

# ASM Word List



The words, abbreviations, and designations that follow are commonly encountered in ASM manuscripts.

An asterisk (\*) indicates that the abbreviation may be used (without introduction) with or without a numeral; however, the term should always be abbreviated in the bodies of tables.

A double asterisk (\*\*) indicates that the abbreviation must be used without introduction.

“Need not be defined” means that the abbreviation does not have to be introduced, but it may be.

“Hyphenated as unit modifier” means that the phrase is hyphenated when it is used adjectivally and precedes the noun it modifies; when it follows the noun, it should not be hyphenated: Gram-positive cells, BUT the cells were Gram positive.

“Follow au.” means that ASM copy editors follow the author if one of the alternative forms is used consistently throughout the manuscript; otherwise, the copy editor will choose one form and be consistent. At times, your definition for an abbreviation may vary significantly from the one given here. Generally, ASM copy editors will follow the author, especially if the term is a chemical name that can be verified. If the variation is slight, however (e.g., hyphens, spacing), the copy editor will follow this manual.

You may find helpful medical acronym websites like <http://www.medindia.net/medical-abbreviations-and-acronyms/index.asp> and <http://www.medilexicon.com/abbreviations>.

As a general rule, use the specific abbreviations given in this list: PFU, NOT pfu; i.p., NOT IP; cpm, NOT CPM; IFN, NOT IF. For abbreviations that do not appear in this manual, periods and all-lowercase abbreviations should be avoided. For example, change X.Y.Z. to XYZ and abt to ABT.

The list is alphabetized in letter-by-letter fashion. Spaces and numerals are ignored: airborne, air dry, airflow; CBC, C57BL, cc. When the only difference between entries is in capitalization or typeface, the order is lowercase roman, lowercase italic, capitalized roman, capitalized italic: a, A, A; dl, *dl*; RF, *R<sub>f</sub>*.

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## A

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a\*: atto (SI prefix, 10<sup>-18</sup>)

**a**—*Saccharomyces cerevisiae* mating type

A—need not be defined (adenine *or* adenosine *or* alanine)

A\*: ampere (SI unit)

Å\*: angstrom

A: zero time intercept for  $\alpha$  phase (see Table 6.3)

A<sub>260</sub>—need not be defined (absorbance at 260 nm; other numbers may be used)

$\alpha$  *or*  $\alpha$  phase: distribution phase (see Table 6.3)

$\alpha$ —*Saccharomyces cerevisiae* mating type

$\alpha$ —a type of error in a probability determination; allow without introduction if given with a *P* value or in the context of statistical discussion

$[\alpha]^{20}_D$ —need not be defined (optical rotation, specific)

$\alpha$ -factor (*Saccharomyces cerevisiae*)—always hyphenated

$\alpha$ -toxin—*change to* alpha-toxin

aa: amino acid(s) (use only with numbers; must be introduced)



AAALAC—need not be defined (Association for Assessment and Accreditation of Laboratory Animal Care)

7-AAD: 7-aminoactinomycin D

AAV: adeno-associated virus

Ab: antibody

ABC—need not be defined (ATP-binding cassette; follow au. on hyphenation of spelled-out form)

ABCYE: *N*-(2-acetamido)-2-aminoethanesulfonic acid-buffered charcoal yeast extract

aberrant

ABNC: active but not culturable *or* active but nonculturable (state) (hyphenate as a unit modifier)

abscess

abscissa

absorb, adsorb, absorbance, absorbancy, absorbency, absorption, adsorption—see chapter 4

ABTS: 2,2'-azino-bis(3-ethylbenzthiazolinesulfonic acid) *or* 2,2'-azino-di-[3-ethylbenzthiazoline sulfonate (6)] (follow au.; see chapter 6, “Chemical names and buffers”)

Ac: acetyl

ACES: *N*-(2-acetamido)-2-aminoethanesulfonic acid (see chapter 6, “Chemical names and buffers”)

acetyl-CoA: acetyl coenzyme A

acetyl coenzyme A (*but* acetyl-CoA)

acetylglucosamine

acetyltransferase

ACh: acetylcholine

acid-fast bacterium, acid-fast bacillus

acid fuchsin

Acidicase

acid-Schiff stain

acknowledgment (*not* acknowledgement)

AcMNPV *or* AcNPV: *Autographa californica* multiple [*or* multicapsid] nucleopolyhedrovirus (as the vernacular name) *or* *Autographa californica multiple* [*or* multicapsid] nucleopolyhedrovirus (as the viral species name)

ACP: acyl carrier protein

acridine orange

acriflavine

ACS: American Chemical (*or* Cancer) Society

ACTH: adrenocorticotropin

Acti-Dione—*change to* cycloheximide (trade name may be given parenthetically at first use)

actinomycin D *or* dactinomycin (follow au.)

acute-phase serum, sera (*not* acute serum)

ACV: acyclovir

acyl-CoA: acyl coenzyme A

acyl coenzyme A (*but* acyl-CoA)

acyltransferase

Ad: adenovirus

Ad2: adenovirus type 2

ADA: adenosine deaminase

adapter *or* adaptor (follow au. but be consistent in a manuscript)

ADCC: antibody-dependent cellular cytotoxicity

adeno-associated virus

adenosine diphosphatase: ADPase\*\*

adenosine 5'-diphosphate *or* adenosine diphosphate: ADP\*\*

adenosine monophosphatase: AMPase\*\*

adenosine 5'-monophosphate *or* adenosine monophosphate: AMP\*\*

adenosine triphosphatase: ATPase\*\*

adenosine 5'-triphosphate *or* adenosine triphosphate: ATP\*\*

*S*-adenosylmethionine

*ad hoc*—italic

adjuvant—a substance enhancing the immune response to an antigen (follow au. if used in a verb form such as “adjuvanted”)

*ad lib* or *ad libitum* (follow au.)

ADME: absorption, distribution, metabolism, and excretion (assay)

AdoMet: S-adenosylmethionine

ADP\*\*: adenosine 5'-diphosphate or adenosine diphosphate

ADPase\*\*: adenosine diphosphatase

ADP-ribosylation

Adrenalin—U.S. trade name for epinephrine

adrenaline—British generic name for epinephrine

adsorb, absorb—see chapter 4

A/E: attaching and effacing (use “and” in the spelled-out form but allow the slash in the abbreviation)

AEBSF: 4-(2-aminoethyl)benzenesulfonyl fluoride hydrochloride

aesculin—*change to* esculin

**a**-factor (*Saccharomyces cerevisiae*)—always hyphenated

AFB: acid-fast bacillus, bacilli

affect, effect—see chapter 4

Affi-Gel

aFGF: acidic fibroblast growth factor

AFLP: amplified fragment length polymorphism (but allow “AFLP” without introduction when used as a trademark of Keygene NV)

AFRC—need not be defined (Agriculture and Food Research Council)

Ag: antigen

AGMK cells—need not be defined (African green monkey kidney cells)

AHF: antihemolytic factor

AIDS\*\*: acquired immune deficiency (or acquired immunodeficiency) syndrome

airborne

air dry, dried (hyphenate “air dried” as a unit modifier)

airflow

aka: also known as (always spell out)

Ala—need not be defined (alanine)

ALAT: alanine transaminase

alamarBlue (trade name)

albumen, albumin—see chapter 4

alcian blue

alfa interferon—*do not change* alfa to  $\alpha$  or alpha

alga (s.), algae (pl.), algal (adj.)

aliquant

aliquot (n. or v.; -ed, -ing)

allogeneic (*not* allogenic)

$\alpha$ —allow  $\alpha$  as a prefix in figures to mean “anti” without introduction, but change it to “anti” in the text

$[\alpha]^{20}_D$ —need not be defined (optical rotation, specific)

alpha-hemolytic (*not*  $\alpha$ -hemolytic)—always hyphenated

alphaherpesvirus (*not*  $\alpha$ -herpesvirus)

alpha-toxin (*not*  $\alpha$ -toxin)

ALS: antilymphocyte serum

ALSAC—do not spell out (official name)

ALT: alanine aminotransferase or alanine transaminase

ALV: avian leukosis virus

a.m.\*: ante meridiem

Amberlite (resin)

ameba (s.), amebae or amebas (pl.), ameboid (adj.) or amoeba (s.), amoebae or amoebas (pl.), amoeboid (adj.)—follow au. (*but Amoeba* for the genus)

amido black

amino acid (*but* aminoaciduria)

amino acid residue (not hyphenated)

aminoaciduria

aminoacyl-tRNA\*\*

amino terminus (*but* amino-terminal end)

aminotransferase

amoeba (s.), amoebae *or* amoebas (pl.), amoeboid (adj.) *or* ameba (s.), amebae *or* amebas (pl.), ameboid (adj.)—follow au. (*but Amoeba* for the genus)

AMOVA: analysis of molecular variance

amoxicillin (*not* amoxycillin)

AMP\*\*\*: adenosine 5'-monophosphate *or* adenosine monophosphate

AMPase\*\*\*: adenosine monophosphatase

ampere: A\* (SI unit)

Ampholine

ampholyte

ampoule

AMS: AutoMicrobic system

amt: amount (tables only)

amu: atomic mass unit

A-MuLV: Abelson murine leukemia virus

AMV: avian myeloblastosis virus (most common) *or* alfalfa mosaic virus

Anaerobe-Tek

analog *or* analogue (follow au.)

analogous (*not* analagous)

ANCOVA: analysis of covariance

and/or—see chapter 4

anion exchange (follow au. on hyphenation as a unit modifier, but be consistent)

annexin V

ANOSIM: analysis of similarity

ANOVA: analysis of variance

ante meridiem: a.m.\*

Anthrax Vaccine Adsorbed (proper [*or* official] name in the Code of Federal Regulations)

anti (prefix)—solid (see chapter 4 for exceptions)

antibiotic medium 3

antimicrobial—*change to* antimicrobial

antiphosphotyrosine—against phosphotyrosine

anti-rabbit immunoglobulin G (antibody to rabbit immunoglobulin G)

antituberculosis—against tuberculosis

AO: acridine orange

AOAC International (*formerly* Association of Official Analytical Chemists; do not spell out AOAC)

AODC: acridine orange direct count (-s, -ing)

AP-1: need not be defined (activator protein-1)

APACHE score *or* APACHE II score: acute physiology and chronic health evaluation (II) score

APC: antigen-presenting cell *or* allophycocyanin (in virus papers and when conjugated with antibodies in fluorescence detection experiments) *or* anaphase-promoting complex (in papers about mitosis)

APHIS—need not be defined (Animal and Plant Health Inspection Service)

API—need not be defined (Analytab Products; do not spell out when part of product designation: API 20E)

apo form of an enzyme—need not be defined (same as an apoenzyme [a catalytically inactive enzyme that requires a cofactor or coenzyme to exhibit activity; together they function as a holoenzyme])

*a posteriori* (tests)—need not be explained (same as *post hoc* tests)

approx: approximately (tables only; chapter 9)

APRE: acute-phase response element



APRT: adenine phosphoribosyltransferase

APT: attached proton test

Aquasol

Ara—need not be defined (arabinose)

Ara box—need not be defined (a DNA sequence motif conferring arabinose-inducible expression)

ara-C *or* araC (follow au.): 1-β-D-arabinofuranosylcytosine

ara-CTP *or* araCTP (follow au.): arabinosyl-CTP

ARC: AIDS-related complex (see [AIDS](#))

archaeobacterium (pl., archaeobacteria) *or* archaeobacterium (pl., archaeobacteria)—follow au. (*but Archaeobacteria* for the class)

ARDRA: amplified rRNA gene restriction analysis (*not* amplified rDNA restriction analysis when the subject is a prokaryote)

Arg—need not be defined (arginine)

ArrayExpress (archive of functional genomics data)

ARS—need not be defined (Agricultural Research Service)

artifact

ARV: AIDS-associated retrovirus (see [AIDS](#))

ASAT: aspartate aminotransferase

Asn—need not be defined (asparagine)

Asp—need not be defined (aspartic acid)

Asp718 (restriction enzyme), *not* Asp-718 (aspartic acid at position 718)

Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC)

assure, ensure, insure—see chapter 4

ASSURED criteria (WHO guidelines for tests for sexually transmitted infections; define parenthetically): (affordable, sensitive, specific, user friendly, robust and rapid, equipment free, deliverable to those who need them)

AST: aspartate transaminase *or* aspartate aminotransferase

ASTM—need not be defined (American Society for Testing and Materials, Villanova, PA)

Asto Master

ASU: atomic Sagnac unit

ASV: avian sarcoma virus

Asx—need not be defined (asparagine *or* aspartic acid)

asymmetry

AT *or* A-T (follow au.)—need not be defined (adenine-thymine sequence)

A+T—need not be defined (adenine plus thymine [content; base ratio]) (when spelled out as a unit modifier, use two hyphens)

A·T—need not be defined (adenine·thymine base pair)

Atabrine, Atebrin—*change to* quinacrine (trade name may be given parenthetically at first use)

ATCC—need not be defined (American Type Culture Collection; do not spell out as part of strain designation, e.g., *Bacillus subtilis* ATCC 31092) (see Table 6.6)

atm\*: atmosphere (normal)

atom%\*: atoms percent

ATP\*\*\*: adenosine 5'-triphosphate *or* adenosine triphosphate

ATPase\*\*\*: adenosine triphosphatase

ATS: antithymocyte serum

attenuator

atto: a\* (SI prefix, 10<sup>-18</sup>)

AU: arbitrary unit(s) *or* absorbance unit(s)

AU *or* A-U (follow au.)—need not be defined (adenine-uracil sequence)

A+U—need not be defined (adenine plus uracil [content; base ratio]) (when spelled out as a unit modifier, use two hyphens)

A·U—need not be defined (adenine·uracil base pair)

AUC: area under the concentration-time curve (expressed in μg · h/ml *or* mg · h/liter; see Table 6.3)

AUC<sub>0-24</sub>, AUC<sub>0-∞</sub>, etc.: area under the concentration-time curve from 0 to 24 h, from 0 h to 4, etc.

AUC/MIC ratio: the area under the concentration-time curve over 24 h in the steady state divided by the MIC

AUFS: absorbance units, full scale

Augmentin—*change to* amoxicillin-clavulanic acid (trade name may be given parenthetically at first use)

AUIC: area under the inhibitory curve (note that this is not the same as the AUC/MIC ratio)

AUMC: area under the first moment of the concentration-time curve

Aureomycin—*change to* chlortetracycline (trade name may be given parenthetically at first use)

Autobac

autolysate

autolysis-defective strain (*not* autolytic-defective strain)

autolyze (*not* autolyse)

AutoMicrobic system

autoradiography *or* radioautography (follow au.)

autoSCAN-3

avg: average (tables only; see chapter 9)

$a_w$ : water activity

Axioskop

AZT: zidovudine

azthreonam—*change to* aztreonam

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## B

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$\beta$  *or*  $\beta$  phase (follow au.): elimination phase (see Table 6.3)

$\beta$ —need not be defined (regression coefficient; see Table 6.2)

$\beta$ —a type of error in a probability determination; allow without introduction if given with a *P* value or in the context of statistical discussion

$\beta$ -Gal:  $\beta$ -galactosidase *or* beta-galactosidase (follow au.)

$\beta$ -galactosidase *or* beta-galactosidase (follow au.)

$\beta$ -hemolytic—*change to* beta-hemolytic (always hyphenated)

$\beta$ -lactam *or* beta-lactam—be consistent within a paper, but use  $\beta$  in title

$\beta$ -lactamase *or* beta-lactamase (follow au.)

$\beta$ -lactamase designations: OXA-1, -2, -3; PSE-1, -2, -3, -4; TEM-1, -2, -3

b: bovine *or* basic (use only as part of a larger abbreviation)

*B*: zero time intercept for  $\beta$  phase

BAC: bacterial artificial chromosome

bacillus (s.), bacilli (pl.)

bacitracin

backcross (n. *or* v.)

Bactec system

bactericidal *or* bacteriocidal (follow au.)

bacteriochlorophyll

bacteriocin

bacteriophage, phage—see chapter 4

bacteriostatic

Bactigen

Bacto—always capitalized (part of trade name in, e.g., Bacto peptone)

baker's yeast

BAL: bronchoalveolar lavage (add “specimen” if that is meant)

BAL 31 *or* Bal 31—a nuclease but not a restriction enzyme; change other forms to one of these

BALB/c (*not* Balb/c)

BALB/3T3

Ballotini beads

Band-Aid (for the trademarked product *or* band-aid (used generically as a proprietary eponym, as in “band-aid vaccine”))

band-pass (filter)

bandwidth

BAP: blood agar plate *or* bacterial alkaline phosphatase

bar—convert to pascals (see chapter 2; 1 bar = 10<sup>5</sup> Pa)

Barbour-Stoenner-Kelly (medium)

bar code *or* barcode (follow au.)

baseline

base pair: bp\*

BCA: bichinchonic acid

B cell (follow au. on hyphenation when used as a unit modifier, but be consistent)

BCG—need not be defined (bacillus Calmette-Guérin); however, in titles and at the first use in the abstract and text, give the full name: *Mycobacterium bovis* BCG

Bchl *or* BChl (follow au.): bacteriochlorophyll

BCIP: 5-bromo-4-chloro-3-indolylphosphate (see chapter 6, “Chemical names and buffers”)

BCS: bovine calf serum

BCV: bovine coronavirus

Bd: buoyant density (used to measure G+C content)

BD-cellulose: benzoylated DEAE-cellulose (see [DEAE](#))

BDH—need not be defined (British Drug Houses, Poole, England)

B-DNA—need not be defined

becquerel: Bq\* (derived SI unit)

benchtop

benzo[*a*]pyrene

benzylpenicillin

benzyl viologen

Bermuda grass

Betadine

bFGF: basic fibroblast growth factor

β-Gal: β-galactosidase *or* beta-galactosidase (follow au.)

β-galactosidase *or* beta-galactosidase (follow au.)

beta-hemolysis (*not* β-hemolysis)—always hyphenated

beta-hemolytic (*not* β-hemolytic)—always hyphenated

betaherpesvirus (*not* β-herpesvirus)

β-lactam *or* beta-lactam—be consistent within a paper, but use β in title

β-lactamase *or* beta-lactamase (follow au.)

β-lactamase designations: OXA-1, -2, -3; PSE-1, -2, -3, -4; TEM-1, -2, -3

BGA: Bordet-Gengou agar

BGSC—need not be defined (*Bacillus* Genetic Stock Center; see Table 6.6)

BHI: brain heart infusion (never hyphenated)

BHIA: brain heart infusion agar (never hyphenated)

BHIB: brain heart infusion broth (never hyphenated)

BHQ: black hole quencher (dye)

BHK cells—need not be defined (baby hamster kidney cells)

bi (prefix)—solid

BID *or* b.i.d. (follow au.): twice a day

BigDye Terminator (cycle sequencing kit)

bioassay

Bio-Bag

Bio-Gel

bioMérieux

bioprospecting, bioprospection

Biosate

bis

BIS: *N,N*-methylenebisacrylamide

bisacrylamide

biuret

BL21(DE3)—*Escherichia coli* strain

BL21 Star(DE3) and BL21 Star(DE3)pLysS—*Escherichia coli* strains

BLAST: need not be defined (Basic Local Alignment Search Tool); also allow blastp, blastn, blastx, tblastn, and tblastx, as well as PSI-BLAST (position-specific iterated BLAST), PHI-BLAST (pattern hit-initiated BLAST), and DELTA-BLAST (domain enhanced-lookup time-accelerated BLAST); avoid using “BLAST” or “blast” as a verb (e.g., “xyz was blasted”) by rewording (e.g., “xyz was subjected to a BLAST search”) and query if in doubt

blind—made or done without sight of certain objects or knowledge of certain facts that could serve for guidance or cause bias (e.g., a blind taste test *or* tests performed in a blind [*not* blinded] manner)

blood borne (hyphenated as unit modifier)

blood-brain barrier

blood stage (hyphenated as unit modifier)

bloodstream

BLOTTO *or* Blotto—need not be defined (bovine lacto transfer technique optimizer)

blue-green algae—add “cyanobacteria” parenthetically after first use in title, abstract, and text

Bluescribe, Bluescript (vectors)

bluetongue virus

BMB: Boehringer Mannheim Biochemicals

BMDM: bone marrow-derived macrophage

BME:  $\beta$ -mercaptoethanol

BMV: brome mosaic virus

BOD: biological (*or* biochemical) oxygen demand

boiling point: bp\*

$\mu$ Bondapak

Bonferroni’s correction (*or* adjustment)

borderline (n. *or* adj.)

bovine viral diarrhea virus

bp\*: boiling point

bp\*: base pair(s) (abbreviation may be used with position numbers as well as quantities)

Bq\*: becquerel (derived SI unit)

brain heart infusion (never hyphenated)

branch point

BRD—see [FRG](#)

BrdU, BrdUrd, *or* BUdR (follow au.): bromodeoxyuridine

breakdown (n.), break down (v.)

breakpoint

break tolerance—allow; acceptable jargon in immunology (e.g., to break the body’s tolerance of its own antigens)

brefeldin A

Brewer anaerobic jar

brewer’s yeast

Brij 58

brilliant green

British thermal unit: Btu\*

Brix—see entry for [Bx](#)

BRL—need not be defined (Bethesda Research Laboratories, Inc., Gaithersburg, MD, *or* Bio-Rad Laboratories, Richmond, CA; BRL need not be spelled out when used in conjunction with Gibco)

bromocresol green, purple *or* bromocresol green, purple (follow au.)

bromphenol blue *or* bromophenol blue (follow au.) (*but m*-bromophenol, 3-bromophenol; i.e., use “bromo-” in chemical names)

bromthymol blue *or* bromothymol blue (follow au.)

broth microdilution, broth macrodilution

brucella agar

BSA: bovine serum albumin

BSK: Barbour-Stoenner-Kelly (medium)

BSL3: biosafety level 3



BSS: balanced salt solution

*Bst* (DNA polymerase)

Bt—allow after introduction as an abbreviation for *Bacillus thuringiensis* when this binary combination is used alone (only this organism can be abbreviated and stand alone in this manner) or as part of a phrase, such as Bt corn (corn treated with *B. thuringiensis* to make it resistant to pests), Bt crops, Bt toxins; also allow abbreviations for Bt serovars, e.g., Btk for *B. thuringiensis* serovar kurstaki; *Bt* or Bt may also be used as a subscript to a gene or protein name

Bti—allow after introduction for *Bacillus thuringiensis* serovar israelensis

Btu\*: British thermal unit

Büchner funnel

BUDR, BrdUrd, or BrdU (follow au.): bromodeoxyuridine

buffer A, buffer B—usually refers to standard media; do not query for ingredients but allow if provided

buildup (n.), build up (v.)

built environment (an environment in which microbiomes are studied)

BUN: blood urea nitrogen

buoyant burst size—average phage yield per infective center (no units)

bv.—do not spell out with organism name (biovar)

Bx: Brix [preceded by a degree sign; 1°Bx is 1 g of sucrose in 100 g of solution; introduce as *x* degree(s) Brix (°Bx)]

bypass (n. or v.)

by-product

Bz: benzoyl

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## C

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c: competitive or chicken (use only as part of a larger abbreviation)

c\*: centi (SI prefix, 10<sup>-2</sup>)

C\*: coulomb (derived SI unit)

C—need not be defined (cytosine or cytidine or cysteine)

C—do not allow as an abbreviation for complement (see chapter 3)

C'—change to complement (see chapter 3)

°C\*: degree Celsius (derived SI unit)

C<sub>8</sub>, C<sub>18</sub> (not C8 or C-18 [when chromatography columns are meant])—see chapter 3

C57BL/6—mouse strain

CA—need not be defined (capsid protein of retroviruses; follow au. on use of “protein” after it)

ca.: circa (abbreviation may be used with numbers with no introduction)

CAD gene—do not italicize (gene coding for three proteins whose initials are C, A, and D)

caesarean section, Caesarean section, cesarean section, or Cesarean section (follow au. but be consistent)

Cairns structure

calcofluor white

cal\*: calorie

caliper

CA-MRSA: community-associated methicillin-resistant *Staphylococcus aureus*

cAMP—need not be defined (cyclic AMP)

CAMP test or CAMP factor—need not be defined (not the same as cAMP; “CAMP” is named for Christie, Atkins, Munch, and Petersen)

candela: cd\* (SI unit)

cannot—see chapter 4, “Contractions”

CAP: catabolite gene activator protein or chloramphenicol

CAPS: *N*-cyclohexyl-3-aminopropanesulfonic acid (a buffering agent)

carbapenem (not carbipenem)

carbodiimide

carbonyl cyanide *m*-chlorophenylhydrazone

Carborundum

Carbowax

carboxymethyl cellulose (*but* CM-cellulose)

carboxy(l) terminus [*but* carboxy(l)-terminal region]

carboy

carries—allow this plural noun as a direct modifier

carrageenan *or* carrageenin (follow au.)

carryover (n.), carry over (v.)

Cary spectrophotometer

Casamino Acids

case-control study

Casitone

CAT: chloramphenicol acetyltransferase *or* computerized axial tomography

catabolite repression (*not* catabolic repression)

catalog *or* catalogue (follow au.)

catalysis

catalyze (*not* catalyse)

cation exchange (follow au. on hyphenation as a unit modifier, but be consistent)

CBA: cytometric bead array

CBC: complete blood count

CBER—need not be defined (Center for Biologics Evaluation and Research; division of the Food and Drug Administration)

C57BL (mice) (*not* C<sub>57</sub>BL, C<sub>57</sub>Bl, *or* C57Bl)

CBP—need not be defined (CREB-binding protein; follow au. on hyphenation of spelled-out form; the fully spelled out form includes an intentional redundancy: cyclic AMP [*or* cAMP]-responsive element binding protein binding protein)

CBS—need not be defined (Centraalbureau voor Schimmelcultures; see Table 6.6)

cc—*change to* cm<sup>3</sup>\* *or* (for liquid) ml\*

CC<sub>50</sub>: 50% cytotoxic concentration

CCC DNA *or* cccDNA (follow au.): covalently closed circular DNA

CCCP: carbonyl cyanide *m*-chlorophenylhydrazone

CCD: charge-coupled device (two hyphens in unit modifier [e.g., charge-coupled-device camera])

CCP—need not be defined (Collaborative Computational Project; CCP4 is Collaborative Computational Project No. 4, a suite of software for macromolecular X-ray crystallography)

CCU: color-changing unit

cd\*: candela (SI unit)

CD: circular dichroism

CD11b/CD18 (two subunits of one molecule; do not change slash)

CD4—need not be defined (protein designation)

CD4<sup>+</sup>, CD4 positive—see chapter 4

CD45<sup>lo</sup>, CD45<sup>hi</sup> (other numbers may be used)

CD<sub>50</sub>: 50% cytotoxic dose (pl., CD<sub>50</sub> *or* CD<sub>50</sub>S)

CDC—need not be defined (Centers for Disease Control and Prevention; do not spell out as part of strain designation; see Table 6.6)

CDCl<sub>3</sub>—need not be defined (deuteriochloroform [often used in NMR spectroscopy]; D is an isotope of H, so *do not change to* CdCl<sub>3</sub>)

c-di- (with or without a hyphen after “di”)—need not be defined (prefix on nucleotide mono-, di-, and triphosphates [e.g., c-di-AMP, c-di-ADP, and c-di-ATP, etc.] meaning “cyclic di-”)

CDK: cyclin-dependent kinase

cDNA\*\*: complementary deoxyribonucleic acid

CDP\*\*: cytidine 5'-diphosphate *or* cytidine diphosphate

CdR: deoxycytidine

CDS: coding DNA sequence

CEA—need not be defined (Commissariat à l'Énergie Atomique)

cecum (s.), ceca (pl.)

CEF: chicken (*not* chick) embryo fibroblast



- cELISA *or* CELISA: competitive enzyme-linked immunosorbent assay *or* cell enzyme-linked immunosorbent assay
- Celite
- CELO virus—need not be defined
- CE mark—need not be defined (asserts that the item meets all the requirements of applicable European Union directives and that conformity assessment procedures have been applied)
- centi: c\* (SI prefix,  $10^{-2}$ )
- centrifugate—*change to* centrifuge
- Cerenkov (radioactivity counting)
- CERIA—need not be defined (Centre d'Étude et de Recherches des Industries Alimentaires)
- cesarean section, Cesarean section, caesarean section, *or* Caesarean section (follow au. but be consistent)
- CE-TOFMS: capillary electrophoresis-time of flight mass spectrometry
- cf.: compare (either may be used; see chapter 4); allow with binary combinations such as “*Mastigocladus cf. laminosus*”
- CF: complement fixation (*or* fixing) *or* cystic fibrosis
- CFA: colonization factor antigen *or* cellular fatty acid
- CFA/I: colonization factor antigen I (slash is correct)
- CFP: cyan fluorescent protein
- CFR: cumulative fraction of response
- CFSE: carboxyfluorescein succinimidyl ester
- CFU\*\*\*: colony-forming unit(s)
- CGH: comparative genomic hybridization
- CGSC—need not be defined (*E. coli* Genetic Stock Center, Yale University, New Haven, CT) (do not spell out with strain numbers; see Table 6.6)
- CH<sub>50</sub> *or* CH50 (follow au. except in proprietary name): allow without explanation in EZ Complement CH50 test; in running text, introduce the abbreviation parenthetically as follows: the CH<sub>50</sub> [*or* CH50] measures the total hemolytic activity of a test sample and is the reciprocal of the dilution of serum complement needed to lyse 50% of a standardized suspension of sheep erythrocytes coated with antierythrocyte antibody
- Chagas disease *or* Chagas' disease (follow au.)
- CHAPS: 3-[(3-cholamidopropyl)-dimethylammonio]-1-propanesulfonate (see chapter 6, “Chemical names and buffers”)
- Charon
- cheesecloth
- CHEF: contour-clamped homogeneous electric field
- Chelex
- chemotax (v.), chemotaxis (n.)
- chicken embryo (*not* chick embryo, *but* “chick cell” is acceptable)
- chimera, chimeric
- ChIP: chromatin immunoprecipitation
- ChIP-chip: chromatin immunoprecipitation with microarray technology
- ChIP-seq: chromatin immunoprecipitation sequencing *or* chromatin immunoprecipitation-DNA sequencing
- chi-square test *or*  $\chi^2$  test (follow au.)
- $\chi^2_1$  test
- Chl: chlorophyll
- chlorophyll *a*, *b*, *c*, *c*<sub>1</sub>, *c*<sub>2</sub>
- CHO cells—need not be defined (Chinese hamster ovary cells)
- chromogen (*not* chromagen)
- Chromosorb
- CHU—need not be defined (Centre Hospitalier Universitaire)
- CHX: cycloheximide
- Ci\*: curie
- CI: confidence interval
- CIA: chemiluminescent immunoassay
- CIE: counterimmunoelectrophoresis
- CIN: cervical intraepithelial neoplasia (in clinical papers)



CIN1, CIN2, etc.: cervical intraepithelial neoplasia grades 1, 2, etc. (system for scoring lesions)

Ciocalteu

CIRE: carbapenem-intermediate or -resistant  
*Enterobacteriaceae*

*cis*—prefix in chemical names (may be used alone, e.g., *cis* acting)

CIU: cell infectious units

CL: clearance (see Table 6.3)

CL<sub>CR</sub>: creatinine clearance (expressed in ml/min/1.73 m<sup>2</sup>; see Table 6.3)

clear-cut

CLIP: UV cross-linking and immunoprecipitation (assay)

CL<sub>NR</sub>: nonrenal clearance

CLO: *Campylobacter*-like organism

cloacin DF13—product of plasmid CloDF13

CloDF13—plasmid designation (see cloacin DF13)

CL<sub>R</sub>: renal clearance (see Table 6.3)

CLSI—need not be defined (Clinical and Laboratory Standards Institute; formerly NCCLS [the name changed in January 2005; references to materials published after 2004 should reflect the new name in the byline; follow the author on the use of the abbreviation or the spelled-out form])

CLSM: confocal laser scanning microscopy

cm\*: centimeter (SI unit)

cM: centimorgan (must be introduced; see [M](#))

C<sub>max</sub>: maximum concentration of drug in serum (see Table 6.3)

C<sub>max</sub>/MIC ratio: the maximum concentration of drug in serum divided by the MIC

C<sub>max, u</sub>: maximum concentration of unbound drug in plasma (or serum)

CMC: carboxymethyl cellulose

CMCase: carboxymethyl cellulase

CM-cellulase: carboxymethyl cellulase

CM-cellulose: carboxymethyl cellulose

CMI: cell-mediated immunity

CMIA: chemiluminescent microparticle immunoassay

CMP\*\*: cytidine 5'-monophosphate *or* cytidine monophosphate

CMV: cytomegalovirus

CNBr—need not be defined (cyanogen bromide)

CNCM—need not be defined (Collection Nationale de Culture de Microorganismes; see Table 6.6)

CNR—need not be defined (Consiglio Nazionale delle Ricerche)

CNRS—need not be defined (Centre National de la Recherche Scientifique)

CNS: central nervous system (*do not allow for* coagulase-negative staphylococcus—spell out *or* use CoNS)

co (prefix)—solid

cobas: trademark (also allow Cobas)

CoA: coenzyme A

coauthor

cochromatograph, cochromatography

cocultivation

COD: chemical oxygen demand

cofactor

colcemid

colchicine

ColE1—plasmid designation (see [colicin E1](#) and chapter 3)

Coleman Junior spectrophotometer

colicin

colicin E1—protein product of plasmid ColE1

colinear *or* collinear (follow au.)

coliphage T3

collodion



COLOC: correlation through long-range coupling

colony-forming unit(s): CFU\*\*

comb. nov.—do not spell out with organism name (new combination)

comigrate

complementary deoxyribonucleic acid: cDNA\*\*

complementary ribonucleic acid: cRNA\*\*

complement fixation (never hyphenated)

complement fixing (hyphenated as unit modifier)

ConA: concanavalin A

*c-onc*, *c-ras*, *c-src*, etc.—need not be defined (cellular forms of oncogenes; see [v-\*onc\*](#))

concanavalin A

concatemer

concn: concentration (tables only; see chapter 9)

concomitant

Congo red

CoNS: coagulase-negative staphylococcus, -cocci

consider (as)—see chapter 4

construct, construction—follow au.; need not be consistent within a manuscript

contig

convalescent-phase serum, sera (*not* convalescent serum)

Coomassie blue *or* Coomassie brilliant blue (follow au.)

COPD: chronic obstructive pulmonary disease

corn steep liquor

cosmid—cloning vehicle that combines properties of plasmids and phage 8 vectors

cost-effective (always hyphenated)

COSY: correlation spectroscopy

COSY NMR: correlation spectroscopy nuclear magnetic resonance

*C<sub>0t</sub>*—need not be defined (usually in mol · s/liter; subscript is zero, not “oh”)

co-trimoxazole

coulomb: C\* (derived SI unit)

Coulter Counter

countercurrent

counterimmunoelectrophoresis

counts per minute: cpm\*

counts per second: cps\*

covalently closed circular DNA

coverslip

Cowan 1—*Staphylococcus aureus* strain

coworker

coxsackievirus group A *or* group A coxsackievirus *or* coxsackie A virus

CPE: cytopathic effect (most common) *or* cytoplasmic polyadenylation element *or* carbapenemase-producing *Enterobacteriaceae*

cpm\*: counts per minute

cps\*: counts per second

CPS: capsular polysaccharide

*C<sub>q</sub>*: quantification cycle (similar to threshold cycle [*C<sub>T</sub>*])

CRE: *cis*-acting replication element *or* cyclic AMP [*or* cAMP]-responsive [*or* cyclic AMP response] element *or* catabolite-responsive element *or* carbapenem-resistant *Enterobacteriaceae*

CREB—need not be defined (cyclic AMP [*or* cAMP] response element binding protein)

Crebbp—need not be defined (the mouse gene transcript [mRNA] for CBP)

cresol red

CRISPR: clustered regularly interspaced short palindromic repeat(s)

CRM: cross-reacting material



cRNA\*\*: complementary ribonucleic acid

Crohn's disease

Cronex Lightning-Plus *or* Hi-Plus

crossbreed

cross bridge

crossing-over

cross-link (n. *or* v.)

crossover (n.), cross over (v.)

cross-react(ion), cross-reactive, cross-reactivity

cross-resistance

cross resistant (hyphenated as unit modifier)

cross section (n.), cross-section (v.), cross-sectional (adj.)

cross talk

cross wall

CRP: cyclic AMP [*or* cAMP] receptor protein *or* C-reactive protein

CRP-cAMP: cyclic AMP [*or* cAMP] receptor protein-cyclic AMP complex

$C_t$ —need not be defined

$C_{t1/2}$ —need not be defined

cryo-electron microscopy (*or* electron cryomicroscopy [follow au.])

crystal violet

CS: conserved sequence

CsA *or* CSA—allow as an abbreviation for cyclosporine

CSF: cerebrospinal fluid *or* colony-stimulating factor

CSIC: Consejo Superior de Investigaciones Científicas

CSIR—need not be defined (Council for Scientific and Industrial Research)

CSIRO—need not be defined (Commonwealth Scientific and Industrial Research Organisation)

csRNA: *cia*-dependent small RNA (query)

$C_T$ : threshold cycle *or* cycle threshold (use “threshold cycle” if the author does not define the abbreviation) (also allow “ $\Delta\Delta CT$  method,” “ $\Delta\Delta C_T$  method,” and “ $2^{-\Delta\Delta CT}$  method” [in other words, it is not necessary to make the  $T$  subscript within superscript in the last example]; the  $\Delta\Delta$  need not be explained)

CT: computed tomography

$C_0t$ —need not be defined (usually in mol · s/liter; subscript is zero, not “oh”)

CTAB: cetyltrimethylammonium bromide

CTA Medium

CTD: C-terminal domain *or* conductivity-temperature-depth

C terminus (n.), C terminal (adj.; hyphenated as unit modifier)

CTL: cytotoxic T lymphocyte

CTLA: cytotoxic-T-lymphocyte-associated antigen *or* cytotoxic-T lymphocyte-associated antigen

CTP\*\*: cytidine 5'-triphosphate *or* cytidine triphosphate

C→T transitions—need not be defined

C-type viruses *or* type C viruses

culture (v.)—see chapter 4

Culturette

curie: Ci\*

curli—pl. n. (short for “curled pili”; does not have a singular form and may stand as a direct modifier)

cutoff (n.), cut off (v.)

cuvette

cv.—do not spell out with plant name (cultivar)

CV: coefficient of variation (see Table 6.2)

CVE: crystal violet-erythromycin

Cy3: fluorophore (dye); do not spell out *or* query

cycles/s\*: cycles per second

cycloheximide (*not* cyclohexamide)



cyclosporine (*not* cyclosporin A)  
CYE: charcoal-yeast extract  
CYPome: cytochrome P450 complement  
Cys—need not be defined (cysteine)  
Cys—need not be defined (half-cystine)  
cysteine  
cystine  
cytidine 5'-diphosphate *or* cytidine diphosphate: CDP\*\*  
cytidine 5'-monophosphate *or* cytidine monophosphate: CMP\*\*  
cytidine 5'-triphosphate *or* cytidine triphosphate: CTP\*\*  
cytochalasin D  
cytochrome *c*, *cd*, *c<sub>3</sub>*, *a<sub>3</sub>*, *b<sub>5</sub>*, *aa<sub>3</sub>* (*but* P450 *or* P-450 [follow au.]), *bd*-I complex  
Cytosan—*change to* cyclophosphamide (trade name may be given parenthetically at first use)  
Czapek Dox (medium, agar)  
Czechia—new name of Czech Republic (allow either per the au's preference, but be consistent)

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## D

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d\*: deci (SI prefix, 10<sup>-1</sup>)  
d: deoxy  
*d*—as in “. . . naphthol(1,2*d*) . . .” (isomer of fused polycyclic hydrocarbons)  
*d*—prefix for direction of optical rotation  
*d*—need not be defined (differential; see chapter 2)  
*∂* (partial differential; label as round dee in hand-edited tables)  
D—prefix for optical configuration  
D—need not be defined (in chemical symbols, deuterium isotope of hydrogen, e.g., D<sub>2</sub>O, CDCl<sub>3</sub>)  
*D*—need not be defined (diffusion coefficient *or* dilution factor)

2D-DIGE: two-dimensional difference in gel electrophoresis  
2,4-D: 2,4-dichlorophenoxyacetic acid  
d4T: stavudine  
da\*: deca (SI prefix, 10)  
dA: deoxyribosyladenine  
Da\* (*not* dal, d, *or* da): dalton  
dactinomycin *or* actinomycin D (follow au.)  
dADP\*\*: deoxyadenosine diphosphate  
DAHP: 3-deoxy-D-arabinoheptulosonic acid 7-phosphate  
D-(+)-alanine, D(-)-alanine, etc. (the parenthetical dash is a minus sign)  
dAMP\*\*: deoxyadenosine monophosphate  
Dana-Farber Cancer Institute  
DAP: days after planting  
DAP *or* Dpm (follow au.): diaminopimelic acid  
DAPI: 4',6-diamidino-2-phenylindole (see chapter 6, “Chemical names and buffers”)  
dark field (hyphenated as unit modifier)  
d(A-T): deoxyadenylate-deoxythymidylate  
data (pl.), datum (s.)—allow plural form to modify another noun (e.g., data point)  
data analysis, data bank, data processing  
database (*but* data bank)  
DATD: *N,N'*-diallyltartardiamide  
dATP\*\*: deoxyadenosine triphosphate  
day care (not hyphenated as unit modifier)  
dB\*: decibel  
DBD: DNA-binding domain (follow au. on hyphenation)  
dbGaP—need not be defined (database of genotypes and phenotypes)  
DBM-paper: diazobenzyloxymethyl-paper



dC: deoxycytidine	$\Delta\Delta CT$ method, $\Delta\Delta C_T$ method, <i>or</i> $2^{-\Delta\Delta CT}$ method (it is not necessary to make the <i>T</i> subscript within superscript in the last example; the $\Delta\Delta$ need not be explained)
DC(s): dendritic cell(s)	
DCCD: <i>N,N'</i> -dicyclohexylcarbodiimide	$\Delta G$ , $\Delta G^\circ$ —need not be defined (change in Gibbs free energy)
dCDP <sup>**</sup> : deoxycytidine diphosphate	dendrogram ( <i>not</i> dendogram)
dCMP <sup>**</sup> : deoxycytidine monophosphate	dengue virus (virus that causes a disease called dengue <i>or</i> dengue fever; if au. uses “dengue” alone to mean the virus, add “virus”)
DC-SIGN: dendritic cell-specific intercellular adhesion molecule-3-grabbing nonintegrin	Denhardt ( <i>or</i> Denhardt’s) solution
dCTP <sup>**</sup> : deoxycytidine triphosphate	<i>de novo</i> —italic
dd: dideoxy (see Table 6.1, footnote <i>a</i> )	density gradient centrifugation
DDBJ—need not be defined (DNA Data Bank of Japan)	density labeled ( <i>not</i> labelled) (hyphenated as unit modifier)
ddC: dideoxycytosine	deoxyadenosine diphosphate: dADP <sup>**</sup>
ddH <sub>2</sub> O: double-distilled water	deoxyadenosine monophosphate: dAMP <sup>**</sup>
ddI: dideoxyinosine	deoxyadenosine triphosphate: dATP <sup>**</sup>
DDR ( <i>or</i> GDR)— <i>change to</i> Germany	deoxycholate
DDT: dichlorodiphenyltrichloroethane	deoxycytidine diphosphate: dCDP <sup>**</sup>
DEAE <sup>**</sup> : diethylaminoethyl	deoxycytidine monophosphate: dCMP <sup>**</sup>
DEAE-cellulose <sup>**</sup> : diethylaminoethyl cellulose	deoxycytidine triphosphate: dCTP <sup>**</sup>
deca: da* (SI prefix, 10)	deoxyguanosine diphosphate: dGDP <sup>**</sup>
deci: d* (SI prefix, 10 <sup>-1</sup> )	deoxyguanosine monophosphate: dGMP <sup>**</sup>
decibel: dB*	deoxyguanosine triphosphate: dGTP <sup>**</sup>
deep freeze (n.)— <i>change to</i> freezer; deep-freeze (v.), deep-froze, deep-frozen	deoxyinosine diphosphate: dIDP <sup>**</sup>
deep water (n.), deepwater (adj.)	deoxyinosine monophosphate: dIMP <sup>**</sup>
degree Celsius: °C* (derived SI unit)	deoxyinosine triphosphate: dITP <sup>**</sup>
degree Fahrenheit: °F*	deoxyribonuclease: DNase <sup>**</sup>
degree of freedom: df*	deoxyribonucleic acid: DNA <sup>**</sup>
deidentify (as in “deidentified samples,” meaning samples with their identifying information removed)	deoxyribosylthymine diphosphate (thymidine 5'-diphosphate, thymidine diphosphate): dTDP <sup>**</sup>
delayed-type hypersensitivity	deoxyribosylthymine monophosphate (thymidine 5'-monophosphate, thymidine monophosphate): dTMP <sup>**</sup>
deleter (allow with mice, as in Cre deleter mice)	deoxyribosylthymine triphosphate (thymidine 5'-triphosphate, thymidine triphosphate): dTTP <sup>**</sup>



deoxyuridine diphosphate: dUDP\*\*

deoxyuridine monophosphate: dUMP\*\*

deoxyuridine triphosphate: dUTP\*\*

deoxyxanthosine diphosphate: dXDP\*\*

deoxyxanthosine monophosphate: dXMP\*\*

deoxyxanthosine triphosphate: dXTP\*\*

DEPC: diethyl pyrocarbonate

DEPT: distortionless enhancement by polarization transfer

DEPTQ: distortionless enhancement by polarization transfer with retention of quaternaries

derivatize

descendant

desiccate, desiccator

desoxy (prefix)—*change to deoxy*

detection: use with “bacterium,” “strain,” “disease,” or “infection”

Deutsche Forschungsgemeinschaft

DEXA: dual-energy X-ray absorption

dextran

df\*: degree of freedom

*df*—need not be defined (differential of *f*; see chapter 2)

DFA: direct fluorescent-antibody assay

DFP: diisopropylfluorophosphate

$\Delta G$ ,  $\Delta G^\circ$ —need not be defined (change in Gibbs free energy)

dG: deoxyguanosine

dGDP\*\*: deoxyguanosine diphosphate

DGGE: denaturing gradient gel electrophoresis

dGMP\*\*: deoxyguanosine monophosphate

dGTP\*\*: deoxyguanosine triphosphate

DH: delayed hypersensitivity

DHA: 2,8-dihydroxyadenine *or* dihydroartemisinin (malaria papers) *or* docosahexaenoic acid

DHEA-S: dehydroepiandrosterone sulfate

DHFR: dihydrofolate reductase

dH<sub>2</sub>O: distilled water (*not* deuterium oxide)

DI: defective interfering (never hyphenated)

diagnosis: use with “disease” *or* “infection” (not to be used with “bacterium” *or* “strain”)

dialysate—product of dialysis

dialyze, dialyzable (*not* dialyse, dialysable)

diam: diameter (tables only; see chapter 9)

DIC: differential inference contrast *or* differential interference contrast (query which is meant) *or* dissolved inorganic carbon

dideoxy—word *or* prefix; follow au.

dIDP\*\*: deoxyinosine diphosphate

diethylaminoethyl: DEAE\*\*

diethylaminoethyl cellulose: DEAE-cellulose\*\*

diethyl ether

diffusible

DIG: digoxigenin

digoxigenin (*not* -oxy-)

dimethylmercury

dimethyl sulfate

dimethyl sulfoxide

dIMP\*\*: deoxyinosine monophosphate

DIPEA: *N,N*-diisopropylethylamine

disc *or* disk (follow au. but be consistent within a ms.)

discernible

disintegrations per minute: dpm\*

disintegrations per second: dps\*



disk *or* disc (follow au. but be consistent within a ms.)

disk diffusion

dispensable

dithiothreitol

dITP\*\*: deoxyinosine triphosphate

dl\*: deciliter

*dl*—part of deletion mutant designation (e.g., *dl123*)

*dl*, DL—prefix in a chemical name

DL-alanine

DMEM: Dulbecco (*or* Dulbecco's) modified Eagle (*or* Eagle's) medium *or* Dulbecco (*or* Dulbecco's) minimal essential medium

dmf, DMF: decayed, missing, or filled (lowercase and uppercase indicate deciduous [baby] and permanent teeth, respectively) *or* dimethylformamide

DMSO *or* Me<sub>2</sub>SO (follow au.): dimethyl sulfoxide

DNA\*\*: deoxyribonucleic acid

DNA gyrase (no hyphen; exception to *Enzyme Nomenclature*)

DNase\*\* (*not* DNase *or* DNAase): deoxyribonuclease (pl., DNases)

DNase I

*dN/dS* ratio: ratio of nonsynonymous to synonymous evolutionary changes (or substitutions)

DNP: 2,4-dinitrophenol (*but* 2,4-dinitrophenylhydrazine)

DNS reagent: 3,5-dinitrosalicylic acid reagent

dNTP: deoxynucleoside triphosphate

D<sub>2</sub>O—need not be defined (deuterium oxide, or heavy water)

DOC: deoxycholate *or* dissolved oxygen concentration *or* dissolved organic carbon

dodecyl sulfate

DOPA: 3,4-dihydroxyphenylalanine

dopa—need not be defined

DOPC: 1,2-dioleoyl-*sn*-glycero-3-phosphocholine

DOPE score: discrete optimized protein energy score

dose-response curve

DOSY: diffusion-ordered spectroscopy

DOT: days of therapy

dot blot (analysis) (never hyphenated)

double mutant—a mutant with two mutations (not hyphenated as unit modifier)

double recombinant—same as double-recombination mutant (not hyphenated as unit modifier)

double-reciprocal plot

double strand (n.), double stranded (adj.; hyphenated as unit modifier)

double-strand breaks

Dounce homogenization

downregulation

DPA: dipicolinic acid

dpc: days postcoitum (*or* postcoitus) *or* days postchallenge

DPFGSE excitation: double pulsed-field gradient spin echo excitation

dpi: days postinfection *or* days postinoculation

dpm\*: disintegrations per minute

Dpm *or* DAP (follow au.): diaminopimelic acid

DPN—*change to* NAD

DPNH—*change to* NADH

DPPC: 1,2-dipalmitoyl-*sn*-glycero-3-phosphocholine

dps\*: disintegrations per second

DPTA: diethylene triamine pentaacetic acid

DR: direct repeat

DRaCALA: differential radial capillary action of ligand assay

dram *or* fluidram (follow au.)

Drierite



drop—use numerals (e.g., 3 drops were. . .; see chapter 2)

dry ice *or* solid CO<sub>2</sub>

dry wt—*change to* dry weight (except in tables; see [wt](#))

ds: double stranded (hyphenated as unit modifier)

DSIR—need not be defined (Department of Scientific and Industrial Research)

DSMZ—need not be defined (Deutsche Sammlung von Mikroorganismen und Zellkulturen; formerly Deutsche Sammlung von Mikroorganismen; do not spell out DSM or DSMZ as part of strain designation and do not change DSM designations to DSMZ; see Table 6.6)

DSS: dextran sulfate sodium

dT: deoxyribosylthymine

d4T: stavudine

DTaP vaccine: diphtheria–tetanus–acellular-pertussis vaccine

dTDP\*\*: deoxyribosylthymine diphosphate *or* thymidine 5'-diphosphate *or* thymidine diphosphate

DTH: delayed-type hypersensitivity

dThd *or* TdR (follow au.): thymidine

dTMP\*\*: deoxyribosylthymine monophosphate

DTP (*or* DPT) vaccine: diphtheria-tetanus-pertussis vaccine (*or* diphtheria-pertussis-tetanus vaccine)

DTPw/Hib vaccine: diphtheria–tetanus–whole-cell pertussis–*Haemophilus influenzae* type b vaccine

DTwP vaccine: diphtheria-tetanus-pertussis (whooping cough) vaccine

DTT: dithiothreitol

dTTP\*\*: deoxyribosylthymine triphosphate

dualtropic *or* dually tropic (*not* dual tropic)

dUDP\*\*: deoxyuridine diphosphate

Dulbecco (*or* Dulbecco's) minimal essential medium

Dulbecco (*or* Dulbecco's) modified Eagle (*or* Eagle's) medium

dUMP\*\*: deoxyuridine monophosphate

dUTP\*\*: deoxyuridine triphosphate

*D* value: thermal resistance (hyphenated as unit modifier)

dXDP\*\*: deoxyxanthosine diphosphate

dXMP\*\*: deoxyxanthosine monophosphate

dXTP\*\*: deoxyxanthosine triphosphate

dye-buoyant density centrifugation

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## E

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*e*—need not be defined (base of ln, ~2.71828)

E\*: exa (SI prefix, 10<sup>18</sup>)

E5.8 *or* e5.8: embryonic day 5.8

E<sub>0</sub>, E<sub>h</sub>—need not be defined (redox potential; subscript is a zero, not “oh”)

E<sub>600</sub> *or* ε (follow au.)—need not be defined (extinction coefficient at 600 nm; usually given in units such as mM<sup>-1</sup> cm<sup>-1</sup>)

1E3 *or* 1e3 (same as 10<sup>3</sup>; allow)

2.7E-3 *or* 2.7e-3 (same as 2.7 × 10<sup>-3</sup>; allow) (the dash is a minus sign)

Eagle (*or* Eagle's) medium

Earle (*or* Earle's) salts

EASE: Expression Analysis Systematic Explorer

eastern equine encephalitis

East Germany—*change to* Germany

EB: elementary body

EBNA—need not be defined (Epstein-Barr virus nuclear antigen)

Ebola virus (also called Zaire ebolavirus; one of five known viruses within the *Ebolavirus* genus), Ebolavirus *or* ebolavirus (generic term for any or all of the five viruses; follow au.)

EBOV: Ebola virus

EBV: Epstein-Barr virus



EC 1.1.99.8—enzyme nomenclature designation (*not* E.C. 1.1.99.8 *or* EC1.1.99.8; a number with a minus sign as the fourth digit [e.g., EC 1.1.2.–] has not yet been assigned to the enzyme by the Enzyme Commission, but KEGG tentatively assigns it a number with a minus)

EC<sub>50</sub>: 50% effective concentration (pl., EC<sub>50</sub> *or* EC<sub>50s</sub>)

echovirus *or* *Echovirus* *or* enteric cytopathic human orphan (ECHO) virus

ECL: enhanced chemiluminescence (allow “ECL” without introduction when used as a trade name, e.g., “ECL kit; Amersham”)

ECMV: encephalomyocarditis virus

EcoRI (*not* EcoR1 *or* EcoRI)—restriction endonuclease designation

ECV: estimated components of variation

ED: effective dose

ED<sub>50</sub>: 50% effective dose (pl., ED<sub>50</sub> *or* ED<sub>50s</sub>)

editor in chief (not hyphenated)

Edman degradation

EDS: energy-dispersive X-ray spectroscopy (*or* spectrometry) (“X-ray” may or may not be present)

EDTA\*\*: ethylenediaminetetraacetic acid *or* ethylenediaminetetraacetate

EEE: eastern equine encephalitis

effect, affect—see chapter 4

EFTEM: energy-filtered transmission electron microscopy

EF-Tu—need not be defined (elongation factor Tu)

e.g.—for example (either may be used; see chapter 4)

EGF: epidermal growth factor

EGFP *or* eGFP: enhanced green fluorescent protein

EGFR: epidermal growth factor receptor

EGTA\*\*: ethylene glycol-bis(β-aminoethyl ether)-*N,N,N',N'*-tetraacetic acid

E<sub>h</sub>, E<sub>0</sub>—need not be defined (redox potential; subscript is zero, not “oh”)

EHEC: enterohemorrhagic *Escherichia coli*

EIA: enzyme immunoassay

EIAV: equine infectious anemia virus

EID: egg infective dose

EID<sub>50</sub>: 50% egg infective dose (pl., EID<sub>50</sub> *or* EID<sub>50s</sub>)

eIF-2α *or* eIF2α: α subunit of eukaryotic initiation factor 2

eigengene

eigenvalue

eigenvector

einstein—unit of measurement for radiant energy; spell out prefixes used with it

electron cryomicroscopy (*or* cryo-electron microscopy [follow au.])

electron dense (hyphenated as unit modifier)

electron micrograph, microscope, microscopy

electron volt: eV\*

electropherogram *or* electrophoretogram (follow au.) (*not* electrophorogram *or* electrophoregram)

ELFA: enzyme-linked fluorescence assay

ELISA: enzyme-linked immunosorbent assay

ELISPOT (*or* ELISpot) assay: enzyme-linked immunosorbent spot assay

Elispot: change to ELISPOT *or* ELISpot

El Tor, *El Tor*, el tor, eltor, *eltor* (follow au.)

eluant *or* eluent (follow au.) (n.), eluate (n.), elute (v.)

ELVIS: enzyme-linked virus-inducible system (a trade name that must be introduced)

EM: electron microscopy

E<sub>max</sub>: maximum effect

EMB: eosin-methylene blue



- EMBL: European Molecular Biology Laboratory (do not spell out when database is being referred to)
- EMBO—need not be defined (European Molecular Biology Organization)
- EMC virus *or* EMCV: encephalomyocarditis virus (unless the human coronavirus strain name “EMC” is meant)
- EMS: ethyl methanesulfonate
- EMSA: electrophoretic mobility shift assay
- ENA database—need not be explained (European Nucleotide Archive)
- Endo agar
- endo H *or* endo-H (follow au.): endo- $\beta$ -*N*-acetylglucosaminidase H
- endpoint—either of two points or values that mark the ends of a line segment or an interval *or* point or stage marking the end of a process
- end product
- En<sup>3</sup>Hance
- en masse*
- ensure, insure, assure—see chapter 4
- Enterococcosel
- Enterotube
- enzymic—*change to enzymatic*
- EOM: ensemble optimized method
- EOP: efficiency of plating
- eosin (*not* eosine)
- eosin-methylene blue
- EPA Method 1601 (*not* EPA method 1601; Method 1601 [note cap “em”] may be used after first use of EPA Method 1601)
- EPEC: enteropathogenic *Escherichia coli*
- epizootiology (*not* epizoology)
- Epon
- Eppendorf tube
- EPR: electron paramagnetic resonance
- EPS: exopolysaccharide
- Epstein-Barr virus
- eq\*: equivalent
- equaled, -ling *or* equalled, -lling (follow au.)
- ER: endoplasmic reticulum *or* estrogen receptor
- erg(s)—not an abbreviation (unit of force; see chapter 2)
- ERG: electroretinogram
- ERIC: enterobacterial repetitive intergenic consensus (sequence)
- ERK: extracellular signal-regulated kinase
- Erlenmeyer flask
- esculin (*not* aesculin)
- ES: embryonic stem (usually used with “cells”)
- ESBL: extended-spectrum  $\beta$ -lactamase
- ESI: electrospray ionization
- ESKAPE (*Enterococcus faecium*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, and *Enterobacter* species) pathogens
- ESR: electron spin resonance *or* erythrocyte sedimentation rate
- ESRD: end-stage renal disease
- EST: expressed sequence tag
- ESV: exact sequence variant
- ET: electrophoretic type
- E:T: effector to target cell (hyphenate spelled-out form as a unit modifier: effector-to-target cell ratio)
- et al.—and others (roman)
- EtBr: ethidium bromide (must be introduced)
- etc.: et cetera (either may be used; set off with commas) (see chapter 4)
- ETD: electron transfer dissociation
- ETEC: enterotoxigenic *Escherichia coli*



Etest (AB Biodisk trade name)

ethylenediaminetetraacetic acid *or* ethylene-diaminetetraacetate:  
EDTA\*\*

ethyleneimine *or* ethylenimine (follow au.)

*N*-ethylmaleimide

ethyl methanesulfonate

EtOH: ethyl alcohol *or* ethanol (follow au.) (*not* ethyl hydroxide)

EU: endotoxin unit(s)

EU: European Union (always spell out unless part of a proper name [e.g., EU Commission])

eucaryote *or* eukaryote (follow au.)

EUCAST—need not be defined (European Committee on Antimicrobial Susceptibility Testing)

Eugonbroth

eugonic broth

eukaryote *or* eucaryote (follow au.)

euthanize *or* euthanize

eV\*: electron volt

E value (need not be defined; the result of a BLAST search)

Evans blue (*not* Evan's blue)

EVD: Ebola virus disease (formerly Ebola hemorrhagic fever)

exa: E\* (SI prefix, 10<sup>18</sup>)

existence

Exo III, ExoIII, exo III, etc.—see chapter 3

expt(l): experiment(al) (tables only; see chapter 9)

EXSY: exchange spectroscopy

EXSY NMR: exchange spectroscopy nuclear magnetic resonance

*ex vivo*

EYFP *or* eYFP: enhanced yellow fluorescent protein

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## F

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f\*: femto (SI prefix, 10<sup>-15</sup>)

f1—phage designation (one, *not* “el”)

°F\*: degree Fahrenheit

F\*: farad (derived SI unit)

F\*: formal (concentration unit equivalent to molar [M])

F—need not be defined (fusion protein; follow au. on use of “protein” after it)

*F*—need not be defined (variance ratio; see Table 6.2)

FA: fluorescent antibody (hyphenated as unit modifier)

FAB: fast atom bombardment

Fab fragment, F(ab')<sub>2</sub> fragment—need not be defined

FACS: fluorescence-activated cell sorter

FACSCalibur

FACScan

FAD: flavin adenine dinucleotide

FADH<sub>2</sub>: reduced flavin adenine dinucleotide

FAE: follicle-associated epithelial (cells)

false negative, false positive (hyphenated as unit modifiers)

falciparum malaria

FAM: 6-carboxyfluorescein

FAMA: fluorescent antibody to membrane antigen

FAME: fatty acid methyl ester

FAO—need not be defined (Food and Agriculture Organization)

farad: F\* (derived SI unit)

far-Western (analysis, blotting, hybridization, etc.)

FAS: fatty acid synthase

FASTA—need not be introduced

fast blue, fast green



*f*AUC: area under the concentration-time curve for the free, unbound fraction of a drug

fauna (sing.), faunas *or* faunae (pl.)—animals in general or animal life, usually characteristic of a particular region or period

FBS: fetal bovine serum

Fc—need not be defined

5FC: flucytosine *or* 5-fluorocytosine *but not* 5-flucytosine

FCRDC—need not be defined (Frederick Cancer Research and Development Center; formerly Frederick Cancer Research Center)

FCS: fetal calf serum *or* fluorescence correlation spectroscopy

fd—phage designation

FDA—need not be defined (Food and Drug Administration; see Table 6.6)

FdUrd *or* FUdR (follow au.): fluorodeoxyuridine

FEC: fecal egg counts

Federal Republic of Germany *or* Germany (follow au.)

feedback

FeLV: feline leukemia virus

femto: f\* (SI prefix, 10<sup>-15</sup>)

fermenter—organism

fermentor—apparatus

Fernbach flask

ferredoxin

ferrichrome: an iron-chelating compound secreted by microorganisms

ferrochrome—a corrosion-resistant alloy of chrome and iron (less common in our journals but occurs occasionally in environmental/industrial studies)

fetuin

FEV1 *or* FEV<sub>1</sub>: median forced expiratory volume in 1 s

FEV1%: median forced expiratory volume in 1 s/forced vital capacity (i.e., the ratio of FEV1 to FVC)

FFU: focus-forming unit(s)

FGF: fibroblast growth factor

FGSC—need not be defined (Fungal Genetic Stock Center; do not spell out as part of strain designation)

FHLH: familial hemophagocytic lymphohistiocytosis

Fiax

FIC: fractional inhibitory concentration

fieldwork, field-worker

fiberglass

Fibrometer

FibroSystem

Ficoll

Ficoll-Hypaque

Ficoll-Paque

FID: flame ionization detection (-*or*)

FIGE: field inversion gel electrophoresis

Fildes (*or* Fildes') enrichment

filter sterilized (hyphenated as unit modifier)

fimbria (s.), fimbriae (pl.), fimbrial (adj.)

first-order (second-order, etc.) reaction

FISH: fluorescent (*or* fluorescence) *in situ* hybridization

Fisher's exact test *or* the Fisher exact test

FITC: fluorescein isothiocyanate

FIU: focus-inducing unit(s)

FIV: feline immunodeficiency virus

FLAG *or* Flag (follow au.)

floatation—*change to* flotation

Flock House virus

floodwater



flora (sing.), floras *or* florae (pl.)—plant life or plants in general, usually characteristic of a particular region or period

flow cell

flowthrough (n.); flow through (v.)

FLP *or* Flp (follow au.)—need not be defined; designation for an enzyme sometimes called flippase

fluorescein isothiocyanate

fluorescent antibody (hyphenated as unit modifier)

fluorimeter *or* fluorometer

5-fluorocytosine

FLV: Friend leukemia virus *or* feline leukemia virus

FMDV: foot-and-mouth disease virus

fMet: formylmethionyl (see chapter 3)

fMIC: MIC of the free, unbound fraction of a drug

fMLP: *N*-formyl-methionyl-leucyl-phenylalanine

FMN: flavin mononucleotide

FMNH: reduced flavin mononucleotide

Fmoc *or* FMOC (follow au.): 9-fluorenylmethoxy carbonyl

F<sub>o</sub> (subscript is a lowercase “oh” [to signify sensitivity to oligomycin], not zero; this is one of two major components of ATP synthase [the other being F<sub>1</sub>]); F<sub>0</sub> (with zero) may be correct in some papers (e.g., with F<sub>420</sub>) (use your judgment)

F<sub>0</sub>F<sub>1</sub>—the complex of the two components of ATP synthase

5-FOA: 5-fluoroorotic acid

focused, focusing

fold (suffix)—severalfold, 2-fold, 2-fold higher (hyphenated as unit modifier), 10-fold

fold purification *or* purification (fold) (see chapter 4)

Folin-Ciocalteu

follow-up (n., adj.), follow up (v.)

foodborne—although *Webster’s Dictionary* indicates that this word should be “food borne,” use one word for consistency with “waterborne” and “airborne”

foot: ft\*

foot-and-mouth disease virus

foot-candle—convert to lux (1 ft-c = 10.76 lx)

footpad

foot rot *or* footrot (follow au.)

formalin *or* Formalin (follow au.)

formalinize

formamide

*N*-formimidoyl thienamycin—*change to* imipenem

Formol

formolized

formulae *or* formulas (pl.) (follow au.)

Formvar

formylmethionyl

FPKM: fragments per kilobase per million

FPLC: fast protein (*or* fast-performance) liquid chromatography

frameshift mutant, mutation

freeze-dried, freeze-dry, freeze-thaw, freeze-thawing, freeze-thawed, freeze-etch (always hyphenated) (*but* freeze fracture)

French press *or* French pressure cell

Freon

freshwater (n. *or* adj.)

FRET: fluorescence [*or* fluorescent] resonance energy transfer

Freund (*or* Freund’s) adjuvant

FRG: Federal Republic of Germany

Fr-MuLV: Friend murine leukemia virus

frozen-hydrated (*not* freeze-hydrated; used in the field of electron microscopy)

FRT: FLP recombination target

Fru—need not be defined (fructose)



FSH: follicle-stimulating hormone

ft\*: foot

FTA: fluorescent treponemal antibody

ft-c: footcandle (convert to lux: 1 ft-c = 10.76 lx)

FTIR: Fourier transform (*not* transformed) infrared spectroscopy

Fuc—need not be defined (fucose)

FUDR *or* FdUrd (follow au.): fluorodeoxyuridine

full-length (always hyphenated as adjective)

Fungicidin—*change to* nystatin (trade name may be given parenthetically at first use)

Fungi Imperfecti

Fungizone—*change to* amphotericin B (trade name may be given parenthetically at first use)

fungus (n.), fungous (adj.); fungal (adj.)

Fusion-Blue—trademarked *E. coli* strain name

FV: Friend virus

FVC: forced vital capacity

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## G

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g\*: gram

g%\*: grams percent

g—need not be defined (gravity [centrifugation], e.g., 100 × g)

G\*: gauss

G\*: giga (SI prefix, 10<sup>9</sup>)

G—need not be defined (guanine *or* guanosine *or* glycine)

G—need not be defined (generally labeled, e.g., [G-<sup>14</sup>C]glucose; do not use GL)

G<sub>0</sub>, G<sub>1</sub>, G<sub>2</sub>, G<sub>1a</sub>, G<sub>1b</sub> (*not* G<sub>0</sub>, G<sub>1</sub>, G<sub>2</sub>, G<sub>1a</sub>, G<sub>1b</sub>)—stages of cell growth

Gal—need not be defined (galactose)

gal\*: gallon

gallbladder

GalNAc—need not be defined (*N*-acetylgalactosamine)

GALT: gut-associated lymphoid tissue

gamma globulin (*not* γ globulin)—see chapter 3

gammaherpesvirus (*not* γ-herpesvirus)

the Gambia (country in western Africa)

ganciclovir (*not* gancyclovir)

GAPDH: glyceraldehyde-3-phosphate dehydrogenase (see chapter 6, “Chemical names and buffers”)

GAS: group A streptococcus, -cocci

Gas-Chrom Q

gas-liquid chromatography

GasPak

g-atom\*: gram-atom

gauge

gauss: G\*

gay—*change to* homosexual (but allow, e.g., “gay bar”)

GBS: glycine-buffered saline *or* group B *Streptococcus* *or* group B streptococcus (*or* streptococci)

GBV: GB virus

GBVC: GB virus C

gc: genome copies

Gc—need not be defined as a viral glycoprotein designation

GC broth—need not be defined

GC: gas chromatography (-ic) (define) *or* guanine and cytosine, as in GC content (which need not be defined)

G+C—need not be defined (guanine plus cytosine [content; base ratio]) (when guanine and cytosine are spelled out in a unit modifier, use two hyphens and “plus”)

G-C—need not be defined (guanine-cytosine [sequence])

G·C—need not be defined (guanine·cytosine [base pair])



GC-C-IRMS: gas chromatography-combustion-isotope ratio mass spectrometry (combination of three processes)

GCG—need not be defined (Genetics Computer Group)

GCP(s): good clinical practice(s)

G-CSF: granulocyte colony-stimulating factor

GCV: ganciclovir (*not* gancyclovir)

GDH: glutamate dehydrogenase

gDNA: genomic DNA

GDP\*\*\*: guanosine 5'-diphosphate *or* guanosine diphosphate

GDR (*or* DDR)—*change to* Germany

Geiger-Müller

gel, gelling, gelled, gelable

gelatin

Gelysate

GenBank

gene gun (*but* Helios Gene Gun [Bio-Rad trade name])

GeneID *or* GeneID number/no.: gene identification designation in NCBI; do not change to “gene identification number”

GeneScreen, GeneScreen Plus

Geneticin (allow trade name for this specially formulated antibiotic)

gen. nov.—do not spell out with organism name (new genus)

gentamicin

genus (s.), genera (pl.)

GEO (repository of functional genomics data from array- and sequence-based analyses)

Germany *or* Federal Republic of Germany (follow au.)

germfree

germ line (never hyphenated)

Gey's solution

GF/C filters

GFP: green fluorescent protein

GFR: glomerular filtration rate

gHBMC: gradient heteronuclear multiple-bond coherence

gHSQC: gradient heteronuclear single quantum coherence

GI or gi followed by a number (sometimes with a vertical bar before the number [follow au.]) (allow without introduction; GenInfo Identifier sequence identification number)

Giemsa stain

giga: G\* (SI prefix, 10<sup>9</sup>)

Glc—need not be defined (glucose)

GLC: gas-liquid chromatography (-ic)

GlcN—need not be defined (glucosamine)

GlcNAc—need not be defined (*N*-acetylglucosamine)

glia (both s. and pl.)

Gln—need not be defined (glutamine)

glove box

GLP: glycolipoprotein

Glu—need not be defined (glutamic acid)

glucose-6-phosphate

Glucostat

Glusulase

glutaraldehyde

Glx—need not be defined (glutamic acid *or* glutamine)

Gly—need not be defined (glycine)

glycerin—*change to* glycerol

glycolate (*not* glycollate)

GM-CSF: granulocyte-macrophage colony-stimulating factor

GMO: genetically modified organisms

GMP\*\*\*: guanosine 5'-monophosphate *or* guanosine monophosphate



GMP(s): good manufacturing practice(s)

GMT: geometric mean titer

Gn—need not be defined as a viral glycoprotein designation

goat anti-mouse immunoglobulin G

GOLD: Global Initiative for Chronic Obstructive Lung Disease

Golgi compartment, Golgi apparatus, Golgi complex, Golgi cisternae, Golgi stacks, Golgi membranes, Golgi body (avoid the last in yeast papers; other words may follow “Golgi”), *trans*-Golgi network, *trans*-Golgi transport, *trans*-Golgi trafficking, *trans*-Golgi vesicles, *cis*-Golgi (do not allow Golgi alone as a noun except in *cis*-Golgi [a location that defines a set of biological parameters; however, *cis*-Golgi network, transport, trafficking, or vesicles, etc., may instead be meant {query if in doubt}])

gonorrhoea

gp69—need not be defined (glycoprotein 69)

G6PD: glucose-6-phosphate dehydrogenase

G3PDH: glyceraldehyde 3-phosphate dehydrogenase

GPI: glycosylphosphatidylinositol

gram-atom: g-atom\*

Gram negative, Gram positive (hyphenated as unit modifiers) (see chapter 4)

grams percent: g%\*

Gram (*or* Gram’s) stain (never hyphenated); Gram staining, Gram stained (hyphenated as unit modifiers); Gram reaction

grant-in-aid

GRAS: generally recognized as safe (do not hyphenate as a unit modifier)

gray: Gy\* (derived SI unit)

gray (*not* grey [color])

gray water (*not* graywater)

gRNA: guide RNA *or* genomic RNA

groundwater

GSH: glutathione

GSK: glycogen synthase kinase

GST: glutathione *S*-transferase *or* glutathione transferase (follow au.)

GTP\*\*\*: guanosine 5'-triphosphate *or* guanosine triphosphate

guanosine 5'-diphosphate *or* guanosine diphosphate: GDP\*\*

guanosine 5'-monophosphate *or* guanosine monophosphate: GMP\*\*

guanosine 5'-triphosphate *or* guanosine triphosphate: GTP\*\*

Guillain-Barré syndrome

GvHD: graft-versus-host disease

Gy\*: gray (derived SI unit)

gyratory shaker

Gyrotory shaker

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## H

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h: human (use only as part of a larger abbreviation)

h\*: hecto (SI prefix, 10<sup>2</sup>)

h\*: hour

H\*: henry (derived SI unit)

ha\*: hectare

HA: hemagglutination *or* hemagglutinin *or* hydroxyapatite (product designation)

*Haemophilus influenzae* b—add “type” before “b” at first use

HAART: highly active antiretroviral therapy

HACCP: hazard analysis and critical control point (system, program, plan, or policy)

HACEK group: a group of Gram-negative bacilli consisting of *Haemophilus* spp., *Actinobacillus actinomycetemcomitans*, *Cardiobacterium hominis*, *Eikenella corrodens*, and *Kingella* spp.

HAI *or* HI (follow au.): hemagglutination inhibition (never hyphenated)

half-life, half-lives (*but* half time)



Ham's (*or* Ham) F-12 medium

hand (suffix)—hyphenated

H&E: hematoxylin and eosin (stain)

Hanks (*or* Hanks') balanced salt solution

hapten

HAT: histone acetyltransferase (the usual definition in MCB articles) *or* hypoxanthine-aminopterin-thymidine

HAU: hemagglutinating unit(s)

HAV: hepatitis A virus

H2BC: heteronuclear multiple-bond correlation over two bonds

HBc (*not* HB<sub>c</sub>)—need not be defined (hepatitis B virus core)

HBcAg (*not* HB<sub>c</sub>Ag)—need not be defined (hepatitis B virus core antigen)

HBs (*not* HB<sub>s</sub>)—need not be defined (hepatitis B virus surface)

HBsAg (*not* HB<sub>s</sub>Ag)—need not be defined (hepatitis B virus surface antigen)

HBSS: Hanks (*or* Hanks') balanced salt solution

HBV: hepatitis B virus

HCD: high cell density *or* highly conserved domain

H<sub>2</sub>DCFDA: 2',7'-dichlorodihydrofluorescein diacetate (dye)

HDAC: histone deacetylase

HDO—need not be defined when used to indicate that a deuterium atom has been substituted for one of the hydrogen atoms in water

H&E: hematoxylin and eosin (stain)

headspace

health care

health care personnel

heat shock protein, heat shock response (*but* heat-shocked cells)

HEBA—*Legionella micdadei* strain

hectare: ha\*

hecto: h\* (SI prefix, 10<sup>2</sup>)

HEK293, HEK 293, *or* HEK-293—need not be introduced; a human embryonic kidney cell line; (follow au. on format but be consistent)

HeLa—cell line designation

helices

Helios Gene Gun (Bio-Rad trade name)

hemacytometer *or* hemocytometer (follow au.)

hemagglutination inhibition test (never hyphenated)

hemagglutinin

hematoxylin and eosin stain

hemoglobin

hemolytic-uremic syndrome

henry: H\* (derived SI unit)

HEPA filter—do not spell out

heparan (not the same as “heparin”; follow au.)

heparin

HEp-2 cells—do not spell out

HEPES\*\*:*N*-2-hydroxyethylpiperazine-*NN*-2-ethanesulfonic acid

Hep-G2 *or* HepG2 (follow au.; not analogous to HEp-2)

herpes simplex virus

herpesvirus (subcategories include alphaherpesvirus, betaherpesvirus, gammaherpesvirus)

herpesvirus saimiri

hertz: Hz\* (derived SI unit)

H&E stain: hematoxylin and eosin stain

HETCOR: heteronuclear shift correlation

heterokaryon

HEX: 6-carboxy-2,4,4,5,7,7-hexachlorofluorescein

Hfr *or* HfrC (follow au.)—need not be defined (high-frequency recombination)



Hg<sup>0</sup>—need not be defined (oxidation scale; superscript is zero, not “oh”)

HGF: hepatocyte growth factor *or* human gingival fibroblast

HHMI—need not be defined (Howard Hughes Medical Institute)

HHS—need not be defined (Health and Human Services; formerly HEW [Health, Education, and Welfare])

HHV-6: human herpesvirus 6 (*not* type 6)

HI *or* HAI (follow au.): hemagglutination inhibition (never hyphenated)

Hib: *Haemophilus influenzae* type b (must be introduced)

high-copy-number mutants

HindI, HindII, HindIII—restriction endonuclease designations (note that “d” is roman)

hind leg (hyphenate as a unit modifier)

His—need not be defined (histidine)

HisPur cobalt resin

HIV—need not be defined; however, if an author uses any of the HIV abbreviations *and* SIV and/or SHIV without introduction in a paper, introduce all of the terms for consistency (human immunodeficiency virus)

HIV-1—need not be defined; however, if an author uses any of the HIV abbreviations *and* SIV and/or SHIV without introduction in a paper, introduce all of the terms for consistency (human immunodeficiency virus type 1)

H+L: heavy plus light chains [need not be spelled out in, e.g., IgG(H+L) or IgG<sub>H+L</sub>, or when used as part of a similar immunoglobulin designation/abbreviation but must be introduced in nonimmunoglobulin abbreviations]

HLA—need not be defined (human leukocyte antigen)

HLA-DR—need not be defined

HLH: helix-loop-helix

*H-2* locus (mice)

HMQC: heteronuclear multiple-quantum correlation

HMSO—need not be defined (Her Majesty’s Stationery Office)

HN: hemagglutinin-neuraminidase (must be introduced; follow au. on use of “protein” after it)

hnRNA—need not be defined (heterogeneous nuclear RNA)

hnRNP—need not be defined (heterogeneous nuclear ribonucleoprotein particle)

H<sub>2</sub>O *or* water

Hoechst (stain or company name)

HOESY: heteronuclear Overhauser effect spectroscopy

HOHAHA: homonuclear Hartmann-Hahn spectroscopy

Holstein (cow)

homogenate

homokaryon

homolog *or* homologue (follow au.)

honeybee *or* honey bee (follow au.)

Hoogsteen pair

horseradish peroxidase

hot spot

hour: h\*

HPAEC: high-pH anion-exchange chromatography

HPF: high-power field

hpi *or* h p.i.: hours postinfection

HPLC: high-pressure (*or* high-performance) liquid chromatography

HPr—enzyme designation

HPRT: hypoxanthine phosphoribosyltransferase

HPUra: 6-(*p*-hydroxyphenylazo)-uracil

HPV: human papillomavirus

HPV6 *or* HPV-6 (follow au.): human papillomavirus 6 (note that “type” is no longer used with HPV types)

hr: homologous region

HRMS: high-resolution mass spectrometry

HRP: horseradish peroxidase



HRPO: horseradish peroxidase	<i>I</i> —need not be defined (intensity of the reflection; used in refinement statistics; may have wide-angle brackets around it [see Fig. 9.6])
HSD: honestly significant difference (test)	i.a. ( <i>not</i> IA): intra-arterial(ly) (may be used for both forms with only one introduction)
HSQC: heteronuclear single quantum coherence (spectroscopy)	IACUC—need not be defined (Institutional Animal Care and Use Committee)
HSV-1: herpes simplex virus 1 ( <i>not</i> herpes simplex virus type 1)	IARC—need not be defined (International Agency for Research on Cancer)
ht: height (tables only; see chapter 9)	IBFQ: Iowa black fluorescent quencher
HTH: helix-turn-helix	IBMC—need not be defined (Institut de Biologie Moléculaire et Cellulaire [of the CNRS])
HTLV: human T-cell ( <i>or</i> T cell) leukemia ( <i>or</i> lymphotropic virus (see chapter 3); use HTLV-1 and HTLV-2, <i>not</i> -I and -II, for types 1 and 2)	IBP—need not be defined (International Biological Programme)
HTS: high-throughput sequencing	i.c. ( <i>not</i> IC): intracutaneous(ly) <i>or</i> intracerebral(ly) (may be used for both forms of either word with only one introduction)
HU: hemolytic unit(s)	IC <sub>50</sub> : 50% inhibitory ( <i>or</i> infective) concentration (pl., IC <sub>50</sub> <i>or</i> IC <sub>50</sub> s)
HuIFN: human interferon	ICC unit: immunofluorescent cell count unit
human herpesvirus 6 ( <i>not</i> type 6)	ICE: interleukin-converting enzyme <i>or</i> integrating conjugative elements (e.g., ICEVchMexI)
HUS: hemolytic-uremic syndrome	ice water— <i>same as</i> ice-cold water
HUVEC: human umbilical vein endothelial cell	ice-water—mixture of ice and water
hVISA: heterogeneous vancomycin-intermediate <i>Staphylococcus aureus</i>	ICP: infected-cell polypeptide (no introduction necessary when used as part of designation, e.g., ICP0) <i>or</i> inductively coupled plasma (with mass spectrometry)
Hyamine	ICR: do not define if a mouse strain designation
hydrolysate (n.), hydrolysis ( <i>but</i> hydrolyze)	ICRF—need not be defined (Imperial Cancer Research Fund)
hydrolyze ( <i>not</i> hydrolyse)	ICU: intensive care unit <i>or</i> intensive-care unit (follow au. but be consistent)
hydroxyapatite <i>or</i> hydroxylapatite (follow au.)	iCycler (Bio-Rad trade name)
Hyl—need not be defined (hydroxylysine)	i.d.: inside diameter
Hyp—need not be defined (hydroxyproline)	i.d. ( <i>not</i> ID): intradermal(ly) (may be used for both forms with only one introduction)
Hypaque	ID: infective dose
hyper (prefix)—solid	ID <sub>50</sub> : 50% infective dose (pl., ID <sub>50</sub> <i>or</i> ID <sub>50</sub> s)
hypo (prefix)—solid	IDO: indoleamine 2,3-dioxygenase
Hz*: hertz (derived SI unit)	
<hr/> <b>I</b> <hr/>	
I: inosine (see Table 6.1)	



IDP\*\**: inosine 5'-diphosphate or inosine diphosphate*

IdU, IdUrd, *or* IUdR (follow au.): iododeoxyuridine

i.e.—that is (may use either) (see chapter 4)

IE: immunoelectrophoresis *or* immediate early

IEF: isoelectric focusing

IEM: immunoelectron microscopy

IEP: immunoelectrophoresis

IF3: protein initiation factor 3 (designation, *not* abbreviation)

IFA: indirect fluorescent-antibody assay, immunofluorescent antibody, indirect immunofluorescence assay, *or* immunofluorescence assay (follow au.; if definition is not supplied, choose one and query); also incomplete Freund adjuvant

IFN: interferon

IFN- $\alpha$ , IFN- $\beta$ , IFN- $\gamma$ , IFN- $\alpha/\beta$ : alpha, beta, gamma, alpha/beta interferon (also allow interferon alpha, beta, gamma, and alpha/beta if that construction is used consistently by the author); allow type I interferon (IFN-I) and type II interferon (see chapter 3)

IFO—need not be defined (Institute for Fermentation; see Table 6.6)

IFU: inclusion-forming unit(s)

Ig—need not be introduced (immunoglobulin [see chapters 3 and 6])

IgA, IgG, IgM—need not be introduced (immunoglobulin A, G, M [see chapters 3 and 6])

IGEPAL—need not be introduced (trade name)

IGRA: interferon gamma release assay

IIF: indirect immunofluorescence

IIV: interindividual variability

I $\kappa$ B—need not be defined (inhibitor of  $\kappa$ B)

IKK (complex): I $\kappa$ B kinase (complex)

i.l. (*not* IL): intralumbar(ly) (may be used for both forms with only one introduction)

IL, IL-1, IL-2: interleukin, interleukin-1, interleukin-2 (follow au. on hyphenation of spelled-out forms)

Ile—need not be defined (isoleucine)

i.m. (*not* IM): intramuscular(ly) (may be used for both forms with only one introduction)

IMAC: immobilized-metal affinity chromatography

ImageQuant

IMEM: Iscove (*or* Iscove's) modified Eagle (*or* Eagle's) medium

imipemide—*change to* imipenem

imipenem

Immobilon

immediate early (not hyphenated)

immune—allow as a noun as well as an adjective

immune compromised: *change to* immunocompromised

immunofluorescence techniques (*not* immunofluorescent techniques)

immunoglobulin

IMN: idiopathic membranous nephropathy

IMP\*\**: inosine 5'-monophosphate or inosine monophosphate*

IMViC: indole–methyl red–Voges-Proskauer–citrate

IN—need not be defined (integrase or integration protein of retroviruses; follow au. on use of “protein” after it)

in.\*: inch (no period when used with superscript, e.g., lb/in<sup>2</sup>)

i.n. (*not* IN): intranasal(ly) (may be used for both forms with only one introduction)

inasmuch as

inch: in.\* (see [in.](#))

in *cis*

indel: insertion/deletion marker or site (lowercase; need not be defined)

India ink

indispensible



indole

indoleacetic acid

INEPT: insensitive nuclei enhanced by polarization transfer

infectible, infectibility

influenza virus A/WS/33 (H0N1) (see chapter 3)

in frame (hyphenated as unit modifier)

INH: isoniazid

in-house (always hyphenated)

INN—need not be defined (international nonproprietary name)

inoculum (s.), inocula (pl.)

iNOS: inducible nitric oxide synthase

inosine 5'-diphosphate *or* inosine diphosphate: IDP\*\*

inosine 5'-monophosphate *or* inosine monophosphate: IMP\*\*

inosine 5'-triphosphate *or* inosine triphosphate: ITP\*\*

inpatient

*in planta*—italic

INRA—need not be defined (Institut National de la Recherche Agronomique)

INRS—need not be defined (Institut National de la Recherche Scientifique)

INSERM—need not be defined (Institut National de la Santé et de la Recherche Médicale)

*in silico*—italic

*in situ*—italic

insure, ensure, assure—see chapter 4

INT: 2-(4-iodophenyl)-3-(4-nitrophenyl)-5-phenyltetrazolium chloride

international unit: IU\*

Internet

*in toto*—italic

in *trans*

*in utero*—italic

*in vacuo*—italic

*in vitro*—italic

*in vivo*—italic

in yeast—see chapter 3

iodometric

Ionagar

ion exchange (hyphenated as unit modifier)

i.p. (*not* IP): intraperitoneal(ly) (may be used for both forms with only one introduction)

IPE: immune polioencephalomyelitis

IPTG: isopropyl- $\beta$ -D-thiogalactopyranoside (see chapter 6, “Chemical names and buffers”)

IR: intercept ratio *or* infrared *or* inverted repeat

IRB: institutional review board

IRE: interferon gene regulatory element

IRES: internal ribosome entry site

Irgasan

IR<sub>L</sub> (IR<sub>S</sub>) *or* IRL (IRS): inverted long (short) repeat

IRS: immune rabbit serum

IS2—insertion element designation (note italic numeral)

ISAGA: immunosorbent agglutination assay

ISBN—do not spell out (International Standard Book Number)

ISC—need not be defined (International Salmonella Center; see Table 6.6)

ISG: interferon-stimulated gene

iso (prefix)—solid

ISO—need not be defined (International Organization for Standardization)

isoflurane (*not* isofluorane)

isoniazid (*not* isoniazide)



Iso-Sensitest agar

isosmotic (*not* isoosmotic *or* iso-osmotic)

IsoVitaleX

ISP: intracellular serine protease

ISSN—do not spell out (International Standard Serial Number)

ITP\*\**: inosine 5'-triphosphate or inosine triphosphate*

ITS: internal transcribed spacer

IU\**: international unit*

IuDR, IdU, *or* IdUrd (follow au.): iododeoxyuridine

IUPAC—need not be defined (International Union of Pure and Applied Chemistry)

i.v. (*not* IV): intravenous(ly) (may be used for both forms with one introduction)

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## J

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J\**: joule (derived SI unit)*

JAK—need not be defined (Janus kinase *or* “just another kinase”)

Janus green

JCM—need not be defined (Japan Collection of Microorganisms; see Table 6.6)

JEOL—need not be defined (Japan Electronic Optics Laboratory)

J-MOD: J-modulated spin echo

JNK: Jun N-terminal protein kinase

JOE: 6-carboxy-4',5'-dichloro-2',7'-dimethoxyfluorescein

Joklik (*or* Joklik's) medium

joule: J\* (derived SI unit)

Joyce-Loebl densitometer

J-RES: J-resolved spectroscopy

Jurkat (cell line)

Jzn. (Dutch for Jr.)—*change to Jr.*

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## K

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k\**: kilo (SI prefix, 10<sup>3</sup>)*

K\**: kelvin (SI unit) (e.g., 310 K but 37°C)*

K (e.g., 37K protein)—see chapter 2

K-12 (*not* K12)—*Escherichia coli* strain

$k_a$  *or*  $K_a$ *: absorption rate constant*

Kaplan-Meier analysis (*or* test)

Kaposi's sarcoma

kappa *or*  $\kappa$ —need not be defined (a statistical measure *or* coefficient; also called Cohen's kappa)

karyotype

kat\**: katal (international unit for enzyme activity recommended by the Enzyme Commission)*

kb\**: kilobase (see chapter 2)*

kbp\**: kilobase pair (see chapter 2)*

kc\**: kilocycle*

$k_{cat}$ —need not be defined

$K_d$ —*usually* dissociation constant, but allow for other meanings if defined; if not defined, insert “(dissociation constant)” after first use and add the au. query “If  $K_d$  is not dissociation constant, please provide correct definition for clarity”

$K_D$ —*usually* equilibrium dissociation constant, but allow for other meanings if defined; if not defined, insert “(equilibrium dissociation constant)” after first use and add the au. query “If  $K_D$  is not equilibrium dissociation constant, please provide correct definition for clarity”

kDa\* (*not* kdal, kD, *or* kd): kilodalton

Kdo: 3-deoxy-D-manno-octulosonic acid

KDO: 2-keto-3-deoxyoctulosonic acid *or* 2-keto-3-deoxyoctonic acid (follow au.)

KEGG database—need not be defined (Kyoto Encyclopedia of Genes and Genomes)

$k_{el}$ *: elimination rate constant (see Table 6.3)*



kelvin: K\* (SI unit)

keto acids

keyhole limpet hemocyanin

kg\*: kilogram (SI unit)

$K_i$ —need not be defined (inhibitor constant; pl.,  $K_{iS}$  or  $K_i$  values)

kieselguhr

Kilit

kilo: k\* (SI prefix,  $10^3$ )

kilobase: kb\* (see chapter 2)

kilobase pair: kbp\* (allow “kb”; see chapter 2)

kilocycle: kc\*

kilogram: kg\* (SI unit)

kinetics—s. or pl. in construction; follow au. (e.g., kinetics was or were)

KiSV: Kirsten sarcoma virus

Kjeldahl procedure

Klenow fragment

Klett-Summerson

Klett units (*not* Klett U, even in tables)

KLH: keyhole limpet hemocyanin

$K_m$ —need not be defined (Michaelis constant; pl.,  $K_{mS}$  or  $K_m$  values)

kmer or k-mer—need not be defined (a short DNA sequence consisting of a fixed number [k] of bases; “k” may be italic)

knockdown (n or adj.), knock down (v.)

knock-in (*not* knockin)

knockout (n. or adj.), knock out (v.)

knowlesi malaria

KOAc: potassium acetate (must be introduced)

Koch’s postulates

Kovács

KPC: *Klebsiella pneumoniae* carbapenemase

Krebs cycle

Kruskal-Wallis

$K_s$ —need not be defined (substrate constant; pl.,  $K_{sS}$  or  $K_s$  values)

KSHV: Kaposi’s sarcoma-associated herpesvirus

$k_{ss}$ : residence rate constant at steady state (see Table 6.3)

K-strategist

K value: serum value

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## L

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*l*—prefix for direction of optical rotation

L—prefix for optical configuration (*but l* for direction of optical rotation)

$L_{50}$ —need not be defined (the number of contigs whose summed length is the  $N_{50}$ )

$\lambda$  (lambda)—phage designation or abbreviation for wavelength (need not be defined); for volume, *change to* microliter ( $\mu\text{l}^*$ )

$\lambda_{em}$ : emission wavelength or emission  $\lambda$

$\lambda_{ex}$ : excitation wavelength or excitation  $\lambda$

labeled, -ing (*not* labelled, -lling)

labor-intensive (always hyphenated)

*lac* operon

Lactalysate

LAL: *Limulus* amoebocyte (or amebocyte) lysate

LAMP: loop-mediated isothermal amplification

large T antigen or large-T antigen (follow au.)

latamoxef—*change to* moxalactam

lb\*: pound



LB—need not be defined (lysogeny broth, Luria broth, Luria-Bertani [broth, agar, etc.], *or* Lennox broth)

LBCF—need not be defined (Laboratory Branch Complement Fixation [CDC])

lb/in<sup>2</sup>\*: pounds per square inch

L broth—need not be defined (Luria broth *or* Lennox broth)

LC: liquid chromatography

LC<sub>50</sub>: 50% lethal concentration (pl., LC<sub>50</sub> *or* LC<sub>50</sub>s)

LCC<sub>90</sub>: 90% Loebel-cidal concentration (pl., LCC<sub>90</sub> *or* LCC<sub>90</sub>s)

L cell

LCL: lymphoblastoid cell line

LCMV: lymphocytic choriomeningitis virus

LCR: ligase chain reaction, locus control region, long control region, *or* latency control region

LD: lethal dose

LD<sub>50</sub>: 50% lethal dose (pl., LD<sub>50</sub> *or* LD<sub>50</sub>s)

LDH: lactate dehydrogenase *or* lactic dehydrogenase

L-DOPA: L-3,4-dihydroxyphenylalanine

least-squares method

LEfSe: linear discriminant analysis effect size (algorithm)

*Legionella bozemanii* WIGA, *L. micdadei* HEBA, *L. micdadei* TATLOCK, *L. pittsburghensis* TATLOCK, *L. pneumophila* OLDA

Legionnaires' disease

leptospire

less (suffix)—solid

Leu—need not be defined (leucine)

leucocidin

leucocyte—*change to* leukocyte

leukapheresis

leukocyte (*not* leucocyte)

leukotriene B<sub>1</sub>

leupeptin

L form (hyphenated as unit modifier)

LGV: lymphogranuloma venereum

LH: luteinizing hormone

LiChrosorb, LiChrospher (*not* -sphere)

life cycle—never hyphenated

life span

like (suffix)—usually solid (see chapter 4)

*Limulus* amoebocyte (*or* ameocyte) lysate

*Limulus* assay

Lineweaver-Burk plot

Lipofectamine

Lipofectin

lipooligosaccharide

liquefaction, liquefy

liter—do not abbreviate except in combinations with prefixes (2 liters, *but* 2 ml)

littermate

LIVE/DEAD staining—need not be explained

LJ medium: Lowenstein-Jensen medium

LLO: *Legionella*-like organism *or* listeriolysin O

LLV: lymphatic leukemia virus

lm\*: lumen (derived SI unit)

LM-PCR: ligation-mediated PCR

ln—need not be defined (natural logarithm)

log—need not be defined (common logarithm)

log-phase cells

log rank (*not* logrank)

loopful



LOS: lipooligosaccharide (*not* lipo-oligosaccharide)

lowercase

LOWESS: locally weighted scatterplot smoothing

LPAIV: low-pathogenicity avian influenza virus

LPS: lipopolysaccharide

LSC: liquid scintillation counting

LSECTin: liver and lymph node sinusoidal endothelial cell C-type lectin

LSD: least significant difference

LT: heat-labile enterotoxin

LT2—*Salmonella enterica* serovar Typhimurium strain

LTB<sub>1</sub>: leukotriene B<sub>1</sub>

LTR: long terminal repeat

Lucite

lumen: lm\* (derived SI unit)

lumen (pl., lumina *or* lumens) (n.), luminal (adj.)

lux: lx\* (derived SI unit)

lx\*: lux (derived SI unit)

Lyme disease

lyophilize

Lys—need not be defined (lysine)

lyse (v.), lysis, lysate (*but* hydrolyze)

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## M

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m: murine (use only as part of a larger abbreviation)

m\*: meter (SI unit)

m\*: milli (SI prefix, 10<sup>-3</sup>)

*m-* or *meta-*—prefix in chemical name (either may be used)

M—need not be defined (matrix protein of viruses other than retroviruses; follow au. on use of “protein” after it)

M\*: mega (SI prefix, 10<sup>6</sup>)

M\*: molar (concentration)

M: morgan (unit of gene or chromosome size; must be introduced)

M, M<sup>+</sup>, M + 1, etc.—need not be defined (terms used in mass spectrometry)

M15—roman

M/15—*change to* 0.067 M

m6A: N<sup>6</sup>-methyladenine

m4C: N<sup>4</sup>-methylcytosine

m5C: 5-methylcytosine

mμ (millimicro)—*change to* n\* (nano)

mμ (millimicron)—*change to* nm\* (nanometer)

Mφ: macrophage

μ—need not be defined (mean in population statistics; see Table 6.2)

μ: ionic strength (usually given for buffers) *or* growth rate

μ\*: micro (SI prefix, 10<sup>-6</sup>)

μ (micron)—*change to* micrometer (μm\*) for length measurements

2μ *or* 2μm (*not* 2-μm)—*Saccharomyces cerevisiae* plasmid (follow au. but be consistent)

μBondapak

μE—*change to* microeinstein(s)

μeq\*: microequivalent

μg\* (*not* mcg): microgram

μm\*: micrometer

μM\*: micromolar

μ<sub>max</sub>: maximum growth rate

μmol\*: micromole

μμ (micromicro)—*change to* p\* (pico)



$\mu\mu$  (micromicron)—*change to pm\** (picometer)  
 mA\*: milliampere  
 MA—need not be defined (matrix protein of retroviruses; follow au. on use of “protein” after it)  
 MAb: monoclonal antibody  
 MAC: *Mycobacterium avium* complex  
 MacConkey agar  
 macro (prefix)—solid  
 macrobroth dilution—*change to* broth macrodilution  
 MACS: marker-assisted congenic screening *or* magnetically activated cell sorting  
 Madin-Darby canine kidney cells  
 MAI: *change to Mycobacterium avium-M. intracellulare (not M. avium-intracellulare)*  
 MAIS: *change to Mycobacterium avium-M. intracellulare-M. scrofulaceum (see MAI)*  
 makeup (n.), make up (v.)  
 MALDI-TOF MS: matrix-assisted laser desorption ionization–time of flight mass spectrometry [*en dash between “ionization” and “time”*]  
 maleimide  
 MALT: mucosa-associated lymphoid tissue (*not* mucosal-associated)  
 Man—need not be defined (mannose)  
 Mann-Whitney U test or Mann-Whitney *U* test (follow au. on italic or roman U [the U is not a required element])  
 MAP—do not allow as an abbreviation for *Mycobacterium avium* subsp. *paratuberculosis*  
 MAPK: mitogen-activated protein kinase (allow “microtubule-associated protein kinase” if au. uses it)  
 MAPKAP: mitogen-activated protein kinase-activated protein  
 Marek’s disease  
 maxi (prefix)—solid (cannot stand alone, such as in maxi kit)  
 mb: millibar (convert to millipascals; see chapter 2)  
 Mb\*: megabase  
 MBC: minimal (*or* -um) bactericidal concentration (pl., MBCs *or* MBC values *but not* MBC concentrations) (see chapter 4)  
 MBC<sub>50</sub>: minimal (*or* -um) bactericidal concentration at which 50% of strains tested are killed (must be introduced unless MBC has already been introduced; see chapter 4)  
 MBL: metallo- $\beta$ -lactamase  
 McFarland standard (a measure of turbidity; usage: a McFarland standard of 0.5 *or* a 0.5 McFarland standard)  
 MCF virus: mink cell focus-forming virus  
 mcg—*change to*  $\mu\text{g}^*$  (microgram)  
 MCK: muscle creatine kinase  
 MCP: monocyte chemoattractant protein  
 MCS: multiple-cloning site  
 M-CSF: macrophage colony-stimulating factor  
 MDa\* (*not* Mdal, MD, *or* Md): megadalton  
 MDCK cells—need not be defined (Madin-Darby canine kidney cells)  
*m/e or m/z* (follow au.)—need not be defined (mass/charge ratio); *do not change*, e.g., “at *m/z* 973.59” to “at an *m/z* of 973.59”  
 2-ME: 2-mercaptoethanol  
 mecillinam—*change to* amdinocillin  
 MED: median effective dose  
 medium (s.), media (pl.)  
 medium 199  
 MEF: mouse embryonic fibroblast  
 mega: M\* (SI prefix, 10<sup>6</sup>)  
 MEK—need not be defined  
 melting point: mp\*  
 MEM: minimal (*or* -um) essential medium *or* modified Eagle (*or* Eagle’s) medium  
 membranous



mengovirus

MeOH: methanol (*not* methyl alcohol *or* methyl hydroxide)

meq\*: milliequivalent

-mer—suffix meaning “subunits” (e.g., a 6-mer [or hexamer] has six subunits; a heterohexamer has six subunits that are not all identical [e.g., an FlhD<sub>4</sub>C<sub>2</sub> heterohexamer has four FlhD subunits and two FlhC subunits])

MERS: Middle East respiratory syndrome

Merthiolate

MES: morpholineethanesulfonic acid *or* 2-(*N*-morpholino)ethanesulfonic acid (follow au.) (see chapter 6, “Chemical names and buffers”)

*meso*—prefix in chemical name

Me<sub>2</sub>SO *or* DMSO (follow au.): dimethyl sulfoxide

mesophile

messenger ribonucleic acid: mRNA\*\* (pl., mRNAs)

Met—need not be defined (methionine)

*meta-* *or* *m-*—prefix in chemical name (either may be used)

metalloenzyme

meter: m\* (SI unit)

methicillin

methylcellulose

methylenebisacrylamide

methylene blue

methylmercury

methyl methanesulfonate

methyl red

methyltransferase

methyl viologen

MEV *or* MeV: mink enteritis virus

MFC: minimal fungicidal concentration (must be introduced)

MFI: mean fluorescence (*or* fluorescent) intensity

mg%—*change to* mg/100 ml (except when average intensity is meant)

Mg(OAc)<sub>2</sub>: magnesium acetate (must be introduced)

mg\*: milligram

MGBNFQ *or* MGB-NFQ—need not be introduced (a trademarked quencher dye)

MGIT (trade name; pronounced “emgit”; may be introduced as mycobacterial growth indicator tube)

MHA: Mueller-Hinton agar

MHB: Mueller-Hinton broth

MHC: major histocompatibility complex (more common) *or* myosin heavy chain

MHC-I: major histocompatibility complex class I

mho—convert to siemens (1 mho = 1 S)

mi\*: mile

MIC\*\*: minimal (*or* -um) inhibitory concentration (pl., MICs *or* MIC values *but not* MIC concentrations) (see chapter 4)

MIC<sub>50</sub>\*\*\*: MIC at which 50% of the isolates tested are inhibited (see chapter 4)

Michaelis constant

Michaelis-Menten kinetics

micro: μ\* (SI prefix, 10<sup>-6</sup>)

micro (prefix)—solid

micro-CT: micro-computed tomography

microbial diversity—*change to* microbially diverse populations (communities, etc.) where necessary (e.g., “we used whole-genome amplification to access the microbial diversity in contaminated sediments” is incorrect)

microbiota (allowed as a pl. n. and with a pl. v.), microbiotas—the microscopic flora and fauna of a region or period or of an organism (e.g., the human microbiota)

microbroth dilution—*change to* broth microdilution

microELISA reader

microequivalent: μeq\*



Microfuge (trade name; if au. uses “microfuge,” *change to* either “microcentrifuge” *or* “Microfuge” and query)

microglia (both s. and pl.)

microgram:  $\mu\text{g}^*$  (*not* mcg)

Micro-ID

micro-Kjeldahl

micrometer:  $\mu\text{m}^*$

micromolar:  $\mu\text{M}^*$

micromole:  $\mu\text{mol}^*$

micron—see Table 2.3

microRNA (*not* micro-RNA)

MicroScan

microscopical—*change to* microscopic

MicroTest

microtiter

microtome

MID: median infective dose

mid-exponential phase, mid-exponential-phase cells

mid-log phase, mid-log-phase cells

MIF: migration inhibition factor

mile: mi\*

milli: m\* (SI prefix,  $10^{-3}$ )

milliamper: mA\*

milliequivalent: meq\*

milligram: mg\*

milliliter: ml\*

millimeter: mm\*

millimolar: mM\*

millimole: mmol\*

Millipore filter

Milli-Q

millivolt: mV\*

mimivirus

min\*: minute (see chapter 2)

mini (prefix)—solid (cannot stand alone, such as in mini kit)

minimal *or* minimum (adj.)—follow au.

minimal inhibitory concentration: MIC\*\*

Minitek

minute: min\* (see chapter 2)

miRNA: microRNA

MIRU: mycobacterial interspersed repetitive unit (hyphenate “repetitive unit” as a unit modifier)

MIRU-VNTR: mycobacterial interspersed repetitive-unit–variable-number tandem-repeat (as modifier for locus, analysis, typing, etc.)

mitis salivarius (agar)

mitomycin, mitomycin C (other letters may be used)

mixed-effects model

ml\*: milliliter

MLD: minimal (*or* -um) lethal dose *or* murine lethal dose

MLEE: multilocus enzyme electrophoresis

MLN: mesenteric lymph node(s)

MLS: macrolides-lincosamides-streptogramin B (*but* use singular in modifier, e.g., macrolide-lincosamide-streptogramin B resistance)

MLST: multilocus sequence type

MuLV *or* MLV: murine leukemia virus

MLVA: multilocus variable-number tandem-repeat analysis

mm\*: millimeter

mM\*: millimolar



mm Hg\*: millimeters of mercury (pressure)

MMLV: Moloney murine leukemia virus

mmol\*: millimole

MMS: Micro-Media Systems, Inc., Potomac, MD, *or* methyl methanesulfonate

MMTV: mouse mammary tumor virus

$M_n$ —need not be defined (number-average molecular weight; note roman subscript; pl.,  $M_n$ s)

MNNG: *N*-methyl-*N'*-nitro-*N*-nitrosoguanidine

MnSOD: manganese superoxide dismutase

mo: month (tables only)

MoAb—*change to* MAb *or* monoclonal antibody

MOI: multiplicity of infection

moiety

mol\*: mole (SI unit)

mol%\*: moles percent

molar (concentration):  $M^*$

mole: mol\* (SI unit)

mol · s/liter\*: mole second per liter

mol wt: molecular weight (tables only)

Mo-MuLV *or* M-MuLV: Moloney murine leukemia virus

Mono Q column

Monospot

MOPS: morpholinepropanesulfonic acid (see chapter 6, “Chemical names and buffers”)

morpholinepropanesulfonic acid

most probable number (use two hyphens as unit modifier)

mothur (software for statistical analysis)

MOWSE: *molecular weight search*

mp\*: melting point

mpk—*change to* mg/kg and query

$M\phi$ : macrophage

MPN: most probable number [it is unnecessary to add “cells,” “bacteria,” or the like after a most probable number value, as in the following: “this cheese was contaminated with *L. monocytogenes* at a  $10^7$  most probable number (MPN)/g” {*change to* “this cheese was contaminated with *L. monocytogenes* at a most probable number (MPN) of  $10^7$  cells/g”}]

$M_r$ —need not be defined (relative molecular weight; note roman subscript; pl.,  $M_r$ s)

MR: methyl red

MRC—need not be defined (Medical Research Council [England *or* Canada])

MRI: magnetic resonance imaging

mRNA\*\*\*: messenger ribonucleic acid (pl., mRNAs)

MRS (broth)—need not be defined

MRSA: methicillin-resistant *Staphylococcus aureus* (not interchangeable with ORSA)

MS: mass spectrometry (-er)

MS-2

MS2—phage designation

MSCV: murine stem cell virus

MSHA: mannose-sensitive hemagglutinin

MS-MS: tandem mass spectrometry

MSS: mean sum of squares

MSSA: methicillin-susceptible *Staphylococcus aureus* (not interchangeable with OSSA)

MSV: murine sarcoma virus

MTC: *Mycobacterium tuberculosis* complex

mtDNA: mitochondrial DNA

MTOC: microtubule-organizing center

MTS: 3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetrazolium

MTT: 3-(4,5-dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide



$\mu$ —need not be defined (mean; see Table 6.2)

$\mu$ : ionic strength (usually given for buffers) *or* growth rate

$\mu^*$ : micro (SI prefix,  $10^{-6}$ )

$\mu$  (micron)—*change to* micrometer ( $\mu\text{m}^*$ ) for length measurements

$2\mu$  *or*  $2\mu\text{m}$  (*not*  $2\text{-}\mu\text{m}$ )—*Saccharomyces cerevisiae* plasmid (follow au. but be consistent)

$\mu\text{Bondapak}$

$\mu\text{E}$ —*change to* microeinstein(s)

$\mu\text{eq}^*$ : microequivalent

$\mu\text{g}^*$ : (*not* mcg): microgram

$\mu\text{m}^*$ : micrometer

$\mu\text{M}^*$ : micromolar

$\mu_{\text{max}}$ : maximum growth rate

$\mu\text{mol}^*$ : micromole

$\mu\mu$  (micromicro)—*change to*  $\text{p}^*$  (pico)

$\mu\mu$  (micromicron)—*change to*  $\text{pm}^*$  (picometer)

m.u.: map unit

Mu—phage designation

MU: methylumbelliferyl

mucus (n.), mucosal (adj.), mucous (adj.)

Mueller-Hinton (agar, broth, medium)

MUG: methylumbelliferyl- $\beta$ -glucuronide

MuIFN: murine interferon

multi-omics *or* multiomics (follow au.)

multiple-sequence alignment

MuLV *or* MLV: murine leukemia virus

MUMmer—need not be defined (software for aligning genomes)

mung bean nuclease

mutant, mutation—see chapter 4

mutator (a genotype that exhibits high rates of mutation)

mV\*: millivolt

MV: methyl viologen

MW: molecular weight (must be introduced; *do not change to*  $M_w$ )

$M_w$ —need not be defined (weight-average molecular weight; note roman subscript; pl.,  $M_{ws}$ ) (*not* the same as MW above)

Mycelia Sterilia

Mycobactosel, Mycoflask, Mycophil, Mycosate, Mycosel

mycoplasma virus

Mycostatin—*change to* nystatin (trade name may be given parenthetically at first use)

*myo-* —prefix in chemical name

$m/z$  *or*  $m/e$  (follow au.)—need not be defined (mass/charge ratio)

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## N

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$\text{n}^*$ : nano (SI prefix,  $10^{-9}$ )

$n$ —need not be defined (number of data [see Table 6.2] *or* prefix in chemical name)

$2n$  *or*  $2N$  (*or*  $2n$  *or*  $2N$ )—need not be defined (diploid set of chromosomes)

$\text{N}^*$ : newton (derived SI unit)

$\text{N}^*$ : normal (concentration)

$\text{N}$ —unspecified *or* unknown nucleoside (in combinations, e.g., NTP; see Table 6.1)

$N_{50}$ —need not be defined (the length of the contig when the cumulative sum equals 50% of the final sum of all contig lengths)

NA: numerical aperture (in microscopy; hyphenate as a unit modifier) *or* neuraminidase

NAc: *N*-acetyl

$\text{Na}^+/\text{Ca}^{2+}$



*N*-acetylgalactosamine

*N*-acetylglucosamine

*N*-acetylneuraminic acid

NAD<sup>\*\*</sup>: nicotinamide adenine dinucleotide

NAD<sup>\*\*\*</sup>: oxidized nicotinamide adenine dinucleotide

NADC—need not be defined (National Animal Disease Center)

NADH<sup>\*\*</sup>: reduced nicotinamide adenine dinucleotide

NADL—need not be defined (National Animal Disease Laboratory [Ames, IA]; do not spell out as part of strain designation; see Table 6.6)

NADP<sup>\*\*</sup>: nicotinamide adenine dinucleotide phosphate

NADPH<sup>\*\*</sup>: reduced nicotinamide adenine dinucleotide phosphate

NAG: *N*-acetylglucosamine

naïve

nalidixic acid

NALT: nasal mucosa-associated lymphoid tissue *or* nasopharynx-associated lymphoid tissue

NAM: *N*-acetylmuramic acid

NANA: *N*-acetylneuraminic acid

nano: n\* (SI prefix, 10<sup>-9</sup>)

NanoLC-ESI-MS/MS: nanoscale liquid chromatography-electrospray ionization-tandem mass spectrometry

NanoSIMS: nanoscale secondary-ion mass spectrometry

NaOAc: sodium acetate (must be introduced)

naphthol

nares—allow plural as a direct modifier

NASBA: nucleic acid sequence-based amplification

N<sub>2</sub>ase: nitrogenase (may be used interchangeably)

NATO—need not be defined (North Atlantic Treaty Organization)

NBRF—need not be defined (National Biomedical Research Foundation)

NBT: Nitro Blue Tetrazolium *or* nitroblue tetrazolium *or* tetrazolium salts

NC—need not be defined (nucleocapsid protein of retroviruses; follow au. on use of “protein” after it)

NCBI—need not be defined (National Center for Biotechnology Information)

NCCLS—change to CLSI in the text unless the occurrence refers to a publication of the organization before 2005 (see chapter 7)

NCIB—need not be defined (National Collection of Industrial Bacteria [Torry Research Station, Aberdeen, Scotland]; do not spell out as part of strain designation; see Table 6.6)

NCIMB—need not be defined (National Collections of Industrial, Food and Marine Bacteria (Aberdeen, Scotland) (consolidation of National Collection of Industrial Bacteria, National Collection of Marine Bacteria, and National Collection of Food Bacteria; do not spell out NCIMB as part of strain name and do not change NCIB, NCMB, or NCFB designations to NCIMB)

NCMB—need not be defined (National Collection of Marine Bacteria [Torry Research Station, Aberdeen, Scotland]; do not spell out as part of strain designation; see Table 6.6)

NCS: newborn calf serum (need not be defined if an abbreviation for Nuclear-Chicago solubilizer)

NCTC—need not be defined (National Collection of Type Cultures, Central Public Health Laboratory, London, England; do not spell out as part of strain designation; see Table 6.6)

ND: not determined *or* not done (follow au. if definition is supplied)

NEB: New England BioLabs

NDV: Newcastle disease virus

NEM: *N*-ethylmaleimide

Nembutal—*change to* pentobarbital sodium (trade name may be given parenthetically at first use)

NEN—need not be defined (short form for New England Nuclear Corp. *or* Dupont, NEN Research Products, Boston, MA)

neotype—*change to* “type strain” if the bacterial name is in the Approved Lists or the validation lists



NEP: nuclear export protein

NERC—need not be defined (Natural Environment Research Council)

nesslerization

Nessler test

Netherlands (if used in running text without a city, use “the” or “The” before it [e.g., disease was rampant in the Netherlands]; after a city, allow “Netherlands,” “the Netherlands,” or “The Netherlands,” but be consistent)

*N*-ethylmaleimide

netilmicin

neuron (*not* neurone)

newborn

newton: N\* (derived SI unit)

New Zealand White rabbits

NF—need not be defined (National Formulary)

NF: nuclear factor

NFAT: nuclear factor of activated T cells

NF- $\kappa$ B—need not be defined

*N*-formimidoyl thienamycin—*change to* imipenem

NHE: sodium nitrogen enhancer(s)

NHS: *N*-hydroxysuccinimide *or* normal human serum *or* National Health Service (for which it need not be spelled out)

nick translated (hyphenated as unit modifier)

nick translation (never hyphenated)

nicotinamide adenine dinucleotide: NAD\*\*

nicotinamide adenine dinucleotide, oxidized: NAD<sup>+</sup>\*\*

nicotinamide adenine dinucleotide phosphate: NADP\*\*

nicotinamide adenine dinucleotide phosphate, reduced: NADPH\*\*

nicotinamide adenine dinucleotide, reduced: NADH\*\*

NIH—need not be defined (National Institutes of Health; do not spell out as part of cell line designation, e.g., NIH 3T3 cells; see Table 6.6)

ninhydrin

Nitro Blue Tetrazolium *or* nitroblue tetrazolium *or* tetrazolium salts

nitrocefin (*not* nitrocephin)

NiV: Nipah virus

NK—need not be defined (natural killer [cells])

NLS: nuclear localization signal

NKT cells—need not be defined (natural killer T cells)

nm\*: nanometer

NMDS: nonmetric multidimensional scaling

NMN: nicotinamide mononucleotide

NMWL: nominal molecular weight limit (do not allow kilodaltons with this abbreviation; may be hyphenated as a unit modifier)

NMR: nuclear magnetic resonance

*no.* *or* number(s)—in text, follow au. when a number is given but use “number” when no number is given; in bodies of tables, always use “no.”

NOAA—need not be defined (National Oceanic and Atmospheric Administration)

Noble agar

NOE-DIFF: nuclear Overhauser effect difference spectroscopy

NOESY: nuclear Overhauser effect spectroscopy

Nomarski optics

non (prefix)—solid

*non-albicans Candida* species (allow)

nonenzymatically

Nonidet P-40

NONOate—need not be explained [a compound having the chemical formula R<sup>1</sup>R<sup>3</sup>N-(NO<sup>-</sup>)-N=O, where R<sup>1</sup> and R<sup>2</sup> are alkyl groups]



nonradioactive	NSAID: nonsteroidal anti-inflammatory drug
nonsedimentable	NSERC—need not be defined (Natural Sciences and Engineering Research Council [Ottawa, Ontario, Canada])
nonsusceptible—allow in phrases like “antibiotic-nonsusceptible organism” (do not change to “non-antibiotic-susceptible organism”)	NSF—need not be defined (National Science Foundation)
nontypeable	NSS: not statistically significant
non-viridans group streptococci (allow)	NSW—need not be defined (New South Wales [Australia])
normal (concentration): N*	nt: nucleotide(s) (use only with numbers; must be introduced)
normal: <i>change to</i> “healthy” when test subjects are being compared to an infected or sick group (this does not apply to, e.g., normal mice versus macrophage-depleted mice)	NTA: nitrilotriacetic acid
Northern (analysis, blotting, hybridization, etc.)	NTD: N-terminal domain
notifiable disease—need not be explained (any disease that is required by law to be reported to government authorities)	N terminus (n.), N terminal (adj.; hyphenated as unit modifier)
NP-40—need not be defined	NTG: <i>N</i> -methyl- <i>N'</i> -nitro- <i>N</i> -nitrosoguanidine
NPD: nonparental ditype	NTHI ( <i>or</i> NTHi): nontypeable <i>Haemophilus influenzae</i>
NPHV: nonhuman primate hepatitis virus	NTP: nucleoside triphosphate
NPR: nuclear paramagnetic resonance	NTU: nephelometric turbidity unit(s)
NPV: nucleopolyhedrovirus <i>or</i> negative predictive value (the proportion of subjects with a negative test result who are correctly diagnosed)	nucleofect <i>or</i> Nucleofect—replace at first use with “transfected using nucleofection (nucleofected)” and allow thereafter [capitalize “Nucleofection” when followed by “Amaxa,” the company holding the trademark, e.g., “Nucleofection program (Amaxa)"]
4-NQO: 4-nitroquinoline-1-oxide	Nucleofector
NRCC—need not be defined (National Research Council of Canada; see Table 6.6)	nucleotidyltransferase
NRRC—need not be defined (Northern Regional Research Center; formerly Northern Regional Research Laboratory, now the National Center for Agricultural Utilization Research; do not spell out as part of strain designation and do not change NRRL designations to NRRC; see Table 6.6)	Nuclepore (company name)
NRRL—need not be defined (Northern Regional Research Laboratory; now the National Center for Agricultural Utilization Research; do not spell out as part of strain designation)	Nujol
NRSA—need not be defined (National Research Service Award)	number(s) <i>or</i> no. (see <a href="#">no.</a> )
NS: not significant	NVSL—need not be defined (National Veterinary Services Laboratory)
NS2-3 ( <i>not</i> NS2-NS3) (a pestivirus polyprotein)	nystatin
	<hr/> <b>O</b> <hr/>
	<i>o- or ortho-</i> —prefix in chemical name (either may be used)
	Ω*: ohm (derived SI unit)
	O157, O157:H7 ( <i>E. coli</i> strains; cap oh, not zero)



OAc: acetate (must be introduced)

OADC: oleic acid-albumin-dextrose-catalase

O antigen (follow au on hyphenation in unit modifiers but be consistent)

OC: open circular (never hyphenated) *or* oligochromatography  
occurrence, occurred, occurring

OCT: optical coherence tomography *or* trade name of a Tissue-Tek specimen matrix compound

o.d.: outside diameter

OD: optical density

OD<sub>260</sub>: optical density at 260 nm

ODS: octyldecyl silane (column) (same as C<sub>18</sub>)

OF: oxidation-fermentation

OFAGE: orthogonal-field-alternation gel electrophoresis

ohm: Ω\* (derived SI unit)

OLDA—*Legionella pneumophila* strain

oligo—if used as a word, *change to* “oligonucleotide”

oligo(dA)\*\*: oligodeoxyadenylic acid *or* oligodeoxyadenylate

oligo(dC)\*\*: oligodeoxycytidylic acid *or* oligodeoxycytidylate

oligo(dG)\*\*: oligodeoxyguanylic acid *or* oligodeoxyguanylate

oligo(dT)\*\*: oligodeoxythymidylic acid *or* oligodeoxythymidylate

omics (refers to a field of study in biology ending in “omics”)

Omnifluor

OMPeome: outer membrane proteome

ongoing

online

ONPG: *o*-nitrophenyl-β-D-galactopyranoside

OPC: oligodendrocyte precursor cells *or* oropharyngeal candidiasis

open circular (never hyphenated)

operator

OPLS-DA: orthogonal projections to latent structures discriminant analysis

OR: odds ratio

Orbitrap (trade name), orbitrap (an ion trap mass analyzer consisting of an outer barrel-like electrode and a coaxial inner spindle-like electrode that traps ions in an orbital motion around the spindle)

orchard grass

ord. nov.—do not spell out with organism name (new order)

ORF: open reading frame

ORFan: open reading frame with no detectable homology to other ORFs in a database

oriLyt *or* ori-Lyt—need not be defined (a lytic origin of DNA replication)

Orn—need not be defined (ornithine)

ORSA: oxacillin-resistant *Staphylococcus aureus* (not interchangeable with MRSA)

*o-* *or ortho*—prefix in chemical name (either may be used)

osM\*: osmolar (if osm is used, query if osmolar or osmole is intended; contact the author if osm is used many times)

osmol\*: osmole (do not allow Osm, even though this abbreviation is given by *Webster’s Medical Dictionary*)

OSSA: oxacillin-susceptible *Staphylococcus aureus* (not interchangeable with MSSA)

OTU (*ad hoc* unit of measure) *or* OTUs (abbreviation): operational taxonomic units (means “the thing being studied” and is often used when only a DNA sequence is available; the definition is intentionally vague)

Ouchterlony

ounce: oz\*

outer membrane protein (never hyphenated)

outgroup

overall

overlaid (*not* overlaid)

overnight



OXA-1, OXA-2, OXA-3 ( $\beta$ -lactamase designations)

oxalacetic acid

oxgall

oxidation-fermentation

oz\*: ounce

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## P

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p: partial pressure (e.g.,  $p\text{CO}_2$  [*or*  $P_{\text{CO}_2}$ ] is partial  $\text{CO}_2$  pressure)  
(must be introduced)

p\*: pico (SI prefix,  $10^{-12}$ )

*p-* or *para-* —prefix in chemical name (either may be used) (*but*, e.g., paraformaldehyde)

P\*: peta (SI prefix,  $10^{15}$ )

P\*: poise ( $10^{-1} \text{ Pa} \cdot \text{s}$ )

*P*—need not be defined (probability) (see Table 6.2)

*P~* or *~P*: prefix *or* suffix meaning phosphorylated (as in  $\text{Spo0A} \sim \text{P}$ ; must be introduced)

Pl—phage designation

P450 *or* P-450 (follow au.) (cytochrome designation)

$\phi\text{X174}$ —phage designation (others:  $\phi 6$ ,  $\phi 80$ )

$\Psi$  *or* *psi* (non-Mendelian gene of *Saccharomyces cerevisiae*)—  
*change to [psi]*

Pa\*: pascal (derived SI unit)

PA: phosphatidic acid *or* polymerase acidic (protein *or* gene)

PAA: phosphonoacetic acid

PABA: *p*-aminobenzoic acid *or* *p*-aminobenzoate (follow au.)

PAD: pulsed amperometric detection

PAF: platelet-activating factor

PAGE: polyacrylamide gel electrophoresis (need not be introduced)

PAH: *p*-aminohippuric acid *or* polycyclic aromatic hydrocarbon  
(more common, especially in AEM)

paired *t* test

PAMP: pathogen-associated molecular pattern

PANTA: polymyxin B, amphotericin B, nalidixic acid, trimethoprim, and azlocillin

PAO, PAO1—*Pseudomonas aeruginosa* strains (“oh,” *not* zero), but note that locus tags with zero (e.g., PA0123) are also used

PAP: population analysis profile

Pap smear *or* test—need not be introduced as Papanicolaou smear *or* test

papillomavirus

papovavirus

*para-* or *p-* —prefix in chemical name (either may be used) (*but*, e.g., paraformaldehyde)

paraffin

Parafilm

Paraquat—trade name for a herbicide; introduce as 1,1'-dimethyl-4,4'-bipyridinium dichloride *or* *N,N'*-dimethyl-4,4'-bipyridine and allow trade name thereafter

Parlodion

PARP: in MCB, almost always poly(ADP-ribose) polymerase, *also* procyclic acidic repetitive protein

parts per billion: ppb\*

parts per million: ppm\*

parts per thousand: ppt\*

PAS: *p*-aminosalicylic acid *or* periodic acid-Schiff stain; not to be confused with PAS domain, which requires no definition

pascal: Pa\* (derived SI unit)

Pasteur pipette

PB18—phage designation

PBL: peripheral blood lymphocyte

pBluescribe, pBluescript, pBluescript KS(-), pBluescript II KS(-), pBluescript SK(-), etc.

PBM: peripheral blood mononucleocyte



PBMC: peripheral blood mononuclear cell

PBP: penicillin-binding protein (follow au. on hyphenation; see chapter 4) (*but* PBP 1a, 1b [*or* 1A, 1B], 2, and 3, etc., are designations and need not be defined)

pBR322—plasmid designation

PBRT: PCR-based replicon typing

PBS: phosphate-buffered saline

PBS57 or PBS-57—need not be defined (an alpha-galactosylceramide analog)

PBS-T *or* PBST: phosphate-buffered saline with Tween 20

PCA: perchloric acid *or* principal-component analysis

PCC—need not be defined (Pasteur Culture Collection; see Table 6.6)

PCMB: *p*-chloromercuribenzoate

PCNA—need not be defined (protein designation)

$p\text{CO}_2$  *or*  $P_{\text{CO}_2}$  (follow au.): partial  $\text{CO}_2$  pressure

PCoA: principal-coordinate analysis

PCP: usually *Pneumocystis carinii* pneumonia, but allow as an abbreviation for *Pneumocystis* pneumonia, *Pneumocystis jirovecii* pneumonia, or *Pneumocystis jirovecii* (formerly *carinii*) pneumonia (follow au.) (see chapter 3)

PCR\*\*: polymerase chain reaction

PCS solubilizer

PD: parental ditype

$\text{PD}_{50}$ : 50% protective dose (pl.,  $\text{PD}_{50}$  *or*  $\text{PD}_{50\text{S}}$ )

PDA: peptone-dextrose agar

PDB: Protein Data Bank (need not be introduced if used only in association with accession numbers)

PDE: phosphodiesterase

PDGF: platelet-derived growth factor

*p*-distance: proportion of nucleotide sites at which the two sequences compared are different (need not be defined)

PE: phosphatidylethanolamine *or* phycoerythrin (use phycoerythrin when something is being conjugated with an antibody)

Pearson's correlation coefficient, the Pearson correlation coefficient, *or* Pearson's *r*

PEC(s): peritoneal exudate cells *or* pancreatic endocrine cells *or* photoelectrochemical cells

PEDIS: patient-elicited and -determined institutional score

PEG: polyethylene glycol

PEG 6000: polyethylene glycol 6000 (not a trade name; other numbers may be used)

PEGylate *or* pegylate (follow au.): to react polyethylene glycol with a protein to disguise its presence from the immune system (need not be defined)

PEI: polyethyleneimine *or* polyethylenimine (follow au.)

Penassay broth

penetratin *or* Penetratin (trade name for a drug, but it has become the most recognizable name for the compound AntpHD43-58; allow the generic term, but introduce it as AntpHD43[hyphen]58 at first use in the abstract and text)

Penrose drain

PENTA: Paediatric European Network for Treatment of AIDS

People's Republic of China

PEP: phosphoenolpyruvate

PEP-PTS: phosphoenolpyruvate phosphotransferase system

peptone

peptone water

percent: %\* (see chapters 2 and 9)

percent, percentage of—see chapter 2

Percoll

PerCP: peridinin chlorophyll protein

periodic acid-Schiff stain

peritrichous cell (*not* peritrichously flagellated cell; *do not use* peritrichous flagellation)

PERMANOVA: permutational multivariate analysis of variance



per mille: ‰\* (salinity; see chapter 2)

*per os*—italic

*per se*—italic

PEST—amino acid sequence, *not* an acronym

peta: P\* (SI prefix, 10<sup>15</sup>)

petri dish, plate

Petroff-Hausser counting chamber

Peyer's patches

PFA: paraformaldehyde

PFGE: pulsed-field gradient

PFGE: pulsed-field gel electrophoresis

PFU\*\*\*: plaque-forming unit(s)

*Pfu* (DNA polymerase)

PG: phosphatidylglycerol

PGE<sub>2</sub>: prostaglandin E<sub>2</sub>

pGEM-T Easy (vector; Promega)

pH—need not be defined (negative logarithm of hydrogen ion concentration; pl., pHs *or* pH values)

PHA: phytohemagglutinin *or* polyhydroxyalkanoate

phage, phages—see chapter 4; for common designations, see chapter 3

phagemid

phagocytose *or* phagocytize (follow au.)

pharmacological (*not* -logic)

phase-contrast microscopy

phasmid—phage-plasmid hybrid

PHB: poly-β-hydroxybutyrate

Phe—need not be defined (phenylalanine)

phenolphthalein

phenoxymethylpenicillin

phenylmethylsulfonyl fluoride

Philips electron microscope

φX174—phage designation (others: φ6, φ80)

phosphatidylethanolamine

phosphatidylglycerol

phosphoamino acid

phosphoenolpyruvate

phosphoribosyltransferase

PhosphorImager—Molecular Dynamics trade name, *but* phosphorimager (generic name), phosphorimage, phosphorimaging, etc.

phosphorus (n.), phosphorous (adj.)

phosphorylase *b*

phosphospecific, phospho-specific, *or* phospho specific (the last is hyphenated as unit modifier)

photo- (prefix)—solid

photooxidation, photooxidize

PHS—need not be defined (Public Health Service)

Phytone

π—need not be defined (ratio of the circumference of a circle to its diameter, ~3.14159)

p.i. (*not* PI): postinfection *or* postinoculation

pI—need not be defined (isoelectric point)

P<sub>i</sub>—need not be defined (inorganic phosphate *or* inorganic orthophosphate *or* orthophosphate)

<sup>32</sup>P<sub>i</sub>—need not be defined

PI: performance index *or* phosphatidylinositol (e.g., in PI 3-kinase) *or* propidium iodide (stain) *or* principal investigator (usually in Acknowledgments) *or* protease inhibitor

PICRUSt—need not be defined because it is a software package (phylogenetic investigation of communities by reconstruction of unobserved states)

PI3K *or* PI3-K: phosphatidylinositol 3-kinase



pico: p\* (SI prefix, 10<sup>-12</sup>)

picorna-like virus

picornavirus

piliated (*not* pilated)

pilus (pl., pili)—structure made of protein subunits called pilin

pint: pt\*

PIPES: piperazine-*N,N'*-bis(2-ethanesulfonic acid) (see chapter 6, “Chemical names and buffers”)

pipette (*not* pipet)

pK—need not be defined

pK<sub>a</sub>—need not be defined

PKA: protein kinase A

PKC: protein kinase C (also PKC  $\alpha$  or PKC- $\alpha$  or PKC $\alpha$ , etc.; may treat as a class [see chapter 6])

P1 *kc*—phage designation

PKS: polyketide synthase

*p*<sub>L</sub>—phage lambda promoter

PLA<sub>2</sub>, PLA<sub>2</sub>: phospholipase A<sub>2</sub>, A<sub>2</sub>

planchet

plankton (s. or pl.), planktons (pl.)

plaque-forming unit(s): PFU\*\*

PLC: phospholipase C (also PLC- $\gamma$ , PLC- $\gamma$ 2, etc.; may treat as a class [see chapter 6])

pleiotropy (*not* pleiotrophy)

pleomorphic

Plexiglas

pm\*: picometer

p.m.\*: post meridiem

PM2—phage designation

PMA: phorbol myristate acetate

PMF: proton motive force

pMLST: plasmid multilocus sequence typing

PMN: polymorphonuclear leukocyte

PMNL: polymorphonuclear leukocyte

PMSF: phenylmethylsulfonyl fluoride

pneumococcus (s.), pneumococci (pl.)

PNGase F: peptide-*N*-glycosidase F

PNPase: polynucleotide phosphorylase

PNPG: *p*-nitrophenyl- $\beta$ -D-glucoside

p.o. (*not* PO): oral(ly) (*per os*) (may be used for both forms with only one introduction)

pO<sub>2</sub> or P<sub>O<sub>2</sub></sub> (follow au.): partial O<sub>2</sub> pressure

POD: probability of detection

poise: P\*

*poky* mutation (*Neurospora crassa*)

Pol: polymerase

poly- (prefix)—solid

poly(A)\*\*: polyadenylic acid *or* polyadenylate

poly(A)<sup>+</sup>—need not be defined (polyadenylated *or* polyadenylic acid containing [follow au.; when in doubt, query])

poly(A)<sup>-</sup>—need not be defined (nonpolyadenylated *or* nonpolyadenylic acid containing [follow au.; when in doubt, query])

Polybrene

poly(C)\*\*: polycytidylic acid *or* polycytidylate

poly(dA-dT)\*\*: polydeoxyadenylic acid-polydeoxythymidylic acid *or* polydeoxyadenylate-polydeoxythymidylate *or* poly(deoxyadenylic acid-deoxythymidylic acid)

polyethylene glycol

polyethyleneimine *or* polyethylenimine (follow au.)

poly(G)\*\*: polyguanylic acid *or* polyguanylate

polyhedrin (crystalline, virus-specific protein that makes up a polyhedron)



polyhedron (pl. polyhedra; large inclusion bodies formed in the cells of insects infected with certain viruses)

poly(I)\*\*: polyinosinic acid

polymyxin B

polyomavirus

polyP *or* poly P: polyphosphate [note that this is different from abbreviations like poly(C)]

polythene—*change to* polyethylene

poly(U)\*\*: polyuridylic acid *or* polyuridylylate

polyvinyl chloride

polyvinylidene difluoride

polyvinylpyrrolidone

POPC: 1-palmitoyl-2-oleoyl-*sn*-glycero-3-phosphocholine

POPE: 1-hexadecanoyl-2-(9Z-octadecenoyl)-*sn*-glycero-3-phosphoethanolamine

POPOP: 1,4-bis(5-phenyloxazolyl)benzene *or* 1,4-bis-[2]-(5-phenyloxazolyl)benzene (follow au.) (see chapter 6, “Chemical names and buffers”)

POPS: 1-hexadecanoyl-2-(9Z-octadecenoyl)-*sn*-glycero-3-phospho-L-serine

Port-A-Cul

postinfection

postinoculation

postirradiation

post meridiem: p.m.\*

postmortem

posttest

posttranslational

posttreatment

potato dextrose agar

Potter-Elvehjem homogenizer

pound: lb\*

pounds per square inch: lb/in<sup>2</sup>\*

pour plates, pour plate technique (never hyphenated)

PPAR: peroxisome proliferator-activated receptor

ppb\*: parts per billion

ppbv\*: parts per billion by volume

PPD: purified protein derivative

PP<sub>i</sub>—need not be defined (inorganic pyrophosphate *or* pyrophosphate)

<sup>32</sup>PP<sub>i</sub>

PPLO: pleuropneumonia-like organism (mycoplasmas)

PPLO agar base—do not spell out

ppm\*: parts per million

ppmv\*: parts per million by volume

PPNG: penicillinase-producing *Neisseria gonorrhoeae*

PPO: 2,5-diphenyloxazole

ppt\*: parts per thousand

PPV: positive predictive value (the proportion of subjects with a positive test result who are correctly diagnosed)

pp60<sup>v-src</sup>—need not be defined (protein coded for by v-*src*)

PQN: probabilistic quotient normalization

*p*<sub>R</sub>—phage lambda promoter

PR—need not be defined (protease of retroviruses; follow au. on use of “protein” after it)

PRC: People’s Republic of China

predominate—may be used in the sense “predominant” (synonymous adjectives per *Webster’s*)

preexist, preexisting

prepn: preparation (tables only)

pre-S—need not be defined; follow au. on use of “protein” after it

primary care (follow au. on hyphenation in unit modifiers but be consistent)



principal, principle—see chapter 4

pristane

Pro—need not be defined (proline)

probenecid

probiotics—live microorganisms, which when administered in adequate amounts, confer a health benefit on the host (need not be defined)

procaryote *or* prokaryote (follow au.)

processive, processivity—*do not change*

Prodigal—*Prokaryotic Dynamic Programming Genefinding Algorithm* (need not be explained)

prodrug—combination of drug plus chemical that aids absorption (no hyphen)

proflavine

progeny (as a collective noun, can refer to more than one thing)

prokaryote *or* procaryote (follow au.)

promoter (*not* promotor)

pronase

prophage

prostaglandin E<sub>2</sub>

proteinase K *or* protease K

protomer

proton motive force

proto-oncogene

protozoan (s.), protozoa *or* protozoans (pl.)

Providence group

PRR: pattern recognition receptor

pruritus (*not* pruritis)

Prussian blue

PS: polysaccharide *or* phosphatidylserine

PSE-1, PSE-2, PSE-3, PSE-4 (β-lactamase designations)

Pseudosel

psi—*change to lb/in<sup>2</sup>\**

Ψ *or* psi (non-Mendelian gene of *Saccharomyces cerevisiae*)—*change to [psi]*

psiM2 (phage)

pt\*: pint

PT: pertussis toxin

PTA: phosphotungstic acid *or* probability of target attainment

PTFE: polytetrafluoroethylene

PTR: proton transfer dissociation

PTS: phosphotransferase system

Pu: purine (need not be defined when used as part of a sequence)

PU: proteolytic unit(s)

pull down (v.), pulldown (n., adj.)

pulse-label, pulse-labeling, pulse-labeled, pulse-chase (always hyphenated)

purple nonsulfur bacteria

pv.—do not spell out with organism name (pathovar)

PVDF: polyvinylidene difluoride

PVL: Panton-Valentine leukocidin (*or* leucocidin)

PVP: polyvinylpyrrolidone

PWM: pokeweed mitogen

Py: pyrimidine (need not be defined when used as part of a sequence) *or* polyomavirus

pyocin

PYR (test): pyrrolidonyl arylamidase

Pyrex

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**Q**

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QAE: quaternary aminoethyl



QD *or* q.d. (follow au.): once a day

Q-ESS

q8h: every 8 h

Qiagen (company name)

QIAquick

QID *or* q.i.d. (follow au.): four times a day

Q(O<sub>2</sub>): oxygen quotient

qPCR: quantitative PCR *or* quantitative real-time PCR

qRT-PCR: reverse transcription-quantitative PCR *or* reverse transcriptase quantitative PCR (follow au.) (see also [RT-qPCR](#))

qt\*: quart

QT: quantitative

QT interval—"QT" need not be defined

QTOF MS *or* Q-TOF MS: quadrupole time of flight mass spectrometry

quick-freeze, quick-frozen (always hyphenated)

QuikChange (Stratagene trade name)

quorum sensing (follow au. on hyphenation in unit modifiers but be consistent)

*q* value: false-discovery rate

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## R

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r: recombinant *or* rat (use only as part of a larger abbreviation)

r—resistance (lowercase roman superscript; e.g., Str<sup>r</sup>)

*r*—need not be defined (correlation coefficient; see Table 6.2)

R\*: roentgen

*R*—need not be defined (coefficient of multiple correlation; see Table 6.2)

ρ (rho)—need not be defined (density; expressed in g/cm<sup>3</sup> *or* g/ml [follow au.]) *or* a rank correlation coefficient in "Spearman's ρ"

ρ *or* rho—non-Mendelian gene of *Saccharomyces cerevisiae* or *Escherichia coli* transcription termination factor; if the *S. cerevisiae* gene is obviously meant, *change to* [*rho*]; otherwise, follow au. re italic or roman and initial capital

rabies virus

*rac*-: racemic

RACE: rapid amplification of cDNA ends

rad(s)—not an abbreviation (unit of radiation); spell out prefixes (e.g., kilorads, *not* krads)

rad\*: radian (SI unit)

radian: rad\* (SI unit)

radioautography *or* autoradiography (follow au.)

Raji (cell line)

rank sum test

RANTES—need not be defined

RAPD: random(ly) amplified polymorphic DNA

RAR: retinoic acid receptor

rare cutting—see chapter 4

rA:rU: riboadenylate:ribouridylylate

rATP—need not be defined

RAV: Rous-associated virus

RAV-0: Rous-associated virus-0

RAW 264.7—cell line designation

r<sub>B</sub><sup>+</sup> m<sub>B</sub><sup>+</sup> *or* r<sub>B</sub><sup>-</sup> m<sub>B</sub><sup>-</sup>—presence and/or absence (+/-) of the restriction and modification genes (used in genotypes)

Rb: retinoblastoma *or* retinoblastoma protein (follow au.) (allow RB if au. is consistent)

RB: reticulate body *or* retinoblastoma protein

RBC: erythrocyte *or* red blood cell

RBS: ribosome binding site (follow au. on hyphenation in unit modifier)

RCF *or* rcf: relative centrifugal force



- rdar: red, dry, and rough morphotype for biofilm behavior (e.g., of *S. Typhimurium*)
- RDE: receptor-destroying enzyme
- rDNA: *change to* rRNA genes where prokaryotes are being discussed; with eukaryotes, allow after introduction as ribosomal DNA (see chapter 4)
- RDP—need not be defined (Ribosomal Database Project)
- REA: restriction endonuclease analysis *or* restriction endonuclease fragment analysis
- read-through *or* readthrough (follow au.) (n.), read through (v.)
- reflexed (intransitive verb)—acceptable in the field of infectious disease serology (e.g., “samples were reflexed to additional testing”)
- RefSeq—need not be defined (NCBI reference sequence database)
- regime, regimen—a systematic plan (as of diet, therapy, or medication) especially when designed to improve and maintain the health of a patient
- Reiter (*or* Reiter’s) syndrome
- renilla (*or* *Renilla*) luciferase
- Renografin
- reovirus
- REP: repetitive extragenic palindromic
- repeated-measures data
- replica plated (hyphenated as unit modifier), replica plating (never hyphenated)
- RES: reticuloendothelial system
- retrovirus (*not* retravirus)
- reversed-phase *or* reverse-phase HPLC (see [HPLC](#)) (follow au.)
- reverse transcriptase (never hyphenated)
- reverse transcription-PCR (*but* reverse transcriptase PCR)
- revolutions per minute: rpm\*
- RF: replicative form (hyphenated as unit modifier) *or* rheumatoid factor
- $R_{\text{free}}$ —need not be defined (used in refinement statistics [see Fig. 9.6])
- $R_f$ —need not be defined (retardation factor; pl.,  $R_s$  *or*  $R_f$  values)
- RFLP: restriction fragment length polymorphism
- rH—need not be defined (relative humidity)
- rhizosphere soil—*change to* rhizosphere (since it is defined as “the soil that surrounds and is influenced by the roots of a plant”)
- $\rho$  (rho)—need not be defined (density; expressed in g/cm<sup>3</sup> *or* g/ml [follow au.]) *or* a rank correlation coefficient in “Spearman’s  $\rho$ ”
- rho *or*  $\rho$ —non-Mendelian gene of *Saccharomyces cerevisiae* or *Escherichia coli* transcription termination factor; if the *S. cerevisiae* gene is obviously meant, *change to* [*rho*]; otherwise, follow au. with regard to italics or roman and initial capital
- rHuIFN: recombinant human interferon
- RIA: radioimmunoassay
- Rib—need not be defined (ribose)
- ribonuclease: RNase\*\*
- ribonucleic acid: RNA\*\*
- ribosomal DNA: *change to* rRNA genes where prokaryotes are being discussed but allow with eukaryotes (see chapter 4)
- ribosomal ribonucleic acid: rRNA\*\*
- ribosylthymine 5'-diphosphate *or* ribosylthymine diphosphate: TDP\*\*
- ribosylthymine 5'-monophosphate *or* ribosylthymine monophosphate: TMP\*\*
- ribosylthymine 5'-triphosphate *or* ribosylthymine triphosphate: TTP\*\*
- RIDT: rapid influenza detection test
- rifampicin—*change to* rifampin
- rIFN: recombinant interferon
- rIL-2: recombinant interleukin-2 (see [IL](#))
- Ringer (*or* Ringer’s) solution
- RIPA: radioimmunoprecipitation assay



RLU: relative light units

RLV: Rauscher leukemia virus

$r^+ m^+$  or  $r_K^- m_K^+$ —presence and/or absence (+/-) of the restriction and modification genes (used in genotypes)

$R_{max}$ —need not be defined (expressed as, e.g., micromoles exchanged per liter per minute [equivalent to  $\mu\text{M}/\text{min}$ ])

$R_{meas}$ —need not be defined (used in refinement statistics [see Fig. 9.6])

RMS: root mean square

RMSD: root mean square deviation

rMuIFN or rmIFN (follow au.): recombinant murine interferon

R-MuLV: Rauscher murine leukemia virus

RNA<sup>\*\*</sup>: ribonucleic acid

RNAi: RNA interference

RNAP: RNA polymerase

RNase<sup>\*\*</sup> (*not* RNase or RNAase): ribonuclease (pl., RNases)

RNA-Seq or RNA-seq: transcriptome sequencing or whole-transcriptome shotgun sequencing or high-throughput RNA sequencing (if the author does not specify the type of sequencing, use “transcriptome sequencing” and query)

RNase T<sub>1</sub> (*not* RNase T1, *but* S1 nuclease)

RNasin

RNeasy

RNP—need not be defined (ribonucleoprotein or ribonucleoprotein particle)

Ro 13-9004—code name for a drug

ROC: receiver operating characteristic

RODAC—trade name for plates

ROESY: rotating-frame nuclear Overhauser effect spectroscopy

roentgen: R\*

roentgenogram, roentgenograph

$R_{0t}$ —need not be defined (subscript is a zero, not “oh”)

rotavirus

Rotazyme

Rous sarcoma virus

RPA: RNase protection assay or recombinase polymerase amplification

RPC: reversed-phase or reverse-phase (follow au.) column (*or* chromatography)

RPKM: reads per kilobase per million

rpm\*: revolutions per minute (for centrifugation, see chapter 2)

RPMI 1640, RPMI medium, or RPMI 1640 medium (follow au.; do not write out RPMI [Roswell Park Memorial Institute] with medium designation)

rRNA<sup>\*\*</sup>: ribosomal ribonucleic acid (pl., rRNAs)

RSB: reticulocyte standard buffer

RSE: relative standard error

RSLC: rapid-separation liquid chromatography

*r*-strategist

RSV: Rous sarcoma virus or respiratory syncytial virus

$R_{0t}$ —need not be defined (subscript is a zero, not “oh”)

RT: reverse transcriptase or reverse transcription or room temperature or real time

RTD: routine test dilution

RT-PCR: reverse transcriptase PCR (never hyphenated) or reverse transcription-PCR (always hyphenated) or real-time PCR

RT-qPCR: reverse transcriptase quantitative PCR (never hyphenated) or reverse transcription-quantitative PCR (always hyphenated) or real-time quantitative PCR

rubber policeman

RubisCO or RuBisCO—need not be defined (ribulose 1,5-bisphosphate carboxylase/oxygenase)

runoff (n., adj.), run off (v.)

run-on (n., adj.), run on (v.)

RUO: research use only



$R_{\text{work}}$ —need not be defined (used in refinement statistics [see Fig. 9.6])

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## S

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s: soluble *or* secretory (use only as part of a larger abbreviation)

s\*: second (SI unit) (time)

s—sensitivity (lowercase roman superscript; e.g., Str<sup>s</sup>)

$s$ —need not be defined (sedimentation coefficient; see chapter 2)

$s^0$ —need not be defined (sedimentation coefficient at zero concentration; superscript is a zero, not “oh”)

$s^2$ —need not be defined (sample variance; see Table 6.2)

$s_{20,w}$ —need not be defined (sedimentation coefficient corrected to 20°C in water)

S—need not be defined; follow au. on use of “protein” after it

S—need not be defined (Svedberg unit of sedimentation coefficient; see chapter 2)

S\*: siemens (derived SI unit)

$S^0$ —need not be defined (elemental sulfur) (superscript is a zero, not “oh”)

30S-50S (couple, not a range)

[<sup>35</sup>S]methionine-cysteine

$\sigma$ ,  $\sigma^2$ —need not be defined (see Table 6.2)

$\sigma^{70}$ , sigma 70, sigma-70, etc. (follow au.)

SAA: serum amyloid A protein

Sabouraud (*or* Sabouraud’s) agar (*or* medium), Sabouraud (*or* Sabouraud’s) dextrose agar

S-adenosylmethionine

SAGA—need not be defined

salmonella-shigella agar

salt water (n.), saltwater (adj.)

SAM: S-adenosylmethionine *or* significance analysis of microarrays

*Sambucus nigra* lectin

SAPK: stress-activated protein kinase

SAR: systemic acquired resistance

Saran *or* saran (follow au.; *but* Saran Wrap)

sarcosyl

Sarkosyl

SARS: severe acute respiratory syndrome

SARS-CoV: severe acute respiratory syndrome coronavirus

SAT: systemic acquired tolerance

SAXS: small-angle X-ray scattering

s.c. (*not* SC): subcutaneous(ly) (may be used for both forms with only one introduction)

SC: synthetic complete (medium)

Scatchard analysis

SCC*mec*: staphylococcal cassette chromosome *mec* element, which can have various types, for example, staphylococcal cassette chromosome *mec* type IV (SCC*mec* IV)

Sceptor

schlieren

shmoo—*change to* shmoo

*scid*, SCID—need not be defined (both forms may be used within a manuscript; follow au.)

screw cap, screw-cap tubes (*not* screw-capped tubes)

scFv: single-chain variable fragment (the fragment is variable; hyphenate as single-chain variable-fragment in a unit modifier)

scRNA: small cytoplasmic RNA

SD: standard deviation (use abbreviation in tables; see Table 6.2) *or* Shine-Dalgarno (sequence)

SDA: Sabouraud (*or* Sabouraud’s) dextrose agar

SDS: sodium dodecyl sulfate (need not be introduced)

SDS-PAGE: sodium dodecyl sulfate-polyacrylamide gel electrophoresis (need not be introduced)



SE: standard error (use abbreviation in tables; see Table 6.2)

SEA—need not be defined (Science and Education Administration [U.S. Department of Agriculture; many locations])

SeaKem

SeaPlaque

SEATO—need not be defined (Southeast Asia Treaty Organization)

seawater

second: s\* (SI unit) (time)

secondary care (follow au. on hyphenation in unit modifiers but be consistent)

seed borne (hyphenated as unit modifier)

SEER: Surveillance, Epidemiology, and End Results (program)

selenite *or* Selenite (follow au.; *but* Selenite-F)

SELEX: systematic evolution of ligands by exponential enrichment

SEM: standard error of the mean (use abbreviation in tables) *or* scanning electron microscopy

Semliki Forest virus

Sendai virus

Sensi-Disc

Sensititre

*sensu lato*—italic

*sensu stricto*—italic

Sephacryl

Sephadex, Sephadex G-25

Sepharose

septage (the liquid and solid material pumped from a septic tank, cesspool, or other waste treatment source)

Septi-Chek

sequela (s.), sequelae (pl.)

Sequenase

Ser—need not be defined (serine)

serine/threonine kinase *or* serine-threonine kinase (follow au.)

serogroup, serotype, serovar (follow au.)

SeroSTAT Staph

serotonin

serum (s.), sera (pl.)

setup (n.), set up (v.)

SeV: Sendai virus

severalfold (see [fold](#))

SFFU: spleen focus-forming units

SFFV: spleen focus-forming virus

SFU: spot-forming units

SFV: Semliki Forest virus

sGFP: synthetic green fluorescent protein

SGOT: serum glutamic oxalacetic (*or* oxaloacetic) transaminase

SGPT: serum glutamic pyruvic transaminase

SH—need not be defined (sulfhydryl)

SH2: Src homology 2 (domain)

shelf life

SHERLOCK *or* Sherlock: specific high-sensitivity enzymatic reporter unlocking

Shiga toxin, Shiga-like toxin (see also [Stx](#))

SHIV: simian-human immunodeficiency virus (a virus that combines parts of the HIV and SIV genomes)

shmoo—yeast cell form (n. or v.); shmooing (a form of mating in yeasts)

shRNA: short hairpin RNA *or* small hairpin RNA

shutdown (n.), shut down (v.)

shutoff (n.), shut off (v.)



SI: *Système International d'Unités* (International System of Units; see chapter 2) *or* stimulation index

side arm (n.), sidearm (adj.)

side chain (never hyphenated)

side effect

siemens: S\* (derived SI unit)

sievert: Sv\* (derived SI unit)

S-IgA: secretory immunoglobulin A

sIgA: secretory (*or* soluble) immunoglobulin A

$\sigma^{70}$ , sigma 70, sigma-70, etc. (follow au.)

signaled, signaling (*not* signalled, signalling)

silica gel (*but* Silica Gel G, H)

Simmons citrate

SIMPER: similarity percentage (analysis)

SIMS: secondary-ion mass spectrometry

Sindbis virus

single mutant—a mutant with one mutation (not hyphenated as unit modifier)

single recombinant—same as single-recombination mutant (not hyphenated as unit modifier)

single strand (n.), single strand *or* single stranded (adj.; hyphenated as unit modifier)

single-strand breaks

Sin Nombre virus

siRNA: small interfering RNA

SIV: simian immunodeficiency virus

skillful (*not* skilful)

skim milk *or* skimmed milk

S layer *or* S-layer (follow au., *but* always hyphenated as unit modifier)

SLE: systemic lupus erythematosus

slot blot (never hyphenated)

SLT: Shiga-like toxin

SLT-II: Shiga-like toxin II

small t antigen *or* small-t antigen (follow au.)

[<sup>35</sup>S]methionine-cysteine, *not* [<sup>35</sup>S]methionine/cysteine

smFRET: single-molecule fluorescence resonance energy transfer

*sn*—need not be defined (stereospecific number)

snap-freeze, snap-frozen

snoRNA—need not be defined (small nucleolar RNA)

SNP: *usually* single nucleotide polymorphism (follow au. on hyphen in unit modifier) (*less often*, sodium nitroprusside)

snRNA—need not be defined (small nuclear RNA)

snRNP—need not be defined (small nuclear ribonucleoprotein *or* small nuclear ribonucleoprotein particle)

SNV: Sin Nombre virus *or* single nucleotide variant (*or* variation)

S1 nuclease *or* nuclease S1 (follow au.; one, not “e1” [*but* RNase T<sub>1</sub>])

sodium dodecyl sulfate-polyacrylamide gel electrophoresis (see chapter 2, “Mixtures”)

SOE PCR: splicing by overhang extension PCR

soft tissue (never hyphenated)

soilborne

SOLiD: sequencing by oligonucleotide ligation and detection

sonicate (n.), sonicate (v.), -cated, -cating

sonication

sonicator

sonification—*change to* sonication and query

Sonifier

Sorvall

SOS (functions, response, etc.)—need not be defined

Southern (analysis, blotting, hybridization, etc.)



- Southwestern (analysis, blotting, hybridization, etc.)
- sp. —need not be spelled out with organism name (species [s.]):  
*Pseudomonas* sp. strain B12, a *Pseudomonas* sp.
- SP—phage designation
- sp act: specific activity (tables only)
- Spearman's rank correlation coefficient *or* the Spearman rank correlation coefficient (allow Spearman's  $\rho$ ; not necessary to change to Spearman's  $r$ )
- speciate, speciation—see chapter 4
- species (s. *or* pl.)
- specific pathogen free (use two hyphens as unit modifier)
- Spectronic 20 colorimeter
- spectrophotometer
- SPF: specific pathogen free (use two hyphens as unit modifier)
- SPG *or* SPGA: sucrose-phosphate-glutamic acid (medium)
- sp gr: specific gravity (tables only)
- SPgV: simian pegivirus
- SPI-1 *or* SPI1: *Salmonella* pathogenicity island 1
- sp. nov.—do not spell out with organism name (new species)
- SPO1 (*Bacillus subtilis*), SPO2—phage designations
- spo0A*, *spoII*, etc.—*Bacillus subtilis* gene designations (zero, *not* cap “oh”)
- Spo0A~P: phosphorylated Spo0A
- sporeformer
- spore forming (hyphenated as unit modifier)
- spp.—need not be spelled out with organism name (species [pl.])
- Sprague-Dawley
- sr\*: steradian (SI unit)
- SR: Schmidt-Ruppin (strain of Rous sarcoma virus; must be introduced)
- SRBC: sheep red blood cell *or* sheep erythrocyte
- sRNA: small RNA (a noncoding RNA; designations for this type of RNA are like protein designations, e.g., RprA, not like genes)
- ss: single stranded (hyphenated as unit modifier)
- SS: salmonella-shigella (agar, medium) *or* sum of squares
- SSC—at first use, add “(1× SSC is 0.15 M NaCl plus 0.015 M sodium citrate)”
- 1× SSC (*but* ×5,000 magnification)
- ssp.—*change to* subsp.
- SSOP(s): sanitation standard operating procedures
- SSPE—at first use, add “(1× SSPE is 0.18 M NaCl, 10 mM NaH<sub>2</sub>PO<sub>4</sub>, and 1 mM EDTA [pH 7.7])” (follow au. if another formulation is used) *or* subacute sclerosing panencephalitis
- SSU: small subunit (hyphenate as a unit modifier)
- ST: heat-stable enterotoxin
- stabilate
- Staph-Ident
- Start—yeast cell cycle checkpoint (note initial capital) (if START is used many times throughout, consult the production editor; otherwise, change START to Start)
- stat.*—need not be defined (abbreviation of Latin *statim* [immediately])
- stationary phase (hyphenated as unit modifier)
- STD: sexually transmitted disease *or* saturation transfer difference (NMR method)
- steady state (hyphenated as unit modifier)
- STEC: Shiga toxin-producing *Escherichia coli* *or* Shiga-toxigenic *Escherichia coli*
- STED: stimulated emission depletion (microscope)
- Steers replicator
- stem-loop
- stepwise
- steradian: sr\* (SI unit)
- sterile filtered (do not change to sterilely filtered)



StiQ sampler

stoichiometry

stomacher

Strep-tag II (trade name)

Streptex

Streptosel

Student's *t* test *or* the Student *t* test

Stx—protein designation for Shiga toxin; the *Shigella dysenteriae* gene designation is *stx*; the *Escherichia coli* gene designations are *stx*<sub>1</sub>, *stx*<sub>2</sub>, *stx*<sub>2c</sub>, and *stx*<sub>2e</sub>, which encode, respectively, Stx1, Stx2, Stx2c, and Stx2e

SU—need not be defined (surface protein of retroviruses; follow au. on use of “protein” after it)

sub- (prefix)—solid

subsp.—do not spell out with organism name (subspecies)

suc d' *Helix pomatia*

sulfur, sulfate (*not* sulphur, sulphate)

sumoylated *or* SUMOylated, sumoylation *or* SUMOylation, etc. (follow au.)

supernate (n.)—*change to* supernatant *or* supernatant fluid

Sv\*: sievert (derived SI unit)

SV40: simian virus 40

sweet gum *or* sweetgum (follow au.)

Swi/Snf *or* SWI/SNF—need not be defined

Swiss-Prot (curated protein sequence database)

Swiss Webster mice

SW50 rotor

Sybr green *or* SYBR green (follow au.)

syn.—allow without introduction as an abbreviation for “synonym” in phrases like “*Leishmania infantum* (syn., *Leishmania chagasi*)”

syncytium-forming (*not* syncytia-forming) virus

Synercid—brand name for quinupristin-dalfopristin

syngeneic (*not* syngenic)

synthesize (*not* synthesise)

syphilis

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## T

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*t*—need not be defined (see Table 6.2)

*t*<sub>1/2</sub>: half-life (see Table 6.3)

*t*<sub>1/2α</sub>: half-life at α phase (see Table 6.3)

*t*<sub>1/2β</sub>: half-life at β phase (see Table 6.3)

T\*: tera (SI prefix, 10<sup>12</sup>)

T\*: tesla (derived SI unit)

T—need not be defined (thymine *or* ribosylthymine *or* threonine)

T<sub>1</sub> (RNase; *but* S1 nuclease)

T2, T4, T7—phage designations

3T3—if it is clear which is meant, *change to* BALB/3T3 *or* NIH 3T3 and query; if not, just query (*or* contact the author if it occurs many times in a paper)

2,4,5-T: 2,4,5-trichlorophenoxyacetic acid

*T or t* (follow au.): time

T<sub>0</sub>, T<sub>2</sub>, etc.: 0, 2, etc., hours after end of log-phase growth

tabletop (n. *or* adj.)

TAE: Tris-acetate-EDTA

Tag, T-ag, TAG, *or* T-Ag (follow au.): T antigen

TAM: Tyro3/Axl/Mer (receptor tyrosine kinases)

TAMRA: 6-carboxytetramethylrhodamine

T antigen—need not be defined (tumor antigen; sometimes T for large tumor antigen and t for small tumor antigen)

tap water

Taq (DNA polymerase)



TaqMan

TATLOCK—*Legionella micdadei* or *L. pittsburghensis* strain

Taxo

taxol—*change to* paclitaxel (Taxol; Bristol-Myers Squibb) if it is clear that the brand name was meant; if Bristol-Myers Squibb (or BMS) is not mentioned as the supplier, use “paclitaxel (originally named taxol)” at the first occurrence in the abstract and text. Also add an author query explaining why the change was made (e.g., “ASM policy requires the use of generic, not trade, names of drugs, and Taxol is now a Bristol-Myers Squibb brand.”).

taxon (s.), taxa (pl.)

TBAB: tryptose blood agar base

TBE: Tris-borate-EDTA (buffer)

T-bet—need not be defined

tBoc or t-BOC (follow au.): *tert*-butoxycarbonyl

TBP: TATA-binding protein (follow au. on hyphenation of spelled-out form)

TBS: Tris-buffered saline

TBST: Tris-buffered saline with Tween 20

3TC: lamivudine

TCA: trichloroacetic acid (e.g., TCA-precipitable counts) or tricarboxylic acid (cycle) (query author)

T cell (follow au. on hyphenation when used as a unit modifier, but be consistent)

TCID: tissue culture infective dose

TCID<sub>50</sub>: 50% tissue culture infective dose (pl., TCID<sub>50</sub> or TCID<sub>50</sub>S)

TCR: T-cell (or T cell) receptor

TDM: therapeutic-drug monitoring

T4 (not T<sub>4</sub>) DNA ligase (phage T4-specific enzyme)

tDNA or T-DNA: transfer DNA

TDP\*\**: ribosylthymine 5'-diphosphate or ribosylthymine diphosphate*

TdR or dThd (follow au.): thymidine

TDx

TE: Tris-EDTA (buffer)

TEAE-cellulose: triethylaminoethyl cellulose

technique (*not* technic)

Teflon

TEM: transmission electron microscopy

TEM-1, TEM-2, TEM-3 (β-lactamase designations)

TEMED: *N,N,N',N'*-tetramethylethylenediamine

temp: temperature (tables only)

temporal temperature gradient gel electrophoresis

Ten Broeck

tera: T\* (SI prefix, 10<sup>12</sup>)

Tergitol, Tergitol NP-40

TERT: telomerase reverse transcriptase

tertiary care (follow au. on hyphenation in unit modifiers)

TES: *N*-tris(hydroxymethyl)methyl-2-aminoethanesulfonic acid (see chapter 6, “Chemical names and buffers”)

tesla: T\* (derived SI unit)

TEV: tobacco etch virus

T-even phages

Texas Red

TFA: trifluoroacetic acid

TGF, TGF-β, TGF-β1, etc.: transforming growth factor, transforming growth factor β, transforming growth factor β1, etc.

Th (or TH or T<sub>h</sub>), Th1 (or TH1 or T<sub>h</sub>1 or T<sub>H</sub>1)—need not be defined (T helper)

Th\*: thomson, a unit of mass-to-charge ratios (used in mass spectrometry)

that, which—see chapter 4

Thd: ribosylthymine



THF: tetrahydrofuran

thiamine

thimerosal

thin-layer chromatography

thioglycolate (*not* thioglycollate)

Thiol broth

thiostrepton

Thiotone

Third World—*change to* developing countries

Thr—need not be defined (threonine)

THY (medium): Todd-Hewitt broth supplemented with yeast extract

thymidine 5'-diphosphate: dTDP\*\*

thymidine 5'-monophosphate: dTMP\*\*

thymidine 5'-triphosphate: dTTP\*\*

thyroxine

TID *or* t.i.d. (follow au.): three times a day

TIGR: the Institute for Genomic Research (now the J. Craig Venter Institute; if an author uses [www.tigr.org](http://www.tigr.org) as the URL for TIGR, change it to <http://www.jcvi.org/>)

time-consuming (always hyphenated)

time course experiment (never hyphenated)

time-kill study (always hyphenated)

time-lapse (adj.; always hyphenated)

time zero *or* zero time (follow au.; *not* time 0 *or* 0 time)

Ti plasmid

TIRF: total internal-reflection fluorescence

Ti rotor (often 10 × 10 Ti rotor; 50 Ti rotor)

titer (n.)—if used as verb, see chapter 4

TK: thymidine kinase

$T_{lag}$ : lag time *or* the delay between the time of dosing and the time of the appearance of the drug concentration in the sampling compartment

TLC: thin-layer chromatography (-ic)

TLCK: *N* $\alpha$ -*p*-tosyl-L-lysine chloromethyl ketone (see chapter 6, “Chemical names and buffers”)

T4 ligase

TLR: Toll-like receptor

$T_m$ : melting (*or* midpoint) temperature; thermal denaturation (see chapter 2)

TM—need not be defined (transmembrane protein of retroviruses; follow au. on use of “protein” after it)

$T_{max}$ : time to maximum concentration of drug in serum (see Table 6.3)

% $T_{MIC}$ : cumulative percentage of a 24-h period that the drug concentration exceeds the MIC under steady-state pharmacokinetic conditions (expressed as a percentage of the dosing interval, unlike  $T_{MIC}$ , which is expressed in hours)

TMP\*\*: ribosylthymine 5'-monophosphate *or* ribosylthymine monophosphate

TMP-SMX (*not* TMP/SMX): trimethoprim-sulfamethoxazole (a combination, *not* “TMP or SMX”)

tmRNA: transfer-messenger RNA

TMS: trimethylsilyl *or* tetramethylsilane

TMV: tobacco mosaic virus

Tn5—bacterial transposon designation (note italic numeral)

TNF, TNF- $\alpha$ : tumor necrosis factor, tumor necrosis factor alpha

TNT—need not be defined (reticulocyte assay from Promega)

TOCSY: total correlation spectroscopy

Todd-Hewitt broth

toluidine blue

TOP10 cells

TOPO TA Cloning kit

torr (a unit of pressure, 1 torr =  $1.333 \times 10^2$  Pa)



TPA: tetradecanoyl phorbol acetate *or* 12-*O*-tetradecanoylphorbol-13-acetate (follow au.)

TPase: tryptophanase

TPCK: tosylsulfonyl phenylalanyl chloromethyl ketone, L-1-tosylamide-2-phenylmethyl chloromethyl ketone, *or* *N*-tosyl-L-phenylalanine chloromethyl ketone (follow au.; if definition is not supplied, choose one and query)

T4 phage, T4 DNA (*but* RNase T<sub>1</sub>)

TPN—*change to* NADP\*\*

TPNH—*change to* NADPH\*\*

TPP: thiamine PP<sub>i</sub>

TPP<sup>+</sup>: tetraphenylphosphonium ion (not the same as TPP above)

TPSA: topological polar surface area

tr: trace (tables only and only if the author chooses to abbreviate it)

TraDIS: transposon-directed insertion site (sequencing)

Tran<sup>35</sup>S-label

*trans-*—prefix in chemical name (may be used alone, e.g., in *trans*, *trans*-acting protein)

transactivation

transferable

transferred, transferring

transfer ribonucleic acid: tRNA\*\*

transient transfection—hyphenated as unit modifier (e.g., transient-transfection assay)

traveled, -ing *or* travelled, -lling (follow au.)

traveler's diarrhea

TREEVIEW *or* Treeview (software program; follow au. but be consistent)

Treg *or* Tregs: regulatory T cells

TRFLP *or* T-RFLP: terminal restriction fragment length polymorphism

Tri-Carb liquid scintillation spectrometer

trichloroacetic acid

trichrome

Tricine

trimethoprim-sulfamethoxazole (*not* -sole; note hyphen, not slash)

triple mutant—a mutant with three mutations (not hyphenated as unit modifier)

triple recombinant—same as triple-recombination mutant (not hyphenated as unit modifier)

Tris\*\*: tris(hydroxymethyl)aminomethane

Tris HCl *or* Tris-HCl—need not be defined

Tris hydrochloride (see Tris)

tris(hydroxymethyl)aminomethane: Tris\*\*

TRITC: tetramethyl rhodamine isocyanate *or* tetramethyl rhodamine isothiocyanate (follow au.)

Triton X-100

TRIzol *or* Trizol (Invitrogen trade name)

tRNA\*\*: transfer ribonucleic acid (pl., tRNAs; see chapter 3 for tRNA species)

T<sub>1</sub> RNase *or* RNase T<sub>1</sub> (follow au.; *but* S1 nuclease, phage T4, T4 ligase)

-tropic, -trophic—see chapter 4

TROSY: transverse relaxation-optimized spectroscopy

Trp—need not be defined (tryptophan)

trypan blue

trypsin

trypsinize (v.)

Trypticase

tryptone

tryptophan

tryptose

*ts*: temperature sensitive (viruses) (see chapter 3)



Ts: temperature sensitive [use this abbreviation only as part of a genetic description for prokaryotes, e.g., *hisD21*(Ts)]

TS: temperature sensitive (standard abbreviation for use with organisms other than viruses)

TSA: Trypticase soy agar *or* tryptic soy agar

TSA II

TSB: Trypticase soy broth *or* tryptic soy broth (allow soya instead of soy if author is consistent)

TSI: triple sugar iron (do not define when part of trade name)

TSI Agar

TSST-1: toxic shock syndrome toxin 1

TSTA: tumor-specific transplantation antigen

TT: tetratype

*t* test

TTGE: temporal temperature gradient gel electrophoresis

*Th* (DNA polymerase)

TTP\*\*: ribosylthymine 5'-triphosphate *or* ribosylthymine triphosphate

Tukey's HSD test: Tukey's honestly significant difference test

tumor (*not* tumour)

tumorigenic

TUNEL: terminal deoxynucleotidyltransferase-mediated dUTP-biotin nick end labeling

turnaround (n., adj.), turn around (v.)

Tween 80

two-tailed (always hyphenated)

Ty1—transposable element in yeasts (note that the number is not italicized)

TYG: tryptone-yeast extract-glucose

type I interferon (IFN-I)—allow (see chapter 3)

typeable

type C viruses *or* C-type viruses (follow au.)

Tyr—need not be defined (tyrosine)

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## U

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u\*: unified atomic mass unit, atomic mass unit, or universal mass unit

U—need not be defined (uniformly labeled, e.g., [U-<sup>14</sup>C]glucose; do not use UL)

U\*: unit

U—need not be defined (uracil *or* uridine)

UA—need not be defined (Unité Associée)

UAS: upstream activation sequence

UBI—need not be defined (Upstate Biotechnology Inc., Lake Placid, NY)

UDP\*\*: uridine 5'-diphosphate *or* uridine diphosphate

U.K. *or* UK: United Kingdom (spell out as n.; use abbreviation as adj.); use “United Kingdom” as the country in affiliation lines, but allow “UK” or “U.K.” as part of the proper name of an affiliation or with parenthetical locations in the text; allow without introduction, but if an author chooses to introduce the abbreviation in a table footnote or figure legend, allow it for consistency with other country introductions

U<sub>L</sub> *or* UL (follow au.): unique long (region, sequence)

ultra (prefix)—solid

ultraviolet: UV\*\*

Ultrogel

UMP\*\*: uridine 5'-monophosphate *or* uridine monophosphate

UNAM—need not be defined (Universidad Nacional Autónoma de México)

underway, under way—see chapter 4

UNDP—need not be defined (United Nations Development Program)

UNESCO—need not be defined (United Nations Educational, Scientific, and Cultural Organization)

UniParc (protein sequence database)



UniProt *or* UniProtKB (protein sequence records from Swiss-Prot [extracted from the literature and from computational analysis] and TrEMBL)

UniRef (protein sequences from the UniProt Knowledgebase and selected UniParc records)

unit: U\* (*but* Klett units)

3' (*or* 5') untranslated region—no hyphen before “untranslated” unless the term is followed by another noun (e.g., 3'-untranslated-region reporter assays [*or* 3'-UTR reporter assays])

UPEC: uropathogenic *Escherichia coli*

UPGMA: unweighted pair group method using average linkages

UPLC: ultraperformance liquid chromatography

uppercase

upregulation

upside down (adv.)—e.g., held upside down; upside-down (unit modifier)—e.g., upside-down tube

uridine 5'-diphosphate *or* uridine diphosphate: UDP\*\*

uridine 5'-monophosphate *or* uridine monophosphate: UMP\*\*

uridine 5'-triphosphate *or* uridine triphosphate: UTP\*\*

U<sub>s</sub> *or* US (follow au.): unique short (region, sequence)

U.S.: United States (spell out as n.; use abbreviation as adj.); allow without introduction, but if an author chooses to introduce the abbreviation in a table footnote or figure legend, allow it for consistency with other country introductions

USA—use as the country in the affiliation line; need not be defined in the bodies of tables, in figures, and with parenthetical locations in the text [e.g., (BD, USA)]; in running text, change to United States (n.) or U.S. (adj.)

USAN: U.S. approved name (for drugs)

USAMRIID—need not be defined (U.S. Army Medical Research Institute of Infectious Diseases)

USP—need not be defined (U.S. Pharmacopeia)

USPHS: U.S. Public Health Service

USSR—*change to* former Soviet Union

UTP\*\*: uridine 5'-triphosphate *or* uridine triphosphate

UTR: untranscribed region *or* untranslated region (use the latter in MCB)

UV\*\*: ultraviolet *or* ultraviolet light

UV-Vis *or* UV-vis (spectroscopy): UV-visible

UWGCG—need not be defined (University of Wisconsin Genetics Computer Group)

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## V

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v: velocity

$\bar{v}$ —need not be defined (partial specific volume)

v *or* v.—need not be defined when used to mean “version” (allow v *or* v. in constructions like v. 1.0 [with a space], v.1.0, and v1.0 [be consistent in a paper])

V\*: volt (derived SI unit)

V (*not* V<sub>d</sub>): volume of distribution (see Table 6.3)

V<sub>0</sub>: voided volume (subscript is a zero, not “oh”)

V<sub>1</sub>: volume of distribution in the central compartment (see Table 6.3)

Vacutainer

VACV: vaccinia virus

Val—need not be defined (valine)

van der Waals (forces, interactions, etc.)

var.: variety (use for fungi, including yeasts; for bacteria, *change to* subsp.; when used, do not spell out with organism name)

varicella-zoster virus

various, varying—see chapter 4

var. nov.—do not spell out with organism name (new variety) (use with yeasts and fungi only)

varying, various—see chapter 4

Vaseline—*change to* petrolatum

Vaspar



VBNC: viable but not culturable *or* viable but nonculturable (state) (hyphenate as a unit modifier)

V-CIA: voltage-induced chemiluminescent assay

$V_d$ —change to  $V$  (volume of distribution; must be introduced)

VDRL—need not be defined (Venereal Disease Research Laboratory); use “VDRL test” when the test for venereal disease is meant

VEE: Venezuelan equine encephalomyelitis

VEGF-R: vascular endothelial growth factor receptor

VERO 76 *or* Vero 76 (follow au.)

Vero cells

Veronal

Versene—change to EDTA\*\*

versus—*not vs except in tables*

Vestopal W

$V \cdot h^*$ : volt-hour

$V_i$ : included volume

via—roman

$V_i$  antigen

VIC—trademark of Applera Corporation, do not query

*vide infra*—change to see below

*vide supra*—change to see above

-virad—suffix indicating a member of a viral order

viral (*or* virion) load—may be used after names of viruses like “cytomegalovirus” (it is not considered redundant)

-virid—suffix indicating a member of a viral family

viridans group streptococci (if the author has omitted “group,” add it)

-virin—suffix indicating a member of a viral subfamily

virome (viral community or population)

-virus—suffix indicating a member of a viral genus

virus specific (*not* viral specific; hyphenated as unit modifier)

Vis: visible light

VISA: vancomycin-intermediate *Staphylococcus aureus*

visna virus

visualize—see chapter 4

vitamin B<sub>12</sub>

vitreous humor

vivax malaria

*viz.*: namely (may use either) (italic)

$V_{max}$ —need not be defined (maximum potential difference *or* maximum initial velocity; usually used in enzyme studies)

$V_{max}$ : maximum rate of metabolism (usually used in drug studies; see Table 6.3)

VNTR: variable-number tandem repeat

Voges-Proskauer

vol: volume (see Table 9.2 and chapter 2)

volt: V\* (derived SI unit)

volt-hour:  $V \cdot h^*$

volume—use numerals (e.g., 5 volumes were . . .); see chapter 2

vol/vol (*not* v/v): volume ratio (volume per volume; see chapter 2)

*v-onc*, *v-ras*, *v-src*, etc.—need not be defined (viral forms of oncogenes; see [c-\*onc\*](#))

vortex (may also be “Vortex,” e.g., “Vortex mixer,” if the Vortex Manufacturing Co. is meant)

VP: Voges-Proskauer

VPI—need not be defined (Virginia Polytechnic Institute; do not spell out as part of strain designation; see Table 6.6)

VPI&SU—need not be defined (Virginia Polytechnic Institute and State University, Blacksburg)

VRP: virus replicon particle(s)

vs: versus (tables only)

VS: visible spectrum (hyphenated as unit modifier)



VSA: variant surface antigen  
VSG: variant surface glycoprotein  
 $V_{ss}$ : volume of distribution at steady state (see Table 6.3)  
VSV: vesicular stomatitis virus  
VV: vaccinia virus  
 $V_z$ : apparent volume of distribution during terminal phase  
VZV: varicella-zoster virus

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## W

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W\*: watt (derived SI unit)  
Waring blender  
wastewater  
water bath  
waterborne  
WATERGATE: water suppression through gradient-tailored excitation  
watt: W\* (derived SI unit)  
wavelength  
Wb\*: weber (derived SI unit)  
WBC: leukocyte *or* white blood cell  
WCC<sub>90</sub>: 90% Wayne-cidal concentration (pl., WCC<sub>90</sub> *or* WCC<sub>90S</sub>)  
WCE: whole-cell extracts  
Web—allow as shorthand for World Wide Web  
weber: Wb\* (derived SI unit)  
website (*but* World Wide Web)  
WEE: western equine encephalitis  
Wellcogen Strep B  
WES: whole-exome sequencing  
Western blot (blotting, hybridization; allow “Western immunoblot”)

western equine encephalitis  
West Germany—*change to* Germany *or* Federal Republic of Germany  
wet wt—*change to* wet weight *except in tables* (see [wt](#))  
WGA: wheat germ agglutinin  
WGS: whole-genome sequencing  
Whatman 3MM filter paper  
Whatman no. 1 filter paper  
which, that—see chapter 4  
while—see chapter 4  
White Leghorn chicken  
white rot (may be hyphenated as a unit modifier)  
WHO—need not be defined (World Health Organization)  
widespread  
WIGA—*Legionella bozemanii* strain  
Wilcoxon  
Wilcoxon signed-rank test  
wild type (hyphenated as unit modifier) (if author uses “wild,” *do not change to* “wild type”)  
Wilks’ test (*or* the Wilks test)  
Wilms’ tumor  
WISH: whole-mount *in situ* hybridization  
wk: week (tables only)  
WO: allow without introduction with patent numbers (patents granted by the World Intellectual Property Organization)  
workload  
World Wide Web (*or* the Web)  
wpi: weeks postinfection *or* weeks postinoculation  
WRAIR—need not be defined (Walter Reed Army Institute of Research; see Table 6.6)  
wt: weight (see Table 9.2 and chapter 2)



WT *or* wt (follow au.): wild type

wt/vol (*not* w/v): weight per volume (see chapter 2)

wt/wt (*not* w/w): weight ratio (weight per weight; see chapter 2)

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## X

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$x$  *or*  $\bar{x}$  —need not be defined (the latter is called  $x$ -bar, a mean in sample statistics; see Table 6.2)

X: xanthosine (see Table 6.1, footnote *a*); unknown *or* “other” as an amino acid *or* as a nucleotide

xanthosine 5'-diphosphate *or* xanthosine diphosphate: XDP\*\*

xanthosine 5'-monophosphate *or* xanthosine monophosphate: XMP\*\*

xanthosine 5'-triphosphate *or* xanthosine triphosphate: XTP\*\*

$x$  axis (abscissa; horizontal)

XDP\*\*: xanthosine 5'-diphosphate *or* xanthosine diphosphate

xenogeneic (*not* xenogenic)

X-Gal: 5-bromo-4-chloro-3-indolyl- $\beta$ -D-galactopyranoside (see chapter 6, “Chemical names and buffers”)

X-Gluc: 5-bromo-4-chloro-3-indolyl- $\beta$ -D-glucuronic acid (see chapter 6, “Chemical names and buffers”)

X-irradiation (*but* X ray)

XL1-Blue (*E. coli* strain)

XMP\*\*: xanthosine 5'-monophosphate *or* xanthosine monophosphate

X-Omat film

XP: 5-bromo-4-chloro-3-indolylphosphate (see chapter 6, “Chemical names and buffers”)

X Plate

X ray (hyphenated as unit modifier; *but* X-irradiation)

XR-1 film

XTP\*\*: xanthosine 5'-triphosphate *or* xanthosine triphosphate

XTT: 2,3-bis-(2-methoxy-4-nitro-5-sulphophenyl)-2H-tetrazolium-5-carboxanilide salt

$X_u^{1-2}$ : drug concentration in urine between  $t_1$  and  $t_2$  (see Table 6.3)

Xyl—need not be defined (xylose)

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## Y

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YAC: yeast artificial chromosome

yard: yd\*

Yates' correction *or* the Yates correction

$y$  axis (ordinate; vertical)

yd\*: yard

32-year-old (noun *or* adjective)

yeast two-hybrid assay (do not change to “*Saccharomyces cerevisiae* two-hybrid assay”)

YEPD: yeast extract-peptone-dextrose

YFP: yellow fluorescent protein

YES: yeast extract-sucrose

YNB: yeast nitrogen base

YPD: yeast extract-peptone-dextrose

Y Plate

yr: year (tables only)

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## Z

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ZDV: zidovudine (follow author on “ZDV” versus “AZT” as abbreviation for this drug)

zebra fish *or* zebrafish (follow au.)

zero hour (*but* use “0 h” in expressions such as “the cells were tested at 0 h and at 15 and 30 min after treatment”)

zero time *or* time zero (follow au.; *not* time 0 *or* 0 time)

Ziehl-Neelsen (*not* Ziehl-Neelsen's) stain



Z score or Z-score (with italic or roman Z)—need not be defined  
(a statistical measurement of a score's relationship to the  
mean in a group of scores)

z-stack *or* z stack—need not be defined (two-dimensional  
bright-field microscopy images are aligned into a three-  
dimensional projection image called a z-stack)

Zwittergent

Zymolyase 60000

zymosa

