Reprinted from *WHO Chronicle*, Vol. 26, No. 9

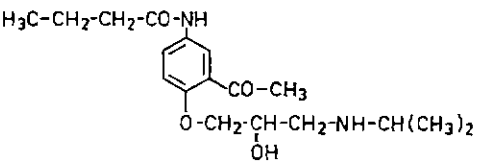
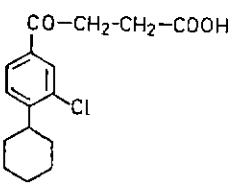
International Nonproprietary Names for Pharmaceutical Substances

In accordance with article 3 of the Procedure for the Selection of Recommended International Nonproprietary Names for Pharmaceutical Substances,[1] notice is hereby given that the following names are under consideration by the World Health Organization as Proposed International Nonproprietary Names.

Comments on, or formal objections to, the proposed names may be forwarded by any person to the Pharmaceuticals unit of the World Health Organization within four months of the date of their publication in the *WHO Chronicle*.

The inclusion of a name in the lists of proposed international nonproprietary names does not imply any recommendation for the use of the substance in medicine or pharmacy.

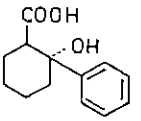
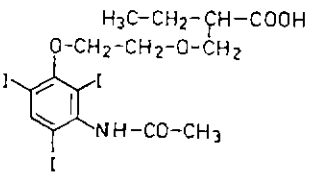
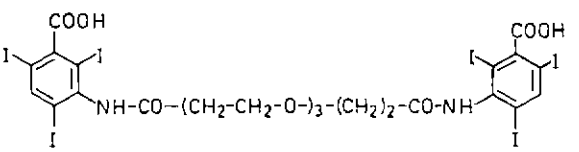
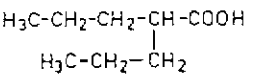
PROPOSED INTERNATIONAL NONPROPRIETARY NAMES (*Prop. I.N.N.*): LIST 28 [2]

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
acebutololum acebutolol	3′-acetyl-4′-[2-hydroxy-3-(isopropylamino)propoxy]butyranilide $C_{18}H_{28}N_2O_4$
	
acidum bucloxicum bucloxic acid	3-(3-chloro-4-cyclohexylbenzoyl)propionic acid $C_{16}H_{19}ClO_3$
	

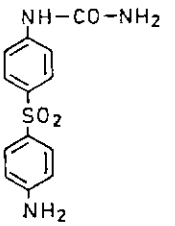
[1] See Annex, p 23

[2] Other lists of proposed international nonproprietary names can be found in *Chron. Wld Hlth Org.*, 1953, **7**, 299, 1954; **8**, 216, 313; 1956, **10**, 28; 1957, **11**, 231; 1958, **12**, 102; *WHO Chronicle*, 1959, **13**, 105, 152; 1960, **14**, 168, 244; 1961, **15**, 314; 1962, **16**, 385; 1963, **17**, 389; 1964, **18**, 433; 1965, **19**, 446; 1966, **20**, 216; 1967, **21**, 70, 478; 1968, **22**, 112, 407; 1969, **23**, 183, 418; 1970, **24**, 119, 413; 1971, **25**, 123, 415; 1972, **26**, 121.

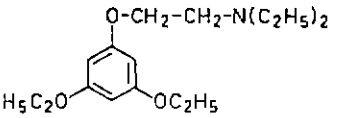
Lists of recommended international nonproprietary names were published in *Chron. Wld Hlth Org.*, 1955, **9**, 185; *WHO Chronicle*, 1959, **13**, 106, 463; 1962, **16**, 101; 1965, **19**, 165, 206, 249; 1966, **20**, 421; 1967, **21**, 538; 1968, **22**, 463; 1969, **23**, 490; 1970, **24**, 526; 1971, **25**, 476.

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
acidum cicloxilicum cicloxilic acid	*trans*-2-hydroxy-2-phenylcyclohexanecarboxylic acid $C_{13}H_{16}O_3$ 
acidum iopronicum iopronic acid	2-[[2-(3-acetamido-2,4,6-triiodophenoxy)ethoxy]methyl]butyric acid $C_{15}H_{18}I_3NO_5$ 
acidum iotranicum iotranic acid	3,3'-[oxybis(ethyleneoxyethylenecarbonylimino)]bis[2,4,6-triiodobenzoic acid] $C_{24}H_{22}I_6N_2O_9$ 
acidum valproicum valproic acid	2-propylvaleric acid $C_8H_{16}O_2$ 

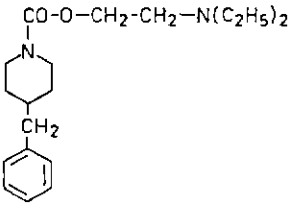
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
amidapsonum amidapsone	(*p*-sulfanilylphenyl)urea $C_{13}H_{13}N_3O_3S$



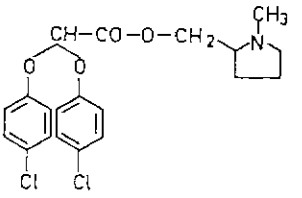
amifloverinum amifloverine	2-(3,5-diethoxyphenoxy)triethylamine $C_{16}H_{27}NO_3$



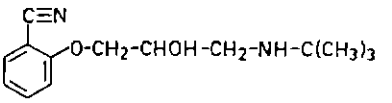
benrixatum benrixate	4-benzyl-1-piperidinecarboxylic acid, 2-(diethylamino)ethyl ester $C_{19}H_{30}N_2O_2$



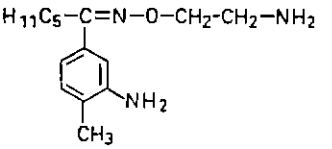
biclofibratum biclofibrate	bis(*p*-chlorophenoxy)acetic acid, 1-methyl-2-pyrrolidinylmethyl ester $C_{20}H_{21}Cl_2NO_4$



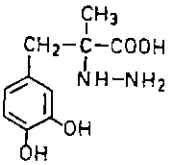
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
bunitrololum bunitrolol	*o*-[3-(*tert*-butylamino)-2-hydroxypropoxy]benzonitrile $C_{14}H_{20}N_2O_2$



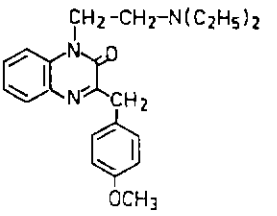
caproxaminum caproxamine	3'-amino-4'-methylhexanophenone *O*-(2-aminoethyl)oxime $C_{15}H_{25}N_3O$

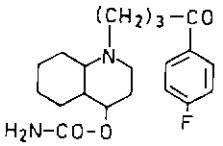
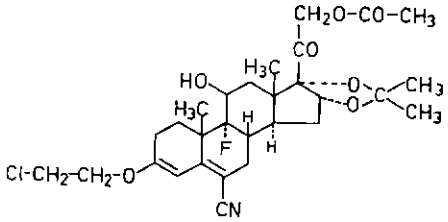
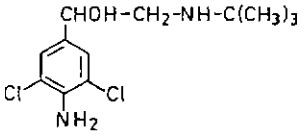
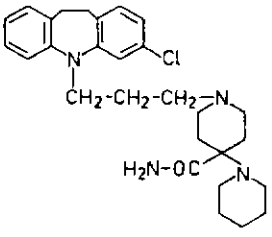


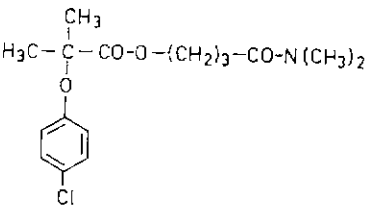
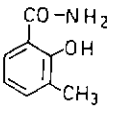
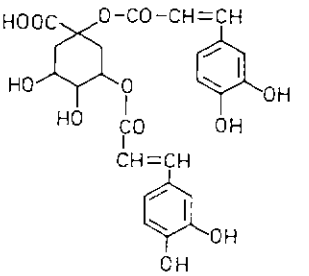
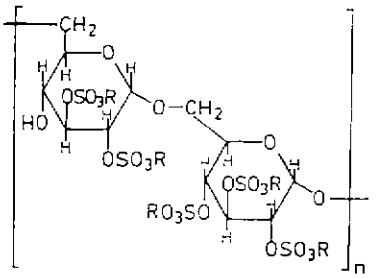
carbidopum carbidopa	α-hydrazino-3,4-dihydroxy-α-methylhydrocinnamic acid $C_{10}H_{14}N_2O_4$

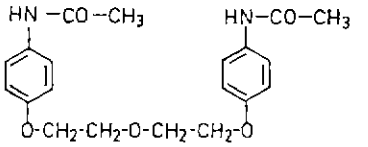
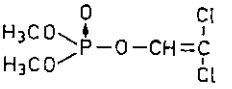
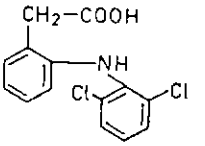
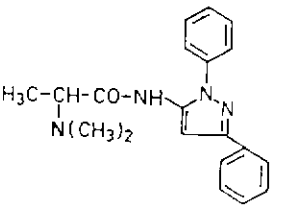


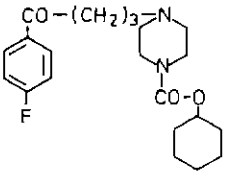
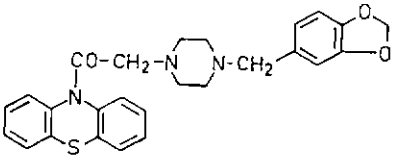
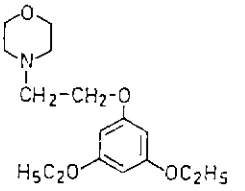
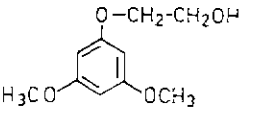
caroverinum caroverine	1-[2-(diethylamino)ethyl]-3-(*p*-methoxybenzyl)-2(1*H*)-quinoxalinone $C_{22}H_{27}N_3O_2$

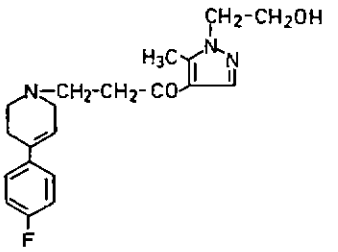
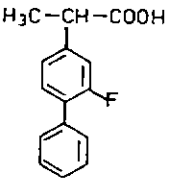
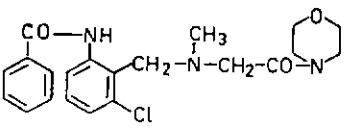
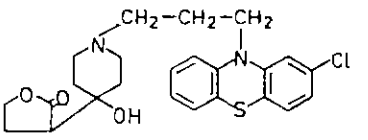


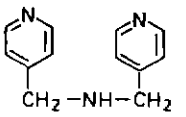
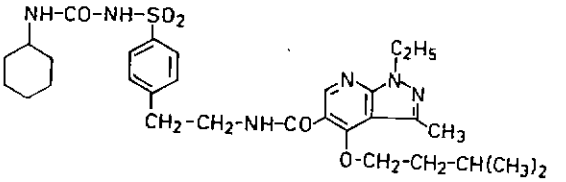
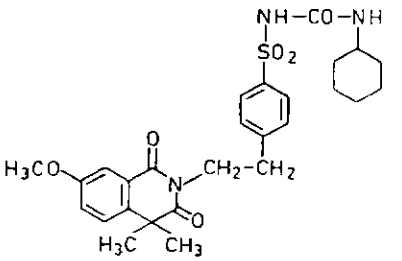
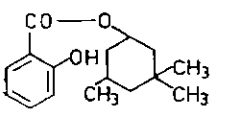
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
cicarperonum cicarperone	4'-fluoro-4-(octahydro-4-hydroxy-1(2*H*)-quinolyl)butyrophenone carbamate (ester) $C_{20}H_{27}FN_2O_3$ 
cicortonidum cicortonide	3-(2-chloroethoxy)-9-fluoro-11 β,16 α,17,21-tetrahydroxy-20-oxopregna-3,5-diene-6-carbonitrile, cyclic 16,17-acetal with acetone, 21-acetate $C_{29}H_{37}ClFNO_7$ 
clenbuterolum clenbuterol	4-amino-α-[(*tert*-butylamino)methyl]-3,5-dichlorobenzyl alcohol $C_{12}H_{18}Cl_2N_2O$ 
clocapraminum clocapramine	1'-[3-(3-chloro-10,11-dihydro-5*H*-dibenz[*b*,*f*]azepin-5-yl)propyl]-[1,4'-bipiperidine]-4'-carboxamide $C_{28}H_{37}ClN_4O$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
clofibridum clofibride	2-(*p*-chlorophenoxy)-2-methylpropionic acid, ester with 4-hydroxy-*N*,*N*-dimethylbutyramide $C_{16}H_{22}ClNO_4$ 
cresotamidum cresotamide	2,3-cresotamide $C_8H_9NO_2$ 
cynarinum cynarine	3,4-dihydrocinnamic acid, 1-carboxy-4,5-dihydroxy-1,3-cyclohexylene ester $C_{25}H_{24}O_{12}$ 
detralfatum detralfate	dextran sulfate, sodium salt, aluminum complex  R = Na or $Al(OH)_2$

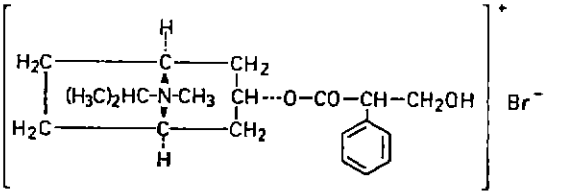
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
diamfenetidum diamfenetide	β,β′-oxybis[*p*-acetophenetidide] $C_{20}H_{24}N_2O_5$ 
dichlorvosum dichlorvos	2,2-dichlorovinyl dimethyl phosphate $C_4H_7Cl_2O_4P$ 
diclofenacum diclofenac	[*o*-(2,6-dichloroanilino)phenyl]acetic acid $C_{14}H_{11}Cl_2NO_2$ 
difamizolum difamizole	2-(dimethylamino)-*N*-(1,3-diphenylpyrazol-5-yl)propionamide $C_{20}H_{22}N_4O$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
eledoisinum eledoisin	5-oxo-L-prolyl-L-prolyl-L-seryl-L-lysyl-L-aspartyl-L-alanyl-L-phenylalanyl-L-isoleucylglycyl-L-leucyl-L-methioninamide *or* 5-oxo-L-Pro-L-Pro-L-Ser-L-Lys-L-Asp-L-Ala-L-Phe-L-Ile-Gly-L-Leu-L-Met-NH_2 $C_{54}H_{85}N_{13}O_{15}S$
fenaperonum fenaperone	4-[3-(*p*-fluorobenzoyl)propyl]-1-piperazinecarboxylic acid, cyclohexyl ester $C_{21}H_{29}FN_2O_3$
	
fenoverinum fenoverine	10-[(4-piperonyl-1-piperazinyl)acetyl]phenothiazine $C_{26}H_{25}N_3O_3S$
	
floredilum floredil	4-[2-(3,5-diethoxyphenoxy)ethyl]morpholine $C_{16}H_{25}NO_4$
	
floverinum floverine	2-(3,5-dimethoxyphenoxy)ethanol $C_{10}H_{14}O_4$
	

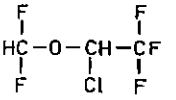
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
flupranonum **flupranone**	3-[4-(*p*-fluorophenyl)-3,6-dihydro-1(2*H*)-pyridyl]-1-[1-(2-hydroxyethyl)-5-methylpyrazol-4-yl]-1-propanone $C_{20}H_{24}FN_3O_2$ 
flurbiprofenum flurbiprofen	2-fluoro-α-methyl-4-biphenylacetic acid $C_{15}H_{13}FO_2$ 
fominobenum fominoben	3'-chloro-α-[methyl[(morpholinocarbonyl)methyl]amino]-*o*-benzotoluidide $C_{21}H_{24}ClN_3O_3$ 
furomazinum furomazine	3-[1-[3-(2-chlorophenothiazin-10-yl)propyl]-4-hydroxy-4-piperidyl]dihydro-2(3*H*)-furanone $C_{24}H_{27}ClN_2O_3S$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
gapicominum gapicomine	4,4'-(iminodimethylene)dipyridine $C_{12}H_{13}N_3$ 
glicaramidum glicaramide	1-cyclohexyl-3-[[*p*-[2-[1-ethyl-4-(isopentyloxy)-3-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxamido]ethyl]phenyl]sulfonyl]urea $C_{30}H_{42}N_6O_5S$ 
gliquidonum gliquidone	1-cyclohexyl-3-[[*p*-[2-(3,4-dihydro-7-methoxy-4,4-dimethyl-1,3-dioxo-2(1*H*)-isoquinolyl)ethyl]phenyl]sulfonyl]urea $C_{27}H_{33}N_3O_6S$ 
homosalatum homosalate	3,3,5-trimethylcyclohexyl salicylate $C_{16}H_{22}O_3$ 

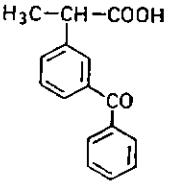
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
ipratropii bromidum ipratropium bromide	3α-hydroxy-8-isopropyl-1αH,5αH-tropanium bromide (±)-tropate $C_{20}H_{30}BrNO_3$



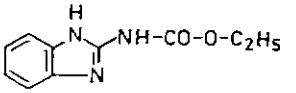
isofluranum isoflurane	1-chloro-2,2,2-trifluoroethyl difluoromethyl ether $C_3H_2ClF_5O$

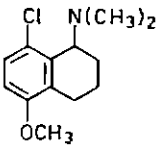
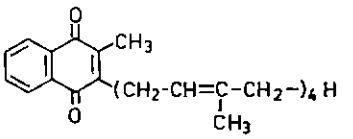
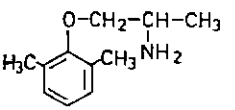
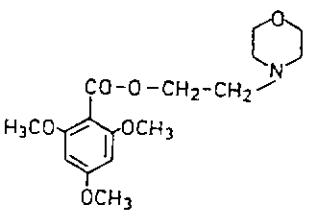


ketoprofenum ketoprofen	*m*-benzoylhydratropic acid $C_{16}H_{14}O_3$

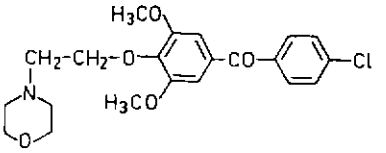


lobendazolum lobendazole	ethyl 2-benzimidazolecarbamate $C_{10}H_{11}N_3O_2$

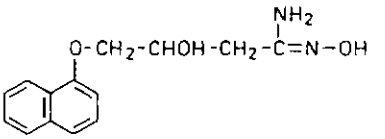


Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
lometralinum lometraline	8-chloro-1,2,3,4-tetrahydro-5-methoxy-*N*,*N*-dimethyl-1-naphthylamine $C_{13}H_{18}ClNO$ 
macrisalbum (^{131}I) macrisalb (^{131}I)	macroaggregated iodinated (^{131}I) human albumin
menatetrenonum menatetrenone	2-methyl-3-(3,7,11,15-tetramethyl-2,6,10,14-hexadecatetraenyl)-1,4-naphthoquinone $C_{31}H_{40}O_2$ 
mexiletinum mexiletine	1-methyl-2-(2,6-xylyloxy)ethylamine $C_{11}H_{17}NO$ 
mocimycinum mocimycin	an antibiotic obtained from cultures of *Streptomyces ramocissimus* or the same substance obtained by any other means.
mofloverinum mofloverine	2,4,6-trimethoxybenzoic acid, 2-morpholinoethyl ester $C_{16}H_{23}NO_6$ 

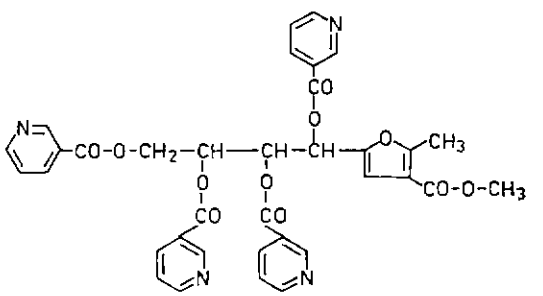
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
morclofonum morclofone	4'-chloro-3,5-dimethoxy-4-(2-morpholinoethoxy)benzophenone $C_{21}H_{24}ClNO_5$



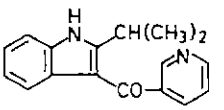
nadoxololum nadoxolol	3-hydroxy-4-(1-naphthyloxy)butyramidoxime $C_{14}H_{16}N_2O_3$

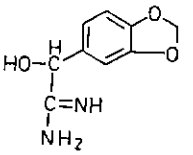
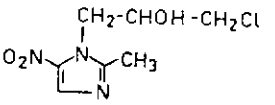
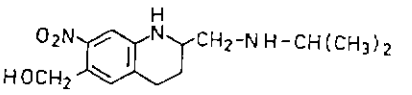
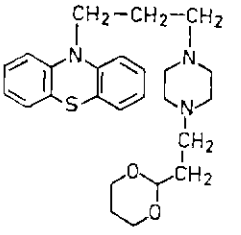


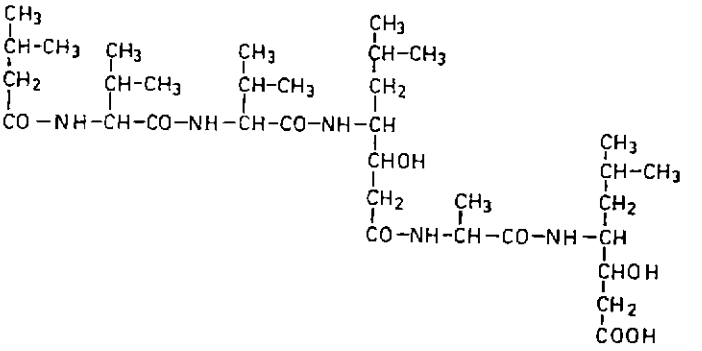
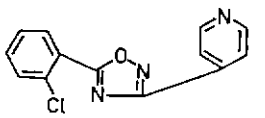
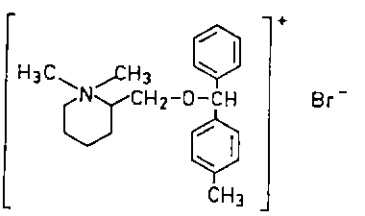
nicofuratum nicofurate	2-methyl-5-(D-*arabino*-1,2,3,4-tetrahydroxybutyl)-3-furoic acid methyl ester, tetranicotinate $C_{35}H_{28}N_4O_{11}$

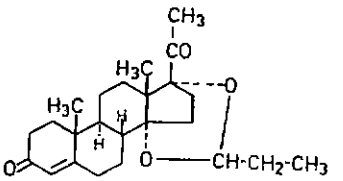
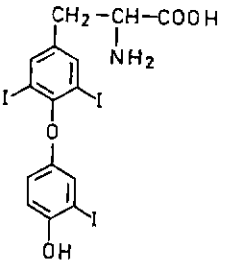
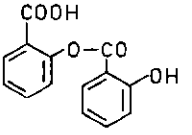
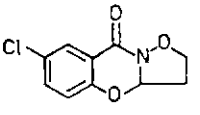


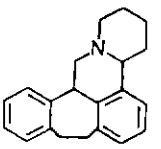
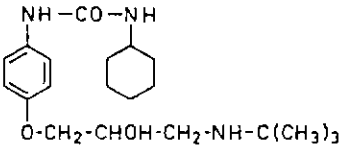
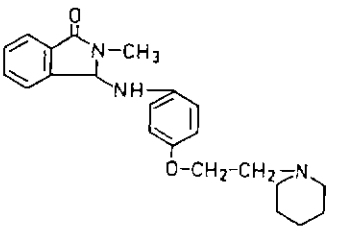
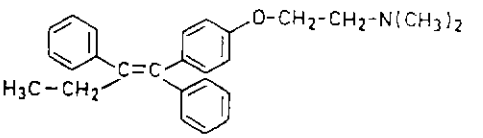
nictindolum nictindole	2-isopropylindol-3-yl 3-pyridyl ketone $C_{17}H_{16}N_2O$

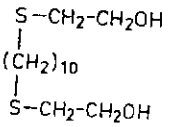
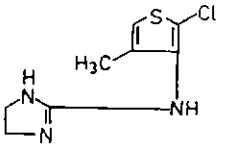
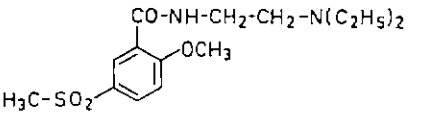
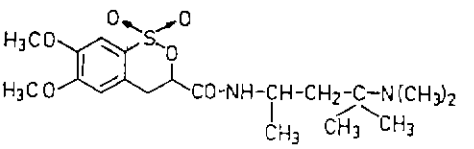


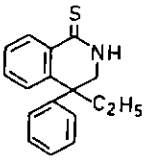
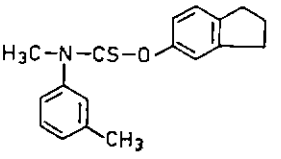
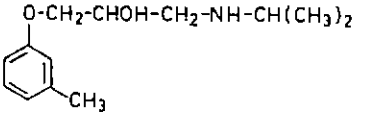
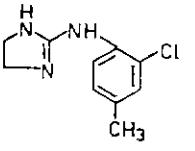
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
ocrasum ocrase	fibrinolytic enzyme derived from *Aspergillus ochraceus*
olmidinum olmidine	3,4-(methylenedioxy)mandelamidine $C_9H_{10}N_2O_3$ 
ornidazolum ornidazole	α-(chloromethyl)-2-methyl-5-nitroimidazole-1-ethanol $C_7H_{10}ClN_3O_3$ 
oxamniquinum oxamniquine	1,2,3,4,-tetrahydro-2-[(isopropylamino)methyl]-7-nitro-6-quinolinemethanol $C_{14}H_{21}N_3O_3$ 
oxaprazinum oxaprazine	10-[3-[4-(2-*m*-dioxan-2-ylethyl)-1-piperazinyl]propyl]phenothiazine $C_{25}H_{33}N_3O_2S$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
pepstatinum pepstatin	isovaleryl-L-valyl-L-valyl-4-amino-3-hydroxy-6-methylheptanoyl-L-alanyl-4-amino-3-hydroxy-6-methylheptanoic acid $C_{34}H_{63}N_5O_9$
	
pifexolum pifexole	4-[5-(*o*-chlorophenyl)-1,2,4-oxadiazol-3-yl]pyridine $C_{13}H_8ClN_3O$
	
pirdonii bromidum pirdonium bromide	1,1-dimethyl-2-[[(*p*-methyl-α-phenylbenzyl)oxy]methyl]piperidinium bromide $C_{22}H_{30}BrNO$
	

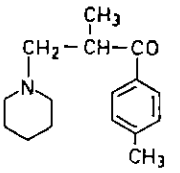
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
proligestonum proligestone	14,17-dihydroxypregn-4-ene-3,20-dione, cyclic acetal with propionaldehyde $C_{24}H_{34}O_4$ 
rathyroninum rathyronine	DL-3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]alanine $C_{15}H_{12}I_3NO_4$ 
renactidum renactide	1-glycine-18-L-argininamide-$\alpha^{1\text{-}18}$-corticotropin *or* Gly-L-Tyr-L-Ser-L-Met-L-Glu-L-His-L-Phe-L-Arg-L-Trp-Gly-L-Lys-L-Pro-L-Val-Gly-L-Lys-L-Lys-L-Arg-L-Arg-NH_2 $C_{100}H_{156}N_{34}O_{22}S$
salsalatum salsalate	salicylic acid, bimolecular ester $C_{14}H_{10}O_5$ 
seclazonum seclazone	7-chloro-3,3a-dihydro-2*H*,9*H*-isoxazolo[3,2-*b*][1,3]benzoxazin-9-one $C_{10}H_8ClNO_3$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
taclaminum taclamine	2,3,4,4a,8,9,13b,14-octahydro-1*H*-benzo[6,7]cyclohepta[1,2,3-*de*]-pyrido[2,1-*a*]isoquinoline $C_{21}H_{23}N$ 
talinololum talinolol	(±)-1-[*p*-[3-(*tert*-butylamino)-2-hydroxypropoxy]phenyl]-3-cyclohexylurea $C_{20}H_{33}N_3O_3$ 
tamidolinum tamidoline	2-methyl-3-(β-piperidino-*p*-phenetidino)phthalimidine $C_{22}H_{27}N_3O_2$ 
tamoxifenum tamoxifen	(*Z*)-2-[*p*-(1,2-diphenyl-1-butenyl)phenoxy]-*N*,*N*-dimethylethylamine $C_{26}H_{29}NO$ 

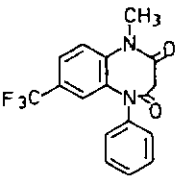
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
tiadenolum tiadenol	2,2'-(decamethylenedithio)diethanol $C_{14}H_{30}O_2S_2$ 
tiamenidinum tiamenidine	2-[(2-chloro-4-methyl-3-thienyl)amino]-2-imidazoline $C_8H_{10}ClN_3S$ 
tiapridum tiapride	*N*-[2-(diethylamino)ethyl]-5-(methylsulfonyl)-*o*-anisamide $C_{15}H_{24}N_2O_4S$ 
tisocromidum tisocromide	*N*-[3-(dimethylamino)-1,3-dimethylbutyl]-6,7-dimethoxy-2,1-benzoxathian-3-carboxamide 1,1-dioxide $C_{19}H_{30}N_2O_6S$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
tisoquonum tisoquone	4-ethyl-3,4-dihydro-4-phenylthioisocarbostyril $C_{17}H_{17}NS$ 
tolindatum tolindate	*O*-5-indanyl *m,N*-dimethylthiocarbanilate $C_{18}H_{19}NOS$ 
toliprololum toliprolol	1-(isopropylamino)-3-(*m*-tolyloxy)-2-propanol $C_{13}H_{21}NO_2$ 
tolonidinum tolonidine	2-(2-chloro-*p*-toluidino)-2-imidazoline $C_{10}H_{12}ClN_3$ 

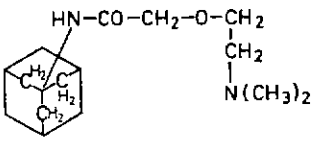
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
tolperisonum tolperisone	2,4'-dimethyl-3-piperidinopropiophenone $C_{16}H_{23}NO$



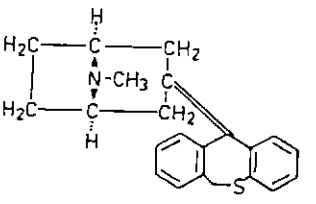
triflubazamum triflubazam	1-methyl-5-phenyl-7-(trifluoromethyl)-1*H*-1,5-benzodiazepine-2,4-[3*H*,5*H*]-dione $C_{17}H_{13}F_3N_2O_2$



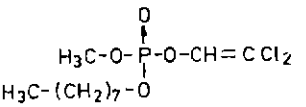
tromantadinum tromantadine	*N*-1-adamantyl-2-[2-(dimethylamino)ethoxy]acetamide $C_{16}H_{28}N_2O_2$



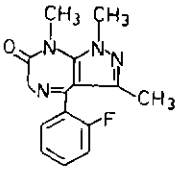
tropatepinum tropatepine	3-dibenzo[*b*,*e*]thiepin-11(6*H*)-ylidene-1αH,5αH-tropane $C_{22}H_{23}NS$



Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
vincofosum vincofos	2,2-dichlorovinyl methyl octyl phosphate $C_{11}H_{21}Cl_2O_4P$



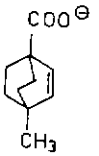
zolazepamum zolazepam	4-(*o*-fluorophenyl)-6,8-dihydro-1,3,8-trimethylpyrazolo[3,4-*e*]-[1,4]-diazepin-7(1*H*)-one $C_{15}H_{15}FN_4O$



Names for Radicals and Groups

Some substances for which a proposed international nonproprietary name has been established may be used in the form of salts or esters. The radicals or groups involved may be of complex composition and it is then inconvenient to refer to them in systematic chemical nomenclature. Consequently, shorter nonproprietary names for some radicals and groups have been devised or selected, and they are suggested for use with the proposed international nonproprietary names.

propionate lauryl sulfate	estolate
4-methylbicyclo[2.2.2.]oct-2-ene-1-carboxylate	ciclotate



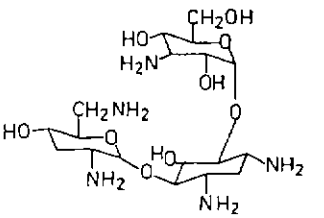
AMENDMENTS TO PREVIOUS LISTS

Vol. 25, No. 9

PROPOSED INTERNATIONAL NONPROPRIETARY NAMES (*Prop. I.N.N.*): LIST 26

p. 433 tobramycinum
tobramycin

complete the present definition to read as follows: " an antibiotic obtained from cultures of *Streptomyces tenebrarius* or the same substance obtained by any other means; *O*-3-amino-3-deoxy-α-D-glucopyranosyl-(1→4)-*O*-[2,6-diamino-2,3,6-trideoxy-α-D-*ribo*-hexopyranosyl-(1→6)]-2-deoxystreptamine
$C_{18}H_{37}N_5O_9$ "



INTERNATIONAL NONPROPRIETARY NAMES FOR PHARMACEUTICAL SUBSTANCES

CUMULATIVE LIST NO. 3, 1971

	delete	*insert*
p. 28	carbasonum carbasone	carbarsonum carbarsone
p. 55	*delete* estomycinum estomycin	an antibiotic obtained from cultures of *Streptomyces chrestomyceticus*, or the same substance produced by any other means
p. 70	*delete* hydroxymycinum hydroxymycin	an antibiotic obtained from cultures of *Streptomyces paucisporogenes*, or the same substance produced by any other means
p. 102	paromomycinum paromomycin	*replace the present definition by the following:* *O*-2,6-diamino-2,6-dideoxy-β-L-idopyranosyl-(1→3)-*O*-β-D-ribofuranosyl-(1→5)-*O*-[2-amino-2-deoxy-α-D-glucopyranosyl-(1→4)]-2-deoxystreptamine $C_{23}H_{45}N_5O_{14}$

All names from lists 1–25 of proposed international nonproprietary names, together with a molecular formula index, will be found in: World Health Organization (1971) *International nonproprietary names for pharmaceutical substances: Cumulative list No. 3, 1971*, Geneva, 189 pages (price: £2.40, $6.00, or Sw. fr. 24.—).

Annex

PROCEDURE FOR THE SELECTION OF RECOMMENDED INTERNATIONAL NONPROPRIETARY NAMES FOR PHARMACEUTICAL SUBSTANCES *

The following procedure shall be followed by the World Health Organization in the selection of recommended international nonproprietary names for pharmaceutical substances, in accordance with the World Health Assembly resolution WHA3.11 :

1. Proposals for recommended international nonproprietary names shall be submitted to the World Health Organization on the form provided therefor.

2. Such proposals shall be submitted by the Director-General of the World Health Organization to the members of the Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations designated for this purpose, for consideration in accordance with the " General principles for guidance in devising International Nonproprietary Names ", appended to this procedure. The name used by the person discovering or first developing and marketing a pharmaceutical substance shall be accepted, unless there are compelling reasons to the contrary.

3. Subsequent to the examination provided for in article 2, the Director-General of the World Health Organization shall give notice that a proposed international nonproprietary name is being considered.

A. Such notice shall be given by publication in the *Chronicle of the World Health Organization* [1] and by letter to Member States and to national pharmacopoeia commissions or other bodies designated by Member States.

(i) Notice may also be sent to specific persons known to be concerned with a name under consideration

B. Such notice shall :

(i) set forth the name under consideration ;

(ii) identify the person who submitted a proposal for naming the substance, if so requested by such person ;

(iii) identify the substance for which a name is being considered ;

(iv) set forth the time within which comments and objections will be received and the person and place to whom they should be directed ;

(v) state the authority under which the World Health Organization is acting and refer to these rules of procedure.

C. In forwarding the notice, the Director-General of the World Health Organization shall request that Member States take such steps as are necessary to prevent the acquisition of proprietary rights in the proposed name during the period it is under consideration by the World Health Organization.

4. Comments on the proposed name may be forwarded by any person to the World Health Organization within four months of the date of publication, under article 3, of the name in the *Chronicle of the World Health Organization*.

5. A formal objection to a proposed name may be filed by any interested person within four months of the date of publication, under article 3, of the name in the *Chronicle of the World Health Organization*.

A. Such objection shall .

(i) identify the person objecting ;

(ii) state his interest in the name ;

(iii) set forth the reasons for his objection to the name proposed.

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* Text adopted by the Executive Board of WHO in resolution EB15.R7 (*Off. Rec. Wld Hlth Org.*, 1955, 60, 3) and amended by the Board in resolution EB43.R9 (*Off. Rec. Wld Hlth Org.*, 1969, 173, 10).

[1] The title of this publication was changed to *WHO Chronicle* in January 1959.

6. Where there is a formal objection under article 5, the World Health Organization may either reconsider the proposed name or use its good offices to attempt to obtain withdrawal of the objection. Without prejudice to the consideration by the World Health Organization of a substitute name or names, a name shall not be selected by the World Health Organization as a recommended international nonproprietary name while there exists a formal objection thereto filed under article 5 which has not been withdrawn.

7. Where no objection has been filed under article 5, or all objections previously filed have been withdrawn, the Director-General of the World Health Organization shall give notice in accordance with subsection A of article 3 that the name has been selected by the World Health Organization as a recommended international nonproprietary name.

8. In forwarding a recommended international nonproprietary name to Member States under article 7, the Director-General of the World Health Organization shall:

A. request that it be recognized as the nonproprietary name for the substance; and

B. request that Member States take such steps as are necessary to prevent the acquisition of proprietary rights in the name, including prohibiting registration of the name as a trade-mark or trade-name.

GENERAL PRINCIPLES FOR GUIDANCE IN DEVISING INTERNATIONAL NONPROPRIETARY NAMES FOR PHARMACEUTICAL SUBSTANCES *

1. Names should be distinctive in sound and spelling. They should not be inconveniently long and should not be liable to confusion with names already in common use.

2. The name for a substance belonging to a group of pharmacologically related substances should, where appropriate, show this relationship. Names that are likely to convey to a patient an anatomical, physiological, pathological or therapeutic suggestion should be avoided.

The above primary principles are to be implemented by utilization of the following secondary principles.

3. In devising the name of the first substance in a new pharmacological group (the parent substance), consideration should be given to the possibility of devising suitable names for related substances belonging to the new group.

4. In devising a name from the systematic chemical name of a substance, syllables such as "methylhydro", "methoxy", and "chlor" should preferably be abbreviated, for example, to "medro", "meto", and "clo"; the derived name should not be chemically misleading.

5. In devising names for acids, one-word names are preferred; their salts should be named without modifying the acid name, e.g., "oxacillin" and "oxacillin sodium", "ibufenac" and "ibufenac sodium" The salts of acids having two-word names such as "nicotinic acid" should be named in the usual style, e.g., "sodium nicotinate".

6. Names for substances which are used as salts should in general apply to the active base (or the active acid). Names for different salts or esters of the same active substance should differ only in respect of the name of the inactive acid (or the inactive base). Exceptions may have to be made for those cases in which pharmacological activity may reside in both parts of the salt or ester.

For quaternary ammonium substances, the cation and anion should be named appropriately as separate components of a quaternary substance and not in the amine-salt style.

7. The use of an isolated letter or number should be avoided; hyphenated construction is also undesirable.

8. To facilitate translation and pronunciation "f" should preferably be used instead of "ph", "t" instead of "th", "e" instead of "ae" or "oe", and "i" instead of "y".

* Text revised by the Expert Committee on Nonproprietary Names for Pharmaceutical Substances (unpublished reports WHO/Pharm/67.443, WHO/Pharm/68.447, and WHO Pharm 70.458)

9. Provided that the names suggested are in accordance with these principles, names proposed by the person discovering or first developing and marketing a pharmaceutical preparation, or names already officially in use in any country, should receive preferential consideration.

10. Group relationship in names (see item 2) should preferably be shown by using common syllables in the following list. Where a syllable or a group of syllables is shown without any hyphens it may be used anywhere in the name. The syllable, or group of syllables, should, if possible, be used only for such substances.

Subsidiary group relationships should be shown by devising names which show similarities to and are analogous with a previously named substance, the parent substance.

At the end of the list are general chemical syllables. Should they come into conflict with other suggested syllables, the suffix conveying the best information should be used.

Latin	*English*	*French*	
-actidum	-actide	-actide	synthetic polypeptides with a corticotrophin-like action
-andr-	-andr-	-andr-	steroids, androgenic
or -stan-	*or* -stan-	*or* -stan-	
or -ster-	*or* -ster-	*or* -ster-	
-arolum	-arol	-arol	anticoagulants of the coumarin type
-bamatum	-bamate	-bamate	tranquillizers of the propanediol and pentanediol series
barb	barb	barb	barbituric acids, hypnotic activity
bol	bol	bol	anabolic steroids
-cainum	-caine	-caïne	local anaesthetics
cef-	cef-	céf-	antibiotics with cefalosporanic acid nucleus
-cillinum	-cillin	-cilline	penicillins: derivatives of 6-amino-penicillanic acid
cort	cort	cort	steroids, glucocorticoids and mineralocorticoids, other than prednisolone derivatives
-crinum	-crine	-crine	acridine derivatives
-curium	-curium	-curium	curare-like drugs
-cyclinum	-cycline	-cycline	antibiotics, tetracycline derivatives
-estr-	-estr-	-estr-	estrogenic drugs
-forminum	-formin	-formine	guanidine oral antidiabetics
gest	gest	gest	steroids, progestative
gli-	gli-	gli-	sulfonamide oral antidiabetics
io-	io-	io-	iodine-containing contrast media
-moxinum	-moxin	-moxine	monoamine oxidase inhibitors
-mycinum	-mycin	-mycine	antimicrobial antibiotics, produced by *Streptomyces* strains
nifur-	-nifur-	nifur-	5-nitrofuran derivatives
-onidum	-onide	-onide	steroids for topical use: acetal derivatives
-orexum	-orex	-orex	anorexigenic agents
-praminum	-pramine	-pramine	dibenzazepine, compounds of the imipramine type
prost	prost	prost	prostaglandins
-serpinum	-serpine	-serpine	derivatives of *Rauwolfia* alkaloids
sulfa-	sulfa-	sulfa-	sulfonamides, used as antimicrobials
-terolum	-terol	-térol	bronchodilators: phenethylamine derivatives
-tizidum	-tizide	-tizide	diuretics which are thiazide derivatives
-toinum	-toin	-toïne	antiepileptics which are hydantoin derivatives
-verinum	-verine	-vérine	spasmolytics with a papaverine-like action
-inum	-ine	-ine	alkaloids and organic bases
-onum	-one	-one	ketones
-ium	-ium	-ium	quaternary ammonium compounds