**Deming Sun, M.D.**

**CURRICULUM VITAE**

**PERSONAL HISTORY:** Department of Ophthalmology

 David Geffen School of Medicine, and

 Doheny Eye Institute

 1355 San Pablo Street

 Los Angeles, CA 90033

 Business telephone: (323) 342-6678

Email: dsun@doheny.org or Demingsun@mednet.ucla.edu

**EDUCATION:** Medical School – Shanghai First Medical University, Shanghai, China, 1965-1971

 M.D., Graduate School – Graduate School of Medicine, Chinese Academy of Medical Sciences, Beijing, China, 1978-1979

 M.D., Medicine

 Albert-Ludwig Universitat

 Freiburg, Germany

 1980-1982

 **Postdoctoral Training:**

 T cell biology and autoimmune diseases. 1985 and 1986-1988 (two periods) Max-Planck Institute, Wurzburg, Germany;

 B cell Biology, 1985-1986, National Jewish Hospital, Denver, USA

**PROFESSIONAL EXPERIENCE:** **Present Position:**

 Professor, Department of Ophthalmology

 David Geffen School of Medicine &

 Mary D Allen endowed chair in vision research, Doheny Eye Institute

 Los Angeles, CA 90033

 2014 – Present

 **Previous Positions:**

 Assistant Professor of Immunology

 St. Jude Children’s Research Hospital

University of Tennessee

 Memphis, TN

 1988-1996

 Associate Professor of Neurology

 University of Alabama at Birmingham

 Birmingham, AL

 1996-2001

 Associate Professor of Ophthalmology

 University of Louisville

 Louisville, KY

 2001-2003

 Professor of Ophthalmology and Microbiology

 and Immunology

 Department of Ophthalmology and Department of Microbiology and Immunology

 University of Louisville

 Louisville, KY

 2003-2008

**PROFESSIONAL ACTIVITIES:** **Committee Service:**

 Member, DNA and Biohazard Agents Committee, St. Jude Children’s Hospital, Memphis, TN, 1993-1996

 Member, Student Promotion Committee, University of Louisville, Louisville, KY, 2004-2005

 Member, Promotion, Appointment, and Tenure (PAT) Committee, University of Louisville, Louisville, KY, 2006-2007

 Member, Research Advisory Committee, Doheny Eye Institute and Department of Ophthalmology, University of Southern California, Los Angeles, CA 2010-Present

 **Professional Associations:**

 Member, International Society of Neuro-immunology, 1987 –

 Member, American Association of Immunologists, 1990 –

 Member, The Association for Research In Vision and Ophthalmology, 2002 –

 **Editorial Services – *Ad Hoc* Reviewer:**

Nature Review Immunology,

Nature Communication,

PLoS One,

Blood,

Journal of Immunology

British Journal of Ophthalmology,

Investigative Ophthalmology & Visual Science,

European Journal of Immunology,

FESEB Journal,

Journal of Leucocyte Biology,

Cellular Immunology,

Current Eye Research,

Journal of Microbiology and Immunology, Journal of Neuroimmunology,

Life Science,

**MAJOR AREAS OF RESEARCH:** Pathogenesis of autoimmune diseases.

 Multiple sclerosis.

 Uveitis.

 T-cell biology.

**NATIONAL INSTITUTES OF HEALTH STUDY SECTION AND OTHER RESPONSIBILITIES:**

1. *Ad hoc* member, “National Institute of Dental & Craniofacial Research, Sjögren’s Syndrome Review Panel,” 2006.
2. *Ad hoc* member, “Anterior Eye Disease (AED) Study Section,” National Institutes of Health, National Eye Institute, 2007.
3. *Ad hoc* member, “Anterior Eye Disease (AED) Member Conflict Reviewers,” National Institutes of Health, National Eye Institute, 2008.
4. *Ad hoc* member, “Anterior Eye Disease (AED) Member Conflict Review,” National Institutes of Health, National Eye Institute, 2009.
5. Chair, “Anterior Eye Disease (AED) Member Conflict Review,” National Institutes of Health, National Eye Institute, 2009.
6. *Ad hoc* member, “Autoimmunity Centers of Excellence,” National Institutes of Health, National Institute of Allergy and Infectious Diseases (NIAID), 2009.
7. Ad hoc member, “Pre-NIH DPVS (Diseases and Pathophysiology of the Visual System) Study Section,” National Institutes of Health, National Eye Institute, 2011.
8. “National Eye Institute Planning Panels: Glaucoma and Optic Neuropathies,” National Institutes of Health, National Eye Institute, 2011.
9. *Ad hoc* Reviewer member, National Eye Institute Special Emphasis Panel,” National Institutes of Health, National Eye Institute, 2011.
10. 2011-2014, Member, NIH DPVS study section.
11. 2018, Ad hoc Reviewer member BDCNJ study section.
12. 2018-19. Reviewer member, NIH Anonymization Study section;

**HONORS AND SPECIAL AWARDS:**

1. Year 2008: Senior Scientific Investigator Award 2008, Research to prevent Blindness;
2. Year 2010: 2nd prize in the field of „Experimental Uveitis“, the EUPIA („European Uveitis Patient Interest Association“;
3. Year 2012: 1st prize in the field of „Experimental Uveitis“, the EUPIA („European Uveitis Patient Interest Association“.
4. 2015. Mary D Allen endowment Chair, Doheny eye institute/UCLA.

**RESEARCH GRANTS AND FELLOWSHIPS RECEIVED:**

**Current Research Grants:**

1. *Role of IL-17+ Autoreactive T-Cells in Experimental Autoimmune Uveitis (EAU)*

Source: National Institutes of Health, National Eye Institute, R01 EY018827

Purpose: The major goals of this project are to determine whether the activation requirements differ between IFN-γ+ interphotoreceptor retinoid-binding protein (IRBP)-specific T-cells and IL-17+ IRBP-specific T-cells, to test the hypothesis that increased activation of the γδ T cell subset leads to an augmented Th17 response and enhanced EAU, and to determine the mechanism by which the interaction between γδ T cells and αβTCR+ IRBP-specific T-cells leads to an augmented Th17 response and enhanced EAU.

Amount: $ 346,000/year

Dates: August 1, 2015 – July 31, 2020

Role: Principal Investigator

**Research Completed in Recent Five Years:**

1. *Regulation by Gammadelta T-Cells of Autoimmune Uveitis (EAU)*

Source: National Institutes of Health, National Eye Institute, R01 EY022403

Purpose: To study the role of γδ T-cells in the ocular inflammation.

Amount: $458,279/year

Dates: May 1, 2012-April 30, 2017

Role: Principal Investigator

1. *Core Grant for Vision Research – Doheny Eye Institute*

Source: National Institutes of Health, National Eye Institute, P30 EY003040

Purpose: Provide core facilities and technical support for eye research projects for the Doheny Eye Institute and the Keck School of Medicine of the University of Southern California.

Amount: $ 616,620

Dates: July 1, 2008-June 30, 2014

Role: Principal Investigator

1. *Characterization of Uveitogenic T-Cells*

Source: National Institute of Health, National Eye Institute, R01 EY014366

Purpose: The major goal of this project was to characterize the uveitogenic T-cells in an animal model of experimental autoimmune uveitis (EAU).

Amount: $ 348,900/yr

Dates: July 1, 2003-June 30, 2009

Role: Principal Investigator

1. *Progression of Uveitis and CD8 Uveitogenic T-Cells*

Source: National Institutes of Health, National Eye Institute, R01 EY017373

Purpose: The major goal of this project was to study the role of CD8 autoreactive T-cells in the pathogenesis and progression of experimental autoimmune uveitis (EAU).

Amount: $$348,900/yr

Dates: February 1, 2007-February 29, 2013

Role: Principal Investigator

1. *Research to Prevent Blindness Senior Scientific Investigator Award*

Source: Research to Prevent Blindness, New York, NY

Purpose: To investigate the pathogenesis of optic neuritis

Amount: $150,000

Dates: 2008

Role: Senior Scientific Investigator

**LECTURES AND PRESENTATIONS:**

1. “Lessons from the Study of Pathogenesis of Autoimmune Encephalomyelitis,” Department of Ophthalmology. University of Louisville, Louisville, KY, Nov 2001.
2. “Pathogenic Linkage Between Autoimmune Encephalomyelitis and Uveitis,” Department of Microbiology and Immunology, University of Louisville, Louisville, KY, Feb 2002.
3. “CD8+ Encephalitogenic and Uveitogenic T-Cells,” The Max-Planck Institute for Neuroimmunology, Martinsried, Munich, Germany, Apr 2002.
4. “CD8+ Encephalitogenic T-Cells,” Berlex Inc., San Francisco, CA, Sep 2002.
5. “Mapping Encephalitogenic Epitope of Myelin/Oligodendrocyte Glycoprotein (MOG) Recognized by CD8+ Encephalitogenic T-Cells Using Dimeric MHC Class I Molecules,” 2002 Shanghai Annual Meeting of Immunology, Nov 2002.
6. “Pathogenesis of Autoimmune Encephalomyelitis and Uveitis,” Shanghai Immunology Institution, Shanghai, China, Nov 2002.
7. “Triggers of Autoimmune Diseases,” Department of Ophthalmology and Vision Center, University of Louisville, Louisville, KY, Feb 2004.
8. “CD8+ Encephalitogenic and Uveitogenic T-Cells,” The Max-Planck Institute of Immunobiology, Freiburg, Germany, Jun 2004.
9. “Destructive and Protective Role of Autoreactive T-Cells,” International Congress of the Eye Research (ICER**),** Speak at the “Internation Congress of eye research, 2004, Sydney Autralia.
10. “Granzymes and Autoimmune Diseases,” The Max-Planck Institute of Immunobiology, Freiburg, Germany, Sep 2004.
11. “CD8+ Encephalitogenic and Uveitogenic T-Cell,” Invited Speaker, 2004 International Immunology Symposium, Shanghai, China, Nov 2004.

### “CSFE-Labeled Cells as a Tool for Study of Cell Activation and Expansion *in vitro* and *in vivo*,” Shanghai Institute of Medical Genetics, Shanghai Children's Hospital, Shanghai Jiao Tong University, Shanghai, China, Nov 2004.

1. “Autoimmune Response Inside the Immuno-Privileged Sites,” Department of Ophthalmology and Vision Center, University of Louisville, Louisville, KY, Jan 2005.
2. “Characterization of CD8+ Autoreactive T-Cell,” Lecture at the Brown Cancer Center, University of Louisville, Louisville, KY, Jan 2005.
3. “CD8+ Autoreactive T-Cell and CD8+ Autoimmune-Protecting Cell,” Lecture at the Department of Immunology and Microbiology, University of Louisville, Louisville, KY, Jan 2005.
4. “Activation and Functional Diversity of CD8+ IRBP-Specific T-Cell,” Presentation at the annual meeting of ARVO (Association for Research in Vision and Ophthalmology), May 2006.
5. “Mechanism of Autoimmune Pathogenesis,” Chair of the Session, 8th International Neuroimmunology Conference, Nagoya, Japan (Oct.15-20, 2006), Oct 19, 2006.
6. “Demyelinating Disease of MOG-Induced EAU,” Invited lecture at the Department of Neurology, University of California at Irvine, Irvine, CA, Mar 3, 2007.
7. “Exposure of IRBP-Specific CD8 Autoreactive T-Cells to Low Doses of Autoantigen Preferentially Activates Functionally Suppressive T-Cell Subsets,” Presentation at the annual meeting of ARVO (Association for Research in Vision and Ophthalmology), May 7, 2007.
8. “Pathogenesis of autoimmune diseases” Lecture at the Department of Pathology, Ohio State University, Columbus, OH, Oct 30, 2007.
9. “Characterization of Autoreactive T-Cells,” Lecture at the Suzhou University, Suzhou, China, Dec 14, 2007.
10. “Pathogenesis of Autoimmune Diseases,” Lecture at the The First Affiliated Hospital of Suzhou University, Suzhou, China, Dec 15, 2007.
11. “Parenchymal Cells of the Autoimmune Organ Actively Participate in the Pathogenic Process of Autoimmune Disease,” Presentation at the annual meeting of ARVO-Pfizer Ophthalmics, Fort Lauderdale, FL, Apr 26, 2008.
12. “Major role of  T-Cells in the Induction of IL-17+ Uveitogenic T-Cells in Mouse EAU,” presentation at the annual meeting of ARVO (Association for Research In Vision and Ophthalmology), Fort Lauderdale, FL, Apr 28, 2008.
13. “Characteristics of Uveitogenic T-Cells,” Speech at s the 2008 Word Ophthalmology Conference, Hong Kong (Jun 28-Jul 2), Jun 30, 2008.
14. “Immunoregulatory Role of γδ T-Cells in the Generation of IL-17+ Uveitogenic T-Cells in Mouse EAU,” Invited Speaker, ARVO-Summer Meeting: [Ocular Autoimmunity and Inflammation](http://www.arvo.org/../EWEB/startpage.aspx?site=serc08), Monterey, CA. Aug 1, 2008.
15. “T-Cells Play a Major Role In the Generation of IL-17+ Uveitogenic T-Cells,” invited speaker, NEI, National Institutes of Health, Aug 29, 2008.

### “Immunology Study of Ocular Inflammation,” Lecture at the Department of Ophthalmology, Xin Hua Hospital, Shanghai Jiao Tong University, Shanghai, China, Nov 18, 2009.

### “Immunology Study of Autoimmune Disease,” Lecture at the Shanghai Institute of Medical Genetics, Shanghai Children's Hospital, Shanghai Jiao Tong University, Shanghai, China, Nov 16, 2009.

### “Pathogenesis of Autoimmune Diseases,” lecture at the Department of Ophthalmology, Chongqing Medical School, Chongqing, China, Nov 9, 2009.

1. “Enhancing and Inhibitory Effects of γδ T-Cells on Uveitogenic αβ T Cells are Convertible,” presentation at the annual meeting of ARVO (Association for Research in Vision and Ophthalmology), May 2011.
2. “Regulatory Role of γδ T-Cells in Autoimmune Uveitis (EAU),” lecture at the Department of Ophthalmology, University of California at Los Angeles, Los Angeles, CA, Nov 14, 2011 .
3. “γδ T-Cells in Autoimmune Disease”, lecture at the Department of Ophthalmology, Chongqing Medical School, Chongqing, China, Dec 2, 2011.
4. “Regulatory Role of γδ T-Cells in Autoimmune Uveitis (EAU)”, lecture at the NanKai University, China, Apr 17, 2013.
5. “Pathogenesis of Autoimmune Diseases,” Lecture at the Institute of Eye Diseases, Tianjin Medical School, China, Apr 20, 2013.
6. “Pathogenic study of autoimmune inflammation”, Lecture at Department of Ophthalmology. UCLA, Aug.29, 2014.
7. “The role of γδ T cell and extracellular ATP metabolites (adenosine) in autoimmune pathogenesis” Lecture at Cleveland Clinic, Lerner Research institute, Cleveland, Ohio. Mar.30, 2016.
8. Ocular Inflammation. Lecture at “Cal-Tech-Doheny Research workshop”. May 23, 2016.
9. “Effect of ATP-Adenosine Metabolism and Function in Autoimmune Responses“. Distinguished Ophthalmology Lecture Series, USC Roski Eye Institute. Feb.26, 2019.

**PUBLICATION/BIBLIOGRAPHY**

**RESEARCH PAPERS (PEER REVIEWED):**

1. Nian, H., D.Sun et al. MmiR-223-3p modulates Th helper 17 responsescell function in experimental autoimmune uveitis (EAU) by via effecting on negatively regulating transcription factor FOXO3 expression in experimental autoimmune uveitis (EAU). FESEB J. 2019. in press.
2. Peng,X., X.Zhang, Y,Zhao, X.Meng, J.Qiao, D.Sun and R.Zhao. 2019. Toll-like receptor-mediated activation of CD39 internalization in BMDCs leads to
3. extracellular ATP accumulation and facilitates P2X7 receptor activation Front Immunol. In revision.
4. He, Z.,Sun, X.,Ma, Z., Fu, J.,Huang, B.,Liu, F.,Chen, Y.,Deng, T.,Han, X.Sun, D.,Lan, C. 2018. Heat shock protein 70 protects mouse against post-infection irritable bowel syndrome via up-regulating intestinal gammadelta T cell's Th17 response. Cell Biosci.8:38-42.
5. Phalke SP, Huang Y, Rubtsova K, Getahun A, Sun D, Reinhardt RL, O'Brien RL, Born WK. 2019. γδ T cells shape memory-phenotype αβ T cell populations in non-immunized mice. PLoS One. 14(6):e0218827.
6. Li X, Liang D, Shao H, Born WK, Kaplan HJ, Sun D. 2019. Adenosine receptor activation in the Th17 autoimmune responses of experimental autoimmune uveitis. Cell. Immunol. 339:24-38.
7. Yun, J., Xiao,T., Zhou,L., Beuerman,RW., Li,J., Zhao,Y., Zhang,X., Sun,D., Kaplan,HJ., and Shao,H. 2018. Local S100A8 Levels Correlate With Recurrence of Experimental Autoimmune Uveitis and Promote Pathogenic T Cell Activity. IOVS. 59(3): 1332–1342. PMC5846334.
8. Liang,D., H.Shao, WK. Born, RL. O'Brien, HJ. Kaplan, and D.Sun. 2018. High level expression of A2ARs is required for the enhancing function, but not for the inhibiting function, of γδ T cells in the autoimmune responses of EAU. PLoS One. 13: e0199601. PMC6013223.
9. Liang,D., JI Woo, H.Shao, WK. Born, RL. O'Brien, HJ. Kaplan, and D.Sun. 2018. Ability of γδ T cells to modulate the Foxp3 T cell response is dependent on Adenosine. PLoS One. 13: e0197189. PMC5957379.
10. Liang,D., H.Shao, WK. Born, RL. O'Brien, HJ. Kaplan, and D.Sun. 2018. Connection between γδ T cell- and adenosine-mediated immune regulation in the pathogenesis of experimental autoimmune uveitis. Crit. Rev. Immunology. 38:233-143. PMC6361114.
11. Born, W. K., Y. Huang, R. L. Reinhardt, H. Huang, D. Sun, and R. L. O’Brien. 2017. Chapter One - γδ T Cells and B Cells. *Adv.Immunol.* W. A. Frederick, ed. Academic Press. 1-45.PMID: 28413020.
12. Zhao, Z., Y. Liang, Y. Liu, P. Xu, M. J. Flamme-Wiese, D. Sun, J. Sun, R. F. Mullins, Y. Chen, and J. Cai. 2017. Choroidal γδ T cells in protection against retinal pigment epithelium and retinal injury. FASEB J. 2017; 31: 4903–4916. PMC5636697.
13. Yun, J., G. Jiang, Y. Wang, T. Xiao, Y. Zhao, D. Sun, H. J. Kaplan, and H. Shao. 2017. The HMGB1-CXCL12 Complex Promotes Inflammatory Cell Infiltration in Uveitogenic T Cell-Induced Chronic Experimental Autoimmune Uveitis. Front Immunol.8: 142. PMC5306251.
14. Liang,D., Nian, H., Shao,H., Kaplan, HJ., and Sun,D. Functional conversion and dominance of γδ T subset in mouse experimental autoimmune uveitis. J.Immunol. In revision.2017. 198:1427-1438. PMC5296277
15. Xue,L, Lu,X., Sun,D., Wang,X., Yang,L., Zhao,S., Nian,H., and Wei,R. Adipose-derived mesenchymal stem cells reduce lymphocytic infiltration in a rabbit model of induced autoimmune dacryoadenitis. IOVS.2016. 157:5161-5170. PMID 27699412.
16. Xiao,Q., Xue,L., Sun,D, Yi, H, Lu,Z., and Nian,H. TLR7 Engagement on Dendritic cells (DCs) Enhances Autoreactive Th17 Responses via Activation of ERK. I.Immunol. 2016. 197:3820-3830. PMID27798152.
17. Zhao,R, Liang,D, and Sun, D. CD73 Blockade of Extracellular ATP Effect by Oxidized ATP Effectively Mitigated Induced Mouse Experimental Autoimmune Uveitis (EAU). PLoS One. 2016. 11: e0155953. PMC4873015.
18. Liang,D, Zuo,A, Zhao,R, Shao,H, Born, W., Kaplan,HJ. O'Brien, RL, and Sun, D. 2016. CD73 expressed on γδ T cells shapes their regulatory effect in experimental autoimmune uveitis. PLoS One. 11: e0150078. PMC4769068.
19. Liang,D, Zuo,A, Zhao,R, Shao,H, Kaplan,HJ. and Deming Sun. 2016. Regulation of adenosine deaminase (ADA) on induced mouse experimental autoimmune uveitis (EAU). J.Immunol. 196:2646-54. PMC4779687.
20. Huang, Y, Yang, Z, Huang, C, McGowan,J, Casper,T, Sun,D, Born WK, O'Brien RL. 2015. γδ T Cell-Dependent Regulatory T Cells Prevent the Development of Autoimmune Keratitis. J.Immunol. 195(12):5572-81. PMC4670787.
21. Jiang,G, Wang,Y, Yun,J, Hajrasouliha,AR, Zhao,Y, Sun,D, Kaplan,HJ, Shao,H.2015. HMGB1 release triggered by the interaction of live retinal cells and uveitogenic T cells is Fas/FasL activation-dependent. J Neuroinflammation. 22; 12:179. PMC4579830.
22. Sun,D, Liang,D, Kaplan,HJ, and Shao,H. 2015. The role of Th17-associated cytokines in the pathogenesis of experimental autoimmune uveitis (EAU). Cytokine. 2015 Jul;74(1):76-80. PMC4457592.
23. Chen M, Liang D, Zuo A, Shao H, Kaplan HJ, Sun D. 2015. An A2B Adenosine Receptor Agonist Promotes Th17 Autoimmune Responses in Experimental Autoimmune Uveitis (EAU) via Dendritic Cell Activation. PLoS One, 10: e0132348. PMC4492970.
24. Liang D, Zuo A, Shao H, Chen,M., Kaplan HJ, Sun D. 2015. A2B adenosine receptor activation switches differentiation of bone marrow cells to a CD11c+Gr-1+ dendritic cell subset that promotes the Th17 response. Immunity, Inflammation and Disease. 30;3(4):360-73. (PMC4693722).
25. Liang D, Zuo A, Shao H, M.Chen, Kaplan HJ, Sun D. 2014. The anti- or pro-inflammatory effect of an adenosine receptor agonist on the Th17 autoimmune esponse is inflammatory environmental-dependent. J.Immunol. 193:5498-505. PMC4299924.
26. Liang D, Zuo A, Shao H, M.Chen, Kaplan HJ, Sun D. 2014. Roles of the adenosine receptor and CD73 in the regulatory effect of γδ T cells. PLoS One, 9: e108932. PMC4182534.
27. Aydintug MK, Zhang L, Wang, C., Liang, D., Wands, JM, Michels, AW, Hirsch, B, Day, BJ, Zhang, G, Sun, D., Eisenbarth, GS., O'Brien, RL., Born, WK. 2014. γδ T cells recognize the insulin B:9–23 peptide antigen when it is dimerized through thiol oxidation. Molecular Immunology. 60:116-128. PMC4091716.
28. Jiang,G., D.Sun, H.Yang, Q.Lu, HJ. Kaplan, H.Shao. 2014. HMGB1 is an early and critical mediator in an animal model of uveitis induced by IRBP-specific T cells. J.Leuk.Biol. 95:599-607. PMC3958740.
29. Wei,R., Dong,L., Xiao,L, D. Sun, X.Li., and H, Nian. Engagement of TLR2 enhances IL-17+ autoreactive T cell responses via p38 MAPK signaling in dendritic cells (DCs). 2014. Clin. & Exp. Immunol. 178:353-363.
30. Liang, D., Zuo, A., Shao, H., Born, W.K., O'Brien, R.L., Kaplan, H.J., Sun, D. IL-23 receptor expression on γδ T cells correlates with their enhancing or suppressive effects on autoreactive T cells in experimental autoimmune uveitis (EAU). J. Immunol. 191:1118-1125, 2013. PMC3720691.
31. Liang, D., A.Zuo, H. Shao, WK. Born, HJ. Kaplan, and D.Sun. 2013. Retinoic acid inhibits experimental autoimmune uveitis via inhibiting CD25+ dendritic cell expansion and γδ T cell activation. Invest.Ophthalmol.Vis.Sci. 54: 3493-3505. PMC3665306
32. Liang, D., Zuo, A., Shao, H., Born, W.K., O'Brien, R.L., Kaplan, H.J., Sun, D. Retinoic acid inhibits experimental autoimmune uveitis via inhibiting CD25+ dendritic cell expansion and γδ T cell activation. Invest. Ophthalmol. Vis. Sci. 54:3493-3505, 2013. PMC3665306.
33. Roark, C.L., Huang, Y., Jin, N., Aydintug, M.K., Casper, T., Sun, D., Born, W.K., O'Brien, R.L. A canonical Vγ4Vδ4+ γδ T cell population with distinct stimulation requirements which promotes the Th17 response. Immunol. Res. Mar;55 (1-3):217-230, 2013. PMC3543513.
34. Huang, Y., Aydintug, M.K., Loomis, J., MacLeod, M.K., McKee, A.S., Kirchenbaum, G., Jakubzick, C.V., Kedl, R.M., Sun, D., Jacobelli, J., O'Brien, R.L., Born, W.K. 1.Antigen-specific regulation of IgE antibodies by non-antigen-specific γδ T cells. J. Immunol.190:913-921, 2013. PMC3552125.
35. Jiang, G., Sun, D., Kaplan H.J., Shao, H. Retinal astrocytes pretreated with NOD2 and TLR2 ligands activate uveitogenic T cells. PLoS One 7:e40510, 2012. PMC 3393637.
36. Liang, D., Zuo, A. Shao, H., Born, W.K., Kaplan, H.J., Sun, D. Role of CD25+ dendritic cells in the generation of Th17 autoreactive T cells in autoimmune experimental uveitis (EAU). J. Immunol. 188:5785-5791, 2012. PMC3358586.
37. Zuo, A., Liang, D., Shao, H., Born, W.K., Kaplan, H.J., Sun, D. In vivo priming of IL-17+ uveitogenic T cells is enhanced by Toll ligand receptor (TLR)2 and TLR4 agonists via γδ T cell activation. Mol. Immunol. 50:125-133, 2012. PMC3288362.
38. O'Brien, R.L., Chain, J.L., Kemal Aydintug, M., Bohrer-Kunter, D., Huang, Y., Hardy, I.R., Cambier, J.C., Lahmers, K., Nuhsbaum, T., Davidson, R., Sun, D., Born, W.K. γδ TCR+ T cells, but not B cells, promote autoimmune keratitis in B10 mice lacking gd T cells. Invest. Ophthalmol. Vis. Sci. 53(1):301-308, 2012. PMC 3292366.
39. Nian, H., Liang, D., Zuo, A., Wei, R., Shao, H., Born. W.K., Kaplan, H.J., Sun, D. Characterization of autoreactive and bystander IL-17+ T cells induced in immunized C57BL/6 mice. Invest. Ophthalmol. Vis. Sci. 53:897-905, 2012. PMC 3317428.
40. Ke, Y., Sun, D., Jiang, G., Kaplan, H.J., Shao, H. IL-22–induced regulatory CD11b+ APCs suppress experimental autoimmune uveitis. J. Immunol. 187:2130-2137, 2011. PMC2996892.
41. Ankathatti Munegowda, M., Deng, Y., Chibbar, R., Xu, Q., Freywald, A., Mulligan, S.J., van Drunen Littel-van den Hurk, S., Sun, D., Xiong, S., Xiang. J. A distinct role of CD4(+) Th17- and Th17-stimulated CD8(+) CTL in the pathogenesis of Type 1 diabetes and experimental autoimmune encephalomyelitis. J. Clin. Immunol. 31:811-826, 2011. PMC3275432.
42. Ke, Y., Jiang, G., Sun, D., Kaplan, H.J., Shao, H. Anti-CD3 antibody ameliorates experimental autoimmune uveitis by inducing both IL-10 and TGF-β dependent regulatory T cells. Clin. Immunol. 138:311-320, 2011. PMC3046397.
43. Nian, H., Shao, H., O'Brien. R.A., Born, W.K., Kaplan, H.J., Sun, D. Activated γδ cells promote the activation of uveitogenic T cells and exacerbate EAU development. Invest. Ophthalmol. Vis. Sci. 52(8):5920-5927, 2011. PMC3262554.
44. Ke, Y., Sun. D., Jiang. G., Kaplan. H.J., Shao, H. PD-L1hi retinal pigment epithelium (RPE) cells elicited by inflammatory cytokines induce regulatory activity in uveitogenic T cells. J. Leukoc. Biol. 88:1241-1249, 2010. PMC2996892.
45. Nian, H., Shao, H., Zhang, G., Born, W.K., O'Brien, R., Kaplan, H.J., Sun, D. Regulatory effect of γδ T cells on IL-17+ uveitogenic T cells. Invest. Ophthalmol. Vis. Sci. 51:4661-4667. 2010. PMC2941184.
46. Born, W.K., Yin, Z., Hahn, Y.S., Sun, D., O'Brien, R.L. Analysis of γδ T cell functions in the mouse. J. Immunol. 184 (8):4055-4061. 2010. PMC4476288.
47. Jiang, G., Ke, Y., Sun, D., et al. Regulatory role of TLR ligands on the activation of auto-reactive T cells by retinal astrocytes. Invest. Ophthalmol. Vis. Sci. 50(10):4769-4776, 2009. PMC3271723.
48. Cui, Y., Shao, H., Sun, D., Kaplan, H.J. Regulation of interphotoreceptor retinoid-binding protein (IRBP)-specific Th1 and Th17 cells in anterior chamber-associated immune deviation (ACAID). Invest. Ophthalmol. Vis. Sci. 50:5811-5817, 2009. PMC3275438.
49. Ke, Y., Jiang, G., Sun, D., Kaplan, H.J., Shao, H. Retinal astrocytes respond to IL-17 differently than retinal pigment epithelial cells. J. Leukocyte Biology 86:1377-84, 2009. PMC2780918.
50. Cui, Y., Shao, H., Chen, L., Nian, H., O'Brien, R.L., Born, W.K., Kaplan, H.J., Sun, D. Major role of γδ T cells in the generation of IL-17+ uveitogenic T cells. J. Immunol. 183:560-567, 2009. PMC4077214.
51. Ke, Y., Liu, K., Huang, G.Q., Cui, Y., Kaplan, H.J., Shao, H., Sun, D. Anti-inflammatory role of IL-17 in experimental autoimmune uveitis. J. Immunol. 182 (5):3183-3190, 2009. PMC3275433.
52. Jiang, G., Ke, Y., Sun, D., Li, H., Ihnen, M., Jumblatt, M.M., Foulks, G., Wang, Y., Bian, Y., Kaplan, H.J., Shao, H. A new model of experimental autoimmune keratoconjunctivitis sicca (KCS) induced in Lewis rat by the autoantigen Klk1b22. Invest. Ophthalmol. Vis. Sci. 50 (5):2245-2254, 2009. PMID: 19060269.
53. Lang, C., Cui, Y., Shao, H., Han, G., Born, W., Kaplan, H.J., Sun, D. Murine γδ T cells are able to express MHC class II molecules and act as antigen-presenting cells. J. Neuroimmunol. 302:3-11, 2008. PMC2612736.
54. Yan, K., Jiang, G., Sun, D., Kaplan, H.J., Shao, H. Ocular regulatory T cells distinguish monophasic from recurrent autoimmune uveitis. Invest. Ophthalmol. Vis. Sci. 49:3999-4007, 2008. PMC2567874.
55. Jiang, G., Yan, K., Sun, D., Han, G., Kaplan, H.J., Shao, H. Reactivation of uveitogenic T cells by retinal astrocytes derived from experimental autoimmune uveitis-prone B10RIII mice. Invest. Ophthalmol. Vis. Sci. 49:282-289, 2008. PMC2567872.
56. Song, L., Le, J., Kaplan, H.J., Sun, D. Sequence 168 to 177 of the interphotoreceptor retinoid-binding protein (IRBP) is an antigenic epitope for CD8 autoreactive T cells in B10RIII mouse. J. Neuroimmunol. 193:68-76, 2008. PMC2557023.
57. Hao, S., Liu, Y., Yuan, J., Zhang, X., He, T., Wu, X., Wei, Y., Sun, D., Xiang, J. Novel exosome-targeted CD4+ T cell vaccine counteracting CD4+25+ regulatory T cell-mediated immune suppression and stimulating efficient central memory CD8+ CTL responses. J. Immunol. 179:2731-2740, 2007. PMC2567870.
58. Peng, Y., Han, G., Shao, H., HJ. Kaplan, H.J. Sun, D. Characterization of IL-17+ interphotoreceptor retinoid binding protein (IRBP)-specific T cells in experimental autoimmune uveitis (EAU). Invest. Ophthalmol. Vis. Sci. 48:4153-4161, 2007. PMC2567912.
59. Shao, H., Kaplan, H.J., Sun, D. Expression of MHC molecules by parenchymal cells of the target organ in autoimmune disease decreases the detrimental effect of invading autoreactive T cells. Chem. Immunol. Allergy 92:94-104, 2007. PMC2951609.
60. Ke, Y., Zhang, P., Sun, D., Jiang, G., Kaplan, H.J., Shao, H. Suppression of established experimental autoimmune uveitis (EAU) by anti-LFA-1 Ab. Invest. Ophthalmol. Vis. Sci. 48:2667-2675, 2007. PMC2587054.
61. Peng, Y.,Shao, H.,Ke, Y., Zhang, P.,Han, G., Kaplan, H.J., Sun, D. Minimally activated CD8 autoreactive T cells specific for IRBP express a high level of Foxp3 and are functionally suppressive. Invest. Ophthalmol. Vis. Sci, 48:2178-2184, 2007. (NIHMS 72085).
62. Han, G., Shao, H., Peng, Y., Zhang, P., Ke, Y., Kaplan, H.J., Sun, D. Suppressor role of rat CD8+CD45RClow T cells in experimental autoimmune uveitis (EAU). J. Neuroimmunol. 183:81-88, 2007. PMC1850240.
63. Tezel, G., Yang, X., Luo, C., Peng, Y., Sun, S.L., Sun, D. Mechanisms of immune system activation in glaucoma: Oxidative stress-stimulated antigen presentation by the retina and optic nerve head glia. Invest. Ophthalmol. Vis. Sci. 48:705-714, 2007. (PMC2494942).
64. Zhang, P., Sun, D., Ke, Y., Kaplan, H.J., Shao, H. The net effect of costimulatory blockers is dependent on the subset and activation status of the autoreactive T cells. J. Immunol. 178:474-479, 2007. PMC2587059.
65. Zeng, F., Chen, M.J., Baldwin, D.A., Gong, Z.J., Yan, J.B., Qian, H., Wang, J., Jiang, D., Ren, Z.R., Sun, D., Huang, S.Z. Multi-organ engraftment and differentiation of human cord blood CD34-line cells in goats assessed by gene expression profiling. Pro. Natl. Acad. Sci. 103:7801-7806, 2006. PMC1472525.
66. Peng, Y., Shao, H., Ke, Y., Zhang, P., Xiang, J., Kaplan, H.J., Sun, D. In vitro activation of CD8 interphotoreceptor retinoid-binding protein (IRBP)-specific T cells requires not only antigenic stimulation, but also exogenous growth factors. J. Immunol. 176:5006-5014. 2006. PMID: 16585597.
67. Liao, T., Ke, Y., Shao, W.H., Haribabu, B., Kaplan, H.J., Sun, D., Shao, H. Blockade of the interaction of leukotriene B4 with its receptor prevents development of autoimmune uveitis. Invest. Ophthalmol. Vis. Sci. 47:1543-1549, 2006.
68. Shao, H., Liao, T., Ke, Y., Shi, H., Song, M., Kaplan, H.J., Sun, D. Severe chronic experimental autoimmune uveitis (EAU) of the C57BL/6 mouse induced by adoptive transfer of IRBP1-20-specific T cells. Exp. Eye Res. 82:323-331, 2006.
69. Xie, S.Y., Zhang, J.Z., Huang, S.Z., Sun, D., Ren, R., Zeng, Y.T. Suppression of eGFP expression in erythroid-specific transgenic mice by siRNA. Blood Cells, Molecules, and Diseases 34:220-225, 2005.
70. Zhang, X., Huang, H., Yuan, J., Sun, D., Hou, W., Gordon, J., Jim, X. CD4-8- dendritic cells prime CD4+ T regulatory 1 cells to suppress antitumor immunity. J. Immunol. 175:2931-2937, 2005.
71. Shao, H., Shi, H., Kaplan, H.J., Sun, D. Chronic recurrent autoimmune uveitis with progressive photoreceptor damage induced in rats by transfer of IRBP-specific T cells. J. Neuroimmunol. 163:102-109, 2005.
72. Shao, H., Peng, Y., Liao, T., Wang, M., Song, M., Kaplan, H.J., Sun, D. A shared epitope of the interphotoreceptor retinoid-binding protein (IRBP) recognized by the CD4+ and CD8+ autoreactive T cells. J. Immunol. 175:1851-1857, 2005. NIHMS 19390.
73. Shao, H., Fu, Y., Liao, T., Peng, Y., Chen, L., Kaplan, H.J., Sun, D. Anti-CD137 mAb treatment inhibits experimental autoimmune uveitis by limiting expansion and increasing apoptotic death of uveitogenic T cells. Invest. Ophthalmol. Vis. Sci. 46:596-603, 2005.
74. Shao, H., Huang, Z., Sheher, L., Sun, S.L., Kaplan, H.J., Sun, D. Myelin/ oligodendrocyte glycoprotein (MOG)-specific T cells induce severe optic neuritis in the C57Bl/6 mouse. Invest. Ophthalmol. Vis. Sci. 45:4060-4065, 2004.
75. Shao, H., Sun, S.L., Kaplan, H.J., Sun, D. Characterization of rat CD8+ uveitogenic T cells specific for IRBP1177-1191. J. Immunol. 173:2849-2854, 2004.
76. Shao, H., Lei. S., Sun, S.L., Xiang, J., Kaplan, H.J., Sun, D. CpG-ODN1826 converts the weak uveitogenic rat IRBP1181-91 peptide into a strong uveitogen. J. Immunol. 171:5624-5630, 2003.
77. Sun, D., Enzman, V., Sun, S.L., Kaplan, H.J., Shao, H. Retinal pigment epithelium (RPE) activated uveitogenic T cells when they express high levels of MHC class II molecules, but inhibited T cell activation when express restricted amount of MHC class II molecules. J. Neuroimmunol. 144:1-8, 2003.
78. Shao H., Lei, S., Sun, S.L., Kaplan, H.J., Sun, D. Conversion of monophasic to recurrent autoimmune disease by autoreactive T cell subsets. J. Immunol. 171:4780-4785, 2003.
79. Shao, H., Fu, Y.X., Song, L., Sun, S.L., Kaplan, H.J., Sun, D. LTβR-Ig treatment blocked actively induced but not adoptively transfer-red uveitis induced by IRBP1177-1191 in Lewis rats. Eur. J. Immunol. 33:1736-1743, 2003.
80. Shao, H., van Kaer, L., Sun, S.L., Kaplan, H.J., Sun, D. Infiltration of NKT cells in inflamed eyes in a rat model of experimental autoimmune uveitis (EAU). J. Autoimmun. 21:1-9, 2003.
81. Shao, H., Sun, D., Sun, S.L., Maria, J., Bora, N., Kaplan, H.L. Expression of B7.1 and B7.2 molecules in the eye during the course of experimental autoimmune anterior uveitis (EAAU). Curr. Eye 25:271-277, 2003.
82. Sun, D., Zhang, Y., Wei, B., Peiper, S.C., Shao, H., Kaplan, H.J. Encephalitogenic activity of truncated myelin/oligodendrocyte glycoprotein (MOG) peptides and their recognition by CD8+ MOG-specific T cells on oligomeric MHC class I molecules. Int. Immunol. 15:261-268, 2003.
83. Shao, H., Kaplan, K.J., Sun, S., Sun, D. Induction of Autoimmune encephalomyelitis and uveitis in B6 and (B6 x SJL) mice by peptides derived from myelin/oligodendrocyte glycoprotein. J. Neuroimmunol. 132:117-122, 2002.
84. Lu, H., Sun, D., Gao, F. Introduction of NKT cell, a novel immunoregulatory subset and in vitro studies involving activated NKT cell. Chin. Med. J. 115(6):666-669, 2002.
85. Sun, D., Whitaker, J.N., Huang, Z., Liu, D., Coleclough, C., Wekerle, H., Raine, C.S. Myelin antigen-specific CD8+ T cells are encephalitogenic and produce severe disease in C57BL/6 mice. J. Immunol. 166:7579-7587, 2001.
86. Cao, L., Sun, D., Moscarello, M.A., Ludwin, S.K., Whitaker, J.N. Inhibition of experimental allergic encephalomyelitis in the Lewis rat by Paclitaxel. J. Neuroimmunol. 108:103-111, 2000.
87. Sun, D., Whitaker, J.N., Hu, X., Coleclough, C. Autoreactive T-cell lines specific for a single nominal peptide vary greatly in their response to alanine-substituted peptides. J. Neuroimmunol. 99:105-113, 1999.
88. Sun, D.M., Whitaker, J.N., Wilson, D.B. Regulatory T cells in experimental allergic encephalomyelitis. III. Comparison of disease resistance in Lewis and Fischer 344 rats. Eur. J. Immunol. 29:1101-1106, 1999.
89. Sun, D., Whitaker, J.N., Wilson, D.B. Regulatory T cells in experimental allergic encephalomyelitis. II. CD8+ T cells functionally antagonistic to CD4 + encephalitogenic MBP-specific T cells show persistent expression of FasL. J. Neurosci. Res. 58:357-366, 1999.
90. Sun, D., Whitaker, J.N., Wilson, D.B. Regulatory T cells in experimental allergic encephalomyelitis. I. Frequency and specificity analysis in normal and immune rats of a T cell subset that inhibits disease. Int. Immunol. 11:307-315, 1999.
91. Sun, D., Coleclough, C., Ji, R., Hu, X., Whitaker, J.N. Alanine-substituted peptide ligands differ greatly in their ability to activate autoreactive T cell subsets specific for the wild-type peptide. J. Neuroimmunol. 99:105-113, 1999.
92. Sun, D., Coleclough, C., Cao, L., Hu, X., Sun, S., Whitaker, J.N. Reciprocal stimulation between TNF-β and nitric oxide may exacerbate CNS inflammation in experimental autoimmune encephalomyelitis. J. Neuroimmunol. 89:122-130, 1998.
93. Sun, D., Whitaker, J.N., Cao, L.G., Han, Q., Sun, S.H., Coleclough, C., Mountz, J.D., Zhou, T. Cell death mediated by Fas-FasL interaction between glial cells and MBP-reactive T cells. J. Neurosci. Res. 52:458-467, 1998.
94. Cao, L.G., Sun, D.M., Whitaker, J.N. Citrullinated myelin basic protein induces experimental autoimmune encephalomyelitis in Lewis rats through a diverse T cell repertoire. J. Neuroimmunol. 88:21-29, 1998.
95. Kurth, D., Neumann, J., Demleitner, K., Hildmann, J., Mehlig, M., Scheicher, C., Wendling, U., Sun, D., Reske, K. Full length cDNA of rat RT1.DMa and RT1.DMb and expression of RT1.DM genes in dendritic and Langerhans cells. Biol. Chem. 378:1005-1012, 1997.
96. Sun, D.M., Coleclough, C., Whitaker, J.N. Nonactivated astrocytes downregulate T cell receptor expression and reduce antigen-specific proliferation and cytokine production of myelin basic protein (MBP)-reactive T cells. J. Neuroimmunol. 78:69-78, 1997.
97. Sun, D.M., Hu, X.Z., Liu, X.H., Whitaker, J.N., Walker, W.S. Expression of chemokine genes in rat glial cells: The effect of myelin basic protein-reactive encephalitogenic T cells. J. Neurosci. Res. 48:192-200, 1997.
98. Sun, D., Coleclough, C., Cao, L., Sun, S., Whitaker, J.N. Quantitative assessment of myelin basic protein-reactive T cell entry to the central nervous system by using oligonucleotide probes complementary to VDJ junctional sequences of rat TCR -chain. J. Immunol. Meth. 207:125-134, 1997.
99. Sun, D., Wilson, D.B., Cao, L., Whitaker, J.N. The role of regulatory T cells in Lewis rats resistant to EAU. J. Neuroimmunol. 78:69-78, 1997.
100. Stepaniak, J.A., Wolf, N.A., Sun, D.M., Swanborg, R.H. Interstrain variability of autoimmune encephalomyelitis in rats: multiple encephalitogenic myelin basic protein epitopes for DA rats. J. Neuroimmunol. 78:79-85, 1997.
101. Sun, D., Hu, X., Shah, R., Zhang, L., Coleclough, C. Production of tumor necrosis factor- as a result of glia-T cell interaction correlates with the pathogenic activity of myelin basic protein-reactive T cells in experimental autoimmune encephalomyelitis. J. Neurosci. Res. 45:400-409, 1996.
102. Sun, D., Hu, X., Shah, R., Coleclough, C. The pattern of cytokine gene expression induced in rat T cells specific for myelin basic protein depends on the type and quality of antigenic stimulus. Cell. Immunol. 166:1-8, 1996.
103. Sun, D., Hu, X., Coleclough, C. The clonal composition of myelin basic protein-reactive encephalitogenic T cell populations is influenced both by the structure of relevant antigens and the nature of antigen- presenting cells. Eur. J. Immunol. 25:69-74, 1995.
104. Sun, D., Woodland, D.L., Coleclough, C., Wendling, U., Reske, K. An MHC class II-expressing T cell clone presenting conventional antigen lacks the ability to present bacterial superantigen. Int. Immunol. 7:1079-1085, 1995.
105. Sun, D., Coleclough, C., Hu, X. Heterogeneity of rat encephalitogenic T cells elicited by variants of the MBP(68-88) peptide. Eur. J. Immunol. 25:1687-1692, 1995.
106. Stepaniak, J.A., Gould, K.E., Sun, D., Swanborg, R.H. A comparative study of experimental autoimmune encephalomyelitis in Lewis and DA rats. J. Immunol. 155:2762-2769, 1995.
107. Sun, D., Hu, X., Le, J., Swanborg, R.H. Characterization of brain-isolated rat encephalitogenic T cell lines. Eur. J. Immunol. 24:1359-1364, 1994.
108. Sun, D., Shah, R., Coleclough, C. Repertoire of rat MBP-reactive T cells: DNA sequencing analysis further demonstrates the clonal heterogeneity of rat T cells reactive against encephalitogenic epitopes. Cell. Immunol. 156:389-401, 1994.
109. Xiang, J., Moyana, T., Chen, Z., Skinnider, L., Hamilton, T., Sun, D. High binding affinity chimeric anti-colorectal carcinoma antibody correlated to enhanced tumor binding and effector function. Cancer Biother. 8:171, 1993.
110. Sun, D., Le, J., Coleclough, C.. Diverse T cell receptor β chain usage by rat encephalitogenic T cells reactive to residues 68-88 of myelin basic protein. Eur. J. Immunol. 23:494-498, 1993.
111. Sun, D., Le, J., Yang, S., Malotkey, M., Coleclough, C. Major role of antigen-presenting cells in the response of rat encephalitogenic T cells to myelin basic proteins. J. Immunol. 151:111-118, 1993.
112. Sun, D. Staphylococcal enterotoxin enhances the activation of rat encephalitogenic T cells by myelin basic protein. J. Neuroimmunol. 46:5-10, 1993.
113. Gocinski, B.L., Sun, D., Coleclough, C. Cis-dominant regulation of CD4 and CD8 gene expression in rat/mouse T cell heterohybridomas. J. Immunol. 150:2243-2252, 1993.
114. Yamamura, T., Sun, D., Aloisi, F., Klinkert, W.E.F., Wekerle, H. Interaction between oligodendroglia and immune cells: Mitogenic effect of an oligodendrocyte precursor cell line on syngeneic T lymphocytes. J. Neurosci. Res. 32:178-189, 1992.
115. Sun, D. Synthetic peptides representing sequence 39 to 59 of rat Vβ TCR fail to elicit regulatory T cells reactive with Vβ TCR on rat encephalitogenic T cells. Cell. Immunol. 141:200-210, 1992.
116. Sun, D., Gold, D.P., Smith, L., Brostoff, S.W., Coleclough, C. Characterization of rat encephalitogenic T cells bearing non-Vβ T cell receptors. Eur. J. Immunol. 22:591-594, 1992.
117. Sun, D., Branum, K., Sun, Q. Prevention of experimental autoimmune encephalomyelitis in Lewis rats by treatment with an anti-rat CD5 antibody (OX19). Cell. Immunol. 145:263-271, 1992.
118. Qin, Y., Sun, D., Wekerle. H. Immune regulation in self tolerance: Functional elimination of a self-reactive, counter-regulatory CD8+ T lymphocyte circuit by neonatal transfer of encephalitogenic CD4+ T cells lines. Eur. J. Immunol. 22:1193-1198, 1992.
119. Walker, W.S. and Sun, D. Constitutive antigen presentation by mouse splenic macrophages is restricted to the progeny of a distinct progenitor population. Cell. Immunol. 133:342-351, 1991.
120. Sun, D., Wekerle, H., Raper, K., Gold, D.P. CD4-CD8-splenic T cells from Lewis rats recovered from experimental autoimmune encephalomyelitis respond to encephalitogenic T cells that mediate this disorder. Cell. Immunol. 137:292-302, 1991.
121. Sun, D. Enhanced interferon-γ-induced Ia-antigen expression by glial cells after previous exposure to this cytokine. J. Neuroimmunol. 34:205-214, 1991.
122. Oropeza-Wekerle, R.L., Kern, P., Sun, D., Muller, S., Briand, J.P., Goebel, W. Characterization of monoclonal antibodies against alpha-hemolysin of Escherichia coli. Infect. Immun. 59:1846-1852, 1991.
123. McCormack, J.M., Sun, D., Walker, W.S. A subset of mouse splenic macrophages can constitutively present alloantigen directly to CD8+ T cells. J. Immunol. 147:421-427, 1991.
124. Gold, D.P., Offner, H., Sun, D., Wiley, S., Vandenbark, A.A., Wilson, D.B. Analysis of T cell receptor β chains in Lewis rats with experimental allergic encephalomyelitis: Conserved complementarity determining region 3. J. Exp. Med. 174:1467-1476, 1991.
125. Aloisi, F., Sun, D., Levi, G., Wekerle, H. Establishment of a permanent rat brain-derived glial cell line as a source of purified oligodendrocyte-type 2 astrocyte lineage cell populations. J. Neurosci. Res. 27:16-24, 1990.
126. Sun, D. and Klinkert, W.E.F. Functional heterogeneity among CD4+ encephalitogenic T cells in recruitment of CD8+ T cells in experimental autoimmune encephalomyelitis. J. Immunol. 143:2867-2872, 1989.
127. Qin, Y., Sun, D., Goto, M., Myermann, R., Wekerle, H. Resistance to experimental autoimmune encephalomyelitis induced by neonatal tolerization to myelin basic protein: Clonal elimination vs. regulation of autoaggressive lymphocytes. Eur. J. Immunol. 19:373-380, 1989.
128. Sun, D.M. and Qin, Y. Studies on the role of suppressor T cells in the resistance of experimental autoimmune Encephalomyelitis. Chin. J. Immunol. 4:65-69, 1988.
129. Sun, D., Myermann, R., Wekerle, H. Up- and down-regulatory activities of astrocyte clones. Ann. N.Y. Acad. Sciences 430:463-465, 1988.
130. Sun, D., Myermann, R., Wekerle, H. Cytotoxic T cells in autoimmune disease of the central nervous system. Ann. N.Y. Acad. Sciences 532:221-229, 1988.
131. Sun, D., Qin, Y., Chluba, J., Epplen, J.T., Wekerle, H. Suppression of experimentally induced autoimmune encephalomyelitis by cytolytic T-T cell interactions. Nature 332:843-846, 1988.
132. Sun, D., Ben-Nun, A., Wekerle, H. Regulatory circuits in autoimmunity: Recruitment of counter-regulatory CD8 positive T cells by encephalitogenic CD4 positive T line cells. Eur. J. Immunol. 18:1993-1999, 1988.
133. Zhang, Y.H., Zhang, S.R., Chen, L.P., Dong, Z.Y., Xia, H.Z., Sun, D.M., Yin, L. Immuno-deficiency acquired during carcinogenesis: a mechanism facilitating cancer development. Chinese Medical Journal 100:465-471, 1987.
134. Wekerle, H. and Sun, D. Immune reactivity in the nervous system: Modulation of T lymphocyte activation by glial cells. J. Exp. Biol. 132:43-57, 1987.
135. Sun, D.M. Studies on the heterogeneity of antigen-presenting cells. I. Establishment of T cell hybridomas specific for distinct antigen-presenting cells. Chin. J. Immunol. 2:326-329, 1987.
136. Sun, D.M. Establishment of the mouse B cell mitogenic- and comitogenic-monoclonal antibodies. Chin. J. Immunol. 3:194-197, 1987.
137. Reske, K., Moehle. U., Sun, D., Wekerle, H. Synthesis and cell surface display of class II determinants by long term propagated rat T line cells. Eur. J. Immunol. 17:909-914, 1987.
138. Sun, D. and Wekerle. H. Ia-restricted encephalitogenic T lymphocytes mediating EAU lyse autoantigen-presenting astrocytes. Nature 320:70-72, 1986.
139. Sun, D. and Wekerle, H. Interaction between autoaggressive T lymphocyte lines and their target tissues – Encephalitogenic T lymphocytes destroy astrocytes presenting Myelin Basic Protein. Ann. N.Y. Acad. Sciences 475:399-400, 1986.
140. Sun, D.M., Lu, S., Shi, W., Hu, X., Zhang. Y. Observations of the influence of phorbol Myristic Acetate (PMA) on murine immunocytes. Chin. J. Immunol. 1:13-16, 1985.
141. Sun, D.M., Hu, X., Shi, W., Lu, S., Zhang, Y. Studies on mouse macrophage activation. III. Possibility of distinctive suppressive mechanisms of macrophage proliferation vs tumor cell growth. Chin. J. Immunol. 1:14-17, 1985.
142. Sun, D.M., Shi, W., Hu, X., Lu, S., Zhang, Y. Studies on macrophage activation. II. Dissociation of suppressive effect of macrophages on lymphocytes versus tumor cells. Acta Academ. Medicinea Sinicae 7:175-179, 1985.
143. Sun, D., Shi, W., Hu, X., Lu, S., Zhang, Y. Effect of monocytes from human peripheral blood on murine lymphoma cells. Chin. J. Microbiol. & Immunol. 5:214-216, 1985.
144. Sun, D.M. Research on the N K cells. Chin. J. Oncology 6:78-790, 1984.
145. Sun, D.M. and Zhang, Y. Studies on mouse macrophage activation. I. Dissociation of macrophage cytolytic and cytostatic effects. Chin. J. Microbiol. & Immunol. 4:379-381, 1984.
146. Sun, D.M. and Lohmann-Matthes, M.L. Improvement of biological assay method for human macrophage-activating factor. Chin. J. Microbiol. & Immunol. 4:82-85, 1984.
147. Sun, D.M. Macrophage heterogeneity – Con A-induced tumoricidal effect of murine macrophages of different origins. Chin. J. Microbiol. & Immunol. 4:305-308, 1984.
148. Sun, D.M. Effect of macrophage-activating factor (MAF) on xenogeneic macrophages. Chin. J. Microbiol. & Immunol. 4:382-384, 1984.
149. Sun, D.M. and Lohmann-Matthes, M.L. Radioimmunoassay of macrophage activating factor. Chin. J. Microbiol. & Immunol. 3:346-349, 1983.
150. Sun, D.M. Establishment of T- and B-hybridomas producing MAF and anti-MAF antibody. Acta Academ. Medicinea Sinicae 6:337-338, 1983.
151. Sun, D. and Lohmann-Matthes, M.D. Establishment of a T cell hybridoma producing macrophage-activating factor (MAF). Chin. J. Microbiol. & Immunol. 6:337-340, 1983.
152. Born, W.K., Ben-Nun, A., Bamberger, U., Nakayama, M., Speth V., Sun, D., and Thornton, M. Killer cell line derived from mouse thymus resembling large granular lymphocyte and expressing Natural Killer-like cytotoxicity. Immunobiology 165:63-77, 1983.
153. Sun, D.M. and Lohmann-Matthes, M.L. Functional subsets of mouse macrophages studied by monoclonal antibodies. Chin. J. Microbiol. & Immunol. 1:381-385, 1982.
154. Sun, D. and Lohmann-Matthes, M.L. Functional different subpopulations of macrophages as defined by monoclonal antibodies. Eur. J. Immunol. 12:136-140, 1982. Lohmann-Matthes, M.L., Lang, H., and Sun, D. Macrophage as cytotoxic effector cells. Immunobiology 161:401-407, 1982.
155. Lohmann-Matthes, M.L., Lang, H., and **Sun, D.** Macrophage as cytotoxic effector cells. *Immunobiology* 161:401-407, 1982.
156. **Sun, D.** and Lohmann-Matthes, M.L. Functional different subpopulations of macrophages as defined by monoclonal antibodies. *Eur. J. Immunol.* 12:136-140, 1982.

**LETTERS TO THE EDITOR:**

1. **Sun, D.** Letter to the Editor. J. Neuroimmunol. 49:221-222, 1994. No title.

**REVIEWS:**

1. **Sun, D.M.** Functions of macrophages and their subsets in immune responses. (Review) *J. Shanghai Immunology* 3:307-311, 1983.
2. **Sun, D.** Interleukin-1 in immune responses. (Review) *Chin. J. Immunol.* 4:58-61, 1985.
3. Grus, F., and **Sun, D.** Immunological mechanisms in glaucoma. (Review) *Semin. Immunopathol.* 30:121-126, 2008. (NIHMS 72075).