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All potential reviewers are contacted individually to determine availability. Manuscript files are sent to at least two expert reviewers. Reviewers are asked to complete the review of the manuscript within two weeks and to return a short review form. Based on the reviewers' comments, the Section Editor recommends a course of action and communicates the reviews and recommendations to the Deputy Editor for a final decision.

The Deputy Editor considers the comments made by the reviewers and the recommendation of the Section Editor, selects those comments to be shared with the authors, makes a final decision concerning the manuscript, and prepares the decision letter for signature by the Editor-in-Chief. If revisions of the manuscript are suggested, the Deputy Editor also recommends who should review the revised paper when resubmitted. Authors are informed of the decision by e-mail; appropriate comments from reviewers and editors are appended.

**Decisions:** There are four categories for initial decisions: accept, accept with minor revision, resubmit with revision, and reject. Some manuscripts are accepted provisionally, pending relatively minor revisions. In this case, the Deputy Editor may conduct the

re-review. For many manuscripts, authors are invited to resubmit if revision or additional experimentation can address major criticisms. Typically, one or more reviewers will then be asked to consider the adequacy of the revisions. Cutting Edge papers are allowed only minor revisions because of time constraints. All revised manuscripts are carefully reexamined, and ultimate acceptability is not guaranteed. *The JI* does not provide for an advance determination of the acceptability of a particular manuscript for publication, nor does it promise expedited review of selected manuscripts.

**Communication with Authors:** To minimize the possibility of misinterpretation or errors in verbal communication, the Editorial Office will provide information, in writing, only to the corresponding author and will not provide extensive details (e.g., exact status of a review or a predicted time to final decision). Deputy Editors do not take calls from authors concerning decisions or other related matters. All such inquiries should be addressed in writing to the Editor-in-Chief, who will discuss concerns with the Deputy Editor. This policy has been established to provide for uniformity and fairness in addressing concerns about the review process.

**Rebuttals:** If the authors believe that a serious scientific error occurred during the review, a letter of rebuttal may be sent to the Editor-in-Chief, explaining the reasons why the decision should be reconsidered. When appropriate, the matter will be taken up with the initial Deputy Editor, Section Editor, or additional reviewers. Rebuttals that challenge rejections that were based on priority alone are rarely successful, since the assignment of priority is necessarily a matter of opinion. If the authors of a rejected manuscript are able to make new advances that go far beyond the original submission, they will often expedite consideration of their paper through the submission of a completely new manuscript.

### *The JI* Reviewers

**Selection:** Selection of reviewers is the responsibility of the Section Editor, although the Scientific Review Coordinator makes recommendations to the Section Editor from a list of individuals who have reviewed manuscripts previously. This database includes the self-identified areas of expertise as well as information about the perceived usefulness and timeliness of past reviews. Individuals who consistently have provided tardy or unhelpful reviews are removed from the database. Every effort is made to avoid both real and apparent conflicts of interest with respect to research activities or collaborative or personal interactions. Reviewers are asked to withdraw from considering any manuscript in which they identify a conflict that has escaped the attention of the Section Editor.

**Scientific Integrity:** Information contained in manuscripts is considered confidential and should not be shared or distributed. If necessary, a reviewer can consult with others for an adequate evaluation of the research findings if all individuals involved maintain confidentiality, objectivity, and avoid conflict of interest. The AAI is not responsible for acts and conduct by reviewers that are not in accordance with accepted professional standards. Reviewers are asked to be objective in their evaluations and to judge primarily the novelty and soundness of the information presented.

**Anonymity:** Although reviews are anonymous, all comments should be capable of withstanding public scrutiny. Except in very unusual circumstances, the identity of the reviewers and Section and Deputy Editors involved in the review of any given manuscript is kept confidential.

**The JI Editorial Board:** The AAI Council, upon recommendation of the Publications Committee, appoints the Editor-in-Chief for a term of five years. Deputy Editors, Section Editors, and Associate Editors are nominated by the Editor-in-Chief and appointed by the Publications Committee. Deputy Editors are appointed for

variable terms. Section Editors and Associate Editors are appointed for one renewable term of two years in most circumstances. The Editor-in-Chief, the Deputy Editors, and the Section Editors constitute the Editorial Board and as such are required to be members of the AAI. The Editor-in-Chief is responsible for the specific editorial conduct of *The JI*. The AAI Publications Committee is responsible for the management and evaluation of *The JI* and any other official publications of the AAI, subject to the general supervision of the AAI Council.

**Manuscripts Submitted from the Institution of an Editor:** Manuscripts submitted from the institution of any Section or Deputy Editor or the Editor-in-Chief are reviewed by other editors from outside that institution. The Editorial Office ensures confidentiality and equity in reviewing all manuscripts.

### ONLINE SUBMISSION

Online submission is required. Select "Submit Manuscripts" from *The Journal of Immunology's* Web site (<http://www.jimmunol.org/>) and follow the instructions found there. Authors should save copies for themselves of all the files in their original formats. See the Figures section (<http://www.jimmunol.org/misc/authorfulllength.shtml#figures>) for help with preparing digital art.

After you upload your manuscript, you will receive an acknowledgment e-mail that provides access to the forms you must complete and fax to *The JI* Editorial Office at 301-634-7829. Your manuscript **will not be processed** until *The JI* Editorial Office receives these signed forms. Please contact our Helpdesk ([infoji@aai.org](mailto:infoji@aai.org)) if you do not receive the acknowledgment e-mail. Please do NOT use the old hardcopy forms found in the printed journal. Copies of the submission forms can also be found on our Web site (<http://www.jimmunol.org/misc/subforms.shtml>).

### PUBLICATION FEES

**All publication fees are payable in U.S. dollars. Accepted manuscripts are published only upon commitment by the author(s) or institutional financial officer to pay these charges.**

**Submission Fee:** Non-AAI members are required to pay \$50 by check (drawn on a U.S. bank) or credit card (American Express, MasterCard, or Visa) for processing each submitted manuscript. There is a section on the submission form to indicate payment method. **Do not send cash. Note that the submission fee is waived for corresponding authors who are regular, emeritus, or honorary AAI members.**

#### Page Charges:

- \$60 per page for up to 8 printed pages in the article.
- \$150 for each additional page from 9 to 12 pages.
- \$210 for each additional page over 12 pages.

**Color Charges:** Color figures may include multiple color panels. Authors will be notified of the cost of color reproduction on the Reprint Form received with their electronic page proofs and must confirm acceptance of the charges in writing. Authors should expect that color figures in the accepted paper will be reproduced in color and will incur color charges. **Note that AAI members receive a significant discount on color charges.**

- **Non-AAI Members:** \$850 for each color page, and \$300 for each additional color figure on the same color page for corresponding authors who are not AAI members (i.e., first figure on first page: \$850; second figure on the first page: \$300; first figure on second page: \$850, etc.).
- **AAI Members:** \$650 for each color page and \$300 for each additional color figure on the same page for corresponding

authors who are regular, emeritus, or honorary AAI members on the date of manuscript acceptance (i.e., first figure on first page: \$650; second figure on the first page: \$300; first figure on the second page: \$650, etc.).

**Online Posting Fee:** \$150 per published article.

**Reprints:** Reprints must be ordered in advance of publication. A Reprint Form showing the cost of reprints, together with an order slip, is sent with the electronic page proofs. The invoice for reprints will also include page charges and color figure charges. Reprint orders from noncontributors must be directed to the Editorial Office. See <http://www.jimmunol.org/misc/reprintsform06.pdf> for the Reprint Order Form.

### MANUSCRIPT PREPARATION

**General Guidelines:** A 12-point serif font, preferably Times New Roman, is required. Do not use compressed type format. Double-space entire manuscript. The average length of full-length articles is eight printed pages. Instructions for estimating the printed length of a manuscript are included below. Each of the following components should begin on a separate page:

1. The **Title Page** must include the full title; a running title (not to exceed 60 characters); each author's full name (first name, middle initial, last name); the affiliations of all authors and their institutions, departments or organizations (use the following symbols in this order: \*, †, ‡, §, ¶, ||, #, \*\*, ††, ‡‡, §§, ¶¶, || ||, ##); and three to five keywords, selected from the Keywords list (<http://www.jimmunol.org/misc/authorfulllength.shtml#keyword>) that describe the topic of the manuscript. (Keywords are used in editor and reviewer assignments and are not published with the manuscript. Please note that the list of keywords does not represent an exhaustive view of what *The JI* considers important topics, but it has been found useful for reviewer assignment purposes.)

2. The **Abstract** must be 250 words or less. Reference citations should not be included in the *Abstract*. The species of animals or species of origin of cells used in the manuscript must be clearly stated in the Abstract.

3. The **Introduction, Materials and Methods, Results, and Discussion** sections should begin on separate pages. Do not combine the *Results* and *Discussion* sections for full-length papers.

4. If the manuscript contains human or animal studies, the *Materials and Methods* section must state that the studies have been reviewed and approved by an appropriate institutional review committee.

5. **Acknowledgments** appear immediately after the *Discussion* and before *References*.

6. **Grant support** must not be included in the *Acknowledgments* but should be cited as a footnote to the title.

7. **Disclosures** contain conflict of interest disclaimers. For more information, see the Editorial Policies Regarding Manuscript Submission.

8. **References** must be numbered as they appear in the text. All authors must be listed for each reference. If citations are included in tables or in figure legends, they must be numbered according to the position of citation of the table or figure in the text. Only published papers and papers "in press" may be included in the *References*. "In press" articles, i.e., not yet published, must be submitted as online attachments in PDF format at the time of article submission. NOTE: Do NOT submit as an attachment papers that are already published, e.g., manuscripts published ahead of print. Such papers must be incorporated into the *References* and

cited with the DOI numbers and the publication dates. Citations of “manuscripts in preparation,” “unpublished observations,” and “personal communications” must appear parenthetically in the text. Manuscripts “submitted for publication” (i.e., not yet accepted) also are mentioned parenthetically in the text. Written approval by the persons cited in personal communications must accompany the manuscript unless they are also authors of the manuscript submitted to *The JI*.

#### Format for references:

Periodicals: Wells, A. D., M. C. Walsh, D. Sankaran, and L. A. Turka. 2000. T cell effector function and anergy avoidance are quantitatively linked to cell division. *J. Immunol.* 165: 2432–2443.

Books: McIntyre, T. M., and W. Strober. 1999. Gut-associated lymphoid tissue: regulation of IgA B-cell development. In *Mucosal Immunology*, 2nd ed. P. L. Ogra, J. Mestecky, E. Lamm, W. Strober, J. Bienenstock, and J. R. McGhee, eds. Academic Press, San Diego, CA. 319–356.

9. **Footnotes** should be used to designate the source of support, new or special abbreviations used, correspondence address, current address, manuscripts submitted for publication, etc. Footnotes should be numbered consecutively and will appear on the title page, but for submission are grouped together and placed on a separate page between the *References* and the *Figure Legends*.

10. **Abbreviations** that may be used without definition are provided in the Standard Abbreviations list. Spell out nonstandard abbreviations used less than three times. Nonstandard abbreviations used three or more times must be defined in a footnote. Abbreviations and their definitions must be consistent throughout the text.

11. **Figure legends** must be numbered with Arabic numerals in order of appearance in the text and should include a short title after the figure number. Where possible, symbols and patterns used to distinguish data should be defined in a key placed within the graphic rather than in the figure legend.

12. **Tables** must be numbered with Roman numerals in order of appearance in the text. Table legends are prepared as footnotes to the table and are included with the table.

#### 13. Figures

- **Sizes:** Figures should be submitted in final size (printed 1:1). Figures may be printed in one of two formats: single column (width from 3.37 to 8.23 cm or 20 picas) and double column (width from 12.65 to 17.1 cm or 42 picas). The single column format is preferred.

- **Text and Lines:** Text in figures should be 6–8 points in size, except for single letter markers, which may be 12 points. Helvetica should be used for all figure text (except for the use of symbols). Line widths must be greater than one point thick or they will not appear on the PDF version of the article.

- **Numbering:** Figures must be numbered as they appear in the text.

- **File Format:** Please note that *The Journal of Immunology* accepts figures only in **TIFF** or **EPS** formats, **NOT** in **PowerPoint**.

- **Guidelines:** For general guidelines for creating digital art, go to Cadmus Digital Art (<http://cjs.cadmus.com/da/guidelines.jsp>) or the Cadmus FAQ page (<http://cjs.cadmus.com/da/faq.jsp>). Topics included are:

Resolution (dots per inch)

Color requirements

Cropping and sizing

Font usage

Scanned images

Supported applications (*The JI* does not support PowerPoint)

- **Graphic Art Preflight:** To avoid production delays due to unacceptable digital art formats, authors of revised and accepted papers must check in advance whether figures meet the standards required for final print and online production. It is mandatory to use Rapid Inspector (<http://rapidinspector.cadmus.com/RapidInspector/zim/index.jsp>), which walks authors through the process, identifying any potential problems that need to be corrected.

14. **Cover art** changes with each issue of *The JI*. Authors are encouraged to submit color figures with their manuscripts for possible use as cover illustrations.

15. **Estimation for printed pages:** One printed page in *The JI* contains approximately 8,000 characters, including spaces. Thus, an 8-page, full-length article would contain approximately 64,000 characters. Each line in a table occupies about 60 characters for a single-column table, and 120 characters for a double-column table. Figures occupy about 180 characters per centimeter height for single-column figures, and 360 characters for double-column figures. Determine the total character count for the text of your manuscript and add the character-equivalents for the tables and figures. This will provide a reasonable estimate for the printed length of a manuscript.

## CUTTING EDGE MANUSCRIPT PREPARATION

Online submission is required. Select “Submit Manuscripts” from *The Journal of Immunology’s* Web site (<http://www.jimmunol.org/>) and follow the instructions found there. Authors should save copies for themselves of all the files in their original formats. See the Figures section for help with preparing digital art. Manuscripts submitted to the Cutting Edge section should conform to the Information for Authors for full-length manuscripts presented above as well as the additional guidelines listed below:

1. List the phone number, fax number, and e-mail address of the corresponding author on the title page.

2. The *Abstract* is limited to 150 words.

3. The *Materials and Methods* section may be sharply limited but should be sufficient to allow the evaluation of results and conclusions.

4. Authors may combine the *Results* and *Discussion* sections.

5. Cutting Edge articles, including figures and references, *must fit within four journal pages*. Authors should estimate the size of figures and tables and limit the text accordingly. One printed page in *The JI* contains approximately 8,000 characters, including spaces. Thus, a 4-page Cutting Edge article would contain approximately 32,000 characters. The formula for calculating the number of pages is provided in Manuscript Preparation.

## PREPARATION OF THE REVISED MANUSCRIPT

Follow *The JI* Editorial Office instructions carefully and thoroughly. A Revised Manuscript Submission Form, which includes Assignment of Copyright, and a point-by-point reply to all referee comments, must accompany the manuscript and figures. Instructions for figures are available at the Cadmus Digital Art (<http://cjs.cadmus.com/da/index.jsp>) Web site; however, please note that *The JI* accepts figures only in **TIFF** or **EPS** formats, **NOT** in **PowerPoint**.

A revised manuscript not returned within nine months of the date of the decision letter will be considered a new manuscript and subject to a new complete review. Submit the revised manuscript online. Authors should retain for themselves copies of all the files in their original formats.

## SUPPLEMENTAL DATA AND DEPOSITION OF MATERIALS

**Supplemental Data:** All supplemental material accompanying an article must be submitted with the original paper for peer review. When submitting online, upload the file when requested. Supplemental material should be limited to short videos (must be no longer than 30 seconds and under 10 MB, with no sound or voice-over) or large tables, large sequence alignments, or large data sets such as those obtained with microarray hybridization experiments. Such supplemental data must be larger than two printed journal pages; smaller pieces of data should be included in the manuscript.

Videos must be  $320 \times 480$  pixels or smaller for best viewing within a browser. Submit videos in MPG or QuickTime. Change QuickTime file extensions to ".mov" so that Web browsers will recognize the file type and play the movie. Compress videos as much as possible to help control file size. Name videos by order of citation appearance (e.g., video1.mov). Authors will be notified if problems exist with videos as submitted and will be asked to take responsibility for modifications. No editing will be done to videos at the Editorial Office. Legends or short explanations of the material must accompany all supplemental material. Links to the material will appear in two places in the online journal, in the Table of Contents and in the information box associated with the first page of the full-text article. There will not be any links in the body of the article. In the printed paper, supplemental material will be footnoted the first time mentioned: "The online version of this article contains supplemental material."

### **Distribution and depositing of materials:**

**Unique materials:** It is required that unique materials described in manuscripts published in *The JI* will be made available, within reason, to qualified investigators for their own noncommercial use. A reasonable amount may be charged by authors to cover preparation and shipping of the requested material. An agreement to this effect is included in the Manuscript Submission Form.

**High-resolution structural data:** Any paper submitted to *The JI* that contains new high-resolution structural data requires an accession number from the Protein Data Bank (<http://www.rcsb.org/pdb/Welcome.do>) and assurance that unrestricted release will occur at or before the time of publication. The accession number should be accompanied by the Web site address of the databank.

**Nucleotide sequences:** Original nucleotide sequences, and determined nucleotide sequences encoding reported amino acid sequences, described in the manuscript must be submitted to GenBank or EMBL DataLibrary at the time of manuscript submission; an accession number and sequence availability are required at the time of publication. The accession number should be accompanied by the Web site address of the databank. Sequences of nucleotides or amino acids longer than 50 bases/residues should not be presented in the text or in table form, but rather should be submitted as a publication-quality figure. Instructions on submission of data may be obtained directly from GenBank (Mail Stop K710, Los Alamos National Laboratory, Los Alamos, NM 87545) or from the European Molecular Biology Library, Nucleotide Sequence Library (Postfach 10.2209, Meyerhofstrasse 1, 6900 Heidelberg, Germany) or see NCBI's GenBank site (<http://www.ncbi.nlm.nih.gov/Genbank/index.html>).

**Microarray data:** *The JI* will not publish descriptive manuscripts that report microarray data, unless such information can be considered of unusual immunological significance and/or include functional experiments that provide novel insight into mechanism. As with other scientific approaches, current experimental, quantitation, verification, and statistical analyses are expected. Microarray experiments should

be Minimum Information About a Microarray Experiment (MIAME) compliant (for guidelines see [www.mged.org](http://www.mged.org)). Whereas limited on-line space may be available for supplemental tables associated with the manuscript, complete microarray data must be deposited in the appropriate public database; e.g., GEO (<http://www.ncbi.nlm.nih.gov/geo/>), ArrayExpress (<http://www.ebi.ac.uk/arrayexpress/>), or CIBEX (<http://cibex.nig.ac.jp/index.jsp>), and must be accessible without restriction from the date of publication. An entry name or accession number must be included in the paper before publication. The accession number should be accompanied by the Web site address of the databank.

## STYLE GUIDE

**General style conventions:** In general, *The JI* follows *Scientific Style and Format*, *The CSE Style Manual for Authors, Editors, and Publishers*, seventh edition, published by the Council of Science Editors, Inc., in instances where journal style issues are not directly addressed.

**Abbreviations for references:** BIOSIS is the primary source for journal name abbreviations; *Index Medicus* is the secondary source.

**Nomenclature:** The most current links for nomenclature guidelines are posted online (<http://www.jimmunol.org/misc/authorfulllength.shtml#style>).

**Allergen nomenclature:** Nomenclature for allergens should be assigned in cooperation with the IUIS Allergen Sub-Committee. Authors of accepted manuscripts that describe novel allergens will be requested to complete a brief standard form available at IUIS Allergen Nomenclature (<http://www.allergen.org/>).

**CD nomenclature:** For the purpose of consistency, *The JI* will follow CD nomenclature. For murine molecules, *The JI* will follow the nomenclature previously published in *J. Immunol.* 160: 3861–3868, 1998. For human molecules, standard CD nomenclature will be followed as updated in *J. Immunol.* 168: 2083–2086, 2002.

**Chemical names:** *The JI* uses *The Merck Index* (<http://library.dialog.com/bluesheets/html/bl0304.html>) and the *IUPAC-IUB Commission on Biochemical Nomenclature-Chemical Abstracts* (<http://www.chem.qmul.ac.uk/iupac/bibliog/white.html>) as the primary references for proper spelling and style of chemical names.

**Chemokine/chemokine receptor nomenclature:** The systematic name for chemokines and chemokine receptors should be used. The original name may be given in parenthesis if desired. See *Cytokine* 21:48–49, 2003.

**Enzyme Nomenclature:** (<http://www.chem.qmul.ac.uk/iubmb/enzyme/>), is *The JI* source for style and spelling of enzyme names.

**Gene nomenclature:** The HUGO guidelines for gene nomenclature (<http://www.gene.ucl.ac.uk/nomenclature/>) may be used for naming human genes. Mouse Genome Informatics ([http://www.informatics.jax.org/searches/marker\\_form.shtml](http://www.informatics.jax.org/searches/marker_form.shtml)) is a reference source for naming mouse genes.

**Genetic nomenclature for mice:** *The JI* uses the revisions for standardized genetic nomenclature for mice published periodically in *Mouse Genome*. A current listing of inbred strains of mice and rats is available at Mouse Genome Informatics. Authors are encouraged to deposit their mapping data with the Mouse Genome Database (MGD) before publication and to include the assigned MGD accession numbers in their manuscripts ([http://www.informatics.jax.org/external/festing/search\\_form.cgi](http://www.informatics.jax.org/external/festing/search_form.cgi)). Data may be submitted electronically by e-mail. Information about electronic submission of data sets can be obtained at the Data and Nomenclature submissions page ([http://www.informatics.jax.org/mgihome/submissions/submissions\\_menu.shtml](http://www.informatics.jax.org/mgihome/submissions/submissions_menu.shtml)). Gene symbols should be reserved with MGD in advance of publication. An

electronic nomenclature submission form (<http://www.informatics.jax.org/mgihome/submissions/submit.shtml>) is available from the MGD Web site.

**HLA nomenclature:** HLA nomenclature is updated periodically by the WHO Nomenclature Committee for Factors of the HLA System. A recent reference is *Hum. Immunol.* 64: 919–920, 2003. Annual comprehensive revisions are published in *Human Immunology*, usually in the spring.

### STANDARD ABBREVIATIONS

The abbreviations listed here are used without definition in articles published in *The JI*. The form may be used for both singular and plural, or made plural with “s” at the author’s option. The list of standard abbreviations is published in the first issue of each volume.

- Å, angstrom  
 aa, amino acid (only with numbers)  
 Ab, antibody  
 ABTS, 2,2'-azino-bis(3-ethylbenzthiazoline-6-sulfonic acid)  
 Ag, antigen  
 AIDS, acquired immunodeficiency syndrome  
 ANOVA, analysis of variance  
 AP-1, activator protein 1  
 APC, Ag-presenting cell  
 ATP, adenosine triphosphate (also ADP, AMP, CMP, CTP, GDP, GMP, GTP, ITP, NTP, TMP, UDP, and UTP)  
 AZT, 3'-azido-2'-deoxythymidine  
 BALT, bronchus-associated lymphoid tissue  
 BAPTA-AM, 1,2-bis(2-aminophenoxy)ethane-*N,N,N',N'*-tetraacetic acid acetoxymethyl ester  
 BCR, B cell receptor  
 bp, base pair (only with numbers)  
 BrdU, 5-bromo-2'-deoxyuridine  
 BSA, bovine serum albumin  
 C, complement  
 C region, constant region of Ig  
 cAMP, cyclic AMP  
 CCL, CC chemokine ligand  
 CCR, CC chemokine receptor  
 CD40L, CD40 ligand  
 cDNA, complementary DNA  
 CDR, complementarity determining region  
 C/EBP, CCAAT/enhancer-binding protein  
 CFA, complete Freund’s adjuvant  
 CFSE, 5-(and 6)-carboxyfluorescein diacetate succinimidyl ester  
 CFU, colony-forming unit  
 cGMP, guanosine 3',5'-cyclic monophosphate  
 CHAPS, 3-[(3-cholamidopropyl)dimethylammonio]-1-propane-sulfonate  
 Ci, curie  
 CIITA, class II transactivator  
 CLIP, class II-associated invariant-chain peptide  
 CMV, cytomegalovirus  
 CNS, central nervous system  
 CoA, coenzyme A  
 Con A, concanavalin A  
 CpG, cytosine guanine dinucleotide  
 cpm, counts per minute  
 CREB, cAMP response binding protein  
 cRNA, complementary RNA  
 CSF, colony-stimulating factor  
 CTL, cytotoxic T lymphocyte  
 CTLA, cytolytic T lymphocyte-associated Ag  
 CXCL, CXC chemokine ligand  
 CXCR, CXC chemokine receptor  
 d, deoxy; distilled (as in dH<sub>2</sub>O)  
 D region, diversity region of Ig or T cell receptor for Ag  
 Da, dalton (only with numbers)  
 dATP, 2'-deoxyadenosine triphosphate  
 DEAE, diethylaminoethyl  
 df, degrees of freedom  
 DMEM, Dulbecco’s modified Eagle’s medium  
 DMSO, dimethylsulfoxide  
 DNA, deoxyribonucleic acid  
 DNase, deoxyribonuclease  
 DNP, dinitrophenyl  
 dNTP, 2'-deoxynucleoside 5'-triphosphate  
 dpm, disintegrations per minute  
 ds, double-stranded (as dsDNA)  
 DTT, dithiothreitol  
 E, erythrocyte  
 EBV, Epstein-Barr virus  
 EC<sub>50</sub>, 50% effective concentration  
 ECL, enhanced chemiluminescence  
 ED<sub>50</sub>, 50% effective dose  
 EDTA, ethylenediaminetetraacetic acid  
 EGTA, ethylene glycol-bis( $\beta$ -aminoethyl ester)-*N,N,N',N'*-tetraacetic acid  
 ELISA, enzyme-linked immunosorbent assay  
 ELISPOT, enzyme-linked immunospot  
 EMSA, electrophoretic mobility shift assay  
 ERK, extracellular signal-regulated kinase  
 E:T ratio, effector to target ratio  
 Fab, Ag-binding fragment  
 F-actin, filamentous actin  
 FACS, fluorescence-activated cell sorter  
 FAM, 6-carboxyfluorescein  
 FBS, fetal bovine serum  
 FcR, Fc receptors (e.g., Fc $\gamma$ RI)  
 FCS, fetal calf serum  
 FITC, fluorescein isothiocyanate  
 FLICE, Fas-associated death domain-like IL-1 $\beta$ -converting enzyme  
 FLIP, FLICE inhibitory protein  
 fMLP or FMLP, formyl-methionyl-leucyl-phenylalanine  
 Fura 2-AM, fura 2-acetoxymethyl ester  
 g, gram (only with numbers)  
 GALT, gut-associated lymphoid tissue  
 GAPDH or G3PDH, glyceraldehyde-3-phosphate dehydrogenase  
 G-CSF, granulocyte CSF  
 GFP, green fluorescent protein  
 GM-CSF, granulocyte-macrophage CSF  
 gp, glycoprotein (e.g., gp100)  
 GPI, glycosylphosphatidylinositol  
 GST, glutathione S-transferase  
 h, hour (only with numbers)  
 H chain, heavy chain  
 H&E, hematoxylin and eosin  
 HBSS, Hanks’ balanced salt solution  
 HEPES, *N*-2-hydroxyethylpiperazine-*N'*-2-ethanesulfonic acid  
 HIV, human immunodeficiency virus  
 HLA, human histocompatibility leukocyte Ag  
 HPLC, high performance liquid chromatography  
 HRP, horseradish peroxidase  
 HSV, herpes simplex virus  
 HUVEC, human umbilical vein endothelial cells  
 IC<sub>50</sub>, 50% inhibition/inhibitory concentration  
 ICAM, intercellular adhesion molecule  
 ICOS, inducible costimulator

- Id, idiotype; idiotypic determinant  
 ID<sub>50</sub>, 50% infective dose or 50% inhibiting dose  
 IDO, indoleamine 2,3-dioxygenase  
 IFA, incomplete Freund's adjuvant  
 IFN, interferon (e.g., IFN- $\gamma$ )  
 Ig, immunoglobulin  
 IgH, Ig heavy chain  
 I $\kappa$ B, inhibitory NF- $\kappa$ B  
 IL, interleukin (e.g., IL-2)  
 i.m., intramuscular  
 IMDM, Iscove's modified Dulbecco's medium  
 IMEM, Iscove's minimal essential medium  
 i.p., intraperitoneal  
 ITAM, immunoreceptor tyrosine-based activation motif  
 ITIM, immunoreceptor tyrosine-based inhibitory motif  
 IU, international unit  
 i.v., intravenous  
 J region, joining region of Ig or T cell receptor for Ag  
 JAK or Jak, Janus kinase  
 JNK, c-Jun N-terminal kinase  
 kb, kilobase (only with numbers)  
 kbp, kilobase pair (only with numbers)  
 K<sub>a</sub>, association constant  
 K<sub>d</sub>, distribution coefficient; dissociation constant  
 K<sub>D</sub>, affinity constant  
 kDa, kilodalton (only with numbers)  
 L chain, light chain  
 LD<sub>50</sub>, 50% lethal dose  
 LFA, leukocyte (lymphocyte) function-associated Ag  
 LIF, leukemia inhibitory factor  
 LPS, lipopolysaccharide  
 LU, lytic unit  
 mAb, monoclonal Ab  
 MACS, magnetic-activated cell sorting  
 MALDI, matrix-assisted laser desorption ionization  
 MALDI-TOF, matrix-assisted laser desorption ionization-time of flight  
 MALT, mucosa-associated lymphoid tissue  
 MAPK, mitogen-activated protein kinase  
 MCP-1, monocyte chemoattractant protein-1  
 M-CSF, macrophage CSF  
 2-ME, 2-mercaptoethanol  
 MEK, mitogen-activated protein kinase kinase  
 MEM, minimum essential medium  
 MES, 2-(*N*-morpholino)ethanesulfonic acid  
 mg, milligram (only with numbers)  
 MHC, major histocompatibility complex  
 min, minute (only with numbers)  
 MIP, macrophage-inflammatory protein  
 ml, milliliter (only with numbers)  
 MLC, mixed lymphocyte culture  
 MLR, mixed leukocyte reaction  
 mo, month(s) (only with numbers)  
 MOPS, 4-morpholinepropanesulfonic acid  
 M<sub>r</sub>, relative molecular mass  
 mRNA, messenger RNA  
 MTT, 3-(4,5-dimethylthiazol-2-yl)-2,5-dimethyltetrazolium bromide  
 $\mu$ g, microgram (only with numbers)  
 $\mu$ l, microliter (only with numbers)  
 m.w., molecular weight  
 MyD88, myeloid differentiating factor 88  
*n*, number in study or group  
 NAD, nicotinamide adenine dinucleotide  
 NADH, reduced NAD  
 NaDodSO<sub>4</sub>, sodium dodecyl sulfate  
 NADP, NAD phosphate  
 NADPH, reduced NAD phosphate  
 NBT, nitroblue tetrazolium  
 ND, not determined  
 NDP, nucleoside 5'-diphosphate  
 NF, nuclear factor  
 NFAT or NF-AT, nuclear factor of activated T cells  
 NF- $\kappa$ B, nuclear factor  $\kappa$ B  
 Ni-NTA, nickel-nitrilotriacetic acid  
 NK cell, natural killer cell  
 NMP, nucleoside 5'-monophosphate  
 NO, nitric oxide  
 NOD, nonobese diabetic  
 NS, not significant  
 nt, nucleotide (only with numbers)  
 OCT, octamer-binding factor  
 OD, optical density  
 OVA, ovalbumin  
*p*, probability  
 PAGE, polyacrylamide gel electrophoresis  
 PBL, peripheral blood lymphocyte  
 PBMC, peripheral blood mononuclear cell  
 PBS, phosphate-buffered saline  
 PCR, polymerase chain reaction  
 PE, phycoerythrin  
 PECAM-1, platelet endothelial cell adhesion molecule-1  
 PerCP, peridinin chlorophyll protein  
 PFU, plaque-forming unit  
 PG, prostaglandin  
 PHA, phytohemagglutinin  
 PI3K, phosphatidylinositol 3-kinase  
 PIPES, piperazine-*N,N'*-bis(2-ethane sulfonic acid)  
 PMA, phorbol myristate acetate  
 PMSF, phenylmethylsulfonyl fluoride  
 PWM, pokeweed mitogen  
 r, recombinant (e.g., rIFN- $\gamma$ )  
 R, receptor (e.g., IL-2R)  
 RACE, rapid amplification of cDNA end  
 RAG, recombination-activating gene  
 RANTES, regulated upon activation, normal T cell expressed and secreted  
 RBC, red blood cell  
 RFLP, restriction fragment length polymorphism  
 RIA, radioimmunoassay  
 RNA, ribonucleic acid  
 RNase, ribonuclease  
 rpm, revolutions per minute  
 rRNA, ribosomal RNA  
 RT-PCR, reverse transcriptase polymerase chain reaction  
 s, second (use only with numbers)  
 s.c., subcutaneous  
 SCID, severe combined immunodeficiency  
 SD, standard deviation  
 SDS, sodium dodecyl sulfate  
 SE, standard error  
 SEM, standard error of the mean  
 SHIP, src homology 2-containing inositol 5'-phosphatase  
 SIV, simian immunodeficiency virus  
 sp. act., specific activity  
 SRBC, sheep red blood cells  
 ss, single-stranded (e.g., ssDNA)  
 SSC, standard saline citrate  
 STAT, signal transducer and activator of transcription  
 SV40, simian virus 40  
*t*<sub>1/2</sub>, half-life, half-time  
 TAMRA, 5-(and 6)-carboxytetramethylrhodamine  
 TAP, transporter associated with Ag processing  
 Tat, terminal deoxynucleotidyltransferase  
 TBS, Tris-buffered saline  
 TBST, TBS with Tween 20  
 TCA, trichloroacetic acid  
 TCR, T cell receptor for Ag  
 TdR, thymidine deoxyribose (also UdR, AdR)  
 TdT, terminal deoxynucleotidyltransferase  
 TGF, transforming growth factor  
 Th cell, T helper cell

TLC, thin layer chromatography  
 TLR, Toll-like receptor  
 TNF, tumor necrosis factor  
 TNP, trinitrophenyl  
 TRAIL, TNF-related apoptosis-inducing ligand  
 Tris, tris(hydroxymethyl)aminomethane  
 tRNA, transfer RNA  
 TUNEL, Tdt-mediated dUTP nick end labeling  
 U, unit (only with numbers)  
 UV, ultraviolet

v/v, volume to volume ratio (%)  
 V region, variable region of Ig  
 VCAM, vascular cell adhesion molecule  
 V(D)J, variable diversity joining  
 VLA, very late activation Ag  
 W, watt (only with numbers)  
 wk, week (only with numbers)  
 xid, X-linked immunodeficiency  
 Zap70,  $\zeta$ -associated protein 70 (or  $\zeta$ -chain-associated protein 70)

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## Keywords

### Animals

Human  
 Rodent  
 Other Animals

### Cells

B Cells  
 Dendritic Cells  
 Endothelial Cells  
 Eosinophils  
 Mast Cells/Basophils  
 Monocytes/Macrophages  
 Natural Killer Cells  
 Neutrophils  
 Stem Cells  
 Stromal Cells  
 T Cells  
 T Cells, Cytotoxic  
 Th1/Th2 Cells

### Diseases

Autoimmunity  
 Diabetes  
 EAE/MS

Endotoxin Shock  
 Graft Versus Host Disease  
 Immunodeficiency Diseases  
 Rheumatoid Arthritis  
 Systemic Lupus Erythematosus

### Infections

AIDS  
 Bacterial  
 Fungal  
 Parasitic-Helminth  
 Parasitic-Protozoan  
 Viral

### Molecules

AcutePhase Reactants  
 Adhesion Molecules  
 Antibodies  
 Antigens/Peptides/Epitopes  
 Autoantibodies  
 Cell Surface Molecules  
 Chemokines  
 Complement  
 Cytokine Receptors

Cytokines  
 Fc Receptors  
 Lipid Mediators  
 Lipopolysaccharide  
 MHC  
 Nitric Oxide  
 Protein Kinases/Phosphatases  
 Superantigens  
 T Cell Receptors  
 Transcription Factors

### Processes

Allergy  
 Antigen Presentation/Processing  
 Apoptosis  
 Cell Activation  
 Cell Differentiation  
 Cell Proliferation  
 Cell Trafficking  
 Chemotaxis  
 Comparative Immunology/Evolution  
 Costimulation  
 Cytotoxicity  
 Gene Rearrangement

Gene Regulation  
 Hematopoiesis  
 Inflammation  
 Memory  
 Neuroimmunology  
 Phagocytosis  
 Repertoire Development  
 Reproductive Immunology  
 Signal Transduction  
 Tolerance/Suppression/Anergy  
 Transplantation  
 Tumor Immunity  
 Vaccination

### Techniques

Gene Therapy  
 Molecular Biology  
 Transgenic/Knockout Mice

### Tissues

Lung  
 Mucosa  
 Skin  
 Spleen & Lymph Nodes  
 Thymus

# THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS

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FEDERAL TAX ID NO: 52-2317193

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## QUALIFICATIONS AND APPLICATION FOR REGULAR MEMBERSHIP 2007 MEMBERSHIP YEAR

The American Association of Immunologists (AAI) is a professional organization whose members have a strong interest in, and have made substantial contributions to, the science of immunology. AAI is a member of the Federation of American Societies for Experimental Biology (FASEB) and is responsible for the publication of *The Journal of Immunology*. To be eligible for election to membership in the AAI, a candidate must meet **one** of the following criteria:

1. Possess a Ph.D., (or equivalent graduate degree, *e.g.*, D.Sc.) in immunology or related disciplines, or an M.D. (or equivalent medical degree, *e.g.*, D.D.S.) and be the **first** author of **one** significant original publication on an immunological topic in a reputable, English language refereed journal. Manuscripts "in press" are acceptable when accompanied by a letter from the publisher or Editor-In-Chief of the journal affirming its acceptance and imminent publication. Abstracts and unpublished papers **will not** be considered in evaluating whether a candidate meets the publications requirement for membership.\*
2. Be an established scientist with substantial achievement in a related discipline and have at least one collaborative paper on an immunological topic in a reputable, English language refereed journal.

*\* These requirements may be waived under exceptional circumstances if a candidate shows evidence of other appropriate training and/or substantial research accomplishment.*

### **THIS APPLICATION PACKAGE MUST INCLUDE:**

1. A current copy of your curriculum vitae including bibliography.
2. A copy of the title page of a first author publication that meets the criteria.
3. The name and signature of an active AAI member as your reference.

NAME: \_\_\_\_\_  
DEGREE (YEAR) & INSTITUTION: \_\_\_\_\_  
PUBLICATION: \_\_\_\_\_  
CURRENT TITLE/ POSITION: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
STREET: \_\_\_\_\_  
CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_ COUNTRY: \_\_\_\_\_  
E-MAIL ADDRESS: \_\_\_\_\_  
PHONE NO: \_\_\_\_\_ FAX NO: \_\_\_\_\_  
RESEARCH SPECIALTY: \_\_\_\_\_

### **REFERENCE:**

NAME OF AAI MEMBER (*please print clearly*): \_\_\_\_\_  
SIGNATURE OF AAI MEMBER: \_\_\_\_\_

Applications should be mailed to the AAI office and marked to the attention of the AAI Membership Department. Please **DO NOT** send payment with your application. You will be invoiced upon approval.

### **Application Review Deadlines:**

Applications are to be received in the AAI office by the first day of each month.

**2007 Dues Rates: January 1 - December 31: U.S. - \$260.00 Canadian - \$367.50 International - \$360.00**



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## 2007 TRAINEE MEMBERSHIP APPLICATION FORM

Name: \_\_\_\_\_ E-mail Address: \_\_\_\_\_

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City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

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Qualified applicants must complete the information below and return this form with the required payment. Trainee members will receive a subscription to *The Journal of Immunology* and the *AAI Newsletter*. Trainee members will also have the privilege of attending and participating (without vote) in the AAI Annual Business Meeting. In addition, they will receive all AAI announcements and correspondence. Checks are to be made payable to *AAI*. All checks must be in U.S. dollars drawn on a U.S. bank and International money orders are accepted.

Individuals may remain Trainee members for a maximum of eight (8) years. Certification **must** be renewed annually.

### SECTION 1 -- APPLICANT INFORMATION

- I am a **Pre**-doctoral Trainee -- I expect to receive the \_\_\_\_\_ (*advanced degree*) in \_\_\_\_\_ (*mo/yr*)
- I am a **Post**-doctoral Trainee -- I hold the following advanced degree(s) (*please indicate all advanced degrees held and the month and year conferred*): \_\_\_\_\_

### SECTION 2 -- CERTIFICATION OF APPLICANT'S TRAINEE STATUS

(to be completed by current AAI member)

As a current member of the AAI, I hereby certify that the applicant identified above is either a regularly matriculated pre-doctoral student or a post-doctoral trainee and, as such, is eligible to remain a Trainee Member of the AAI.

Current AAI Member's Name (First, MI, Last): \_\_\_\_\_

Signature: \_\_\_\_\_

Title (Dean, Dept. Chair, or Professor in Charge): \_\_\_\_\_

AAI Member Number: \_\_\_\_\_ Date: \_\_\_\_\_

### SECTION 3 -- APPLICANT PLEDGE AND PAYMENT

I \_\_\_\_\_, pledge that the copies of *The Journal of Immunology* purchased by me at the special subscription rate to Trainee Members are for my personal use. They will not be placed in a library for general use, sold, or replace a subscription currently purchased by an institution. I also agree that my on-line access to *The JI* will not be shared with others.

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# MICHIGAN STATE UNIVERSITY

## Tenure-Track Position Nutritional Immunology

Michigan State University seeks candidates for a tenure-track Assistant Professor position in the area of Immunology related to Nutrition (Nutritional Immunology). The successful candidate will be expected to develop an independent NIH-funded research program that focuses on the role of nutrition in enhancing immune function and/or in the prevention or treatment of chronic inflammatory diseases. He/she should possess aptitude to mentor/teach students. *Complete details on position and qualifications can be found at <http://msu.edu/unit/fshn/announcements/nutr.pdf>.* Qualified applicants should submit electronically (pdf format) by Feb. 1 2007 to [ddreffs@msu.edu](mailto:ddreffs@msu.edu) the following; (1) curriculum vitae, (2) summary of research accomplishments and teaching experience, (3) research plan, and (4) reprints of publications. In addition, 3 letters of reference should be sent **directly** to: **Chair, Nutritional Immunology Search Committee, Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI 48824-1224. Fax: 517-353-8963.**

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## PSORIASIS IMMUNOGENETICS Assistant Professor

Assistant Professor (tenure-track) in psoriasis immunogenetics clinical research. The position requires doing psoriasis research involving cellular immunology, human genetic linkage and association analysis, and microarray analysis of gene expression and genetic variation. This research requires performance of biopsies of human skin by punch and keratome techniques and providing research related clinical care. Qualifications: M.D. and post-doctoral training in immunology and human genetic linkage and association analysis; Ph.D. degree involving genomics, immunology and human genetic linkage and association, desirable; and related research publication record in genetics and immunology focused on psoriasis.

Send CV and references to:

John J. Voorhees, MD FRCP  
University of Michigan  
Dept of Dermatology  
1910 Taubman Ctr  
Ann Arbor, MI 48109-0314



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Applications are invited for a research track position at Yale University School of Medicine. The successful applicant will join an established laboratory in a research, administrative, and supervisory role. The candidate will participate in an ongoing well funded research program investigating CD4 T cell activation and differentiation both in vitro and in an in vivo model of asthma. The candidate will be expected to oversee daily research related activities, monitor grant-related financial matters, participate in grant writing, and engage in independent and/or collaborative research activities. This position is particularly well suited to someone seeking a leadership role in an established laboratory. Position offers opportunities for advancement.

The anticipated starting date for this position is early 2007. Candidates should have a Ph.D. in immunology or closely related field with a strong experimental background. The ideal candidate will have experience with small animal models of disease, microscopy, and molecular biology. Good writing, organizational, and personal skills are required. Please submit a letter of interest and curriculum vitae, along with a statement of research experience and sample of writing to: [vickie.johnson@yale.edu](mailto:vickie.johnson@yale.edu).



## Faculty Positions in Immunology

The UNC Lineberger Comprehensive Cancer Center and the Department of Microbiology and Immunology are searching for individuals with promising or established research programs in the broad areas of immunology. Candidates should have a Ph.D. and/or M.D. with a strong record of recent accomplishments as a postdoctoral fellow or sustained productivity as an established faculty member. Candidates chosen will be placed in tenure-track positions at The University of North Carolina at Chapel Hill. The search will be coordinated by Jenny Ting, Ph.D., Alumni Distinguished Professor and Immunology Program Leader, Lineberger Comprehensive Cancer Center.

Areas of interest include but are not limited to: Cancer immunology, immunity and infection, inflammation and cancer, innate immunity, macrophage and dendritic cell biology, immune signaling, and molecular immunology. Applicants should send a curriculum vitae, a description of research plans, and three letters of reference to:

Melissa Stroud Mack  
UNC Lineberger Comprehensive Cancer Center, CB# 7295  
University of North Carolina at Chapel Hill  
Chapel Hill, NC 27599-7295

The University of North Carolina at Chapel Hill is an equal opportunity/ADA employer.

Women and minorities are encouraged to apply.

# The American Association of Immunologists

## Working for You! AAI Membership Benefits

The mission of The American Association of Immunologists (AAI) is to advance the knowledge of immunology and related disciplines, foster interchange of ideas and information among scientists, and promote understanding of the field of immunology. AAI offers regular, trainee, and emeritus membership.

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- Membership in the largest and most prestigious professional association of immunologists in the world. Over 6,500 AAI member-scientists are working together to advance immunology research as well as on issues that affect their lives
- A subscription to *The Journal of Immunology*; includes print copy *and* on-line access to every issue from the oldest in the archive to the most recent
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**94th Annual Meeting  
of  
The American Association of  
Immunologists**

**2** ♦ **0** ♦ **0** ♦ **7**



**May 18 - 22, 2007**  
**Miami Beach Convention Center**  
**Miami Beach, Florida**

**Important Deadlines**

- ♦ Abstract Submission – **January 10, 2007**
- ♦ Hotel Reservations – **April 6, 2007**
- ♦ Early Registration – **March 14, 2007**
- ♦ Awards (see website)

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