT tests. **Cells**, 2018, 7, 3. [\(Link\)](#)*

- Welter A., Sundararaman S., Li R., Zhang T., Karulin A.Y., Lehmann A., Naeem V., Roen D.R., Kuerten S., and P. V. Lehmann (2018). *High-throughput GLP-capable target cell visualization assay for measuring cell-mediated cytotoxicity*. **Cells**, 2018, 7, 35. ([Link](#))
- Fecher P., Caspell R., Naeem, V., Karulin A.Y., Kuerten S. and P.V. Lehmann. *B cells and B cell blasts withstand cryopreservation while retaining their functionality for producing antibody*. **Cells**, 2018, 7, 50. ([Link](#))
- Fredrik Terlutter, Tobias M. Nowacki, Richard Caspell, Ruliang Li, Krisztian Horvath, Charlotte von Gall, Stefanie Kurten, Srividya Sundararaman, and Paul V. Lehmann. *Direct detection of T and B memory lymphocytes reveals HCMV exposure that serum antibodies fail to identify*. **Cells**, 2018, 7, 75. ([Link](#))
- Przybyła A., Zhang T., Li R., Roen D.R., Mackiewicz A., and P. V. Lehmann. *Natural T cell autoreactivity to melanoma antigens: clonally expanded melanoma-antigen specific CD8+ memory T cells can be detected in healthy humans*. **Cancer Immunol. Immunotherapy**, 2019, 68, 709-720. ([Link](#))
- Paul V. Lehmann, Maneewan Suwansaard, Ting Zhang, Diana R. Roen, Greg A. Kirchenbaum, Alexey Y. Karulin, Alexander Lehmann, and Pedro A. Reche. *Comprehensive evaluation of the expressed CD8+ T cell epitope space using high-throughput epitope mapping*. **Frontiers in Immunology**, 2019, 10, 655. ([Link](#))
- Greg A. Kirchenbaum, Jodi Hanson, Diana R. Roen, and Paul V. Lehmann. *Detection of antigen-specific T cell lineages and effector functions based on secretory signature* **Journal of Immunological Sciences**, 2019, 3, 14-20. ([Link](#))
- Diego VP, Luu BW, Hofmann M, Dinh LV, Almeida M, Powell JS, Rajalingam R, Peralta JM, Kumar S, Curran JE, Sauna ZE, Kellerman R, Park Y, Key NS, Escobar MA, Huynh H, Verhagen AM, Williams-Blangero S, Lehmann PV, Maraskovsky E, Blangero J, Howard TE. *Quantitative HLA-class-II/factor VIII (FVIII) peptidomic variation in dendritic cells correlates with the immunogenic potential of therapeutic FVIII proteins in hemophilia A*. **J Thromb Haemost**, 2020,18, 201-216. ([Link](#))
- Fridolin Franke, Greg A. Kirchenbaum , Stefanie Kuerten and Paul V. Lehmann. *IL-21 in Conjunction with Anti-CD40 and IL-4 Constitutes a Potent Polyclonal B Cell Stimulator for Monitoring Antigen-Specific Memory B Cells*. **Cells**, 2020, 9, 433. ([Link](#))
- Alexander Lehmann and Paul. V. Lehmann. *Aleatory epitope recognition prevails in human T cell responses?* **Critical Reviews in Immunology**, 2020, 40: 225-235. ([Link](#))
- Tariq A. Bhat, Suresh Gopi Kalathil, Paul N Bogner, Paul V. Lehmann, Thomas H. Thatcher, Patricia J. Sime, and Yasmin Thanavala. *AT-RvD1 mitigates SHS-exacerbated pulmonary inflammation and restores SHS-suppressed anti-bacterial immunity*. **J. Immunology**, 2021, 206: j2001228. ([Link](#))
- Alexander A. Lehmann, Ting Zhang, Pedro A Reche, Paul V Lehmann. *Discordance between the predicted vs. the actually recognized CD8+ T cell epitopes of HCMV pp65 antigen and aleatory epitope dominance*. **Frontiers in Immunology**, 2021, 11: 618428 ([Link](#))
- Alexander A. Lehmann, Pedro A. Reche, Ting Zhang, Maneewan Suwansaard, and Paul. V. Lehmann. *CERI, CEF-X, and CPI: largely improved positive controls for testing antigen-specific T cell function in PBMC compared to CEF*. **Cells**, 2021, 10, 248. ([Link](#))
- Alexander A. Lehmann, Greg A Kirchenbaum, Ting Zhang, Pedro A Reche, Paul V Lehmann. *Deconvoluting the T cell response to SARS-CoV-2: specificity versus chance- and cognate cross-reactivity*. 2021. **Frontiers in Immunology**. 2021, 12: 982 ([Link](#))
- Anna Przybyla· Alexander A. Lehmann, Ting Zhang, Jacek Mackiewicz, Łukasz Galus, Greg A. Kirchenbaum, Andrzej Mackiewicz, Paul V. Lehmann. *Functional T cell reactivity to melanocyte antigens is lost during development of malignant melanoma, but is restored with successful immunotherapy*. 2021 **Cancers**,13: 223 ([Link](#))
- Sabine Tacke, Stefan Braune, Damiano M Rovituso, Tjalf Ziemssen , Paul V Lehmann, Heidi Dikow, Arnfin Bergmann, and Stefanie Kuerten. *B-cell activity predicts response to glatiramer acetate and interferon in relapsing-remitting MS*. **Neurology: Neuroimmunology & Neuroinflammation MS**, 2021;8:e980 ([Link](#))
- Sebastian Köppert, Carla Wolf, Noémi Becza, Giuseppe A. Sautto, Fridolin Franke, Stefanie Kürten, Ted M. Ross, Paul V. Lehmann, and Greg A. Kirchenbaum. *Affinity tag coating enables reliable detection of antigen-specific B cells in ImmunoSpot Assays*. **Cells**, 2021,10:1843 ([Link](#))
- Alvaro Ras-Carmona, Alexander A. Lehmann, Paul V Lehmann, and Pedro A. Reche. *Prediction of B cell epitopes using a novel sequence similarity-based method*. **Sci Rep**. 2022, 12:13739.
- John Nemunaitis, Paul V. Lehmann, and James Willey. *Pros Less Than Cons for COVID-19 Vaccination and Boost of Young Adults in Light of Recent Literature*. **Eur. Soc. Med**, 2022, 10: 8 ([Link](#))

- Carla Wolf, Sebastian Köppert, Noémi Becza, Stefanie Kürten, Greg Adam Kirchenbaum and Paul V Lehmann. *Antibody levels poorly reflect on the frequency of memory B cells generated following SARS-CoV-2, seasonal influenza, or EBV infection.* **Cells.** 2022, 11 (22), 3662. ([Link](#))
- Paul V. Lehmann, Diana R. Roen, and Alexander A. Lehmann. *Unbiased, high-throughput identification of T cell epitopes by ImmunoSpot®.* **Meth. Molec. Biol.** 2023, 2673: 69-88. ([Link](#))
- Alexander A. Lehmann, Diana R. Roen, Zoltan Megyesi, and Paul V. Lehmann. *Reagent Tracker™ platform verifies and provides audit trails for the error-free implementation of T cell ImmunoSpot® assays.* **Methods Mol Biol**, 2024, 2768: 105-114. ([Link](#))
- Paul V. Lehmann, Zhigang Liu, Noémi Becza, Alexis V. Valente, Junbo Wang, and Greg A. Kirchenbaum. *Monitoring memory B cells by next generation ImmunoSpot® provides insights into humoral immunity that measurements of circulating antibodies do not reveal.* **Methods Mol Biol**, 2024, 2768: 167-200. ([Link](#))
- Lingling Yao, Noémi Becza, Andrea Maul-Pavicic, Jack Chepke, Greg A. Kirchenbaum, and Paul V. Lehmann. *Four-color ImmunoSpot® assays requiring only 1-3 mL of blood permit precise frequency measurements of antigen-specific B cells secreting immunoglobulins of all four classes and subclasses.* **Methods Mol Biol**, 2024, 2768: 251-272. ([Link](#))
- Alexey Y. Karulin, Melinda Katona, Zoltán Megyesi, Greg A. Kirchenbaum and Paul V. Lehmann. *Artificial intelligence-based counting algorithm enables accurate and detailed analysis of the broad spectrum of spot morphologies observed in antigen-specific B cell ELISPOT and FluoroSpot assays.* **Methods Mol Biol**, 2024, 2768: 59-85. ([Link](#))
- Noémi Becza, Zhigang Liu, Jack Chepke, Xing-Huang Gao, Paul V. Lehmann¹, and Greg A. Kirchenbaum^{1,†} *Assessing the affinity spectrum of the antigen-specific B cell repertoire via ImmunoSpot®.* **Methods Mol Biol**, 2024, 2768: 211-239. ([Link](#))
- Alexander A. Lehmann, Paul V. Lehmann and Steven Todryk. How reliable are predictions of CD8+ T cell epitope recognition? Lesson for cancer. **Onco** 2024; 4(2):68-76. ([Link](#))
- Paul V. Lehmann*, Alexey Y. Karulin, Noémi Becza, Lingling Yao, Zhigang Liu, Jack Chepke, Andrea Maul-Pavicic, Carla Wolf, Sebastian Köppert, Alexis V. Valente, Anton V. Gorbachev, Magdalena Tary-Lehmann, and Greg A. Kirchenbaum. Theoretical and practical considerations for validating antigen-specific B cell ImmunoSpot assays. **J. Immunol Methods**, 2025, 113817 ([Link](#))
- Greg A. Kirchenbaum, Graham Pawelec, and Paul V. Lehmann. Information that cannot be gained by studies of serum antibodies: ImmunoSpot assays permit detailed assessment of antigen-specific memory B cells through defining their frequency, affinity spectrum, cross-reactivity profile, and antibody class/subclass utilization. **Cells**, 2025, 14: 223 ([Link](#))
- Marcio Almeida, Vincent P. Diego, Kevin R. Viel, Bernadette W. Luu, Karin Haack, Raja Rajalingam, Afshin Ameri, Meera Chitlur, Natalia Rydz, David Lillicrap, Raymond G. Watts, Craig M. Kessler, 5 Christopher Ramsey, Long V. Dinh, Benjamin Kim, Jerry S. Powell, Juan M. Peralta, Ruayda Bous, 6 Shirley M. Abraham, Yu-Min Shen, Carlos M. Murillo, Henry Mead, Paul Lehmann, Eli J. Fine, 7 Miguel A. Escobar, Satish Kumar, Barbara Konkle, Sarah Williams-Blangero, Carol K. Kasper, Laura Almasy, Shelley A. Cole, John Blangero, and Tom E. Howard. A scan of pleiotropic immune mediated disease genes identifies novel determinants of baseline FVIII 1 Inhibitor status in Hemophilia-A. **Genes and Immunity**. 2025, 3: 179-189. ([Link](#))
- Vincent P. Diego, Bernadette W. Luu, Marcio A. Almeida, Raja Rajalingam, Marco Hofmann, Jacob A. Galan, Eron G. Manusov, Jerry S. Powell, Long V. Dinh, Henry Mead, Huy Huynh, Anne M. Verhagen, Juan M Peralta, Paul V. Lehmann, Satish Kumar, Eli J. Fine, Joanne E. Curran, Harald H. Goring, Miguel A. Escobar, Sarah Williams-Blangero, Eugene Maraskovsky, John Blangero, Tom E. Howard. Disentangling effects of the DR and DQ isomers encoded by the HLA class II haplotype DRB1*15:01/DQB1*06:02 to help establish the true risk allele for FVIII inhibitor development in Hemophilia A. **Front. Genet.** 2025, 16. DOI 10.3389/fgene.2025.1506862 ([Link](#))
- Georgia Stylianou, Greg Kirchenbaum, Paul V. Lehmann, Simon Pearce, Stephen Todryk. Measuring human memory B cells in autoimmunity using ELISPOT. 2025. **Biomolecules**, 15:643. doi: 10.3390/biom15050643. ([Link](#))
- Noémi Becza, Lingling Yao, Paul V. Lehmann, and Greg A. Kirchenbaum. Optimizing PBMC utilization and cryopreservation for ImmunoSpot analysis of rare antigen-specific memory B cells. **Vaccines**, 2025. 13: 765 ([Link](#))

E. Former Trainees who became Faculty:

Patrick Ott, MD, PhD, now Associate Professor, Dana-Farber Cancer Institute, Harvard Medical School
 Peter Heeger, MD, now Professor at Mount Sinai, NY
 Thomas Forsthuber, MD, PhD, now Professor University of Texas, San Antonio
 Michael Anderson, M.D., now Professor, UCSF Benioff Children Hospitals' President
 Don Anthony, MD, now Professor of Medicine, at CWRU
 Heinfried Radeke, MD, PhD, now Professor at Goethe University Frankfurt, Germany
 Clara Pelfrey, PhD, now Associate Professor at CWRU/CCF
 Stefanie Kuerten, MD, PhD, now Professor at University of Bonn, Germany

Postdoctoral trainees:

Doctoral thesis mentor to:

Alexey Karulin, Ph.D.
 Oleg Targoni, Ph.D.
 Patrick Ott, MD
 Frauke Rininsland, Ph.D.
 Beate Berner, MD
 Wenji Zhang, MD
 Tobias Schlingman, MD
 Ioana Moldovan, MD
 Thomas Kleen, Ph.D.
 Thomas Hattier, Ph.D.
 Peter Heeger, MD
 Thomas Forsthuber, MD, Ph.D.
 Michael Anderson, MD
 Heinfred Radeke, MD, Ph.D.
 Clara Pelfrey, Ph.D.
 Don Anthony, MD
 Srividya Sundararaman, Ph.D.
 Anna Przybyła, Ph.D.
 Greg Kirchenbaum, Ph.D.
 Maneewan Suwansaard, Ph.D.
 Xing-Huang Gao, Ph.D.
 Loral Showalter, Ph.D.

Kristina Feldman
 Maike Hesse
 Judith Gottwein
 Jan Baus
 Thomas Kleen
 Christian Kreher
 Wolf Bartholomae
 Harald Hofstaetter
 Kamruz Darabi
 Britta Stern
 Christian Kreher
 Robert Gurkov
 Anke Lonsdorf
 Jan Baus
 Bernhard Herzog
 Tobias Schlingman
 Stephan Quas
 Hayder Kuckrek

Stefanie Kuerten
 Tobias Nowacki
 Felix Lichtenegger
 Justine Tingo
 Annemarie Schiller
 Marie Wunsch
 Fredrik Terlutter
 Philipp Fecher
 Andrea Duechting
 Fridolin Franke
 Carla Wolf
 Sebastian Koeppert
 Alex A. Lehmann