

## STEROID NOMENCLATURE

THE FOLLOWING steroids are so well known as not to require the use of systematic names —

- |  |                                 |
|--|---------------------------------|
| 1. aetiocholanolone                      | 8. dehydroepiandrosterone (DHA) |
| 2. aldosterone                           | 9. deoxycorticosterone (DOC)    |
| 3. androsterone                          | 10. oestrone                    |
| 4. cholesterol and the<br>common sterols | 11. oestradiol-17 $\beta$       |
| 5. corticosterone                        | 12. oestradiol-17 $\alpha$      |
| 6. cortisol                              | 13. oestriol                    |
| 7. cortisone                             | 14. progesterone                |
|  | 15. testosterone                |

These names may be modified by addition or removal of substituent groups, thus —

11 $\beta$ -hydroxytestosterone, 16-oxo DHA, 11-deoxycortisol, may be used as trivial names without confusion. Similarly the (a) dihydro- and (b) tetrahydro-derivatives of 2, 5, 6, 7 and 9, referring to compounds with (a) H added at 4 and 5 $\beta$  and (b) in addition at 3 to give 3 $\alpha$ -hydroxysteroids, need not be defined by systematic names. Thus —

tetrahydroaldosterone or dihydrocortisone

are acceptable trivial names. Also 5 $\alpha$ -dihydrotestosterone is an acceptable trivial name. Reduction of a 20 carbonyl gives compounds such as 20 $\alpha$ , or 20 $\beta$ -dihydroprogesterone. The term 20 $\alpha$ -hydroxyprogesterone is wrong and thus unacceptable as a trivial name. The prefix 'epi' may also be used with trivial names to denote inversion at one centre, thus —

16-epioestriol, epiandrosterone and 11-epicortisol

are acceptable trivial names. For steroids with additional double bonds the prefix 'dehydro' may be used, thus —

11-dehydro-oestradiol-17 $\alpha$

is an acceptable trivial name. The prefix 'allo' and the marking of double bonds with a  $\Delta$  are not allowed. The journal will not accept single-letter abbreviations for steroids.

The following trivial names referring to the steroids defined here are acceptable

- |                                       |   |
|---------------------------------------|---|
| 16. androstenedione                   | 4-androstene-3,17-dione   |
| 17. cortol-20- $\alpha$ or 20 $\beta$ | 5 $\beta$ -pregnane-3 $\alpha$ ,11 $\beta$ ,17 $\alpha$ ,20 $\alpha$ or 20 $\beta$ -21-pentol |

18. cortolone-20 $\alpha$ or 20 $\beta$	3 $\alpha$ ,17 $\alpha$ ,20 $\alpha$ or 20 $\beta$ ,21-tetrahydroxy-5 $\beta$ -pregnan-11-one
19. ecdysone	2 $\beta$ ,3 $\beta$ ,14 $\alpha$ ,22 $\beta$ ,25-pentahydroxy-cholest-7-en-6-one
20. pregnenolone	3 $\beta$ -hydroxy-5-pregnen-20-one
21. urinary pregnanediol	5 $\beta$ -pregnane-3 $\alpha$ ,20 $\alpha$ -diol
22. urinary pregnanetriol	5 $\beta$ -pregnane-3 $\alpha$ ,17 $\alpha$ ,20 $\alpha$ -triol

Thus, for example, pregnenolone may be used without reference to its systematic name. Any other pregnenolone would of course, require definition by systematic name. These trivial names may be modified as in 11 $\beta$ -hydroxy-androstenedione or 21-hydroxypregnenolone.

All other steroids, including those of the bile acid series must be properly defined by systematic names at first mention in accordance with the "Revised Tentative Rules for Nomenclature of Steroids" (IUPAC Commission on the Nomenclature of Organic Chemistry and IUPAC-IUB Commission on Biochemical Nomenclature) *Biochim. biophys. Acta* **164** (1968) 453-486 or *J. Steroid Biochem.* **1** (1970) 143-175.

### OTHER ABBREVIATIONS AND SYMBOLS

The *Journal of Steroid Biochemistry* will in general use the recommended SI symbols for units (Système International d'Unités; see *Symbols, Signs and Abbreviations Recommended for British Scientific Publications* (1969), London, The Royal Society). The symbol for the plural of a unit is the same as that for the singular: thus "centimeters" is "cm", not "cms". The principles given in the Tentative Rules of the IUPAC-IUB Commission on Biochemical Nomenclature (see *Biochemical Journal* **101** (1966) 1) will be followed for abbreviations. Abbreviations of names of compounds except those listed below must be defined together in a footnote.

Accepted abbreviations of names of compounds which may be used without definition:

ACTH	adrenocorticotrophin (or tropin)
ADP, CDP, GDP	The 5'-pyrophosphates of adenosine, cytidine, guanosine,
IDP, UPD, XDP	inosine, uridine, xanthosine.
AMP etc.	Adenosine 5'-monophosphate, etc.
ATP etc.	Adenosine 5'-triphosphate, etc.
CoA and acyl-CoA	Coenzyme A and its acyl derivatives.
DEAE	Diethylaminoethyl cellulose.
DNA	Deoxyribonucleic acid.
EDTA	Ethylenediaminetetra-acetate.
FAD	Flavin-adenine dinucleotide.
FSH	Follicle-stimulating hormone.
GH	Growth hormone.
HCG	Chlorionic gonadotrophin (or tropin), human
LH	Luteinizing hormone
LtH	Luteotrophic (or tropic) hormone
NAD <sup>+</sup> , NADH	Nicotinamide-adenine dinucleotide (oxidized and reduced forms).

NADP <sup>+</sup> , NADPH	Nicotinamide-adenine dinucleotide phosphate (oxidized and reduced forms).
P <sub>i</sub>	Inorganic orthophosphate.
PTH	Parathyroid hormone.
RNA	Ribonucleic acid.
nRNA, mRNA	Nuclear, messenger, ribosomal and transfer ribonucleic acid
rRNA, tRNA	species.
Tris	2-Amino-2-hydroxymethylpropane-1,3-diol.

Other accepted abbreviations which need not be defined:

acceleration due to gravity	<i>g</i>
approximately	approx. (not c. or ca.)
aqueous	aq.
centimetre	cm
compare	cf.
counts/minute	c.p.m.
crystalline	cryst.
curie ( $3.7 \times 10^{10}$ d.p.s.)	Ci
diffusion coefficient	<i>D</i>
diffusion coefficient, corrected to 20° in water, at zero concentration	$D_{20,w}^0$
dilute	dil.
disintegrations/minute	d.p.m.
disintegrations/second	d.p.s.
equilibrium constant	<i>K</i>
gas-liquid chromatography	g.l.c.
gram(me)	g
gram(me)-molecule	mol
hour	h
infrared	I.R.
kilogram(me)	kg
litre	l
logarithm (base 10)	log
logarithm (base e)	ln
maximum	max.
median effective dose	ED <sub>50</sub>
median lethal dose	LD <sub>50</sub>
melting point	m.p.
Michaelis constant	<i>K<sub>m</sub></i>
microgram(me)	μg
micromolar (concentration)	μM
micromole	μmol (not μM)
millilitre	ml
millimicron ( $10^{-9}$ m)	nm (not mμ)
millimolar (concentration)	mM or mmol/l
millimole (amount)	mmol (not mM)
minimum	min.
minute (60s)	min

molar (conc.)	M or mol/l
mole	mol
nanogram(me)	ng
nuclear magnetic resonance	n.m.r.
per	/
per cent	%
picogram(me)	pg
precipitate	ppt.
preparation	prep.
probability that an event is due to chance	P
recrystallized	recryst.
relative band or spot speed in chromatography	$R_F$ ; plural $R_F$ values
revolutions/minute	rev./min (not r.p.m.)
second (time)	s
sedimentation coefficient	s
sedimentation coefficient, corrected to 20° in water, at zero concentration	$s_{20,w}^0$
soluble	sol.
solution	soln.
solvent systems	e.g. benzene-hexane-water (4:2:1, by vol.) benzene-water (2:1, v/v)
specific activity	S.A.
standard deviation	S.D.
Svedberg unit of sedimentation coefficient ( $10^{-3}$ s)	S
thin-layer chromatography	t.l.c.
time (symbol)	t
ultraviolet	U.V.
uncorrected	uncorr.
wavelength	$\lambda$
wave number (unit)	$\text{cm}^{-1}$
weight	wt.
weight in volume	w/v

### *Symbols for amino acids*

The symbols (see *Biochem. J.* **102** (1967) 23) are to be used only when representing polymers, and need not be defined.

### *Symbols for nucleotides*

These symbols (see *Biochem. J.* **101** (1966) 1) need not be defined.

### *Symbols for sugars*

The symbols (see *Biochem. J.* **101** (1966) 1) are to be used only when representing polymers, and need not be defined.

*Enzymes*

The recommendations of "Enzyme Nomenclature" (Marcel Florkin and Elmer H. Stotz, eds., *Comprehensive Biology*, vol. 13. Elsevier Publishing Co., 1965) are to be followed as far as possible, and the EC numbers should be quoted as suggested on p. 42 of that publication.

*Isotopically labelled compounds*

Symbols for the isotope introduced are placed in square brackets in front of the name, e.g., [4-<sup>14</sup>C] testosterone, the figure (4) indicating the position of the isotope in the compound.