Reprinted from *WHO Chronicle*, Vol. 23, No. 9, pp. 418-449

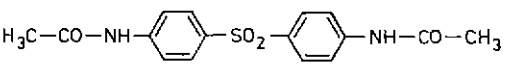
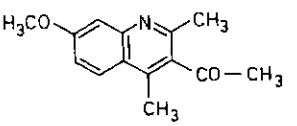
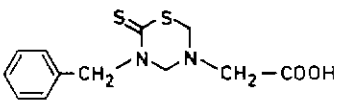
International Nonproprietary Names for Pharmaceutical Substances

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.

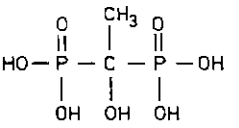
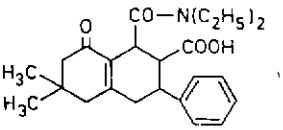
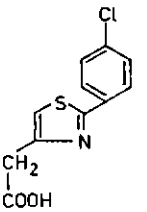
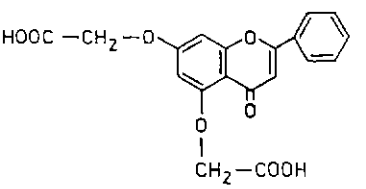
PROPOSED INTERNATIONAL NONPROPRIETARY NAMES (*Prop. I.N.N.*): LIST 22 [2]

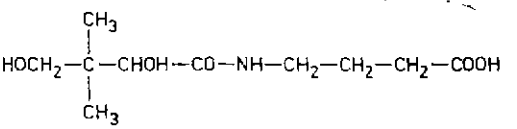
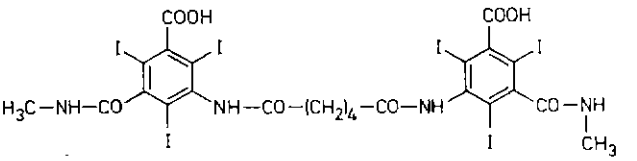
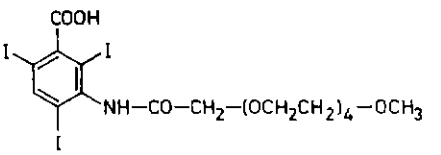
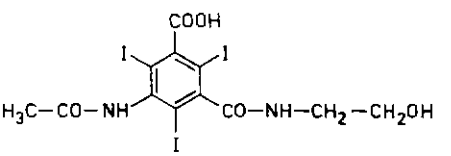
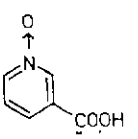
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description Molecular and Graphic Formulae*
acedapsonum acedapsone	4', 4'''-sulfonylbis[acetanilide] $C_{16}H_{16}N_2O_4S$ 
acequinolinum acequinoline	7-methoxy-2,4-dimethyl-3-quinolyl methyl ketone $C_{14}H_{15}NO_2$ 
acidum bensuldazicum bensuldazic acid	5-benzyldihydro-6-thioxo-2*H*-1,3,5-thiadiazine-3(4*H*)-acetic acid $C_{12}H_{14}N_2O_2S_2$ 

[1] See Annex, p. 30.

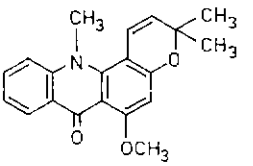
[2] Other lists of proposed international nonproprietary names can be found in *Chron. Wld Hlth Org.*, 1953, 7, 299; 1954, 8, 216, 313; 1956, 10, 28, 1957, 11, 231; 1958, 12, 102; *WHO Chronicle*, 1959, 13, 105, 152; 1960, 14, 168, 244; 1961, 15, 314, 1962, 16, 385; 1963, 17, 389; 1964, 18, 433; 1965,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

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.

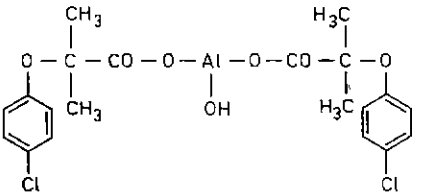
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
acidum etidronicum etidronic acid	(1-hydroxyethylidene)diphosphonic acid $C_2H_8O_7P_2$ 
acidum fenafticum fenaftic acid	1-(diethylcarbamoyl)-1,2,3,4,5,6,7,8-octahydro-6,6-dimethyl-8-oxo-3-phenyl-2-naphthoic acid $C_{24}H_{31}NO_4$ 
acidum fenclozicum fenclozic acid	2-(*p*-chlorophenyl)-4-thiazoleacetic acid $C_{11}H_8ClNO_2S$ 
acidum flavodicum flavodic acid	[(4-oxo-2-phenyl-4*H*-1-benzopyran-5,7-diyl)dioxy]diacetic acid $C_{19}H_{14}O_8$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
acidum hopantenicum hopantenic acid	D-(+)-4-(2,4-dihydroxy-3,3-dimethylbutyramido)butyric acid $C_{10}H_{19}NO_5$ 
acidum iocarmicum iocarmic acid	5,5'-(adipoyldiimino)bis[2,4,6-triiodo-*N*-methylisophthalamic acid] $C_{24}H_{20}I_6N_4O_8$ 
acidum iotrizoicum iotrizoic acid	2,4,6-triiodo-3-[2-[2-[2-[2-(2-methoxyethoxy)ethoxy]ethoxy]-ethoxy]acetamido]benzoic acid $C_{18}H_{24}I_3NO_8$ 
acidum ioxitalamicum ioxitalamic acid	5-acetamido-*N*-(2-hydroxyethyl)-2,4,6-triiodoisophthalamic acid $C_{12}H_{11}I_3N_2O_5$ 
acidum oxiniacicum oxiniacic acid	nicotinic acid 1-oxide $C_6H_5NO_3$ 

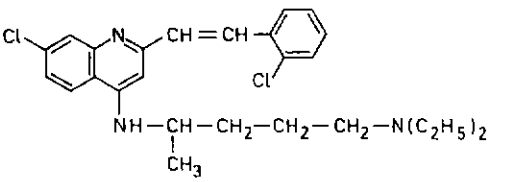
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
acroninum acronine	3,12-dihydro-6-methoxy-3,3,12-trimethyl-7*H*-pyrano[2,3-*c*]acridin-7-one $C_{20}H_{19}NO_3$



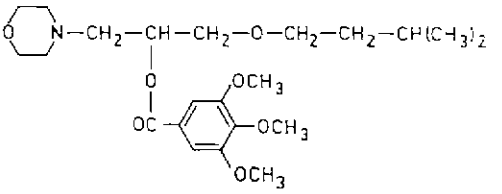
alufibratum alufibrate	bis[2-(*p*-chlorophenoxy)-2-methylpropionato]hydroxyaluminum $C_{26}H_{27}AlCl_2O_7$

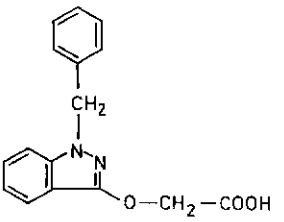
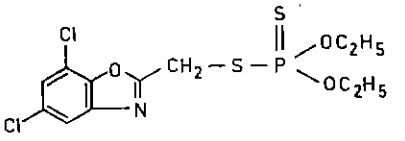
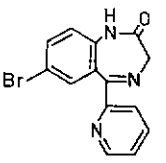
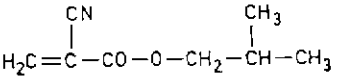


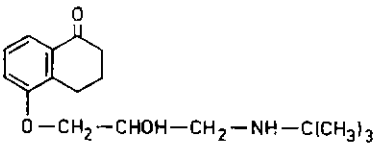
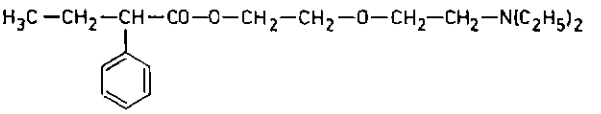
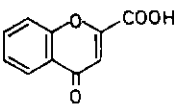
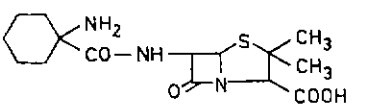
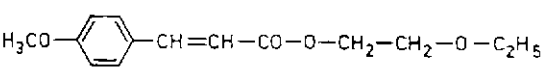
aminoquinqlum aminoquinol	7-chloro-2-(*o*-chlorostyryl)-4-[[4-(diethylamino)-1-methylbutyl]amino]quinoline $C_{24}H_{31}Cl_2N_3$



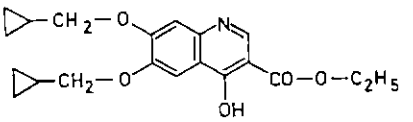
amoproxanum amoproxan	α-(isopentyloxymethyl)-4-morpholineethanol 3,4,5-trimethoxybenzoate (ester) $C_{22}H_{35}NO_$



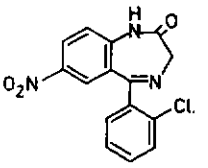
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
bendazacum bendazac	[(1-benzyl-1*H*-indazol-3-yl)oxy]acetic acid $C_{16}H_{14}N_2O_3$ 
benoxafosum benoxafos	*S*-[(5,7-dichlorobenzoxazol-2-yl)methyl] *O*,*O*-diethyl phosphorodithioate $C_{12}H_{14}Cl_2NO_3PS_2$ 
brinasum brinase	fibrinolytic enzyme derived from *Aspergillus oryzae*
bromazepamum bromazepam	7-bromo-1,3-dihydro-5-(2-pyridyl)-2*H*-1,4-benzodiazepin-2-one $C_{14}H_{10}BrN_3O$ 
bucrilatum bucrilate	isobutyl 2-cyanoacrylate $C_8H_{11}NO_2$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
bunololum bunolol	(±)-5-[3-(*tert*-butylamino)-2-hydroxypropoxy]-3,4-dihydro-1(2*H*)-naphthalenone $C_{17}H_{25}NO_3$ 
butamiratum butamirate	2-[2-(diethylamino)ethoxy]ethyl 2-phenylbutyrate $C_{18}H_{29}NO_3$ 
chromocarbum chromocarb	4-oxo-4*H*-1-benzopyran-2-carboxylic acid $C_{10}H_6O_4$ 
ciclacillinum ciclacillin	6-(1-aminocyclohexanecarboxamido)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid $C_{15}H_{23}N_3O_4S$ 
cinoxatum cinoxate	2-ethoxyethyl *p*-methoxycinnamate $C_{14}H_{18}O_4$ 

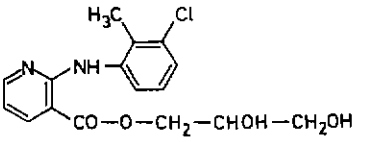
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
ciproquinatum ciproquinate	ethyl 6,7-bis(cyclopropylmethoxy)-4-hydroxy-3-quinolinecarboxylate $C_{20}H_{23}NO_5$



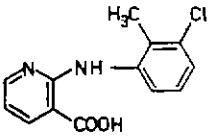
clonazepamum clonazepam	5-(*o*-chlorophenyl)-1,3-dihydro-7-nitro-2*H*-1,4-benzodiazepin-2-one $C_{15}H_{10}ClN_3O_3$



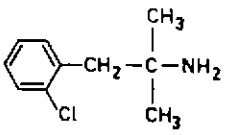
clonixerilum clonixeril	2,3-dihydroxypropyl 2-(3-chloro-*o*-toluidino)nicotinate $C_{16}H_{17}ClN_2O_4$



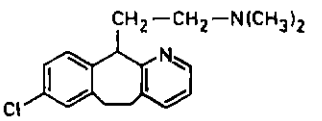
clonixinum clonixin	2-(3-chloro-*o*-toluidino)nicotinic acid $C_{13}H_{11}ClN_2O_2$



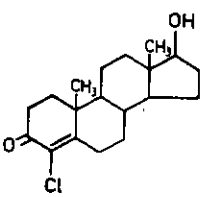
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
clorterminum clortermine	o-chloro-α,α-dimethylphenethylamine $C_{10}H_{14}ClN$



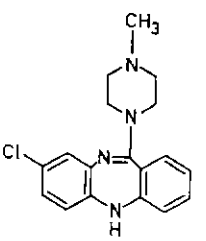
closiraminum closiramine	8-chloro-11-[2-(dimethylamino)ethyl]-6,11-dihydro-5*H*-benzo[5,6]-cyclohepta[1,2-*b*]pyridine $C_{18}H_{21}ClN_2$



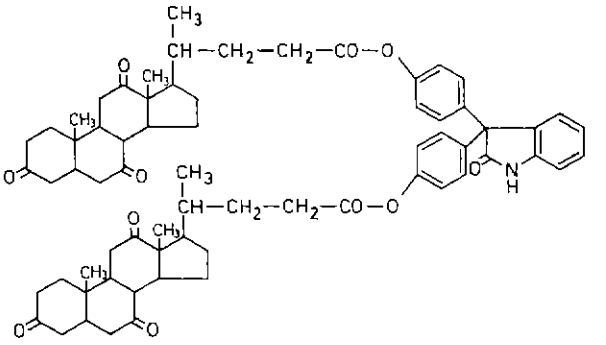
clostebolum clostebol	4-chloro-17β-hydroxyandrost-4-en-3-one $C_{19}H_{27}ClO_2$



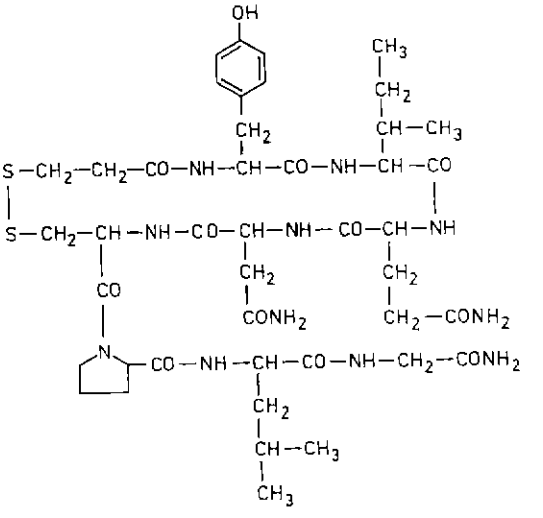
clozapinum clozapine	8-chloro-11-(4-methyl-1-piperazinyl)-5*H*-dibenzo[*b*,*e*][1,4]diazepine $C_{18}H_{19}ClN_4$

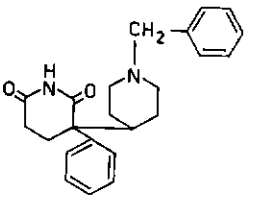
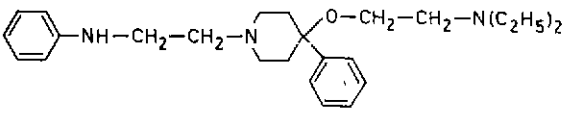
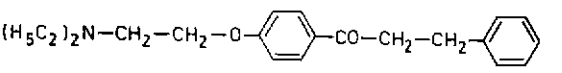
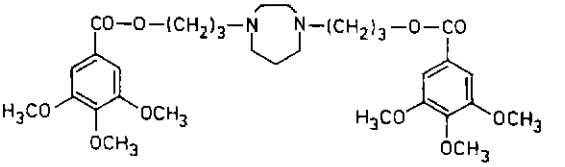
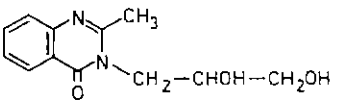


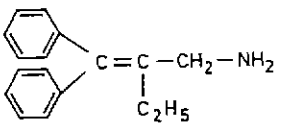
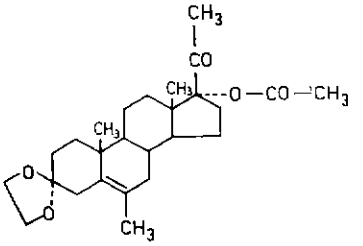
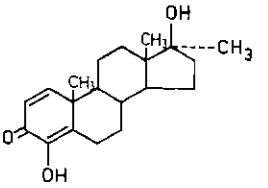
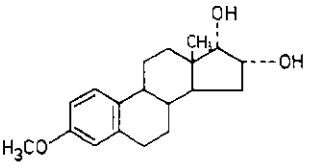
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
cofisatinum cofisatin	3,3-bis(*p*-hydroxyphenyl)-2-indolinone 3,7,12-trioxo-5β-cholan-24-oic acid diester $C_{65}H_{79}NO_{11}$

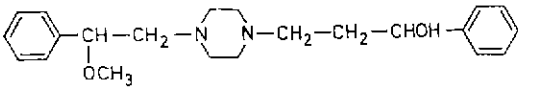
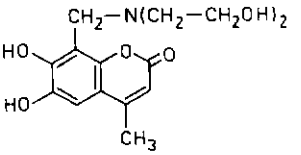
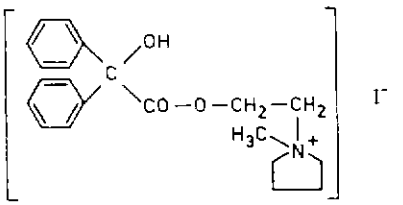
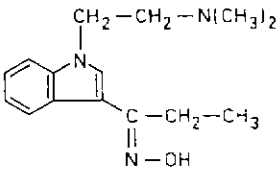


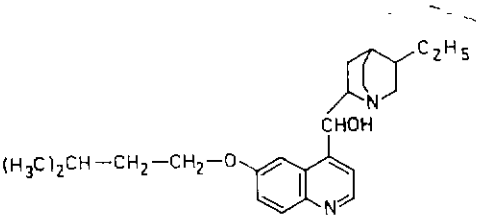
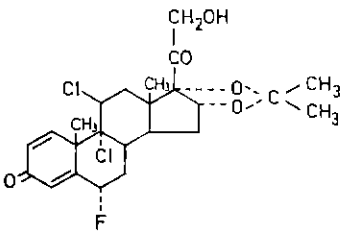
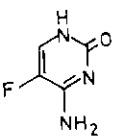
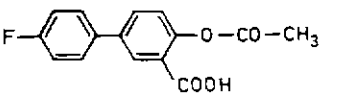
colestipolum colestipol	tetraethylenepentamine polymer with 1-chloro-2,3-epoxypropane
demoxytocinum demoxytocin	1-(3-mercaptopropionic acid)-oxytocin $C_{43}H_{65}N_{11}O_{12}S_2$

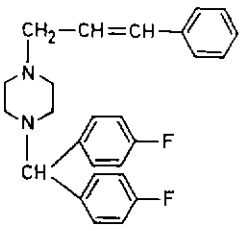
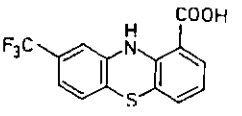
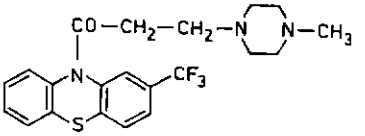
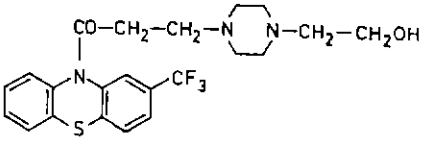


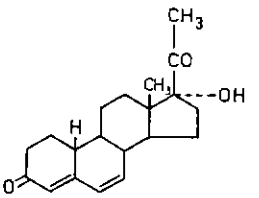
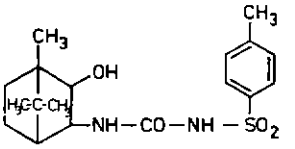
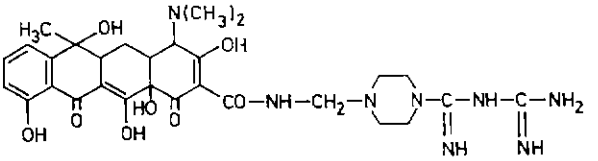
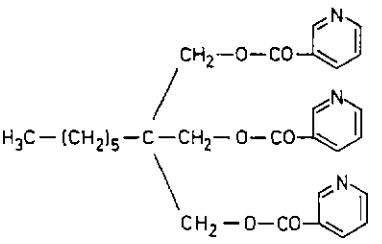
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
dexbenzetimidum dexbenzetimide	(+)-2-(1-benzyl-4-piperidyl)-2-phenylglutarimide $C_{23}H_{26}N_2O_2$ 
diamocainum diamocaine	1-(2-anilinoethyl)-4-[2-(diethylamino)ethoxy]-4-phenylpiperidine $C_{25}H_{37}N_3O$ 
dietifenum dietifen	4-[2-(diethylamino)ethoxy]phenyl phenethyl ketone $C_{21}H_{27}NO_2$ 
dilazepum dilazep	tetrahydro-1*H*-1,4-diazepine-1,4(5*H*)-dipropanol 3,4,5-trimethoxybenzoate (diester) $C_{31}H_{44}N_2O_{10}$ 
diproqualonum diproqualone	3-(2,3-dihydroxypropyl)-2-methyl-4(3*H*)-quinazolinone $C_{12}H_{14}N_2O_3$ 

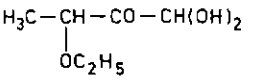
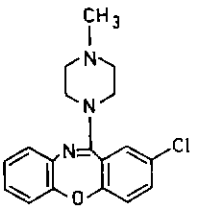
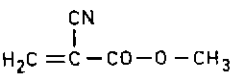
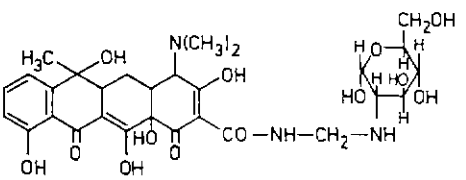
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
ecinaminum ecinamine	2-(diphenylmethylene)butylamine $C_{17}H_{19}N$ 
edogestronum edogestrone	17-hydroxy-6-methylpregn-5-ene-3,20-dione cyclic 3-(ethylene acetal) acetate $C_{25}H_{34}O_5$ 
enestebolum enestebol	4,17β-dihydroxy-17-methylandrosta-1,4-dien-3-one $C_{20}H_{28}O_3$ 
epimestrolum epimestrol	3-methoxyestra-1,3,5(10)-triene-16α,17α-diol $C_{19}H_{28}O_3$ 

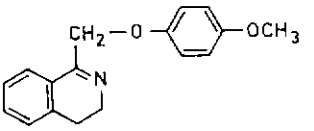
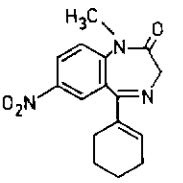
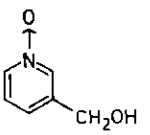
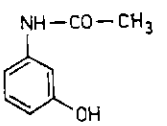
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
eprozinolum eprozinol	4-(β-methoxyphenethyl)-α-phenyl-1-piperazinepropanol $C_{22}H_{30}N_2O_2$ 
esculaminum esculamine	8-[[bis(2-hydroxyethyl)amino]methyl]-6,7-dihydroxy-4-methylcoumarin $C_{15}H_{19}NO_6$ 
etipirii iodidum etipirium iodide	1-(2-hydroxyethyl)-1-methylpyrrolidinium iodide benzilate (ester) $C_{21}H_{26}INO_3$ 
etoprindolum etoprindole	1-[2-(dimethylamino)ethyl]indol-3-yl ethyl ketone oxime $C_{15}H_{21}N_3O$ 

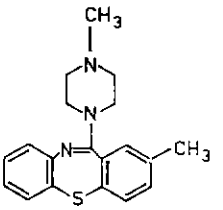
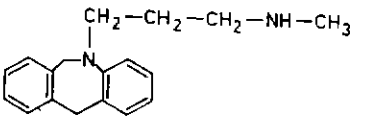
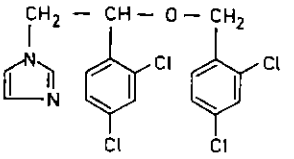
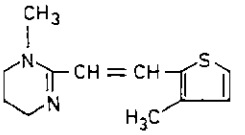
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
euprocinum euprocin	$O^{6'}$-isopentylhydrocupreine $C_{24}H_{34}N_2O_2$ 
flucloroloni acetonidum fluclorolone acetonide	9,11β-dichloro-6α-fluoro-16α,17,21-trihydroxypregna-1,4-diene-3,20-dione cyclic 16,17-acetal with acetone $C_{24}H_{29}Cl_2FO_5$ 
flucytosinum flucytosine	5-fluorocytosine $C_4H_4FN_3O$ 
flufenisalum flufenisal	4′-fluoro-4-hydroxy-3-biphenylcarboxylic acid acetate $C_{15}H_{11}FO_4$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
flunarizinum flunarizine	1-cinnamyl-4-[bis(*p*-fluorophenyl)methyl]piperazine $C_{26}H_{26}F_2N_2$ 
flutiazinum flutiazin	8-(trifluoromethyl)phenothiazine-1-carboxylic acid $C_{14}H_8F_3NO_2S$ 
ftormetazinum ftormetazine	10-[3-(4-methyl-1-piperazinyl)propionyl]-2-(trifluoromethyl)phenothiazine $C_{21}H_{22}F_3N_3OS$ 
ftorpropazinum ftorpropazine	10-[3-[4-(2-hydroxyethyl)-1-piperazinyl]propionyl]-2-(trifluoromethyl)-phenothiazine $C_{22}H_{24}F_3N_3O_2S$ 

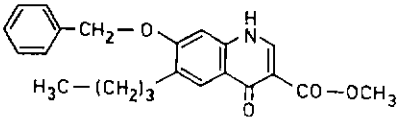
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
gestadienolum gestadienol	17-hydroxy-19-norpregna-4,6-diene-3,20-dione $C_{20}H_{26}O_3$ 
glibornuridum glibornuride	1-(2-*endo*-hydroxy-3-*endo*-bornyl)-3-(*p*-tolylsulfonyl)urea $C_{18}H_{26}N_2O_4S$ 
guamecyclinum guamecycline	*N*-[[4-(amidinoamidino)-1-piperazinyl]methyl]-4-(dimethylamino)--1,4,4a,5,5a,6,11,12a-octahydro-3,6,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-2-naphthacenecarboxamide $C_{29}H_{38}N_8O_8$ 
hepronicatum hepronicate	2-hexyl-2-(hydroxymethyl)-1,3-propanediol trinicotinate $C_{28}H_{31}N_3O_6$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
kallidinogenasum kallidinogenase	an enzyme isolated from the pancreas or urine of mammals
ketoxalum ketoxal	3-ethoxy-1,1-dihydroxy-2-butanone $C_6H_{12}O_4$ 
laramycinum laramycin	an antibiotic obtained from cultures of *Streptomyces bikiniensis* var. *laranensis*, or the same substance obtained by any other means
loxapinum loxapine	2-chloro-11-(4-methyl-1-piperazinyl)dibenz[*b*,*f*][1,4]oxazepine $C_{18}H_{18}ClN_3O$ 
mecrilatum mecrilate	methyl 2-cyanoacrylate $C_5H_5NO_2$ 
meglucyclinum meglucycline	2-deoxy-2-[[[4-(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,6,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-2-naphthacene-carboxamido]methyl]amino]-β-D-glucopyranose $C_{29}H_{37}N_3O_{13}$ 

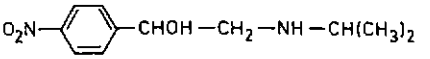
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
memotinum memotine	3,4-dihydro-1-[(*p*-methoxyphenoxy)methyl]isoquinoline $C_{17}H_{17}NO_2$ 
menitrazepamum menitrazepam	5-(1-cyclohexen-1-yl)-1,3-dihydro-1-methyl-7-nitro-2*H*-1,4-benzodiazepin-2-one $C_{16}H_{17}N_3O_3$ 
mepiroxolum mepiroxol	3-pyridinemethanol 1-oxide $C_6H_7NO_2$ 
metacetamolum metacetamol	3'-hydroxyacetanilide $C_8H_9NO_2$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
metiapinum metiapine	2-methyl-11-(4-methyl-1-piperazinyl)dibenzo[*b*,*f*][1,4]thiazepine $C_{19}H_{21}N_3S$ 
mezepinum mezepine	5,6-dihydro-5-[3-(methylamino)propyl]-11*H*-dibenz[*b*,*e*]azepine $C_{18}H_{22}N_2$ 
miconazolum miconazole	1-[2,4-dichloro-β-[(2,4-dichlorobenzyl)oxy]phenethyl]imidazole $C_{18}H_{14}Cl_4N_2O$ 
morantelum morantel	*trans*-1,4,5,6-tetrahydro-1-methyl-2-[2-(3-methyl-2-thienyl)vinyl]-pyrimidine $C_{12}H_{16}N_2S$ 

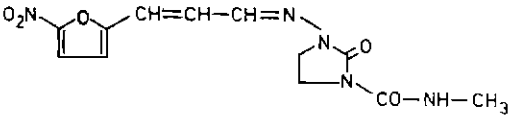
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
nequinatum nequinate	methyl 7-(benzyloxy)-6-butyl-1,4-dihydro-4-oxo-3-quinoline-carboxylate $C_{22}H_{23}NO_4$



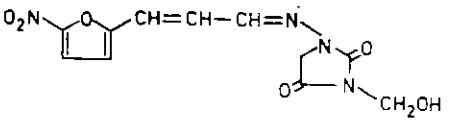
nifenalolum nifenalol	α-[(isopropylamino)methyl]-*p*-nitrobenzyl alcohol $C_{11}H_{16}N_2O_3$

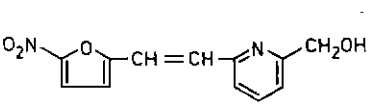
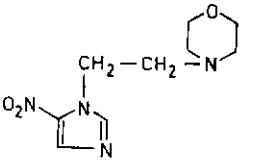
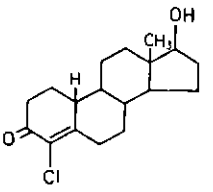
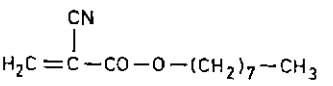
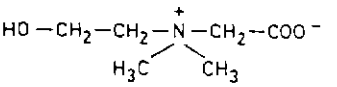


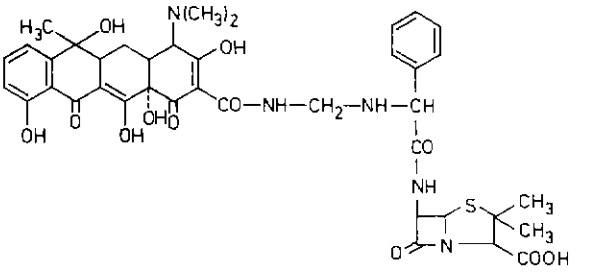
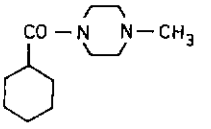
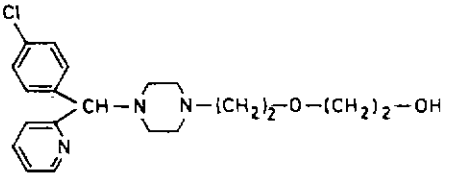
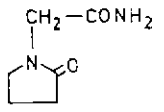
nifurizonum nifurizone	1-(methylcarbamoyl)-3-[[3-(5-nitro-2-furyl)allylidene]amino]-2-imidazolidinone $C_{12}H_{13}N_5O_5$

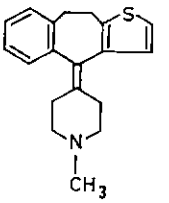
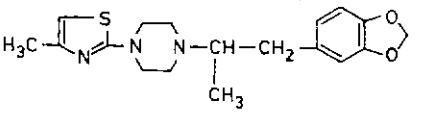
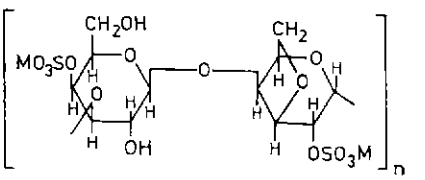
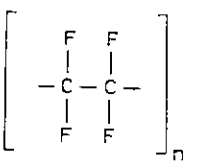


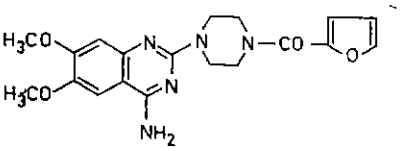
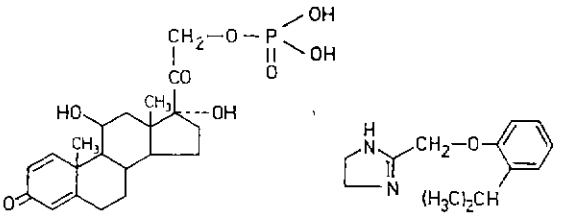
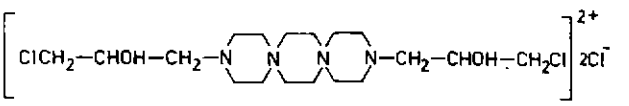
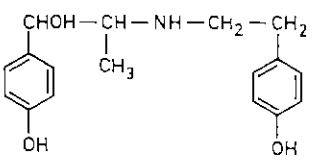
nifurmazolum nifurmazole	3-(hydroxymethyl)-1-[[3-(5-nitro-2-furyl)allylidene]amino]hydantoin $C_{11}H_{10}N_4O_6$



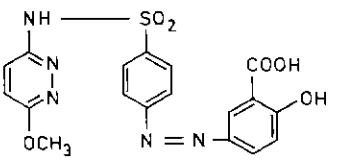
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
nifurpirinolum nifurpirinol	6-[2-(5-nitro-2-furyl)vinyl]-2-pyridinemethanol $C_{12}H_{10}N_2O_4$ 
nimorazolum nimorazole	4-[2-(5-nitroimidazol-1-yl)ethyl]morpholine $C_9H_{14}N_4O_3$ 
norclostebolum norclostebol	4-chloro-17β-hydroxyestr-4-en-3-one $C_{18}H_{25}ClO_2$ 
ocrilatum ocrilate	octyl 2-cyanoacrylate $C_{12}H_{19}NO_2$ 
oxibetainum oxibetaine	(carboxymethyl)dimethyl(2-hydroxyethyl)ammonium hydroxide inner salt $C_6H_{13}NO_3$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
penimocyclinum penimocycline	6-[2-[[[4-(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,6,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-2-naphthacenecarboxamido]-methyl]amino]-2-phenylacetamido]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid $C_{39}H_{43}N_3O_{12}S$
	
pexantelum pexantel	1-(cyclohexylcarbonyl)-4-methylpiperazine $C_{12}H_{22}N_2O$
	
piclopastinum piclopastine	2-[2-[4-(*p*-chloro-α-2-pyridylbenzyl)-1-piperazinyl]ethoxy]ethanol $C_{20}H_{26}ClN_3O_2$
	
piracetamum piracetam	2-oxo-1-pyrrolidineacetamide $C_6H_{10}N_2O_2$
	

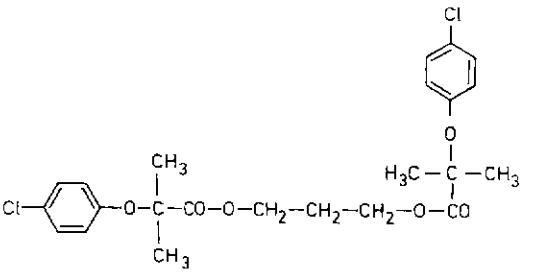
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
pizotifenum pizotifen	4-(9,10-dihydro-4*H*-benzo[4,5]cyclohepta[1,2-*b*]thien-4-ylidene)-1-methylpiperidine $C_{19}H_{21}NS$ 
podilfenum podilfen	1-[α-methyl-3,4-(methylenedioxy)phenethyl]-4-(4-methyl-2-thiazolyl)-piperazine $C_{18}H_{23}N_3O_2S$ 
poligeenanum poligeenan	3,6-anhydro-4-*O*-β-D-galactopyranosyl-α-D-galactopyranose 2,4′-bis-(potassium/sodium sulfate) (1→3′)-polysaccharide $(C_{12}H_{16}M_2O_{15}S_2)n$  M = Na or K
politefum politef	poly(tetrafluoroethylene) $(C_2F_4)n$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
prazosinum prazosin	1-(4-amino-6,7-dimethoxy-2-quinazolinyl)-4-(2-furoyl)piperazine $C_{19}H_{21}N_5O_4$ 
prednazolinum prednazoline	11β,17,21-trihydroxypregna-1,4-diene-3,20-dione 21-(di-H phosphate) compound with 2-[(2-isopropylphenoxy)methyl]-2-imidazoline $C_{22}H_{29}O_8P.C_{13}H_{18}N_2O$ 
prospidii chloridum prospidium chloride	3,12-bis(3-chloro-2-hydroxypropyl)-3,12-diaza-6,9-diazoniadispiro-[5.2.5.2]hexadecane dichloride $C_{18}H_{36}Cl_4N_4O_2$ 
ritodrinum ritodrine	*p*-hydroxy-α-[1-[(*p*-hydroxyphenethyl)amino]ethyl]benzyl alcohol $C_{17}H_{21}NO_3$ 
rizolipasum rizolipase	lipase of *Rhizopus arrhizus* var. Delemar

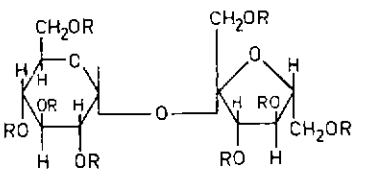
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
salazodinum salazodine	5-[[*p*-[(6-methoxy-3-pyridazinyl)sulfamoyl]phenyl]azo]salicylic acid $C_{18}H_{16}N_6O_6S$



simfibratum simfibrate	2-(*p*-chlorophenoxy)-2-methylpropionic acid trimethylene ester $C_{23}H_{28}Cl_2O_6$

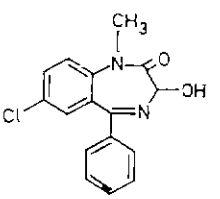


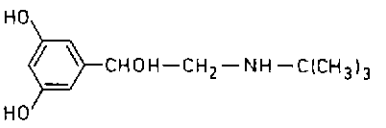
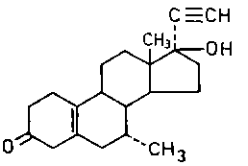
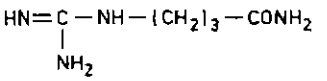
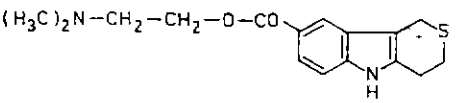
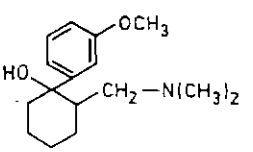
sucralfatum sucralfate	sucrose hydrogen sulfate basic aluminum salt

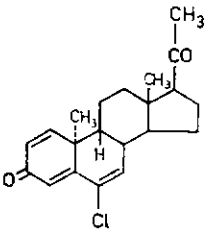
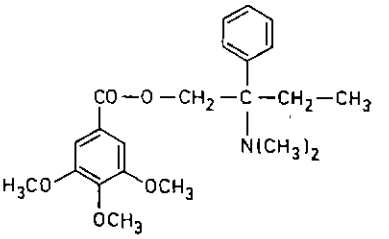
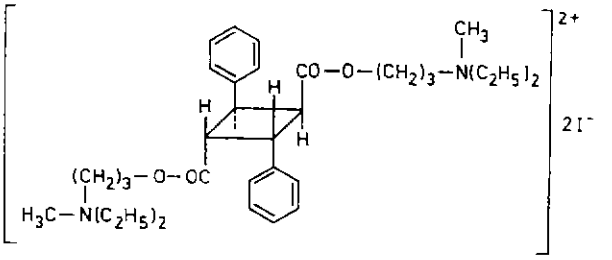
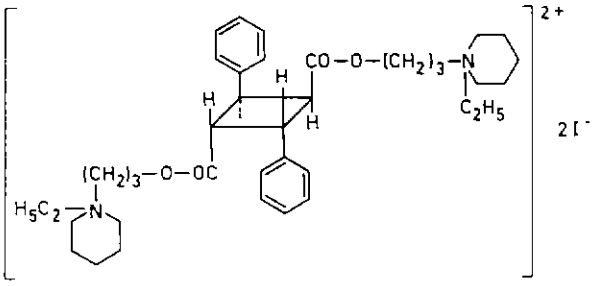


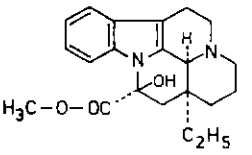
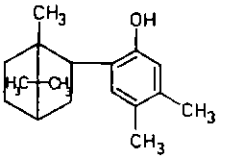
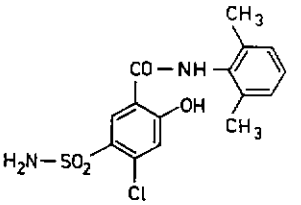
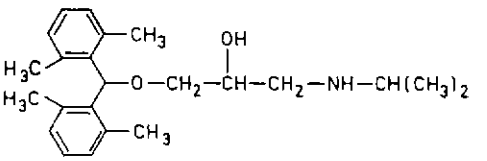
(R = —H or $-SO_3Al_xO_y(OH)_z$)

temazepamum temazepam	7-chloro-1,3-dihydro-3-hydroxy-1-methyl-5-phenyl-2*H*-1,4-benzodiazepin-2-one $C_{16}H_{13}ClN_2O_2$



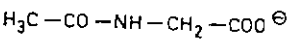
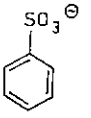
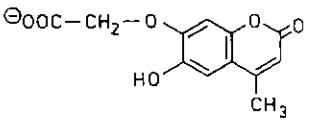
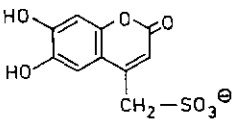
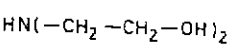
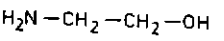
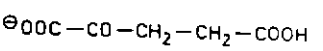
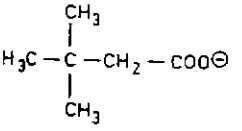
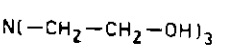
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
terbutalinum terbutaline	α-[(*tert*-butylamino)methyl]-3,5-dihydroxybenzyl alcohol $C_{12}H_{19}NO_3$ 
tibolonum tibolone	17-hydroxy-7α-methyl-19-nor-17α-pregn-5(10)-en-20-yn-3-one $C_{21}H_{28}O_2$ 
tiforminum tiformin	4-guanidinobutyramide $C_5H_{12}N_4O$ 
tipindolum tipindole	2-(dimethylamino)ethyl 1,3,4,5-tetrahydrothiopyrano[4,3-*b*]indole-8-carboxylate $C_{16}H_{20}N_2O_2S$ 
tramadolum tramadol	(±)-*trans*-2-[(dimethylamino)methyl]-1-(*m*-methoxyphenyl)cyclohexanol $C_{16}H_{25}NO_2$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
trengestonum trengestone	6-chlore-9β,10α-pregna-1,4,6-triene-3,20-dione $C_{21}H_{25}ClO_2$ 
trimebutinum trimebutine	β-(dimethylamino)-β-ethylphenethyl alcohol 3,4,5-trimethoxybenzoate (ester) $C_{22}H_{29}NO_5$ 
truxicurii iodidum truxicurium iodide	diethyl(3-hydroxypropyl)methylammonium iodide α-2,4-diphenyl-1,3-cyclobutanedicarboxylate $C_{34}H_{52}I_2N_2O_4$ 
truxipicurii iodidum truxipicurium iodide	1-ethyl-1-(3-hydroxypropyl)piperidinium iodide α-2,4-diphenyl-1,3-cyclobutanedicarboxylate $C_{38}H_{56}I_2N_2O_4$ 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae*
vincaminum vincamine	an alkaloid obtained from *Vinca minor* $C_{21}H_{26}N_2O_3$ 
xibornolum xibornol	6-isobornyl-3,4-xylenol $C_{16}H_{26}O$ 
xipamidum xipamide	4-chloro-5-sulfamoyl-2′,6′-salicyloxylidide $C_{15}H_{15}ClN_2O_4S$ 
xipranololum xipranolol	1-(di-2,6-xylylmethoxy)-3-(isopropylamino)-2-propanol $C_{23}H_{33}NO_2$ 

Names for Radicals and Groups

Some preparations 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. The following shorter nonproprietary names for some such radicals and groups have been devised or selected, and they are suggested for use with proposed international nonproprietary names.

N-acetylglycinate		aceturate
benzenesulfonate		besilate
[(6-hydroxy-4-methyl-2-oxo-2*H*-1-benzopyran-7-yl)oxy]acetate		cromacate
6,7-dihydroxycoumarin-4-methanesulfonate		cromesilate
diethanolamine		diolamine
ethanolamine		olamine
2-oxoglutarate		oxoglurate
tertiary butyl acetate		tebutate
triethanolamine		trolamine

CORRIGENDA

Vol. 21, No. 11

PROPOSED INTERNATIONAL NON-PROPRIETARY NAMES (*Prop. I.N.N.*): LIST 18

p. 480:

delete	*insert*
benazolinum	metizolinum
benazoline	metizoline

Vol. 22, No. 9

PROPOSED INTERNATIONAL NON-PROPRIETARY NAMES (*Prop. I.N.N.*): LIST 20

p. 421:

delete	*insert*
orpressinum	ornipressinum
orpressin	ornipressin

INTERNATIONAL NON-PROPRIETARY NAMES FOR PHARMACEUTICAL PREPARATIONS CUMULATIVE LIST No. 2, 1967

p. 10:

delete	*insert*
alfasonum	algestonum
alfasone	algestone

p. 41:

delete	
etomidatum	(±)-ethyl 1-(α-methylbenzyl)imidazole-5-carboxylate
etomidate	$C_{14}H_{16}N_2O_2$
insert	
etomidatum	(+)-ethyl 1-(α-methylbenzyl)imidazole-5-carboxylate
etomidate	$C_{14}H_{16}N_2O_2$

p. 41:

delete	*insert*
etymidum	carbifenum
etymide	carbifene

p. 45:

delete	*insert*
gentamycinum	gentamicinum
gentamycin	gentamicin

p. 53:

delete	*insert*
leucovorinum	calcii folinas
leucovorin	calcium folinate

p. 56:

delete	*insert*
meclastinum	clemastinum
meclastine	clemastine

p. 68:

delete	
nortestosteroni cypionas	17β-hydroxyestr-4-en-3-one cyclopentanepropionate
nortestosterone cypionate	$C_{26}H_{38}O_3$
insert	
nandrolonum	17β-hydroxyestr-4-en-3-one
nandrolone	$C_{18}H_{26}O$

p. 80:

delete	
propoxyphenum	4-dimethylamino-3-methyl-1,2-diphenyl-2-butanol propionate ester
propoxyphene	$C_{22}H_{29}NO_2$

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.

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.

---

* 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.

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. Syllables such as " methylhydro "; " methoxy " and " chlor " should preferably be abbreviated (to " medro" " meto ", " clo ", etc.).

5. In the naming of substances which are acids, existing names generally used in chemistry which include the word " acidum " (" acid ") should be used, if the name is adequate for practical use in therapy and pharmacy. In other circumstances, the substance should be named by a single word and not by a name which includes the word " acid ". Where the word " acid " is not used in the name, as is customary in the penicillin series, a salt should preferably be named without modification of the parent acid name, e.g., " oxacillin " and " oxacillin sodium ".

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 ".

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.

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

Latin	*English*	*French*	
-andr- or -stan- or -ster-	-andr- or -stan- or -ster-	-andr- or -stan- or -ster-	steroids, androgenic
-apol-	-apol-	-apol-	polysulfonic anticoagulants
-arolum	-arol	-arol	anticoagulants
-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 carboxy-6-amino-penicillanic acid
-cort-	-cort-	-cort-	steroids, glucocorticoids and mineralocorticoids, other than prednisolone derivatives
-crinum	-crine	-crine	acridine derivatives
-curonium	-curonium	-curonium	curare-like drugs
-cyclinum	-cycline	-cycline	antibiotics, tetracycline derivatives
-dionum	-dione	-dione	antiepileptics derived from oxazolidinedione
-estr-	-estr-	-estr-	estrogenic drugs
-gest-	-gest-	-gest-	steroids, progestative
gli-	gli-	gli-	sulfonamide oral antidiabetics
io-	io-	io-	iodine-containing contrast media
-mer-	-mer-	-mer-	mercury-containing drugs, antimicrobial or diuretic
mito-	mito-	mito-	nucleotoxic, antineoplastic agents
-moxinum	-moxin	-moxine	monoamine, oxidase inhibitors
-mycinum	-mycin	-mycine	antimicrobial antibiotics, produced by *Streptomyces* strains
nifur-	nifur-	nifur-	5-nitrofuran derivatives
-orexum	-orex	-orex	anorexigenic agents
-praminum	-pramine	-pramine	dibenzazepine, compounds of the imipramine type
-quinum	-quine	-quine	quinoline derivatives
-serpinum	-serpine	-serpine	derivatives of *Rauwolfia* alkaloids
-stigminum	-stigmine	-stigmine	anticholinesterases
sulfa-	sulfa-	sulfa-	sulfonamides, used as antimicrobials
-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 amines