



Vaccine Adjuvants

Take your vaccine to the next level

In vivoGen



177 (12)

J Immunol 2006; 177:8281-8879; ;
<http://www.jimmunol.org/content/177/12>

This information is current as
of November 30, 2020.

Why *The JI*? [Submit online.](#)

- **Rapid Reviews! 30 days*** from submission to initial decision
- **No Triage!** Every submission reviewed by practicing scientists
- **Fast Publication!** 4 weeks from acceptance to publication

**average*

Subscription Information about subscribing to *The Journal of Immunology* is online at:
<http://jimmunol.org/subscription>

Permissions Submit copyright permission requests at:
<http://www.aai.org/About/Publications/JI/copyright.html>

Email Alerts Receive free email-alerts when new articles cite this article. Sign up at:
<http://jimmunol.org/alerts>

The Journal of Immunology is published twice each month by
The American Association of Immunologists, Inc.,
1451 Rockville Pike, Suite 650, Rockville, MD 20852
All rights reserved.
Print ISSN: 0022-1767 Online ISSN: 1550-6606.





IMMUNOLOGY

THE JOURNAL OF

TABLE OF CONTENTS

8281 IN THIS ISSUE

BRIEF REVIEWS

- 8283 Alternative Translational Products and Cryptic T Cell Epitopes: Expecting the Unexpected
On Ho and William R. Green

CUTTING EDGE

- 8291 Cutting Edge: Programed Death (PD) Ligand-1/PD-1 Interaction Is Required for CD8⁺ T Cell Tolerance to Tissue Antigens
Natalia Martin-Orozco, Yi-Hong Wang, Hideo Yagita, and Chen Dong
- 8296 Cutting Edge: TLR2 Is Required for the Innate Response to *Porphyromonas gingivalis*: Activation Leads to Bacterial Persistence and TLR2 Deficiency Attenuates Induced Alveolar Bone Resorption
Elia Burns, Gilad Bachrach, Lior Shapira, and Gabriel Nussbaum
- 8301 Cutting Edge: TCR-Induced NAB2 Enhances T Cell Function by Coactivating IL-2 Transcription
Samuel Collins, Lawrence A. Wolfraim, Charles G. Drake, Maureen R. Horton, and Jonathan D. Powell

CELLULAR IMMUNOLOGY AND IMMUNE REGULATION

- 8307 Functional Adaptive CD4 Foxp3 T Cells Develop in MHC Class II-Deficient Mice
Petra Bochtler, Christian Wahl, Reinhold Schirmbeck, and Jörg Reimann
- 8315 Human Mast Cell Chymase Cleaves Pro-IL-18 and Generates a Novel and Biologically Active IL-18 Fragment
Youichi Omoto, Kazuya Tokime, Keiichi Yamanaka, Koji Habe, Tatsuhiko Morioka, Ichiro Kurokawa, Hiroko Tsutsui, Kiyofumi Yamanishi, Kenji Nakanishi, and Hitoshi Mizutani
- 8320 Severely Impaired Clonal Deletion of CD4⁺ T Cells in Low-Dose Irradiated Mice: Role of T Cell Antigen Receptor and IL-7 Receptor Signals
Elena Shklovskaya and Barbara Fazekas de St. Groth
- 8331 $\gamma\delta$ T Cells Promote Anterior Chamber-Associated Immune Deviation and Immune Privilege through Their Production of IL-10
Hossam M. Ashour and Jerry Y. Niederkorn

On the cover: Luminal gut bacteria (orange-yellow) were visualized in an ileal section from an uninfected C57BL/6 mouse using FISH. Cellular nuclei (blue) were stained using DAPI. Gut content contains bacteria and autofluorescent (yellow-green) food components. Following oral infection with *T. gondii*, overgrowth of Gram-negative bacteria is observed associated with translocation of bacteria to submucosal tissues contributing to ileal inflammation and ileal necrosis. Heimesaat, M. M., S. Bereswill, A. Fischer, D. Fuchs, D. Struck, J. Niebergall, H.-K. Jahn, I. R. Dunay, A. Moter, D. M. Gescher, R. R. Schumann, U. B. Göbel, and O. Liesenfeld. 2006. Gram-negative bacteria aggravate murine small intestinal Th1-type immunopathology following oral infection with *Toxoplasma gondii*. *J. Immunol.* 177: 8785–8795.

The Journal of Immunology (ISSN 0022-1767) is published twice each month by The American Association of Immunologists, Inc., 9650 Rockville Pike, Bethesda, MD 20814-3994. Subscription term: New subscriptions and renewals begin January 1 and expire one year later (see <http://www.jimmunol.org/subscriptions> for prices and details). A special rate is available to members of The American Association of Immunologists, Inc. (see <http://www.aai.org/membership>). Periodicals postage paid at Bethesda, MD 20814-3998, and at additional mailing offices. Country of origin U.S.A. Printed on acid-free recyclable paper. Postmaster: Send address changes to *The Journal of Immunology*, Subscription Department, Room L-2407A, 9650 Rockville Pike, Bethesda, MD 20814-3998. Copyright © 2006 by The American Association of Immunologists, Inc.

- 8338 Rapamycin Promotes Expansion of Functional CD4⁺CD25⁺FOXP3⁺ Regulatory T Cells of Both Healthy Subjects and Type 1 Diabetic Patients
Manuela Battaglia, Angela Stabilini, Barbara Migliavacca, Jutta Horejs-Hoeck, Thomas Kaupper, and Maria-Grazia Roncarolo
- 8348 High Accumulation of T Regulatory Cells Prevents the Activation of Immune Responses in Aged Animals
Sanjay Sharma, Ana Lucia Dominguez, and Joseph Lustgarten
- 8356 Latent Virus Influences the Generation and Maintenance of CD8⁺ T Cell Memory
Brian S. Sheridan, Kamal M. Khanna, Gregory M. Frank, and Robert L. Hendricks
- 8365 Lunatic Fringe Controls T Cell Differentiation through Modulating Notch Signaling
Shin-ichi Tsukumo, Kayo Hirose, Yoichi Maekawa, Kenji Kishihara, and Koji Yasutomo
- 8372 T Cell Antiviral Effector Function Is Not Dependent on CXCL10 Following Murine Coronavirus Infection
Linda N. Stiles, Jenny L. Hardison, Chris S. Schaumburg, Lucia M. Whitman, and Thomas E. Lane
- 8381 Identification of Cellular Intermediates and Molecular Pathways Induced by IL-21 in Human B Cells
Danijela Konforte and Christopher J. Paige
- 8393 Heat Shock Up-Regulates Imp2 and Imp7 and Enhances Presentation of Immunoproteasome-Dependent Epitopes
Margaret K. Callahan, Elizabeth A. Wohlfert, Antoine Ménoret, and Pramod K. Srivastava
- 8400 Regulatory Roles of NKT Cells in the Induction and Maintenance of Cyclophosphamide-Induced Tolerance
Toshiro Iwai, Yukihiko Tomita, Shinji Okano, Ichiro Shimizu, Yohichi Yasunami, Takashi Kajiwara, Yasunobu Yoshikai, Masaru Taniguchi, Kikuo Nomoto, and Hisataka Yasui
- 8410 Dendritic Cell Targeting of Survivin Protein in a Xenogeneic Form Elicits Strong CD4⁺ T Cell Immunity to Mouse Survivin
Anna Charalambous, Margarita Oks, Godwin Nchinda, Sayuri Yamazaki, and Ralph M. Steinman
- 8422 Viral Interference with B7-1 Costimulation: A New Role for Murine Cytomegalovirus Fc Receptor-1
Justine D. Mintern, Elizabeth J. Klemm, Markus Wagner, Marie Eve Paquet, Melanie D. Napier, You Me Kim, Ulrich H. Koszinowski, and Hidde L. Ploegh
- 8432 Innate Cytokine Responses in Porcine Macrophage Populations: Evidence for Differential Recognition of Double-Stranded RNA
Crystal L. Loving, Susan L. Brockmeier, Wenjun Ma, Juergen A. Richt, and Randy E. Sacco
- 8440 Regulated Expression of FcγR in Human Dendritic Cells Controls Cross-Presentation of Antigen-Antibody Complexes
Yi Liu, Xiaoni Gao, Emi Masuda, Patricia B. Redecha, Marissa C. Blank, and Luminita Pricop
- 8448 NK and CD4 Cells Collaborate to Protect against Melanoma Tumor Formation in the Brain
Robert M. Prins, Dan D. Vo, Haumith Khan-Farooqi, Meng-Yin Yang, Horacio Soto, James S. Economou, Linda M. Liau, and Antoni Ribas
- 8456 Interactions between T Cells Responding to Concurrent Mycobacterial and Influenza Infections
Dominic O. Co, Laura H. Hogan, Jozsef Karman, Erika Heninger, Shoua Vang, Krisna Wells, Yoshihiro Kawaoka, and Matyas Sandor
- 8466 Asynchronous Differentiation of CD8 T Cells That Recognize Dominant and Cryptic Antigens
Chantal Baron, Marie-Christine Meunier, Étienne Caron, Caroline Côté, Mark J. Cameron, David J. Kelvin, Richard LeBlanc, Vincent Rineau, and Claude Perreault
- 8476 Structurally Distinct Membrane Nanotubes between Human Macrophages Support Long-Distance Vesicular Traffic or Surfing of Bacteria
Björn Önfelt, Shlomo Nedvetzki, Richard K. P. Benninger, Marco A. Purbhoo, Stefanie Sowinski, Alistair N. Hume, Miguel C. Seabra, Mark A. A. Neil, Paul M. W. French, and Daniel M. Davis

- 8484 Prenatal Stress Enhances Susceptibility of Murine Adult Offspring toward Airway Inflammation
Maike K. Pincus-Knackstedt, Ricarda A. Joachim, Sandra M. Blois, Alison J. Douglas, Arif S. Orsal, Burghard F. Klapp, Ulrich Wahn, Eckard Hamelmann, and Petra C. Arck
- 8493 Phagocytosis Induces Lysosome Remodeling and Regulated Presentation of Particulate Antigens by Activated Dendritic Cells
Jayakar V. Nayak, David A. Hokey, Adriana Larregina, Yukai He, Russell D. Salter, Simon C. Watkins, and Louis D. Falo, Jr.
- 8504 Treatment of Experimental Autoimmune Prostatitis in Nonobese Diabetic Mice by the Vitamin D Receptor Agonist Elocalcitol
Giuseppe Penna, Susana Amuchastegui, Chiara Cossetti, Francesca Aquilano, Roberto Mariani, Francesca Sanvito, Claudio Doglioni, and Luciano Adorini
- 8512 Defective Chemokine-Directed Lymphocyte Migration and Development in the Absence of Rho Guanosine Diphosphate-Dissociation Inhibitors α and β
Hiroyoshi Ishizaki, Atsushi Togawa, Miki Tanaka-Okamoto, Keiko Hori, Miyuki Nishimura, Akiko Hamaguchi, Toshio Imai, Yoshimi Takai, and Jun Miyoshi
- 8522 Decidual NK Cells Alter In Vitro First Trimester Extravillous Cytotrophoblast Migration: A Role for IFN- γ
Yuxiang Hu, Jan P. Dutz, Colin D. MacCalman, Paul Yong, Rusung Tan, and Peter von Dadelszen
- 8531 Local and Systemic Effects of Intranodally Injected CpG-C Immunostimulatory-Oligodeoxyribonucleotides in Macaques
Natalia Teleshova, Jessica Kenney, Gary Van Nest, Jason Marshall, Jeffrey D. Lifson, Irving Sivin, Jason Dufour, Rudolf Bohm, Agegnehu Gettie, and Melissa Robbiani
- 8542 CD5-CK2 Binding/Activation-Deficient Mice Are Resistant to Experimental Autoimmune Encephalomyelitis: Protection Is Associated with Diminished Populations of IL-17-Expressing T Cells in the Central Nervous System
Robert C. Axtell, Liang Xu, Scott R. Barnum, and Chander Raman
- 8550 Semimature Stage: A Checkpoint in a Dendritic Cell Maturation Program That Allows for Functional Reversion after Signal-Regulatory Protein- α Ligation and Maturation Signals
Deborah Braun, Laurent Galibert, Toshiharu Nakajima, Hirohisa Saito, Van Vu Quang, Manuel Rubio, and Marika Sarfati
- 8560 Lysophosphatidylcholine Stimulates IL-1 β Release from Microglia via a P2X₇ Receptor-Independent Mechanism
Christian Stock, Tom Schilling, Albrecht Schwab, and Claudia Eder

MOLECULAR AND STRUCTURAL IMMUNOLOGY

- 8569 Functional Requirements for the Lysosomal Thiol Reductase GILT in MHC Class II-Restricted Antigen Processing
K. Taraszka Hastings, Rebecca L. Lackman, and Peter Cresswell
- 8578 Cross-Species Dependence of Ly49 Recognition on the Supertype Defining B-Pocket of a Class I MHC Molecule
Kerry J. Lavender and Kevin P. Kane
- 8587 A Natural Structural Variant of the Mouse TCR β -Chain Displays Intrinsic Receptor Function and Antigen Specificity
Anne Aublin, Maria Ciofani, Nancy Willkomm, Abdelbasset Hamrouni, Andrea L. Szymczak-Workman, Tomio Takahashi, Yongoua Sandjeu, Philippe Guillaume, Dario A. A. Vignali, Olivier Michielin, Juan Carlos Zúñiga-Pflücker, and Janet L. Maryanski
- 8595 Molecular Basis of TCR Selectivity, Cross-Reactivity, and Allelic Discrimination by a Bacterial Superantigen: Integrative Functional and Energetic Mapping of the SpeC-V β 2.1 Molecular Interface
A. K. M. Nur-ur Rahman, Christine A. Herfst, Beenu Moza, Stephanie R. Shames, Luan A. Chau, Clara Bueno, Joaquín Madrenas, Eric J. Sundberg, and John K. McCormick

- 8604 Role of Scavenger Receptors in the Binding and Internalization of Heat Shock Protein 70
Jimmy R. Thériault, Hideki Adachi, and Stuart K. Calderwood
- 8612 Differential IFN- γ Stimulation of *HLA-A* Gene Expression through CRM-1-Dependent Nuclear RNA Export
Sarah K. Browne, James R. Roesser, Sheng Zu Zhu, and Gordon D. Ginder
- 8620 Vav Proteins Regulate the Plasma Cell Program and Secretory Ig Production
Linda M. Stephenson, Ana V. Miletic, Tracie Kloeppe, Shana Kusin, and Wojciech Swat
- 8626 Small Mannose-Binding Lectin-Associated Protein Plays a Regulatory Role in the Lectin Complement Pathway
Daisuke Iwaki, Kazuko Kanno, Minoru Takahashi, Yuichi Endo, Nicholas J. Lynch, Wilhelm J. Schwaeble, Misao Matsushita, Masaru Okabe, and Teizo Fujita

IMMUNOGENETICS

- 8633 Th2 Cell-Selective Enhancement of Human *IL13* Transcription by *IL13*-1112C>T, a Polymorphism Associated with Allergic Inflammation
Lisa Cameron, Robin B. Webster, Jannine M. Stempel, Patricia Kiesler, Michael Kabesch, Harikrishnan Ramachandran, Lizhi Yu, Debra A. Stern, Penelope E. Graves, I. Carla Lohman, Anne L. Wright, Marilyn Halonen, Walter T. Klimecki, and Donata Vercelli
- 8643 Allorecognition of an HLA-A*01 Aberrant Allele by an HLA Identical Family Member Carrying the HLA-A*0101 Allele
Ingrid Almciega, Zhibang Charles Wang, Joaquin Zúñiga, Marcelo Fernandez-Viña, Olga Clavijo, Hugo Araujo, Viviana Romero, John Henry, Soldano Ferrone, and Edmond J. Yunis

HOST DEFENSE

- 8650 Overexpression of Suppressor of Cytokine Signaling-5 in T Cells Augments Innate Immunity during Septic Peritonitis
Hiroyuki Watanabe, Masato Kubo, Kosuke Numata, Katsumasa Takagi, Hiroshi Mizuta, Seiji Okada, Takaaki Ito, and Akibiro Matsukawa
- 8658 Human α - and β -Defensins Block Multiple Steps in Herpes Simplex Virus Infection
Ehsan Hazrati, Benjamin Galen, Wuyuan Lu, Wei Wang, Yan Ouyang, Marla J. Keller, Robert I. Lehrer, and Betsy C. Herold
- 8667 β -Glucan Is a Fungal Determinant for Adhesion-Dependent Human Neutrophil Functions
Liz M. Lavigne, Jorge E. Albina, and Jonathan S. Reichner
- 8676 NAK-Associated Protein 1 Participates in Both the TLR3 and the Cytoplasmic Pathways in Type I IFN Induction
Miwa Sasai, Masashi Shingai, Kenji Funami, Mitsutoshi Yoneyama, Takashi Fujita, Misako Matsumoto, and Tsukasa Seya
- 8684 Interleukin-23 Restores Immunity to *Mycobacterium tuberculosis* Infection in IL-12p40-Deficient Mice and Is Not Required for the Development of IL-17-Secreting T Cell Responses
Teresa M. Wozniak, Anthony A. Ryan, and Warwick J. Britton
- 8693 *Pseudomonas* Lipopolysaccharide Accelerates Wound Repair via Activation of a Novel Epithelial Cell Signaling Cascade
Jonathan L. Koff, Matt X. G. Shao, Suil Kim, Iris F. Ueki, and Jay A. Nadel
- 8701 High Mobility Group B1 Protein Suppresses the Human Plasmacytoid Dendritic Cell Response to TLR9 Agonists
Petar J. Popovic, Richard DeMarco, Michael T. Lotze, Steven E. Winikoff, David L. Bartlett, Arthur M. Krieg, Z. Sheng Guo, Charles K. Brown, Kevin J. Tracey, and Herbert J. Zeh III
- 8708 Human Effector CD8⁺ T Lymphocytes Express TLR3 as a Functional Coreceptor
Julie Tabiasco, Estelle Devèvre, Nathalie Rufer, Bruno Salaun, Jean-Charles Cerottini, Daniel Speiser, and Pedro Romero

INFLAMMATION

- 8714 Thiocyanate-Dependent Induction of Endothelial Cell Adhesion Molecule Expression by Phagocyte Peroxidases: A Novel HOSCN-Specific Oxidant Mechanism to Amplify Inflammation
Jian-Guo Wang, Shawn A. Mahmud, Julia Nguyen, and Arne Slungaard
- 8723 Induction of Vascular Leakage and Blood Pressure Lowering through Kinin Release by a Serine Proteinase from *Aeromonas sobria*
Takahisa Imamura, Hidemoto Kobayashi, Rasel Khan, Hidetoshi Nitta, and Keinosuke Okamoto
- 8730 Inhibition of Macrophage Migration Inhibitory Factor or Its Receptor (CD74) Attenuates Growth and Invasion of DU-145 Prostate Cancer Cells
Katherine L. Meyer-Siegler, Kenneth A. Iczkowski, Lin Leng, Richard Bucala, and Pedro L. Vera
- 8740 Oncostatin M-Induced IL-6 Expression in Murine Fibroblasts Requires the Activation of Protein Kinase C δ
David C. Smyth, Christine Kerr, and Carl D. Richards
- 8748 Deficiency of P-Selectin or P-Selectin Glycoprotein Ligand-1 Leads to Accelerated Development of Glomerulonephritis and Increased Expression of CC Chemokine Ligand 2 in Lupus-Prone Mice
Xiaodong He, Trenton R. Schoeb, Angela Panoskaltis-Mortari, Kurt R. Zinn, Robert A. Kesterson, Junxuan Zhang, Sharon Samuel, M. John Hicks, Michael J. Hickey, and Daniel C. Bullard
- 8757 Biomechanical Signals Suppress Proinflammatory Responses in Cartilage: Early Events in Experimental Antigen-Induced Arthritis
Mario Ferretti, Robert Gassner, Zheng Wang, Priyangi Perera, James Deschner, Gwendolyn Sowa, Robert B. Salter, and Sudha Agarwal
- 8767 Lysozyme-Modified Probiotic Components Protect Rats against Polymicrobial Sepsis: Role of Macrophages and Cathelicidin-Related Innate Immunity
Heng-Fu Bu, Xiao Wang, Ya-Qin Zhu, Roxanne Y. Williams, Wei Hsueh, Xiaotian Zheng, Ranna A. Rozenfeld, Xiu-Li Zuo, and Xiao-Di Tan
- 8777 SHIP1 Negatively Regulates Proliferation of Osteoclast Precursors via Akt-Dependent Alterations in D-Type Cyclins and p27
Ping Zhou, Hideki Kitaura, Steven L. Teitelbaum, Gerald Krystal, F. Patrick Ross, and Sunao Takeshita
- 8785 Gram-Negative Bacteria Aggravate Murine Small Intestinal Th1-Type Immunopathology following Oral Infection with *Toxoplasma gondii*
Markus M. Heimesaat, Stefan Bereswill, André Fischer, David Fuchs, Daniela Struck, Julia Niebergall, Hannab-Katharina Jahn, Ildikó R. Dunay, Annette Moter, Dorothee M. Gescher, Ralf R. Schumann, Ulf B. Göbel, and Oliver Liesenfeld
- 8796 Involvement of the Cannabinoid CB2 Receptor and Its Endogenous Ligand 2-Arachidonoylglycerol in Oxazolone-Induced Contact Dermatitis in Mice
Saori Oka, Junichi Wakui, Shinobu Ikeda, Shin Yanagimoto, Seishi Kishimoto, Maiko Gokoh, Miwako Nasui, and Takayuki Sugiura
- 8806 Cyclooxygenase Regulates Cell Surface Expression of CXCR3/1-Storing Granules in Human CD4⁺ T Cells
Olivier Gasser, Thomas A. Schmid, Gabriela Zenhausern, and Christoph Hess

CLINICAL IMMUNOLOGY

- 8813 The Expression and Possible Roles of Chemokine CXCL11 and Its Receptor CXCR3 in the Human Endometrium
Yasushi Hirota, Yutaka Osuga, Kaori Koga, Osamu Yoshino, Tetsuya Hirata, Chieko Morimoto, Miyuki Harada, Yuri Takemura, Emi Nose, Tetsu Yano, Osamu Tsutsumi, and Yuji Taketani
- 8822 Characterization of the B Cell Epitopes Associated with a Truncated Form of *Pseudomonas* Exotoxin (PE38) Used to Make Immunotoxins for the Treatment of Cancer Patients
Masanori Onda, Satoshi Nagata, David J. FitzGerald, Richard Beers, Robert J. Fisher, James J. Vincent, Byungkook Lee, Michihiro Nakamura, Jaulang Hwang, Robert J. Kreitman, Raffit Hassan, and Ira Pastan

- 8835 Familial NK Cell Deficiency Associated with Impaired IL-2- and IL-15-Dependent Survival of Lymphocytes
Céline Eidenschenk, Emmanuelle Jouanguy, Alexandre Alcaïs, Jean-Jacques Mention, Benoit Pasquier, Ingrid M. Fleckenstein, Anne Puel, Laure Gineau, Jean-Claude Carel, Eric Vivier, Françoise Le Deist, and Jean-Laurent Casanova
- 8844 Aberrant Regulation of Synovial T Cell Activation by Soluble Costimulatory Molecules in Rheumatoid Arthritis
Bing Wan, Hong Nie, Ailian Liu, Guozhang Feng, Dongyi He, Rong Xu, Qi Zhang, Chen Dong, and Jingwu Z. Zhang
- 8851 Adenovirus-Specific CD4⁺ T Cell Clones Recognizing Endogenous Antigen Inhibit Viral Replication In Vitro through Cognate Interaction
Bianca Heemskerk, Tamara van Vreeswijk, Louise A. Veltrop-Duits, Claudia C. Sombroek, Kees Franken, Renate M. Verhoesel, Pieter S. Hiemstra, Daphne van Leeuwen, Maaike E. Rensing, René E. M. Toes, Maarten J. D. van Tol, and Marco W. Schilham
- 8860 Synergism between CpG-Containing Oligodeoxynucleotides and IL-2 Causes Dramatic Enhancement of Vaccine-Elicited CD8⁺ T Cell Responses
James N. Kochenderfer, Christopher D. Chien, Jessica L. Simpson, and Ronald E. Gress
- 8874 Corrections
- 8880 Author Index
- 8883 Ad Hoc Reviewers
- 8895 Author Index to Volume 177
- 8922 Subject Index to Volume 177
- 8957 AAI Membership Application
- 8958 AAI Trainee Membership Application