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Circulation as of 9/15/06: 7,225.
Publication schedule: Printed and posted online twice each month. Print issues publish on the 1st and the 15th of each month.
Average time from submission to initial decision: 37 days.
Average time from acceptance to print: 7.5 weeks.
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d) that the corresponding author agrees to, and will include in the text of the abstract submitted to PMC, the following disclaimer: “This is an author-produced version of a manuscript accepted for publication in The Journal of Immunology (The JI). The American Association of Immunologists, Inc. (the AAI), publisher of The JI, holds the copyright to this manuscript. This manuscript has not yet been copyedited or subjected to editorial proofreading by The JI; hence, it may differ from the final version published in The JI (online and in print). The AAI (The JI) is not liable for errors or omissions in this author-produced version of the manuscript or in any version derived from it by the National Institutes of Health or any other third party. The final, citable version of record can be found at www.jimmunol.org.”

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The Process: By submitting a manuscript to The JI, the authors agree to subject it to the confidential peer-review process. Editors and reviewers are informed that the manuscript must be considered confidential. After a manuscript is received, it is assigned to the Science Coordinator to a Deputy Editor and a Section Editor, whose expertise is considered to be appropriate. The Section Editor prepares a list of expert reviewers, which may include some suggested by the Science Coordinator. Authors can indicate specific individuals whom they would like to have excluded as reviewers as well as individuals thought to be particularly appropriate, although these suggestions may not always be accepted. Generally, requests to exclude certain potential reviewers will be honored except in fields with a limited number of experts.

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, return for revision, and reject. Some manuscripts are accepted provisionally, pending relatively minor revisions. In this case, the Deputy Editor may conduct the 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.

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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 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 for full-length manuscripts; 150 words or less for Cutting Edge. 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., papers 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:


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.

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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. Tables must be in DOC file format. Each table should be submitted as a separate file.

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At submission of a revised manuscript, high-resolution figures that meet the following specifications must be submitted. For more information see the TIPS page on the online manuscript submission home page (ji.msubmit.net).

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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.

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1. **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 estimating the number of pages is provided in Manuscript Preparation.

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

3. The Abstract is limited to 150 words.

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

5. Authors may combine the Results and Discussion sections.

### PREPARATION OF THE REVISED MANUSCRIPT

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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 incorporated into the manuscript as regular figures/tables.

Videos must be 320 x 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.”

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Nucleotide sequences: 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. 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 website address of the databank. 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 (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, quantification, verification, and statistical analyses are expected. Microarray experiments should be Minimum Information About a Microarray Experiment (MIAME) compliant (for guidelines see www.mged.org). Whereas limited online 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 (www.ncbi.nlm.nih.gov/geo/), ArrayExpress (www.ebi.ac.uk/arrayexpress/), or CIBEX (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 website address of the database.

STYLE GUIDE


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 (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 (www.allergen.org)/.


Chemical names: The JI uses The Merck Index (library. dialog.com/bluesheets/html/bi0304.html) and the IUPAC-IUB Commission on Biochemical Nomenclature-Chemical Abstracts (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: (www.chem.qmul.ac.uk/submb/enzyme/), is The JI source for style and spelling of enzyme names.

Gene nomenclature: The HUGO guidelines for gene nomenclature (www.genenames.org) may be used for naming human genes. Mouse Genome Informatics (www.informatics.jax.org/) 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 (www.informatics.jax.org). Data may be submitted electronically by e-mail. Information about electronic submission of data sets can be obtained at the MGD home page. Genetic nomenclature for mice is available from the MGD website.

**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'-azinobis(3-ethylbenzthiazole-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-3-deoxythymidine
BALT, bronchus-associated lymphoid tissue
BAPTA-AM, 1,2-bis(2-aminophenoxy)ethane-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 dH2O)
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
DME, Dulbecco's modified Eagle's medium
DMSO, dimethylsulfoxide
DNA, deoxyribonucleic acid
DNase, deoxyribonuclease
DNP, dinitrophenyl
dNTP, 2'-deoxyribonucleoside 5'-triphosphate
dpm, disintegrations per minute
ds, double-stranded (as dsDNA)
DTT, dithiothreitol
E, erythrocyte
EBV, Epstein-Barr virus
EC50, 50% effective dose
ECL, enhanced chemiluminescence
ELISA, enzyme-linked immunosorbent assay
ELISPOT, enzyme-linked immunospot
EMS, electromobility 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
FCS, fetal calf serum
FcR, Fc receptors (e.g., FcγRI)
FCS, fetal calf serum
FITC, fluorescein isothiocyanate
FLICE, Fas-associated death domain-like IL-1β-converting enzyme
FLIP, FLICE inhibitory protein
FMP, 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
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
\( t_{1/2} \), 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
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, ζ-chain-associated protein 70 (or ζ-chain-associated protein 70)

**Keywords**

**Animals**
- 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

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

**Infections**
- AIDS
- Bacterial
- Fungal
- Parasitic-Helminth
- Parasitic-Protozoan
- Viral

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

**Techniques**
- Gene Therapy
- Molecular Biology
- Transgenic/Knockout Mice

**Tissues**
- Lung
- Mucosa
- Skin
- Spleen & Lymph Nodes
- Thymus

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

**Gene Regulation**
- Hematopoesis
- Inflammation
- Memory
- Neuroimmunology
- Phagocytosis
- Repertoire Development
- Reproductive Immunology
- Signal Transduction
- Tolerance/Suppression/Anergy
- Transplantation
- Tumor Immunity
- Vaccination
The American Association of Immunologists

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