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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.

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

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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 ([HYPERLINK "www.allergen.org/"](http://www.allergen.org/) www.allergen.org/).

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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.

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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.

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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-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-3-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-propanesulfonate 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 element 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

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

EC₅₀, 50% effective concentration

ECL, enhanced chemiluminescence

ED₅₀, 50% effective dose

EDTA, ethylenediaminetetraacetic acid

EGTA, ethylene glycol-bis(b-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., FcγRI)
 FCS, fetal calf serum
 FITC, fluorescein isothiocyanate
 FLICE, Fas-associated death domain-like IL-1β-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
 IC₅₀, 50% inhibition/inhibitory concentration
 ICAM, intercellular adhesion molecule
 ICOS, inducible costimulator Id, idiotype; idiotypic determinant
 ID₅₀, 50% infective dose or 50% inhibiting dose
 IDO, indoleamine 2,3-dioxygenase
 IFA, incomplete Freund's adjuvant
 IFN, interferon (e.g., IFN-γ)
 Ig, immunoglobulin
 IgH, Ig heavy chain IκB, inhibitory NF-κB
 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_a, association constant
 K_d, distribution coefficient; dissociation constant
 K_D, affinity constant kDa, kilodalton (only with numbers)
 L chain, light chain; light
 LD₅₀, 50% lethal dose
 LFA, leukocyte (lymphocyte) function-associated Ag
 LIF, leukemia inhibitory factor
 LPS, lipopolysaccharide
 LU, lytic unit
 mAb, monoclonal Ab
 2-ME, 2-mercaptoethanol
 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
 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_r, relative molecular mass
 mRNA, messenger RNA
 MTT, 3-(4,5-dimethylthiazol-2-yl)-2,5-dimethyltetrazolium bromide
 μg, microgram (only with numbers)
 μl, 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
 NaDodSO₄, sodium dodecyl sulfate
 NADP, NAD phosphate
 NADPH, NAD phosphate (reduced)
 NBT, nitroblue tetrazolium
 ND, not determined
 NDP, nucleoside 5'-diphosphate
 NF, nuclear factor
 NFAT or NF-AT, nuclear factor of activated T cells
 NF-κB, nuclear factor κB
 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-γ)

- 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
 $t_{1/2}$, 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
 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, ζ -associated protein 70 (or ζ -chain-associated protein 70)

Keywords

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|-----------------------|------------------------------|----------------------------------|------------------------------|
| Animals | Graft Versus Host Disease | Lipid Mediators | Inflammation |
| Human | Immunodeficiency Diseases | Lipopolysaccharide | Memory |
| Rodent | Rheumatoid Arthritis | MHC | Neuroimmunology |
| Other Animals | Systemic Lupus Erythematosus | Nitric Oxide | Phagocytosis |
| Cells | Infections | Protein Kinases/Phosphatases | Repertoire Development |
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| Neutrophils | Acute Phase Reactants | Cell Activation | Gene Therapy |
| Stem Cells | Adhesion Molecules | Cell Differentiation | Molecular Biology |
| Stromal Cells | Antibodies | Cell Proliferation | Transgenic/Knockout Mice |
| T Cells | Antigens/Peptides/Epitopes | Cell Trafficking | Tissues |
| T Cells, Cytotoxic | Autoantibodies | Chemotaxis | Lung |
| Th1/Th2 Cells | Cell Surface Molecules | Comparative Immunology/Evolution | Mucosa |
| Diseases | Chemokines | Costimulation | Skin |
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