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Tables should be in Arabic numerals, e.g. Fig. 3, and they should be numbered in order of appearance. In general, the same data should not be presented in both a Figure and a Table.

Figures, with captions attached, should be supplied as original drawings or matt photographs together with photocopies. All Figures should have their number and the authors' names written in pencil on the back; the top of the Figure should be indicated with a pencilled arrow. Acceptable symbols for experimental points are ●, ▲, ■, ○, △, □. The symbols × or + must be avoided. The same symbols must not be used for two curves where the points might be confused. For scatter diagrams, solid symbols are preferred. When a particular variable appears in more than one Figure, the same symbol should be used for it throughout, if possible.

Curves should not be drawn beyond the experimental points, nor should axes extend appreciably beyond the data. Only essential information that cannot readily be included in the legend should be written within the Figure.

Figures for half-tone reproduction should be submitted as glossy prints. They are particularly expensive to print and their use should be avoided as far as possible.

Tables should be typed separately from the text. They should have an underlined title followed by any legend.

Captions for the Figures, and titles and legends for the Tables, should make them **readily understandable** without reference to the text. Adequate statistical information, including that on regression lines, should be included in Figure captions where appropriate.

3.10. Footnotes

These should be avoided as far as possible but where they are used in Tables they should be identified by the symbols * † ‡ § || ¶, in that order.

3.11. Isotope measurements

The information given should include (a) conditions of radioactivity counting, e.g. infinitely thick, infinitely thin; (b) the nature of the phosphor used in liquid-scintillation counting; (c) details of corrections made to the observed count rate, e.g. for 'quenching' or 'cross-over'; (d) standard deviation of the results or a statement of the minimum total counts above background collected and the background value.

In general the specific radioactivity of the starting materials should be given, preferably in

terms of radioactivity per unit weight or, for stable isotopes, as atoms % excess.

Pending the general introduction of SI units radioactivity should continue to be expressed in terms of the curie (Ci) followed by the corresponding figure in terms of the becquerel (Bq: disintegrations/s), in parentheses, and suitably rounded.

3.12. Radionuclide applications in man

If new or modified radionuclide applications in man are described, an estimate of the maximal possible radiation dose to the body and critical organs should be given.

For the time being this can continue to be expressed in rems, but with the corresponding figure in sieverts (Sv) given in parentheses after it.

3.13. Methods

In describing certain techniques, namely centrifugation (when the conditions are critical), chromatography and electrophoresis, authors should follow the recommendations published by the Biochemical Society (currently, *Biochemical Journal* (1981) 193, 1–21).

3.14. Nomenclature of disease

This should follow the *International Classification of Disease* (8th revision, World Health Organization, Geneva, 1969) as far as possible.

3.15. Powers in Tables and Figures

Care is needed where powers are used in Table headings and in Figures to avoid numbers with an inconvenient number of digits. For example: (i) an entry '2' under the heading 10^3k means that the value of k is 0.002; an entry '2' under the heading $10^{-3}k$ means that the value of k is 2000. (ii) A concentration 0.00015 mol/l may be expressed as 0.15 under the heading 'concn. (mmol/l)' or as 150 under the heading 'concn. ($\mu\text{mol/l}$)' or as 15 under the heading ' $10^5 \times \text{concn. (mol/l)}$ ', but not as 15 under the heading 'concn. (mol/l $\times 10^{-5}$)'.

3.16. References

The numerical citation system is now used: references in the text are numbered consecutively in the order in which they are first mentioned, the numerals being given in brackets, e.g. [22]. References cited in Figure legends or Tables only should be numbered in a sequence determined by the position of the first mention in the text of the Figure or Table. References should be listed in

numerical order and the names of all authors of a paper should be given, with the full title of the paper and the source details in full including the first and last page numbers, e.g.

- [2] CLARK, T.J.H., FREEDMAN, S., CAMPBELL, E.J.M. & WINN, B.R. (1969) The ventilatory capacity of patients with chronic airways obstruction. *Clinical Science*, **36**, 307–316.

When the quotation is from a book, the following format should be used, giving the relevant page or chapter number:

- [20] MOLLISON, P.L. (1967) *Blood Transfusion in Clinical Medicine*, 4th edn, p. 50. Blackwell Scientific Publications, Oxford.
- [22] REID, L. (1968) In: *The Lung*, p. 87. Ed. Liebow, A.A. & Smith, D.E. Williams and Wilkins, Baltimore.

References to 'personal communications' and 'unpublished work' should appear in the text only and not in the list of references. The name and initials of the source of information should be given. When the reference is to material that has been accepted for publication but has not yet been published, this should be indicated in the list of references by 'In press' together with the name of the relevant journal and, if possible, the expected date of publication. If such a citation is of major relevance to the manuscript submitted for publication authors are advised that the editorial process might be expedited by the inclusion of a copy of such work. In the case of quotations from personal communications the authors should state in the covering letter that permission for quotation has been obtained.

3.17. Solutions

Concentration of solutions should be described where possible in molar terms (mol/l and subunits thereof), stating the molecular particle weight if necessary. Values should not be expressed in terms of normality or equivalents. Mass concentration should be expressed as g/l or subunits thereof, for example mg/l or $\mu\text{g/l}$. For solutions of salts, molar concentration is always preferred to avoid ambiguity as to whether anhydrous or hydrated compounds are used. Concentrations of aqueous solutions should be given as mol/l or mol/kg (g/l or g/kg if not expressed in molar terms) rather than % (w/v) or % (w/w). It should always be made clear whether concentrations of components in a reaction mixture are final concentrations or the concentrations in solutions added.

3.18. Spectrophotometric data

The term 'absorbance' [$\log(I_0/I)$] should be used rather than 'optical density' or 'extinction'. The

solvent, if other than water, should be specified. Symbols used are: A , absorbance; a , specific absorption coefficient ($\text{litre g}^{-1} \text{cm}^{-1}$) (alternatively use $A_{1\text{cm}}^{1\%}$); ϵ , molar absorption coefficient (the absorbance of a molar solution in a 1 cm light-path) ($\text{litre mol}^{-1} \text{cm}^{-1}$, not $\text{cm}^2 \text{mol}^{-1}$).

3.19. Spelling

Clinical Science uses as standards for spelling the *Concise* or *Shorter Oxford Dictionary of Current English* (Clarendon Press, Oxford) and *Butterworth's Medical Dictionary* (Butterworths, London).

3.20. Statistics

Papers are frequently returned for revision (and their publication consequently delayed) because the authors use inappropriate statistical methods. Two common errors are the use of means, standard deviations and standard errors in the description and interpretation of grossly non-normally distributed data and the application of t -tests for the significance of difference between means in similar circumstances, or when the variances of the two groups are non-homogeneous. In some circumstances it may be more appropriate to provide a 'scattergram' than a statistical summary.

A reference should be given for all methods used to assess the probability of a result being due to chance. The format for expressing mean values and standard deviations or standard errors of the mean is, for example: mean cardiac output 10.4 l/min (SD 1.2; $n = 11$). Degrees of freedom should be indicated where appropriate. Levels of significance are expressed in the form $P < 0.01$.

3.21. Trade names

The name and address of the supplier of special apparatus and of biochemicals should be given. In the case of drugs, approved names should always be given with trade names and manufacturers in parentheses.

4. UNITS: THE SI SYSTEM

The recommended *Système International* (SI) units [see *Quantities, Units and Symbols*, 2nd edn (1975) The Royal Society, London] are used by *Clinical Science*. **All papers submitted should use these units** except for blood pressure values, which should be expressed in mmHg, or gas tensions, where values at the author's discretion may be given as mmHg (with kPa in parentheses) or as kPa (with mmHg in parentheses) in the text and either as mmHg or as kPa in Figures, which (if practicable) should have scales in both units. Airways pressure should be expressed in kPa. Where molecular weight is known, the amount of a chemical or drug should be expressed in mol or in

an appropriate subunit, e.g. mmol. Energy should be expressed in joules (J).

The basic SI units and their symbols are as follows:

Physical quantity	Name	Symbol
length	metre	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
thermodynamic temperature	kelvin	K
luminous intensity	candela	cd
amounts of substance	mole	mol

The following are examples of derived SI units:

Physical quantity	Name	Symbol	Definition
energy	joule	J	$\text{kg m}^2 \text{s}^{-2}$
force	newton	N	$\text{kg m s}^{-2} = \text{J m}^{-1}$
power	watt	W	$\text{kg m}^2 \text{s}^{-3} = \text{J s}^{-1}$
pressure	pascal	Pa	$\text{kg m}^{-1} \text{s}^{-2} = \text{N m}^{-2}$
electric charge	coulomb	C	A s
electric potential difference	volt	V	$\text{kg m}^2 \text{s}^{-2} \text{A}^{-1} = \text{J A}^{-1} \text{s}^{-1}$
electric resistance	ohm	Ω	$\text{kg m}^2 \text{s}^{-3} \text{A}^{-2} = \text{V A}^{-1}$
electric conductance	siemens	S	$\text{kg}^{-1} \text{m}^{-2} \text{s}^3 \text{A}^2 = \Omega^{-1}$
electric capacitance	farad	F	$\text{A}^2 \text{s}^3 \text{kg}^{-1} \text{m}^{-2} = \text{A s V}^{-1}$
frequency	hertz	Hz	s^{-1}
volume	litre	l	10^{-3}m^3

The word 'litre' has been accepted as a special name for cubic decimetre (1 litre = 1 dm³).

Both the basic and derived SI units, including the symbols of derived units that have special names, may be preceded by prefixes to indicate multiples and submultiples. The prefixes should be as follows:

	Prefix	Symbol	Multiple	Prefix	Symbol
10 ⁶	mega	M	10 ⁻³	milli	m
10 ³	kilo	k	10 ⁻⁶	micro	μ
10 ²	hecto	h*	10 ⁻⁹	nano	n
10	deka	da	10 ⁻¹²	pico	p
10 ⁻¹	deci	d*	10 ⁻¹⁵	femto	f
10 ⁻²	centi	c*			

* To be avoided where possible (except for cm).

Compound prefixes should not be used, e.g. 10⁻⁹ m should be represented by 1 nm, not 1 μm .

Notes:

(i) Full stops are not used after symbols.

(ii) Minutes (min), hours (h), days and years will continue to be used in addition to the SI unit of time [the second (s)].

(iii) The solidus may be used in a unit as long as it does not have to be employed more than once,

e.g. mmol/l is acceptable, but ml/min/kg is not, and should be replaced by $\text{ml min}^{-1} \text{kg}^{-1}$.

5. ABBREVIATIONS, CONVENTIONS, DEFINITIONS, SYMBOLS AND SPECIAL COMMENTS

As well as standard symbols and abbreviations that have been accepted by international bodies, and which can be used without definition, this list shows selected abbreviations in the form of groups of capital letters (e.g. ALA, ECF, MCHC) which when used must be defined in the text as indicated on p. iv. The standard abbreviations for amino acids are only for use in Figures and Tables or for peptide sequences.

absorbance	A
acceleration due to gravity	g
adenosine 3':5'-cyclic mono-phosphate	cyclic AMP
adenosine 5'-phosphate	AMP
adenosine 5'-pyrophosphate	ADP
adenosine 5'-triphosphate	ATP
adenosine triphosphatase	ATPase
adrenocorticotrophic hormone	ACTH
adrenoceptor (see also blocking agents)	
alanine	Ala
alternating current	a.c.
alveolar minute ventilation	\dot{V}_A
alveolar to arterial oxygen tension difference	$(P_{A,O_2} - P_{a,O_2})$
ampere	A
aminolaevulinic acid	ALA
angiotensin	ANG; reference amino acid abbreviations are used as prefix within brackets: e.g. [Sar ¹ ,Val ² ,Ala ⁸]ANG
Ångstrom (Å)	not used; express in nm (1 Ångstrom = 10 ⁻¹ nm)
antidiuretic hormone	ADH (when referring to the physiological secretion)
arginine	Arg
arteriovenous	a-v: permitted in Figures and Tables
asparagine	Asn
aspartic acid	Asp
atmosphere (unit of pressure)	not used; express in kPa (1 atmosphere = 101.325 kPa)
atomic weight	at. wt.
becquerel	Bq (1 d.p.s.)
blocking agents	e.g. β -adrenoceptor antagonists preferred
blood pressure	express in mmHg
blood urea nitrogen	not used; recalculate as urea, express in mmol/l
blood volume	BV
body temperature and pressure, saturated	BTPS

British Pharmacopoeia	write in full and give edition	electromotive force	e.m.f.
calculated	calc. (in Tables only)	electron spin resonance	e.s.r.
'Calorie' (= 1000 cal)	<i>not used</i> ; recalculate as kilojoules (1 'Calorie' = 4.184 kJ)	electronvolt	eV (for radiation energies)
carbon dioxide output (in respiratory physiology)	\dot{V}_{CO_2} ; express in ml STP/min	equation	eqn.
cardiac frequency	f_c ; in beats/min	equivalents (amount of a chemical)	<i>not used</i> ; recalculate in molar terms
cardiac output	express in l/min	erythrocyte count	express as 10^{12} cells/l
centimetre	cm	erythrocyte sedimentation rate	ESR
clearance of x	C_x	ethanol, ethanolic	<i>not</i> ethyl alcohol or alcoholic
coenzyme A and its acyl derivatives	CoA and acyl-CoA	ethylenediaminetetra-acetate exchangeable	EDTA Na _e , K _e etc., for total exchangeable sodium, potassium etc.
compare	cf.	Experiment (with reference numeral)	Expt.; plural, Expts.
complement fractions	C1–C9	expired minute ventilation	\dot{V}_E
compliance (respiratory physiology)	C; express in 1 kPa^{-1}	extinction	<i>use</i> absorbance
concentrated	conc.	extracellular fluid	ECF
concentration	concn.; may be denoted []; e.g. plasma [HCO_3^-]	extracellular fluid volume	ECFV
conductance (respiratory physiology)	G; express in $1 \text{ s}^{-1} \text{ kPa}^{-1}$	extraction ratio of x (renal)	E_x
correlation coefficient	r; may be used without definition	Figure (with reference numeral)	Fig.; plural, Figs.
counts/min, counts/s	c.p.m., c.p.s.	filtered load of x (renal)	F_x
cubic centimetres	<i>use</i> ml	follicle-stimulating hormone	FSH
curie	Ci (1 Ci = 3.7×10^{10} d.p.s.)	forced expiratory volume in 1.0 s	FEV _{1.0}
cycle/s	Hz	fractional concentration in dry gas	F
cysteine	Cys	fractional disappearance rate	k (as in $A = A_0 e^{-kt}$)
dates	e.g. 11 August 1970	frequency of respiration	f_R ; in breaths/min
dead-space minute ventilation	\dot{V}_D	functional residual capacity	FRC
dead-space volume	V_D	gas-liquid chromatography	g.l.c.
degrees, Celsius or centigrade	$^\circ\text{C}$	gas transfer factor	T; in $\text{mmol min}^{-1} \text{ kPa}^{-1}$
deoxy (prefix)	<i>not</i> desoxy	glomerular filtration rate	GFR
deoxycorticosterone	DOC	glutamic acid	Glu
deoxycorticosterone acetate	DOCA	glutamine	Gln
deoxyribonucleic acid	DNA	glutathione	GSH (reduced); GSSG (oxidized)
dialysate	diffusate preferred; 'dialysate' should be clearly defined	glycine	Gly
diethylaminoethylcellulose	DEAE-cellulose	gram(me)	g
differential of x with respect to time	\dot{x} (= dx/dt)	gravitational field, unit of (9.81 m s^{-2})	g
1,25-dihydroxycholecalciferol	1,25-(OH) ₂ D ₃	growth hormone	GH; if human, HGH
dilute	dil.	guery	Gy (100 rads)
2,3-diphosphoglycerate	2,3-DPG	haematocrit	<i>not</i> allowed; <i>use</i> packed cell volume (PCV)
direct current	d.c.	haemoglobin	Hb; express in g/dl
disintegrations/min	d.p.m.	half-life	$t_{1/2}$
disintegrations/s	d.p.s.	hertz (s^{-1})	Hz
dissociation constant		histidine	His
acidic	K_a	hour	h
basic	K_b	human chorionic gonadotropin	HCG
apparent	e.g. K'_a	human placental lactogen	HPL
minus log of	pK	hydrocortisone	<i>use</i> cortisol
doses	avoid Latin designations such as b.d. and t.i.d.	hydrogen ion activity minus log of	aH; express in nmol/l
dyne	dyn; used for vascular resistance	25-hydroxycholecalciferol	pH
elastance	E; express in Pa m^{-3}	hydroxyproline	25-(OH)D ₃
electrocardiogram	ECG	immunoglobulins	Hyp
electroencephalogram	EEG		IgA, IgD, IgE, IgG, IgM

injection routes:	use abbreviations only in Figures	millimetre of mercury	mmHg; for blood pressure and, at authors' discretion, for gas tensions: see p. vi (1 mmHg = 0.133 kPa)
intra-arterial	i.a.	millimolar (concentration)	mmol/l; <i>not</i> mM
intramuscular	i.m.	millimole	mmol
intraperitoneal	i.p.	minimum	min.
intravenous	i.v.	minute (60 s)	min
subcutaneous	s.c.	molal	mol/kg
international unit	i.u. (definition and reference should be given for uncommon or ambiguous applications, e.g. enzymes)	molar (concentration)	mol/l; <i>not</i> M
		molar absorption coefficient	ϵ (the absorbance of a molar solution in a 1 cm light-path)
intracellular fluid	ICF	mole	mol
intracellular fluid volume	ICFV	molecular weight	mol. wt.
ionic strength	<i>I</i>	nicotinamide-adenine dinucleotide	NAD if oxidation state not indicated NAD ⁺ if oxidized NADH if reduced
isoleucine	Ile	nicotinamide-adenine dinucleotide phosphate	NADP if oxidation state not indicated NADP ⁺ if oxidized NADPH if reduced
isotonic	<i>not used</i> ; specify composition of fluid, e.g. NaCl, 150 mmol/l	normal	should not be used to denote the concentration or osmolarity of a solution
isotopically labelled compounds	e.g. [U- ¹⁴ C]glucose, [1- ¹⁴ C]glucose, sodium [1- ¹⁴ C]-acetate; use ¹³¹ I-labelled albumin, <i>not</i> [¹³¹ I]albumin for simple molecules: ¹⁴ CO ₂ , ³ H ₂ O	normal temperature and pressure	<i>use</i> standard temperature and pressure (STP)
joule	J	nuclear magnetic resonance number (in enumerations)	n.m.r. no. (in Tables only)
kilogram(me)	kg	observed	obs. (in Tables only)
kilopond	<i>not used</i> ; 1 kilopond = 9.8067 N	ohm	Ω
lactate dehydrogenase	LDH	ornithine	Orn
leucine	Leu	ortho-	<i>o-</i>
leucocyte count	express as 10 ⁹ cells/l	orthophosphate (inorganic)	<i>P</i> ₁
lipoproteins (serum)		osmolality	express in mol (or mmol)/kg
high density	HDL	oxygen uptake per minute (in respiratory physiology)	$\dot{V}O_2$; express in ml STP/min
low density	LDL	packed cell volume	PCV
very low density	VLDL	page, pages	p., pp.
litre	1 (write in full if confusion with the numeral 1 is possible)	para-	<i>p-</i>
logarithm (base 10)	log	para-aminohippurate	PAH
logarithm (base e)	ln	partial pressure	<i>P</i> ; express in either kPa or mmHg (see p. vi)
luteinizing hormone	LH	e.g. alveolar, of O ₂	<i>P</i> _A , O ₂
lysine	Lys	arterial, of CO ₂	<i>P</i> _A , CO ₂
maximum	max.	capillary, of O ₂	<i>P</i> _C , O ₂
mean corpuscular haemoglobin	MCH; express in pg	mixed venous, of CO ₂	<i>P</i> \bar{V} , CO ₂
mean corpuscular haemoglobin concentration	MCHC; express in g/dl	pascal	Pa
mean corpuscular volume	MCV; express in fl (1 μ m ³ = 1 fl)	per	/
median lethal dose	LD ₅₀	per cent	%
meta-	<i>m-</i>	petroleum ether	<i>not used</i> ; <i>use</i> light petroleum and give boiling range
melting point	m.p.	phenylalanine	Phe
methanol, methanolic	<i>not</i> methyl alcohol	plasma renin activity	express as pmol of angiotensin I h ⁻¹ ml ⁻¹
methionine	Met	plasma volume	PV
metre	m	poise	1 poise = 10 ⁻¹ N s m ⁻²
Michaelis constant	<i>K</i> _m		
micromole	μ mol		
micron (10 ⁻⁶ m)	μ m; <i>not</i> μ		
milliequivalent	<i>not used</i> ; give amount in mmol		
millilitre	ml		

potential difference	p.d.	specific conductance of airways	sGaw; express in $\text{s}^{-1} \text{kPa}^{-1}$
power output	W (1 W = 0.1635 kpm/min)	standard deviation	SD } may be used
precipitate	ppt.	standard error of the mean	SEM } without definition
pressure	P; express in kPa (except for blood pressures and gas tensions: see p. 6); 1 kPa = 7.5 mm Hg	standard temperature and pressure	STP
probability of an event being due to chance alone	P	steroid nomenclature	see <i>Biochemical Journal</i> (1969) 113, 5–28; (1972) 127, 613–617
proline	Pro	sulphydryl	use thiol or SH
protein-bound iodine (plasma)	PBI	sum	Σ
pulmonary capillary blood flow	\dot{Q}_c	Svedberg unit	S
pyrophosphate (inorganic)	PPi	temperature (absolute)	T
rad (radiation dose; 10^{-5} J absorbed/g of material)	not abbreviated (100 rads = 1 Gy)	(empirical)	t
red blood cell	use erythrocyte; express counts as 10^{12} cells/l	temperature, thermodynamic	$^{\circ}\text{K}$
red cell mass	RCM	thin-layer chromatography	t.l.c.
relative band speed (partition chromatography)	R_F	threonine	Thr
rem	100 ergs/g \times quality factor	thyrotrophic hormone	TSH
renin	see plasma renin activity	thyrotrophin-releasing hormone	TRH
residual volume	RV	tidal volume	V_T
resistance (rheological)	R; express in $\text{kPa l}^{-1} \text{s}$	time (symbol)	t
respiratory exchange ratio (pulmonary)	R	time of day	e.g. 18.15 hours
respiratory quotient (metabolic)	RQ	torr	not used; use kPa (1 torr = 0.133 kPa)
revolutions	rev.	total lung capacity	TLC
rev./min	not r.p.m.; use g if possible (see p. viii)	tryptophan	Trp
ribonucleic acid	RNA	tubular maximal reabsorptive capacity for x	$T_{m,x}$
röntgen	R	tyrosine	Tyr
saline	define at first mention [e.g. NaCl solution (154 mmol/l)]	ultraviolet	u.v.
saturation	S, e.g. Sa_2O_2 for arterial oxygen saturation (see partial pressure for other analogous abbreviations)	urinary concentration of x	U_x
second (time)	s	valency	e.g. Fe^{2+} , not Fe^{++}
serine	Ser	valine	Val
sievert	Sv (1 J/kg \times quality factor)	variance ratio	F
solvent systems	e.g. butanol/acetic acid/water (4:1:1, by vol.), butanol/acetic acid (4:1, v/v)	vascular resistance	express in $\text{kPa l}^{-1} \text{s}$ (with value in dyn s cm^{-5} in parentheses); primary values of differential vascular pressure (mmHg) and flow (l/min) should always also be given in Tables or text as appropriate
species	sp., plural spp.	velocity	v; express as m s^{-1}
specific activity	sp. act. Confusion must be avoided between e.g. specific radioactivity and the specific activity of an enzyme	venous admixture	\dot{Q}_{va} used only for buffer mixtures; otherwise use 5,5'-diethylbarbituric acid
		veronal	η
		viscosity, dynamic	v
		viscosity, kinematic	VC
		vital capacity	V
		volt	\dot{Q} ; use \dot{Q} for blood flow rate
		volume of blood (in cardio-respiratory physiology)	W
		watt	λ
		wavelength	wt.
		weight	use leucocyte: express counts as 10^9 cells/l
		white blood cell	

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CORRECTIONS

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page 191: *to the listed addresses below the authors' names should be added* Liver Unit, Kings College Hospital and Medical School, London

page 473, Fig. 4 legend: *for* C_{18:0}, Oleic acid; C_{18:2}, linoleic acid; C_{18:0}, stearic acid; C_{16:1}, myristic acid *read* C_{18:1}, Oleic acid; C_{18:2}, linoleic acid; C_{18:0}, stearic acid; C_{16:1}, palmitoleic acid.