IN MEMORIAM
5575 J. Donald Capra, M.D. (1937–2015)
Judith A. James, Linda F. Thompson, and Ralph C. Budd

IN THIS ISSUE
5577 Nurturing Nanotubes See article p. 5626
Premature Aging in Lupus See article p. 5725
XCL1: Excellent for Vaccine Targeting See article p. 5895
MCPIP Modulates Macrophages See article p. 6011
Conserved Commonalities in Celiac Crystals See article p. 6112
Surfactant Suppresses Susceptibility See article p. 6123

BRIEF REVIEWS
5579 Nouvelle Cuisine: Platelets Served with Inflammation
Rick Kapur, Anne Zufferey, Eric Boilard, and John W. Semple
5588 Intestinal Fucose as a Mediator of Host–Microbe Symbiosis
Joseph M. Pickard and Alexander V. Chernovskiy

CUTTING EDGE
5595 Cutting Edge: Role of Osteopontin and Integrin αv in T Cell–Mediated Anti-Inflammatory Responses in Endotoxemia
Makoto Inoue and Mari L. Shinohara
5599 Cutting Edge: T Follicular Helper Cell Differentiation Is Defective in the Absence of Bcl6 BTB Repressor Domain Function
J. Philip Nance, Simon Bélanger, Robert J. Johnston, Toshitada Takemori, and Shane Crotty
5604 Cutting Edge: Bcl6-Interacting Corepressor Contributes to Germinal Center T Follicular Helper Cell Formation and B Cell Helper Function
Jessica A. Yang, Noah J. Tubo, Micah D. Gearhart, Vivian J. Bardwell, and Marc K. Jenkins

On the cover: IFN-γ drives macro-autophagy in mouse podocytes. Immortalized podocytes were stimulated with 1000 units/ml of IFN-γ for 12 h and stained with anti-LC3 (red) Ab. Actin fibers were identified by costaining with phalloidin–FITC (green) and nuclei were visualized by DAPI incorporation. Original magnification ×600. Chaudhary, K., R. Shinde, H. Liu, J. P. Gnaana-Prakasam, R. Veeranan-Karmegam, L. Huang, B. Ravishankar, J. Bradley, N. Kvirkvelia, M. McManamin, et al. 2015. Amino acid metabolism inhibits antibody-driven kidney injury by inducing autophagy. J. Immunol. 194: 5713–5724.
Cutting Edge: c-Kit Signaling Differentially Regulates Type 2 Innate Lymphoid Cell Accumulation and Susceptibility to Central Nervous System Demyelination in Male and Female SJL Mice
Abigail E. Russi, Margaret E. Walker-Caulfield, Mark E. Ebel, and Melissa A. Brown

ALLERGY AND OTHER HYPERSENSITIVITIES

Poly(inosinic-cytidylic) Acid–Triggered Exacerbation of Experimental Asthma Depends on IL-17A Produced by NK Cells
Lars P. Lunding, Sina Webering, Christina Vock, Jochen Behrends, Christina Wagner, Christoph Hölscher, Heinz Fechenbach, and Michael Wegmann

Nanotubes Connect CD4+ T Cells to Airway Smooth Muscle Cells: Novel Mechanism of T Cell Survival
Saha Al Heidal, Melissa Zeroual, Soroosh Farahbakh, Toby McGovern, Paul-André Risse, Mauro Novali, Anne-Marie Lauzon, Horia N. Roman, and James G. Martin

Haploinsufficiency for Stard7 Is Associated with Enhanced Allergic Responses in Lung and Skin
Li Yang, Ian Lewkowich, Karen Apsley, Jill M. Fritz, Marsha Willi-Karp, and Timothy E. Weaver

CD155 (PVR/Necl5) Mediates a Costimulatory Signal in CD4+ T Cells and Regulates Allergic Inflammation

ANTIGEN RECOGNITION AND RESPONSES

The Notch Signaling Pathway Controls Short-Lived Effector CD8+ T Cell Differentiation but Is Dispensable for Memory Generation
Mélisa Mathieu, Frédéric Duval, Jean-François Daudelin, and Nathalie Labrecque

AUTOIMMUNITY

Identification of the Inflammasome Nlrp1b as the Candidate Gene Conferring Diabetes Risk at the Idd4.1 Locus in the Nonobese Diabetic Mouse
Vinicius N. Motta, Janet G. M. Markle, Omid Gulhan, Steven Mortin-Tuth, Kuo-Chien Liao, Jeremy Mogridge, Charles A. Steward, and Jayne S. Danska

Immune Tolerance Induction with Multiepitope Peptide Derived from Citrullinated Autoantigens Attenuates Arthritis Manifestations in Adjuvant Arthritis Rats
Smadar Gertel, Guy Serre, Yehuda Shoenfeld, and Howard Amiel

DCIR Maintains Bone Homeostasis by Regulating IFN-γ Production in T Cells
Takumi Maruhashi, Tomonori Kaifu, Rikio Yabe, Akimasa Seno, Soo-Hyun Chung, Noriyuki Fujikado, and Yoichiro Iwakura

Concordance of Increased B1 Cell Subset and Lupus Phenotypes in Mice and Humans Is Dependent on BLK Expression Levels
Ying-Yu Wu, Ina Georg, Alejandro Díaz-Barreiro, Nieves Varela, Bernard Lauwereyns, Ramesh Kumar, Harini Bagavant, Mireia Castillo-Martínez, Fadi El Salem, Concepción Marañón, and Marta E. Alarcón-Riquelme

Analysis of Celiac Disease Autoreactive Gut Plasma Cells and Their Corresponding Memory Compartment in Peripheral Blood Using High-Throughput Sequencing
Omri Snir, Luka Mesin, Moriah Gidoni, Knut E. A. Lundin, Gur Yaari, and Ludwig M. Sollid

Amino Acid Metabolism Inhibits Antibody-Dependent Kidney Injury by Inducing Autophagy
Kapil Chaudhary, Rahul Shinde, Haiyun Liu, Jaya P. Gnana-Prakasam, Ramesh Kumar, Venkatesh Veeravan-Karmegam, Lei Huang, Buvena Ravishankar, Jillian Bradley, Nino Kvrkvelia, Malgorzata McMenamin, Wei Xiao, Daniel Kleven, Andrew L. Mellor, Michael P. Madaio, and Tracy L. McGaha

A CD153+CD4+ T Follicular Cell Population with Cell-Senescence Features Plays a Crucial Role in Lupus Pathogenesis via Osteopontin Production
Suhail Tahir, Yuji Fukushima, Keiko Sakamoto, Kyojuke Sato, Harumi Fujita, Joe Inoue, Toshimitsu Uede, Yoko Hamazaki, Masakazu Hattori, and Nagahiro Minato
CLINICAL AND HUMAN IMMUNOLOGY

5736 Exacerbated Experimental Colitis in TNFAIP8-Deficient Mice
Honghong Sun, Yunwei Lou, Thomas Porturas, Samantha Morrissey, George Luo, Ji Qi, Qingguo Ruan, Songlin Shi, and Youhai H. Chen

5743 Crucial Roles of TNFAIP8 Protein in Regulating Apoptosis and Listeria Infection
Thomas P. Porturas, Honghong Sun, George Buchlis, Yunwei Lou, Xiaohong Liang, Terry Cathopoulis, Svetlana Fyngerts, Derek S. Johnson, Zhaojun Wang, and Youhai H. Chen

5751 Characterization of a Human Platelet Antigen-1a–Specific Monoclonal Antibody Derived from a B Cell from a Woman Alloimmunized in Pregnancy
Mariana Eksteen, Heidi Tiller, Maria Averina, Görel Heide, Mette Kjaer, Cedric Ghevaert, Terje E. Michaelsen, Øistein Ihle, Anne Husebekk, Bjørn Skogøen, and Tor B. Stuge

5761 TLR2 Stimulation Regulates the Balance between Regulatory T Cell and Th17 Function: A Novel Mechanism of Reduced Regulatory T Cell Function in Multiple Sclerosis
Mukanthu H. Nyirenda, Elena Morandi, Uwe Vinkemeier, Dumitru Constantin-Teodosiu, Sophie Drinkwater, Maureen Mee, Lloyd King, Giulio Podda, Guang-Xian Zhang, Amir Ghaemmaghami, Cris S. Constantinescu, Amit Bar-Or, and Bruno Gran

5775 Altered Distribution and Increased IL-17 Production by Mucosal-Associated Invariant T Cells in Adult and Childhood Obesity
Eirin Carolan, Laura M. Tobin, Bostana A. Mangan, Michelle Corrigan, Gadinathware Gowaatwe, Greg Byrne, Justin Googhogan, Declan Cody, Jean O’Connell, Desmond C. Winter, Derek G. Doherty, Lydia Lynch, Donal O’Shea, and Andrew E. Hogan

IMMUNE REGULATION

5781 Diverse Inflammatory Cytokines Induce Selectin Ligand Expression on Murine CD4 T Cells via p38α MAPK
Mark E. Ebel, Olufolakemi Awe, Mark H. Kaplan, and Geoffrey S. Kansas

5789 Programmed Death-1 Controls T Cell Survival by Regulating Oxidative Metabolism
Victor Tkachev, Stefanie Goodell, Anthony W. Opipari, Ling-Yang Hao, Luigi Franchi, Gary D. Glick, James L. M. Ferrara, and Craig A. Byersdorfer

5801 PD-1 Upregulated on Regulatory T Cells during Chronic Virus Infection Enhances the Suppression of CD8+ T Cell Immune Response via the Interaction with PD-L1 Expressed on CD8+ T Cells
Hyo Jin Park, Joon Seok Park, Yun Hee Jeong, Jimin Son, Young Ho Ban, Byoung-Hee Lee, Lieping Chen, Jun Chang, Doo Hyun Chung, Inhak Choi, and Sang-Jun Ha

5812 De Novo–Induced Self-Antigen–Specific Foxp3+ Regulatory T Cells Impair the Accumulation of Inflammatory Dendritic Cells in Draining Lymph Nodes
Thermis Alissafi, Alkaterini Hatzioannou, Marianna Ioannou, Tim Sparwasser, Joachim R. Grün, Andreas Grützkau, and Panayotis Verginis

5825 Thymic Involution Perturbs Negative Selection Leading to Autoreactive T Cells That Induce Chronic Inflammation
Brandon D. Coder, Hongjun Wang, Linhui Ruan, and Dong-Ming Su

5838 Neonatal Exposure to Pneumococcal Phosphorylcholine Modulates the Development of House Dust Mite Allergy during Adult Life
Preeyam S. Patel and John F. Kearney

5851 Involvement of the HCK and FGR src-Family Kinases in FCRL4-Mediated Immune Regulation
Yanling Liu, Ksenia Bezverbnaya, Tianjian Zhao, Marion J. Parsons, Menguo Shi, Bebhinn Treanor, and Götz R. A. Ehrentraut

IMMUNE SYSTEM DEVELOPMENT

5861 Thymic Low Affinity/Avidity Interaction Selects Natural Th1 Cells
Byung Hyun Kang, Hyo Jin Park, Hye In Yum, Seung Pyo Park, Jin Kyun Park, Eun Ha Kang, Jae-II Lee, Eun Bong Lee, Chung-Gyu Park, Kyeong Cheon Jung, and Seong Hoe Park
Invariant NKT Cells Require Autophagy To Coordinate Proliferation and Survival Signals during Differentiation
Bo Pei, Meng Zhao, Brian C. Miller, Jose Luis Vela, Monique W. Bruinsma, Herbert W. Virgin, and Mitchell Kronenberg

IMMUNOGENETICS
GIMAP GTPase Family Genes: Potential Modifiers in Autoimmune Diabetes, Asthma, and Allergy
Mirika T. Heinonen, Anti-Pekka Laine, Cilla Söderhäll, Olena Graziuva, Sini Rautio, Erik Melén, Göran Pershagen, Harri J. Lähdesmäki, Mikael Knip, Jorma Ilonen, Tiina A. Henittinen, Juha Kere, Riitta Lahesmaa, and The Finnsib Pediatric Diabetes Registry

IMMUNOTHERAPY AND VACCINES
Laser-Assisted Intradermal Delivery of Adjuvant-Free Vaccines Targeting XCR1+ Dendritic Cells Induces Potent Antitumor Responses
Dorothea Terhorst, Even Fossum, Anna Baranska, Samira Tamoutounour, Camille Malosie, Mattia Garbani, Reinhard Braun, Elmira Lechat, Reto Crameri, Bjarne Bogen, Sandrine Henri, and Bernard Malissen

Diverse Antibody Genetic and Recognition Properties Revealed following HIV-1 Envelope Glycoprotein Immunization
Ganeb E. Phad, Néstor Vázquez Bernat, Yu Feng, Jednyaa Inglee, Paola Andrea Martinez Murillo, Sijy O’Dell, Yuxing Li, John R. Mascola, Christopher Sullivan, Richard T. Wyatt, and Gunilla B. Karlsson Hedestam

A Synthetic M Protein Peptide Synergizes with a CXC Chemokine Protease To Induce Vaccine-Mediated Protection against Virulent Streptococcal Pyoderma and Bacteremia
Manisha Pandey, Emma Langshaw, Jon Hartas, Alfred Lam, Michael R. Batzloff, and Michael F. Good

The Frequency of Naive and Early-Activated Hapten-Specific B Cell Subsets Dictates the Efficacy of a Therapeutic Vaccine against Prescription Opioid Abuse
Megan Lundenbach, Federico Baraffa, Jeffrey S. Verucke, Mark D. Distefano, Philip J. Titcombe, Daniel L. Mueller, Noah J. Tubo, Thomas S. Griffith, and Marco Pravetoni

Genetic Vaccines To Potentiate the Effective CD103+ Dendritic Cell–Mediated Cross-Priming of Antitumor Immunity
Yi Zhang, Guo Chen, Zuqiang Liu, Shenghe Tian, Jiying Zhang, Cara D. Carey, Kenneth M. Murphy, Walter J. Storkus, Louis D. Falo, Jr., and Zhaoyang You

INFECTIOUS DISEASE AND HOST RESPONSE
IL-33 Receptor ST2 Amplifies the Expansion of NK Cells and Enhances Host Defense during Mouse Cytomegalovirus Infection
Taiukasa Nabekura, Jean-Philippe Girard, and Lewis L. Lanier

Candida albicans Stimulates IL-23 Release by Human Dendritic Cells and Downstream IL-17 Secretion by Vβ1 T Cells
Christina O. Maher, Katie Dunne, Ross Comerford, Siobhán O’Dea, Aisling Loy, James Woo, Thomas R. Rogers, Fiona Mulcahy, Pádraic J. Dunne, and Derek G. Doherty

Platelet-Activating Factor Receptor Contributes to Antileishmanial Function of Miltefosine
Pallavi R. Gangalum, Waldionê de Castro, Leda Q. Vieira, Ramadhiv Dey, Luis Rivas, Shailza Singh, Subrata Majumdar, and Bhaskar Saha

Species-Specific Differences in the Expression and Regulation of α4β7 Integrin in Various Nonhuman Primates
Siddappa N. Byrareddy, Neil Sidell, James Arthos, Claudia Cicala, Chunxia Zhao, Dawn M. Little, Paul Dunbar, Gui X. Yang, Kee1 Pierzchalski, Maureen A. Kane, Ann E. Mayne, Byongwoon Song, Marcelo A. Soares, Francois Villinger, Anthony S. Fauci, and Aftab A. Ansari

CXCL14 Displays Antimicrobial Activity against Respiratory Tract Bacteria and Contributes to Clearance of Streptococcus pneumoniae Pulmonary Infection
Chen Dai, Paola Basilico, Tiziana Patrizia Cremona, Paul Collins, Bernhard Moser, Charaf Benarafa, and Marlene Wolf
Vinpocetine Inhibits *Streptococcus pneumoniae*-Induced Upregulation of Mucin MUC5AC Expression via Induction of MKP-1 Phosphatase in the Pathogenesis of Otitis Media
Ji-Yun Lee, Kensei Komatsu, Byang-Chool Lee, Masanori Miyata, Abyln O’Neill Bohn, Haidong Xu, Chen Yan, and Jian-Dong Li

Cryptococcal Heat Shock Protein 70 Homolog Ssa1 Contributes to Pulmonary Expansion of *Cryptococcus neoformans* during the Afferent Phase of the Immune Response by Promoting Macrophage M2 Polarization
Alison J. Eastman, Xiumiao He, Yafeng Qiu, Michael J. Davis, Priya Vedula, Daniel M. Lyons, Yoon-Dong Park, Sarah E. Hardison, Antoni N. Malachowski, John J. Osterholzer, Floyd L. Wormley, Jr., Peter R. Williamson, and Michal A. Olszewski

**INNATE IMMUNITY AND INFLAMMATION**

Transcription Factors STAT6 and KLF4 Implement Macrophage Polarization via the Dual Catalytic Powers of MCPIP
Nidhi Kapoor, Jianli Niu, Yasser Saad, Sanjay Kumar, Tatiana Sirakova, Edilu Becerra, Xiaoman Li, and Pappachan E. Kolattukudy

Regulation of Neutrophilic Inflammation by Proteinase-Activated Receptor 1 during Bacterial Pulmonary Infection
Ricardo J. José, Andrew E. Williams, Paul F. Mercer, Michal G. Sulikowski, Jeremy S. Brown, and Rachel C. Chambers

Baf2/Irf1 Induces Inflammatory Responses in Classically Activated Macrophages, Lipopolysaccharides, and Mycobacterial Infection

IRF-1 Promotes Liver Transplant Ischemia/Reperfusion Injury via Hepatocyte IL-15/IL-15Rα Production
Shinichiro Yokota, Oumma Yoshiida, Lei Dou, Anthony V. Spadaro, Kumiko Ise, Mark A. Ross, Donna B. Stolz, Shoko Kimura, Qiang Du, Anthony J. Demetris, Angus W. Thomson, and David A. Geller

Glucocorticoid-Induced Leucine Zipper: A Critical Factor in Macrophage Endotoxin Tolerance
Jessica Hoppstädter, Sonja M. Kessler, Stefano Bruscoli, Hanno Huwer, Carlo Riccardi, and Alexandra K. Kiener

The Distal Upstream Promoter in Ly49 Genes, Pro1, Is Active in Mature NK Cells and T Cells, Does Not Require TATA Boxes, and Displays Enhancer Activity
Frances Gays, Sally Tabu, and Colin G. Brooks

Pyruvate Dehydrogenase Kinase 1 Participates in Macrophage Polarization via Regulating Glucose Metabolism
Zheng Tan, Na Xie, Huachun Cui, Douglas R. Moellering, Edward Abraham, Victor J. Thannickal, and Gang Liu

CD81 Controls Immunity to *Listeria* Infection through Rac-Dependent Inhibition of Proinflammatory Mediator Release and Activation of Cytotoxic T Cells
Gloria Martínez del Hoyo, Marta Ramírez-Huesca, Shoshana Levy, Claude Boucheix, Eric Rubinstein, María Minguito de la Escalera, Leticia González-Cintado, Carlos Ardaun, Esteban Veiga, María Yáñez-Mó, and Francisco Sánchez-Madrid

**MOLECULAR AND STRUCTURAL IMMUNOLOGY**

Identification of a Nuclear Export Sequence in the MHC CIITA
Emily Chiu, Theresa Gold, Veronica Fettig, Michael T. LeVasseur, and Drew E. Cressman

Determinants of Gliadin-Specific T Cell Selection in Celiac Disease
Jan Petersen, Jeroen van Bergen, Khati Lee Loh, Yvonne Kony-Winkelkater, Dennis X. Beringer, Allan Thompson, Sjord F. Bukker, Chris J. J. Mulder, Kristin Ladell, James E. McLaren, David A. Price, Jamie Rosjohn, Hugh H. Reid, and Frits Koning
### MUCOSAL IMMUNOLOGY

**6123 Genetic Variation in SP-A2 Leads to Differential Binding to Mycoplasma pneumoniae Membranes and Regulation of Host Responses**  
*Julie G. Ledford, Dennis R. Voelker, Kenneth J. Addison, Ying Wang, Vinayak S. Nikam, Simone Degan, Pitachaimani Kandasamy, Sasipa Tanyaratsrisakul, Bernard M. Fischer, Monica Kraft, and John W. Hollingsworth*

### TRANSPLANTATION

**6133 De Novo–Developed Antibodies to Donor MHC Antigens Lead to Dysregulation of MicroRNAs and Induction of MHC Class II**  
*Zhongping Xu, Deepak K. Nayak, Nicholas Benshoff, Ramsey Hachem, Andrew E. Gelman, and Thalachallour Mohanakumar*

### NOVEL IMMUNOLOGICAL METHODS

**6144 A Novel Lung Explant Model for the Ex Vivo Study of Efficacy and Mechanisms of Anti-Influenza Drugs**  
*Ben Nicholas, Karl J. Staples, Stefan Moese, Eric Meldrum, Jon Ward, Patrick Dennison, Tom Havelock, Timothy S. C. Hinks, Khalid Amer, Edwin Woo, Martin Chamberlain, Neeta Singh, Malcolm North, Sandy Pink, Tom M. A. Wilkinson, and Ratko Djukanović*

**6155 Quantitative Profiling of Immune Repertoires for Minor Lymphocyte Counts Using Unique Molecular Identifiers**  
*Evgeny S. Egorov, Ekaterina M. Merzyak, Andrew A. Shelenkov, Olga V. Britanova, George V. Sharonov, Dmitriy B. Staroverov, Dmitriy A. Bolotin, Alexey N. Davydov, Ekaterina Barsova, Yurii B. Lebedev, Mikhail Shugay, and Dmitriy M. Chudakov*

**6164 A Population Response Analysis Approach To Assign Class II HLA-Epitope Restrictions**  
*Sinu Paul, Myles B. C. Dillon, Cecilia S. Lindestam Arlehamn, Huang Huang, Mark M. Davis, Denise M. McKinney, Thomas Jens Scriba, John Sidney, Bjoern Peters, and Alessandro Sette*

### LETTERS OF RETRACTION

**6190 Retraction: Pregnancy-Associated Exosomes and Their Modulation of T Cell Signaling**

**6192 Correction: Viral MHC Class I-like Molecule Allows Evasion of NK Cell Effector Responses In Vivo**  
*Mishal Pyszak, Anne Dumaine, Benoît Charbonneau, Nassima Fodil-Cornu, Stipan Jonjic, and Silvia M. Vidal*

**6193 Correction: Extracellular Vesicles Derived from Gram-Negative Bacteria, such as *Escherichia coli*, Induce Emphysema Mainly via IL-17A–Mediated Neutrophilic Inflammation**  
*You-Sun Kim, Won-Hee Lee, Eun-Jeong Choi, Jun-Pyo Choi, Young Joo Heo, Yong Song Gho, Young-Koo Jee, Yeon-Mok Oh, and Yoon-Keun Kim*

### CORRECTIONS

**6191 Correction: Repression of Ccr9 Transcription in Mouse T Lymphocyte Progenitors by the Notch Signaling Pathway**  
*Veena Krishnamoorthy, Tiffany Carr, Renee F. de Pooter, Akinola Olumade-Emmanuel, Fotini Gounari, and Barbara L. Kee*

**6194 AUTHOR INDEX**

**6197 AUTHOR INDEX TO VOLUME 194**