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by the year of publication in brackets. If more than one paper by the same authors in one year are cited, a, b, c, etc. are placed after the year of publication, both in the text and in the list of references. The title of the article is given in full, followed by the *abbreviated title of the periodical*, volume **number** and first and last page numbers. The abbreviations used for periodicals are those of the most recent edition of the *World List of Scientific Periodicals*. A selected list of abbreviations has been issued by the Biological Council. References to articles in books should consist of names of **AUTHORS**, year of publication, title of article followed by the *title of the book*, the editors, volume number, if any, and page numbers, the place of publication and the names of the publishers. For example:

BOLTON, T.B. & KITAMURA, K. (1983). Evidence that ionic channels associated with the muscarinic receptor of smooth muscle may admit calcium. *Br. J. Pharmacol.*, **78**, 405–416.

BRADING, A.F. (1981). Ionic distribution and mechanisms of transmembrane ion movements in smooth muscle. In *Smooth Muscle: An Assessment of Current Knowledge*. ed. Bülbiring, E., Brading, A.F., Jones, A.W. & Tomita, T. pp.65–92. London: Edward Arnold.

Tables

Each table should be given on a separate page, paginated as part of the paper. Tables should be numbered consecutively with arabic numerals and the number should be followed by a brief descriptive caption, occupying not more than two lines, at the head of the table. The proportions of the text area should be borne in mind when designing the layout of tables. For the sake of clarity, tables should not have more than 85 characters to a line, with spaces between columns counted as four characters. The absolute maximum is 110 characters to a line. Column headings should be marked for setting in italics (underlined in the typescript). Except in special circumstances, tables should be self-explanatory; the necessary descriptions should be at the bottom of the table. References to individual items should be made by using the following symbols: * † ‡ § ¶.

Figures

Unnecessary figures should be avoided, particularly those requiring half-tone reproduction. They should not be larger than size A4 (210 × 297 mm). Author's names should be given on the back of the figures; the number and the top of the figure (if critical and not obvious) should also be indicated. Original drawings in black ink on white stout paper or faint blue graph paper are preferred and should be carefully prepared to conform with the style and conventions of the

journal as they will not normally be redrawn. Two sets of figures (or one set and one photocopy) should be submitted with each manuscript. All lettering should be clearly indicated, in pencil.

Good photographic copies of original drawings are also acceptable. Original drawings or their photographic reproductions must be larger than, but not more than twice as large as their final size in the journal. It is of the greatest importance that the final size of the symbols after reduction is not smaller than 2 mm in diameter and the lines not less than 0.2 mm broad; the respective values in the original drawings should therefore be about 4 mm and 0.4 mm. Symbols should be chosen from the following set and, as far as possible, should be used in the sequence presented here.

○ ● □ ■ △ ▲ ▽ ▼ ◇ ◆ + ×

Tracings may be in the form of originals or high quality photographic prints on matt paper. If the tracings are made on lined paper then, wherever possible, the grid should be painted out in white. Photographs and micro-photographs should be printed on glossy paper. The size should be larger than, but not more than twice as large as the final size in the journal. Lettering should be shown on one set only. The originals of ECG's and other records which have a lined background are preferred to photographic copies. Negative prints of kymograph and oscilloscope tracings should be used so that the tracings appear black on white and large black areas are avoided. In all tracings or graphs, both abscissae and ordinates should be calibrated. The proportions of the printed page should be borne in mind when preparing all figures.

The author should state what conclusions may be drawn from the figure. Each figure should be accompanied by a caption typed on a separate sheet of paper and paginated as part of the paper. Captions should explain the figures in sufficient detail that, in most circumstances, they can be understood without reference to the text.

Unsatisfactory figures may be returned to the author for revision, or may be the reason for rejection of the paper.

Proofs. Two sets of page proofs, will be supplied, one of which may be retained by the authors. The other should be corrected immediately and returned to the Press Editor. Corrections should be kept to a minimum.

Short communications

The main purpose of short communications is the rapid publication of new results of sufficient importance *to merit priority of publication over full papers*. Revision is not normally allowed; they are accepted

as they stand or they are rejected. If there is material worth publishing, but significant revision is required, or if the manuscript is not considered to merit priority of publication, the Board may propose publication as a full paper. Typescripts must be submitted in duplicate in double spacing on one side of size A4 paper and conform in every respect to the format and conventions of the journal as outlined under 'Full papers'. Particular attention must be paid to correctness of abbreviations, grammar and spelling. The length, including title, summary and references, must not exceed 1200 words plus one figure or one table. There should be a short summary consisting of a single paragraph, followed by introduction, methods, results, discussion and select references.

Abbreviations and symbols

Further details of abbreviations, symbols and terminology may be found in the following publications:

Amino acids	ref 17
Anatomical	ref 2
Biochemical	refs 1, 5
Centrifugal	ref 1
Chemical	refs 1, 7, 14
Enzyme	refs 1, 8, 13
Haematological	ref 6
Isotopic	ref 1
Micro-organisms	refs 3, 4
Physical (incl. SI units)	refs 9, 10
Physiological	ref 11, 18
Psychological	ref 12
Peptides	ref 16
Steroids	ref 15

Physico-chemical quantities

The British Journal of Pharmacology uses the SI symbols for units (see refs 9 and 10).

Prefixes for SI units. The following prefixes for multiples of units should be used:

Multiplier	Prefix	Symbol
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f
10^{-18}	atto	a

Multiplier	Prefix	Symbol
10^3	kilo	k
10^6	mega	M
10^9	giga	G
10^{12}	tera	T

Thus, micron = μm ; ångstrom = 0.1 nm. Mixed prefixes are not permissible, thus $\text{m}\mu\text{g}$ should be ng. The symbols d (10^{-1}) and c (10^{-2}) should be restricted to those occasions on which there is a strongly felt need for them (e.g. cm).

Use of the solidus

The solidus should be avoided as far as possible and the negative index substituted, e.g. mg kg^{-1} rather than mg/kg ; $\text{pmol mm}^{-2} \text{min}^{-1}$ rather than $\text{pmol/mm}^2/\text{min}$

Symbols

Symbols denoting physical quantities are usually printed as italic capitals (indicated by single underline in typescript). A dash over the symbol indicates a mean value; a dot over the symbol indicates a time derivative. Suffixes may be used to indicate 'where'

and 'what'. They are printed as inferiors on the line. Multiple suffixes should be avoided if a simpler symbol adequately defined is unambiguous, but if necessary should be separated by commas e.g. P_{A,CO_2} denotes partial pressure of CO_2 alveolar air.

<i>Quantity</i>	<i>Abbreviation</i>	<i>Preferred unit</i>	<i>Symbol</i>
Amount (of substance)	M^\dagger	mole	mol
Capacitance	C	farad	F
Concentration	C^\dagger	moles per litre	M or mol l^{-1}
Current	I	ampere	A
Electrical conductance	G	siemens	S
Electromotive force	$e.m.f.$	volt	V
Flow (blood or other liquid)	\dot{Q}^\dagger	litres per second (or min)	l s^{-1} or l min^{-1}
Flow (air or other gas)	\dot{V}^\dagger	litres per second (or min)	l s^{-1} or l min^{-1}
Force	F	newton	N
Frequency of regular event	F	hertz	Hz
Length	L	metre	m
Mass	M	gram	g
Power	\dot{W}	watt	W
Pressure (or partial pressure)	P^\dagger	pascal*	Pa
Radioactivity		becquerel or curie	Bq (60 d.p.m.) or Ci (3.7×10^{10} Bq)
Resistance (electrical)	R	ohm	Ω
Temperature	T	degree celsius	$^\circ\text{C}$
Time	t	second (preferred)	s
		minute	min
		hour	h
Volume (blood or other liquid)	Q^\dagger	litre	l
Volume (air or other gas)	V^\dagger	litre	l
Work	W	joule	J

*mm of mercury (mmHg) are allowed if conventional, and if mercury manometer is used for calibration. SI equivalents should be given ($1\text{mmHg} \approx 133\text{ Pa}$).

† may be used with suffixes to denote where and what.

Chemical and Biological Abbreviations

The abbreviations listed may be used without definition *except* those for chemicals, drugs and enzymes which must be written in full at first mention in the title, summary and again in the text. At first mention they should be followed by the abbreviation in brackets. Subsequently, the abbreviation alone may be

used.

The list of abbreviations for chemical, drug and enzyme names is clearly not comprehensive and includes only a few commonly used examples.

Use abbreviations sparingly as extensive use can make the text hard to follow.

acetylcholine	ACh	adrenaline	Ad
acetylcholine esterase	AChE	analytical standard of	A.R.
adenosine 3':5'-cyclic monophosphate	cyclic AMP	reagent purity	
adenosine 5'-phosphate	AMP	anhydrous	anhyd.
adenosine triphosphatase	ATPase	approximate(ly)	approx.
		approximately equals	\approx

aqueous	aq.	extracellular fluid	ECF
boiling point	b.p.	fatty acids, nonesterified	NEFA
bovine serum albumin	BSA	figure(s) (with reference number)	Figure(s)
British National Formulary	B.N.F.	figure (diagram)	figure
	(with date)		
British Pharmaceutical Codex	B.P.C.	γ -aminobutyric acid	GABA
	(with date)	gas-liquid chromatography	g.l.c.
British Pharmacopoeia	B.P.	glomerular filtration	GFR
	(with date)		
cardiovascular system	CVS	haemoglobin	Hb
catechol- <i>O</i> -methyl transferase	COMT	half-life	$t_{1/2}$
central nervous system	CNS	high frequency	h.f.
cerebrospinal fluid	CSF	high performance liquid chromatography	h.p.l.c.
chi-squared (statistics)	χ^2	human serum albumin	HSA
clearance	c	hydrogen-ion concentration	[H ⁺]
coenzyme A	CoA	hydrogen-ion activity,	pH
concentrated	conc.	negative logarithm of	
corrected	corr.	(hydrogen-ion exponent)	
cubic	cu.	6-hydroxydopamine	6-OHDA
		5-hydroxyindoleacetic acid	5-HIAA
date: year, month, day	e.g. 1983-02-22.	5-hydroxytryptamine	5-HT
degree of freedom (statistics)	d.f.		
deoxyribonucleic acid	DNA	immunoglobulins	IgA, IgD, IgE, IgG, IgM
deoxyribonuclease	DNase		
dextro-(absolute configuration)	D-	inhibitor constant	K_i
dextro-(optical rotation)	(+)-	insoluble	insol.
diameter	diam.	international unit	iu
diameter, inside	i.d.	intra-arterial	i.a.
diameter, outside	o.d.	intracellular fluid	ICF
diffusion coefficient	D	intradermal	i.d.
3,4-dihydroxyphenylalanine	DOPA	intramuscular	i.m.
3,4-dihydroxyphenylethyl-amine	dopamine	intraperitoneal	i.p.
		intracerebroventricular	i.c.v.
direct current	d.c.	intravenous	i.v.
disintegration per minute	d.p.m.	isotope (atomic mass)	^{131}I
dissociation constant	K_D	e.g. iodine-131	
dissociation constant, negative logarithm of	pK	isotopically substituted compounds e.g.	[^{14}C]-ethanol
distilled	dist.		
dry ice	solid CO ₂	laevo-(absolute configuration)	L-
		laevo-(optical rotation)	(-)-
edition	edn	lethal dose, median	LD ₅₀
editor(s)	ed.	logarithm to base e	log _e or ln
effective dose, median	ED ₅₀	logarithm to base 10	log ₁₀
electrocardiogram	ECG		
electrocorticogram	ECoG	maximum	max.
electroconvulsive therapy	ECT	mean arterial pressure	MAP
electroencephalogram	EEG	mean value of (statistics)	\bar{x}
electromyogram	EMG	melting point	m.p.
electron spin resonance	e.s.r.	meta	<i>m</i> -
electroretinogram	ERG	Michaelis constant	K_M
equilibrium constant	K	minimum	min.
equivalent (general use)	equiv.	mobility (electrophoresis)	<i>m</i>
erythrocyte sedimentation rate	ESR	molecular weight (molecular mass)	see relative
ethylenediaminetetracetic acid	EDTA	molecular mass	
experiment	expt	monoamine oxidase	MAO
experimental	exptl	noradrenaline	NA

nuclear magnetic resonance number	n.m.r. no.	sinister (configuration by the sequence rule)	S
number of observations (statistics)	<i>n</i>	soluble	sol.
ortho	<i>o</i> -	solution	soln.
packed cell volume	PCV	standard deviation: (of observed sample)	s.d.
page/pages	p./pp.	standard error (of estimate mean value)	s.e.mean
para-	<i>p</i> -	standard error (of sampling)	s.e.
paragraph	para. or ¶	standard temperature and pressure	STP
parts per million	p.p.m.	subcutaneous	s.c.
per cent	%	sum (statistical): of hypothetical population of observed sample	Σ S or Σ
posterior	post.	temperature	temp.
probability (significance level in a statistical test)	<i>P</i>	thin layer chromatography	t.l.c.
rectus (configuration by the sequence rule)	R	time clock-24 h clock used e.g. 18 h 30 min	<i>t</i>
red blood corpuscle	RBC	2-amino-2-hydroxymethyl-propan-1,3-diol	Tris
relative band speed to front (chromatography)	<i>R_F</i>	ultraviolet	u.v.
relative molecular mass	<i>M_r</i>	unit	u
relative retention time (gas chromatography)	<i>t_r</i>	vacuum	vac.
renal plasma flow	RPF	valency	e.g. Fe ²⁺ ; Fe(II) protoporphyrin
resistance (respiratory)	<i>R</i>	volume by volume	v/v
respiratory exchange ratio	<i>R</i>	wavelength	λ
revolutions per minute	r.p.m.	weight	wt.
ribonucleic acid	RNA	weight by volume	w/v
section	§		
sedimentation coefficient (ultracentrifugation)	<i>s</i>		

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