Supplement to *WHO Chronicle*, 1978, Vol. 32, No. 9 (September)

# International Nonproprietary Names for Pharmaceutical Substances

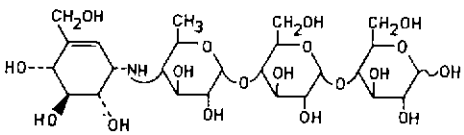
In accordance with article 3 of the Procedure for the Selection of Recommended International Nonproprietary Names for Pharmaceutical Substances,[1] notice is hereby given that the following names are under consideration by the World Health Organization as Proposed International Nonproprietary Names.

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*, e.g. for List 40 Prop. INN not later than 31 January 1979.

*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. INN): List 40 [2]

| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number* |
|---|---|
| acarbosum<br>acarbose | *O*-4,6-dideoxy-4-[[(1*S*,4*R*,5*S*,6*S*)-4,5,6-trihydroxy-3-(hydroxymethyl)-2-cyclohexen-1-yl]amino]-α-D-glucopyranosyl-(1→4)-*O*-α-D-glucopyranosyl-(1→4)-D-glucopyranose.<br>$C_{25}H_{43}NO_{18}$ 56180-94-0 |



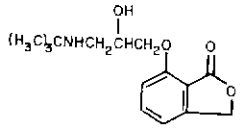
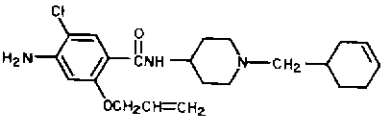
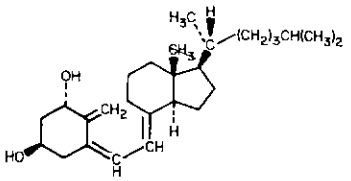
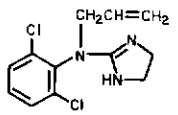
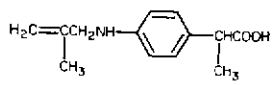
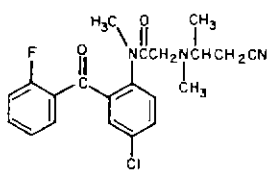
Comprehensive information on the INN programme can be found in: WHO Technical Report Series, No. 581, 1975 (*Nonproprietary Names for Pharmaceutical Substances.* Twentieth Report of the WHO Expert Committee), ISBN 92 4 120581 4 (price: Sw. fr. 6.—); an account of this publication will be found on page 23 of this Supplement (Annex 2). All names from Lists 1-37 of Proposed International Nonproprietary Names, together with a molecular formula index, will be found in: *International Nonproprietary Names for Pharmaceutical Substances. Cumulative list No. 5, 1977,* World Health Organization, Geneva, 1977 (ISBN 92 4 056011 4) (price: Sw. fr. 48.—). This publication consists, in the main, of a computer printout which groups together all the proposed and recommended international nonproprietary names (INN)—in Latin, English, French, Russian, and Spanish—published up to March 1977. The printout also indicates in which of the 37 individual lists of proposed names and 16 lists of recommended names, each INN was originally published, and gives references to national nonproprietary names, pharmacopoeia monographs, and other sources. In addition, the list contains molecular formulae and Chemical Abstracts Service registry numbers. For easy reference, national nonproprietary names that differ from INN, molecular formulae, and Chemical Abstracts Service registry numbers are indexed in a series of annexes. A final annex describes the procedure for selecting recommended INN and outlines the general principles to be followed in devising these names. All the textual material published in this volume appears in both English and French.

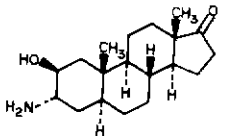
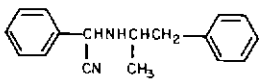
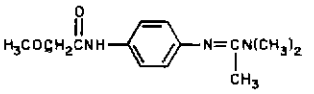
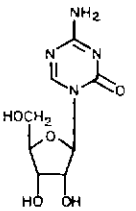
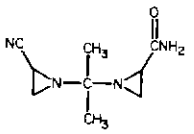
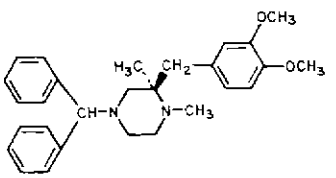
These publications may be obtained, direct or through booksellers, from the sales agents listed on the back cover of the *WHO Chronicle*. Orders from countries where sales agents have not yet been appointed may be addressed to: World Health Organization, Distribution and Sales Service, 1211 Geneva 27, Switzerland.

[1] See Annex 1, p. 22.

[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, 414; 1973, 27, 120, 330; 1974, 28, 133; supplements to *WHO Chronicle*, 1974, Vol. 28, No. 9; 1975, Vol. 29, No. 3, No. 9; 1976, Vol. 30, No. 3, No. 9; 1977, Vol. 31, No. 3, No. 9; 1978, Vol. 32, No. 3.

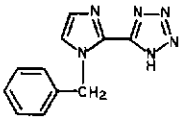
Lists of recommended international nonproprietary names were published in *Chron. Wld Hlth Org.*, 1955, 9, 185; *WHO Chronicle*, 1959, 13, 106, 463; 1962, 16, 101; 1965, 19, 165, 206, 249; 1966, 20, 421; 1967, 21, 538; 1968, 22, 463; 1969, 23, 490; 1970, 24, 526; 1971, 25, 476; 1972, 26, 476; 1973, 27, 453; supplements to *WHO Chronicle*, 1974, Vol. 28, No. 10; 1975, Vol. 29, No. 10; 1976, Vol. 30, No. 10; 1977, Vol. 31, No. 10.

| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number* |
|---|---|
| afurololum<br>afurolol | 7-[3-(*tert*-butylamino)-2-hydroxypropoxy]phthalide<br>$C_{15}H_{21}NO_4$ 65776-67-2 |
| |  |
| alepridum<br>alepride | 2-(allyloxy)-4-amino-5-chloro-*N*-[1-(3-cyclohexen-1-ylmethyl)-4-piperidyl]benzamide<br>$C_{22}H_{30}ClN_3O_2$ 66564-15-6 |
| |  |
| alfacalcidolum<br>alfacalcidol | (5*Z*,7*E*)-9,10-secocholesta-5,7,10(19)-triene-1$\alpha$,3$\beta$-diol<br>$C_{27}H_{44}O_2$ 41294-56-8 |
| |  |
| alinidinum<br>alinidine | 2-(*N*-allyl-2,6-dichloroanilino)-2-imidazoline<br>$C_{12}H_{13}Cl_2N_3$ 33178-86-8 |
| |  |
| alminoprofenum<br>alminoprofen | *p*-[(2-methylallyl)amino]hydratropic acid<br>$C_{13}H_{17}NO_2$ 39718-89-3 |
| |  |
| alozafonum<br>alozafone | 4′-chloro-2-[(2-cyano-1-methylethyl)methylamino]-2′-(*o*-fluorobenzoyl)-*N*-methylacetanilide<br>$C_{21}H_{21}ClFN_3O_2$ 65899-72-1 |
| |  |

| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number* |
|---|---|
| amafolonum<br>amafolone | 3α-amino-2β-hydroxy-5α-androstan-17-one<br>$C_{19}H_{31}NO_2$ 50588-47-1<br>  |
| amfetaminilum<br>amfetaminil | [(α-methylphenethyl)amino]phenylacetonitrile<br>$C_{17}H_{18}N_2$ 17590-01-1<br>  |
| amidantelum<br>amidantel | 4′-[[1-(dimethylamino)ethylidene]amino]-2-methoxyacetanilide<br>$C_{13}H_{19}N_3O_2$ 49745-00-8<br>  |
| azacitidinum<br>azacitidine | 4-amino-1-β-D-ribofuranosyl-*s*-triazin-2(1*H*)-one<br>$C_8H_{12}N_4O_5$ 320-67-2<br>  |
| azimexonum<br>azimexon | 1-[1-(2-cyano-1-aziridinyl)-1-methylethyl]-2-aziridinecarboxamide<br>$C_9H_{14}N_4O$ 64118-86-1<br>  |
| benderizinum<br>benderizine | (*R*)-4-(diphenylmethyl)-1,2-dimethyl-2-veratrylpiperazine<br>$C_{28}H_{34}N_2O_2$ 59752-23-7<br>  |

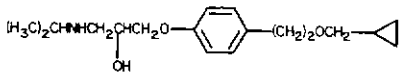
bentemazolum
bentemazole

5-(1-benzylimidazol-2-yl)-1*H*-tetrazole
$C_{11}H_{10}N_6$ 63927-95-7



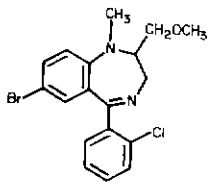
betoxololum
betoxolol

1-[*p*-[2-(cyclopropylmethoxy)ethyl]phenoxy]-3-(isopropylamino)-2-propanol
$C_{18}H_{29}NO_3$ 63659-18-7



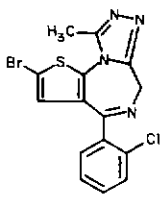
brometazepamum
brometazepam

7-bromo-5-(*o*-chlorophenyl)-2,3-dihydro-2-(methoxymethyl)-1-methyl-1*H*-1,4-benzodiazepine
$C_{18}H_{18}BrClN_2O$ 65517-27-3



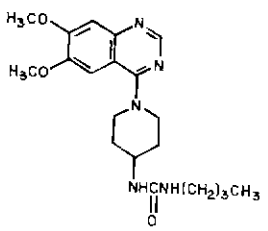
brotizolamum
brotizolam

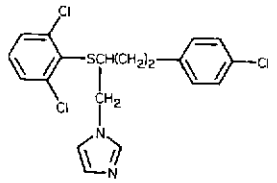
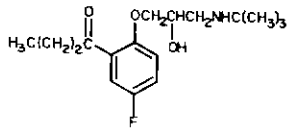
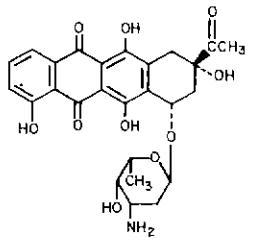
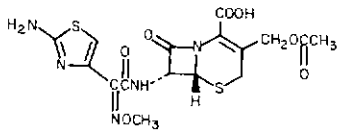
2-bromo-4-(*o*-chlorophenyl)-9-methyl-6*H*-thieno[3,2-*f*]-*s*-triazolo[4,3-*a*]-[1,4]diazepine
$C_{15}H_{10}BrClN_4S$ 57801-81-7

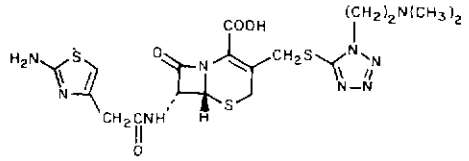
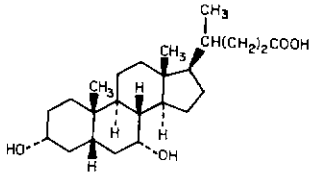
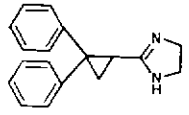
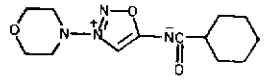
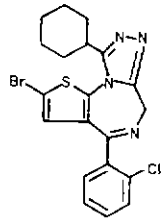


buquineranum
buquineran

1-butyl-3-[1-(6,7-dimethoxy-4-quinazolinyl)-4-piperidyl]urea
$C_{20}H_{29}N_5O_3$ 59184-78-0

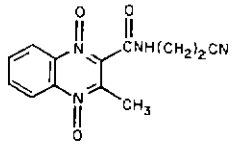


| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number* |
|---|---|
| butoconazolum<br>butoconazole | (±)-1-[4-(*p*-chlorophenyl)-2-[(2,6-dichlorophenyl)thio]butyl]imidazole<br>$C_{19}H_{17}Cl_3N_2S$ 64872-76-0 |
| |  |
| ofilolol<br>ofilolol | (±)-2′-[3-(*tert*-butylamino)-2-hydroxypropoxy]-5′-fluorobutyrophenone<br>$C_{17}H_{26}FNO_3$ 64552-17-6 |
| |  |
| carubicinum<br>carubicin | (1*S*,3*S*)-3-acetyl-1,2,3,4,6,11-hexahydro-3,5,10,12-tetrahydroxy-6,11-dioxo-1-naphthacenyl 3-amino-2,3,6-trideoxy-α-L-*lyxo*-hexopyranoside<br>$C_{26}H_{27}NO_{10}$ 50935-04-1 |
| |  |
| cefotaximum<br>cefotaxime | (6*R*,7*R*)-7-[2-(2-amino-4-thiazolyl)glyoxylamido]-3-(hydroxymethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid α-(*O*-methyloxime), acetate (ester)<br>$C_{16}H_{17}N_5O_7S_2$ 60846-21-1 |
| |  |

| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number* |
|---|---|
| cefotiamum<br>cefotiam | (6*R*,7*R*)-7-[2-(2-amino-4-thiazolyl)acetamido]-3-[[[1-[2-(dimethylamino)-ethyl]-1*H*-tetrazol-5-yl]thio]methyl]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid<br>$C_{18}H_{23}N_9O_4S_3$ 61622-34-2<br>  |
| celucloralum<br>celucloral | cellulose 2-hydroxyethyl ether reaction product with chloral |
| chenodiolum<br>chenodiol | 3α,7α-dihydroxy-5β-cholan-24-oic acid<br>$C_{24}H_{40}O_4$ 474-25-9<br>  |
| cibenzolinum<br>cibenzoline | 2-(2,2-diphenylcyclopropyl)-2-imidazoline<br>$C_{18}H_{18}N_2$ 53267-01-9<br>  |
| ciclosidominum<br>ciclosidomine | *N*-(cyclohexylcarbonyl)-3-morpholinosydnone imine<br>$C_{13}H_{20}N_4O_3$ 66564-16-7<br>  |
| ciclotizolamum<br>ciclotizolam | 2-bromo-4-(*o*-chlorophenyl)-9-cyclohexyl-6*H*-thieno[3,2-*f*]-*s*-triazolo-[4,3-*a*][1,4]diazepine<br>$C_{20}H_{18}BrClN_4S$ 58765-21-2<br>  |

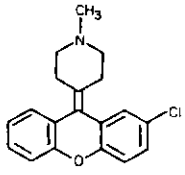
cinoquidoxum
cinoquidox

*N*-(2-cyanoethyl)-3-methyl-2-quinoxalinecarboxamide 1,4-dioxide
$C_{13}H_{12}N_4O_3$ 64557-97-7



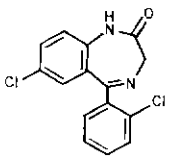
clopipazanum
clopipazan

4-(2-chloroxanthen-9-ylidene)-1-methylpiperidine
$C_{19}H_{18}ClNO$ 60085-78-1



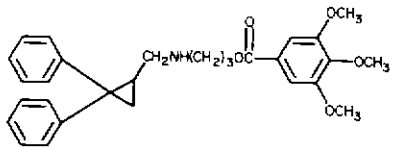
delorazepamum
delorazepam

7-chloro-5-(*o*-chlorophenyl)-1,3-dihydro-2*H*-1,4-benzodiazepin-2-one
$C_{15}H_{10}Cl_2N_2O$ 2894-67-9



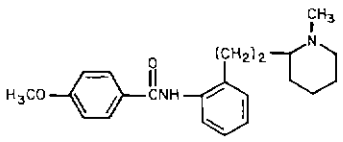
ecipramidilum
ecipramidil

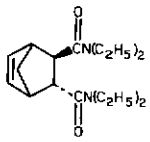
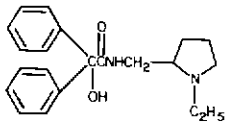
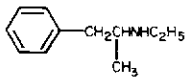
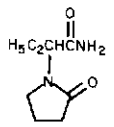
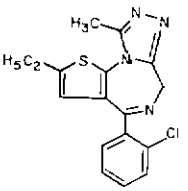
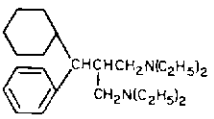
3-[[(2,2-diphenylcyclopropyl)methyl]amino]propyl 3,4,5-trimethoxybenzoate
$C_{29}H_{33}NO_5$ 64552-16-5



encainidum
encainide

(±)-2′-[2-(1-methyl-2-piperidyl)ethyl]-*p*-anisanilide
$C_{22}H_{28}N_2O_2$ 37612-13-8



| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number* |
|---|---|
| endomidum<br>endomide | (1*R*,2*S*,3*S*,4*S*)-*N*,*N*,*N*′,*N*′-tetraethyl-5-norbornene-2,3-dicarboxamide<br>$C_{17}H_{28}N_2O_2$ 4582-18-7<br>  |
| epicainidum<br>epicainide | *N*-[(1-ethyl-2-pyrrolidinyl)methyl]benzilamide<br>$C_{21}H_{26}N_2O_2$ 66304-03-8<br>  |
| etilamfetaminum<br>etilamfetamine | *N*-ethyl-α-methylphenethylamine<br>$C_{11}H_{17}N$ 457-87-4<br>  |
| etiracetamum<br>etiracetam | (±)-α-ethyl-2-oxo-1-pyrrolidineacetamide<br>$C_8H_{14}N_2O_2$ 33996-58-6<br>  |
| etizolamum<br>etizolam | 4-(*o*-chlorophenyl)-2-ethyl-9-methyl-6*H*-thieno[3,2-*f*]-*s*-triazolo[4,3-*a*]-[1,4]diazepine<br>$C_{17}H_{15}ClN_4S$ 40054-69-1<br>  |
| fecleminum<br>feclemine | 2-(α-cyclohexylbenzyl)-*N*,*N*,*N*′,*N*′-tetraethyl-1,3-propanediamine<br>$C_{24}H_{42}N_2$ 3590-16-7<br>  |

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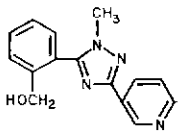
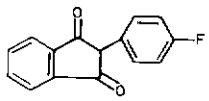
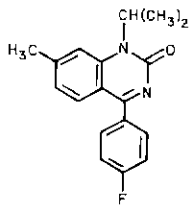
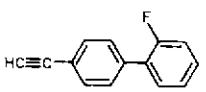
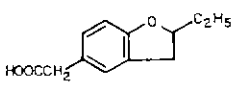
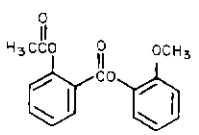
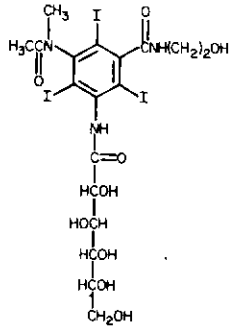
|---|---|
| fepitrizolum<br>fepitrizol | *o*-[1-methyl-3-(3-pyridyl)-1*H*-1,2,4-triazol-5-yl]benzyl alcohol<br>$C_{15}H_{14}N_4O$ 53415-46-6<br>  |
| fluindionum<br>fluindione | 2-(*p*-fluorophenyl)-1,3-indandione<br>$C_{15}H_9FO_2$ 957-56-2<br>  |
| fluproquazonum<br>fluproquazone | 4-(*p*-fluorophenyl)-1-isopropyl-7-methyl-2(1*H*)-quinazolinone<br>$C_{18}H_{17}FN_2O$ 40507-23-1<br>  |
| fluretofenum<br>fluretofen | 4'-ethynyl-2-fluorobiphenyl<br>$C_{14}H_9F$ 56917-29-4<br>  |
| furofenacum<br>furofenac | 2-ethyl-2,3-dihydro-5-benzofuranacetic acid<br>$C_{12}H_{14}O_3$ 56983-13-2<br>  |
| guacetisalum<br>guacetisal | *o*-methoxyphenyl salicylate acetate<br>$C_{16}H_{14}O_5$ 55482-89-8<br>  |

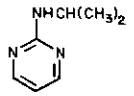
ioglunidum
ioglunide

3′-[(2-hydroxyethyl)carbamoyl]-2′,4′,6′-triiodo-5′-(*N*-methylacetamido)-D-gluconanilide
$C_{18}H_{24}I_3N_3O_9$ 56562-79-9



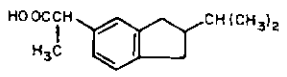
isaxoninum
isaxonine

2-(isopropylamino)pyrimidine
$C_7H_{11}N_3$ 4214-72-6



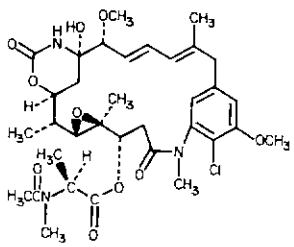
isoprofenum
isoprofen

2-isopropyl-α-methyl-5-indanacetic acid
$C_{15}H_{20}O_2$ 57144-56-6



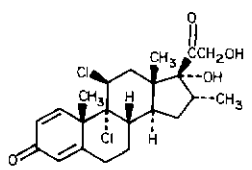
maitansinum
maitansine

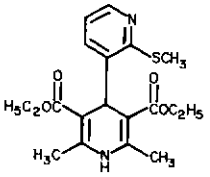
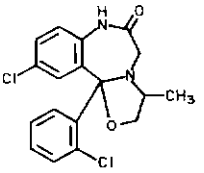
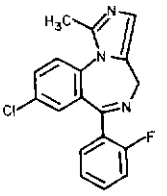
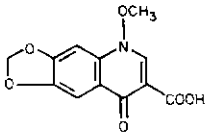
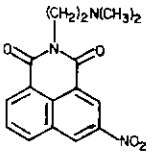
*N*-acetyl-*N*-methyl-L-alanine[1*S*-(1*R* *, 2*S* *,3*R* *,5*R* *,6*R* *,16*E*,18*E*,20*S* *, 21*R* *)]-11-chloro-21-hydroxy-12,20-dimethoxy-2,5,9,16-tetramethyl-8,23-dioxo-4,24-dioxa-9,22-diazatetracyclo[19.3.1.1$^{10,14}$.0$^{3,5}$]hexacosa-10,12, 14(26),16,18-pentaen-6-yl ester
$C_{34}H_{46}ClN_3O_{10}$ 35846-53-8



meclorisonum
meclorisone

9,11β-dichloro-17,21-dihydroxy-16α-methylpregna-1,4-diene-3,20-dione
$C_{22}H_{28}Cl_2O_4$ 4732-48-3



| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number* |
|---|---|
| mesudipinum<br>mesudipine | diethyl 1′,4′-dihydro-2′,6′-dimethyl-2-(methylthio)[3,4′-bipyridine]-3′,5′-dicarboxylate<br>$C_{19}H_{24}N_2O_4S$ 62658-88-2<br>  |
| mexazolamum<br>mexazolam | 10-chloro-11b-(*o*-chlorophenyl)-2,3,7,11b-tetrahydro-3-methyloxazolo-[3,2-*d*][1,4]benzodiazepin-6(5*H*)-one<br>$C_{18}H_{16}Cl_2N_2O_2$ 31868-18-5<br>  |
| midazolamum<br>midazolam | 8-chloro-6-(*o*-fluorophenyl)-1-methyl-4*H*-imidazo-[1,5-*a*][1,4]benzo-diazepine<br>$C_{18}H_{13}ClFN_3$ 59467-70-8<br>  |
| miloxacinum<br>miloxacin | 5,8-dihydro-5-methoxy-8-oxo-1,3-dioxolo[4,5-*g*]quinoline-7-carboxylic acid<br>$C_{12}H_9NO_6$ 37065-29-5<br>  |
| mitonafidum<br>mitonafide | *N*-[2-(dimethylamino)ethyl]-3-nitronaphthalimide<br>$C_{16}H_{15}N_3O_4$ 54824-17-8<br>  |

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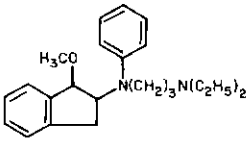
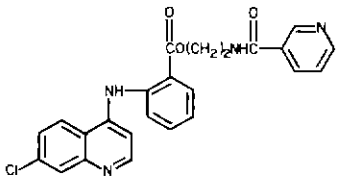
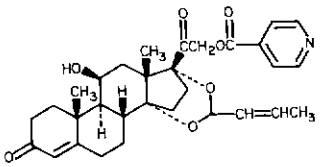
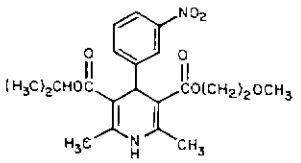
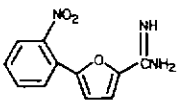
|---|---|
| moxaprindinum<br>moxaprindine | *N,N*-diethyl-*N'*-(1-methoxy-2-indanyl)-*N'*-phenyl-1,3-propanediamine<br>$C_{23}H_{32}N_2O$ 53076-26-9<br>  |
| nicafeninum<br>nicafenine | *N*-(7-chloro-4-quinolyl)anthranilic acid ester with *N*-(2-hydroxyethyl)-nicotinamide<br>$C_{24}H_{19}ClN_4O_3$ 64039-88-9<br>  |
| nicocortonidum<br>nicocortonide | 11β,14,17,21-tetrahydroxypregn-4-ene-3,20-dione cyclic 14,17-acetal with crotonaldehyde, 21-isonicotinate<br>$C_{31}H_{37}NO_7$ 65415-41-0<br>  |
| nimodipinum<br>nimodipine | isopropyl 2-methoxyethyl 1,4-dihydro-2,6-dimethyl-4-(*m*-nitrophenyl)-3,5-pyridinedicarboxylate<br>$C_{21}H_{26}N_2O_7$ 66085-59-4<br>  |
| nitrafudamum<br>nitrafudam | 5-(*o*-nitrophenyl)-2-furamidine<br>$C_{11}H_9N_3O_3$ 64743-09-5<br>  |

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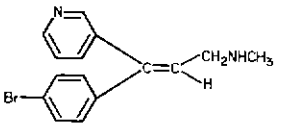
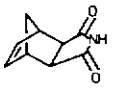
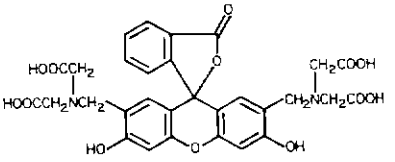
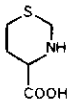
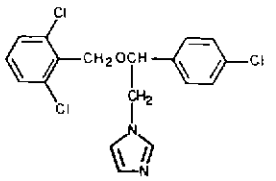
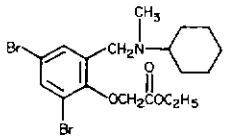
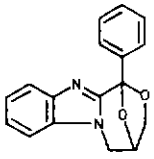
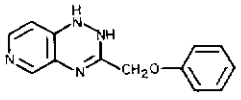
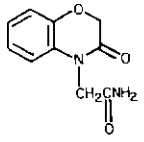
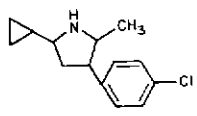
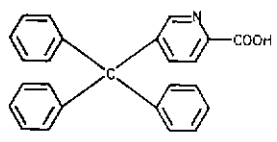
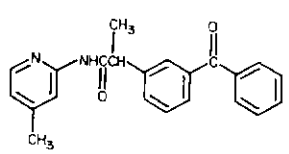
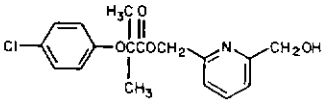
|---|---|
| nomelidinum<br>nomelidine | (*Z*)-3-[1-(*p*-bromophenyl)-3-(methylamino)propenyl]pyridine<br>$C_{15}H_{15}BrN_2$ 60324-59-6<br>  |
| noreximidum<br>noreximide | *cis-exo*-5-norbornene-2,3-dicarboximide<br>$C_9H_9NO_2$ 6319-06-8<br>  |
| oftasceinum<br>oftasceine | 2′,7′-bis[[bis(carboxymethyl)amino]methyl]fluorescein<br>$C_{30}H_{26}N_2O_{13}$ 1461-15-0<br>  |
| omonasteinum<br>omonasteine | tetrahydro-2*H*-1,3-thiazine-4-carboxylic acid<br>$C_5H_9NO_2S$ 60175-95-3<br>  |
| orconazolum<br>onazole | (±)-1-[*p*-chloro-β-[(2,6-dichlorobenzyl)oxy]phenethyl]imidazole<br>$C_{18}H_{15}Cl_3N_2O$ 22833-02-9<br>  |
| oxabrexinum<br>oxabrexine | ethyl [[4,6-dibromo-α-(cyclohexylmethylamino)-*o*-tolyl]oxy]acetate<br>$C_{18}H_{25}Br_2NO_3$ 65415-42-1<br>  |

| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number* |
|---|---|
| oxapadolum<br>oxapadol | 4,5-dihydro-1-phenyl-1,4-epoxy-1*H*,3*H*-[1,4]oxazepino[4,3-*a*]benzimidazole<br>$C_{17}H_{14}N_2O_2$ 56969-22-3<br>  |
| oxifunginum<br>oxifungin | 1,2-dihydro-3-(phenoxymethyl)pyrido[3,4-*e*]-*as*-triazine<br>$C_{13}H_{12}N_4O$ 64057-48-3<br>  |
| paraxazonum<br>paraxazone | 2,3-dihydro-3-oxo-4*H*-1,4-benzoxazine-4-acetamide<br>$C_{10}H_{10}N_2O_3$ 26513-79-1<br>  |
| picilorexum<br>picilorex | 3-(*p*-chlorophenyl)-5-cyclopropyl-2-methylpyrrolidine<br>$C_{14}H_{18}ClN$ 62510-56-9<br>  |
| picotrinum<br>picotrin | 5-tritylpicolinic acid<br>$C_{25}H_{19}NO_2$ 64063-57-6<br>  |
| piketoprofenum<br>piketoprofen | *m*-benzoyl-*N*-(4-methyl-2-pyridyl)hydratropamide<br>$C_{22}H_{20}N_2O_2$ 60576-13-8<br>  |

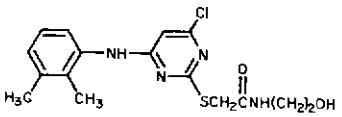
pirifibratum
pirifibrate

[6-(hydroxymethyl)-2-pyridyl]methyl 2-(*p*-chlorophenoxy)-2-methylpropionate
$C_{17}H_{18}ClNO_4$ 55285-45-5



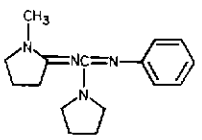
pirinixilum
pirinixil

2-[[4-chloro-6-(2,3-xylidino)-2-pyrimidinyl]thio]-*N*-(2-hydroxyethyl)-acetamide
$C_{16}H_{19}ClN_4O_2S$ 65089-17-0



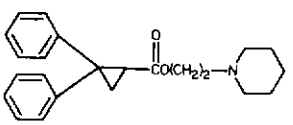
pirogliridum
pirogliride

*N*-(1-methyl-2-pyrrolidinylidene)-*N'*-phenyl-1-pyrrolidinecarboxamidine
$C_{16}H_{22}N_4$ 62625-18-7



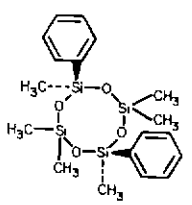
pituxatum
pituxate

2-piperidinoethyl 2,2-diphenylcyclopropanecarboxylate
$C_{23}H_{27}NO_2$ 39123-11-0



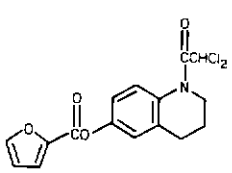
quadrosilanum
quadrosilan

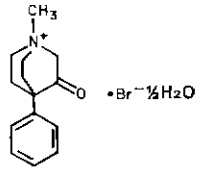
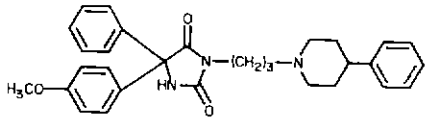
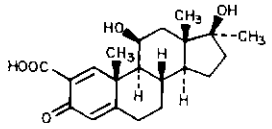
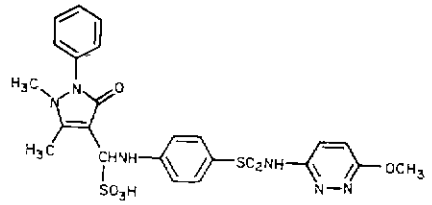
*cis*-2,2,4,6,6,8-hexamethyl-4,8-diphenylcyclotetrasiloxane
$C_{18}H_{28}O_4Si_4$ 33204-76-1



quinfamidum
quinfamide

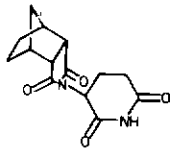
2-furoic acid ester with 1-(dichloroacetyl)-1,2,3,4-tetrahydro-6-quinolinol
$C_{16}H_{13}Cl_2NO_4$ 62265-68-3



| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number* |
|---|---|
| quinuclii bromidum<br>quinuclium bromide | 1-methyl-3-oxo-4-phenylquinuclidinium bromide hemihydrate<br>$C_{14}H_{18}BrNO \cdot \frac{1}{2}H_2O$ 64755-06-2<br>  |
| ropitoinum<br>ropitoin | 5-(*p*-methoxyphenyl)-5-phenyl-3-[3-(4-phenylpiperidino)propyl]hydantoin<br>$C_{30}H_{33}N_3O_3$ 56079-81-3<br>  |
| roxibolonum<br>roxibolone | 11β,17β-dihydroxy-17-methyl-3-oxoandrosta-1,4-diene-2-carboxylic acid<br>$C_{21}H_{28}O_5$ 60023-92-9<br>  |
| sfericasum<br>sfericase | Alkaline *Bacillus sphaericus* proteinase<br>63551-77-9 |
| sulfamazonum<br>sulfamazone | α-[*p*-[(6-methoxy-3-pyridazinyl)sulfamoyl]anilino]-2,3-dimethyl-5-oxo-1-phenyl-3-pyrazoline-4-methanesulfonic acid<br>$C_{23}H_{24}N_6O_7S_2$ 65761-24-2<br>  |

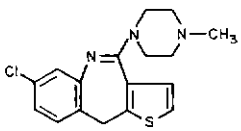
taglutimidum
taglutimide

*cis-endo-N*-(2,6-dioxo-3-piperidyl)-2,3-norbornanedicarboximide
$C_{14}H_{16}N_2O_4$ 14166-26-8



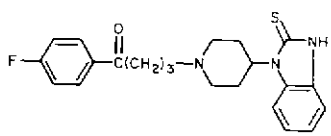
tilozepinum
tilozepine

7-chloro-4-(4-methyl-1-piperazinyl)-10*H*-thieno[3,2-*c*][1]benzazepine
$C_{17}H_{18}ClN_3S$ 42239-60-1



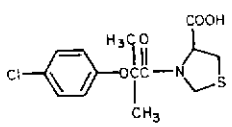
timiperonum
timiperone

4-fluoro-4-[4-(2-thioxo-1-benzimidazolinyl)piperidino]butyrophenone
$C_{22}H_{24}FN_3OS$ 57648-21-2



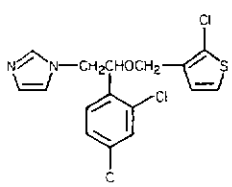
timofibratum
timofibrate

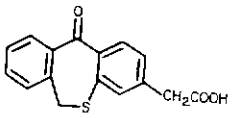
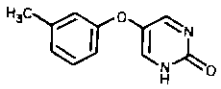
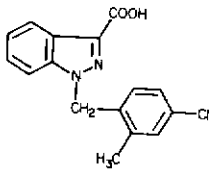
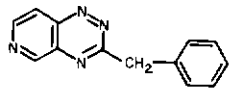
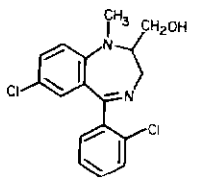
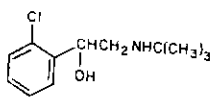
3-[2-(*p*-chlorophenoxy)-2-methylpropionyl]-4-thiazolidinecarboxylic acid
$C_{14}H_{16}ClNO_4S$ 64179-54-0



tioconazolum
tioconazole

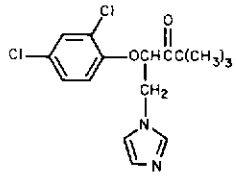
1-[2,4-dichloro-β-[(2-chloro-3-thenyl)oxy]phenethyl]imidazole
$C_{16}H_{13}Cl_3N_2OS$ 65899-73-2



| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number* |
|---|---|
| tiopinacum<br>tiopinac | 6,11-dihydro-11-oxodibenzo[*b*,*e*]thiepin-3-acetic acid<br>$C_{16}H_{12}O_3S$ 61220-69-7<br>  |
| tolimidonum<br>tolimidone | 5-(*m*-tolyloxy)-2(1*H*)-pyrimidinone<br>$C_{11}H_{10}N_2O_2$ 41964-07-2<br>  |
| tolnidaminum<br>tolnidamine | 1-(4-chloro-2-methylbenzyl)-1*H*-indazole-3-carboxylic acid<br>$C_{16}H_{13}ClN_2O_2$ 50454-68-7<br>  |
| triafunginum<br>triafungin | 3-benzylpyrido[3,4-*e*]-*as*-triazine<br>$C_{13}H_{10}N_4$ 55242-77-8<br>  |
| tuclazepamum<br>tuclazepam | 7-chloro-5-(*o*-chlorophenyl)-2,3-dihydro-1-methyl-1*H*-1,4-benzodiazepine-2-methanol<br>$C_{17}H_{16}Cl_2N_2O$ 51037-88-8<br>  |
| tulobuterolum<br>tulobuterol | α-[(*tert*-butylamino)methyl]-*o*-chlorobenzyl alcohol<br>$C_{12}H_{18}ClNO$ 41570-61-0<br>  |

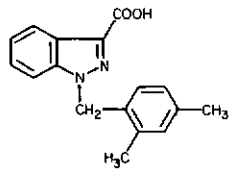
valconazolum
valconazole

(±)-2-(2,4-dichlorophenoxy)-1-imidazol-1-yl-4,4-dimethyl-3-pentanone
$C_{16}H_{18}Cl_2N_2O_2$ 56097-80-4



xinidaminum
xinidamine

1-(2,4-dimethylbenzyl)-1*H*-indazole-3-carboxylic acid
$C_{17}H_{16}N_2O_2$ 50264-78-3



zinostatinum
zinostatin

neocarzinostatin, acidic single-chained polypeptide obtained from cultures of *Streptomyces carcinostaticus* var. F-41, or the same substance produced by any other means
9014-02-2

## 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.

| | |
|---|---|
| 2-(dimethylamino)ethyl | deanil |
| decyl | decil |

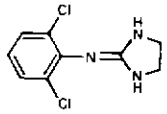
# AMENDMENTS TO PREVIOUS LISTS

## International Nonproprietary Names for Pharmaceutical Substances

### Cumulative List No. 3, 1971

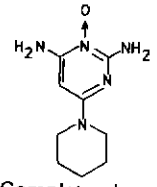
p. 37 clonidinum
clonidine

*Replace chemical information by the following:*
2-[(2,6-dichlorophenyl)imino]imidazolidine



p. 87 minoxidilum
minoxidil

*Replace chemical information by the following:*
2,4-diamino-6-piperidinopyrimidine 3-oxide



p. 103 penbutololum
penbutotol

Complete chemical name by preceeding it by (−)−

Supplement to Vol. 28, No. 9

## Proposed International Nonproprietary Names (Prop. INN): List 32

p. 17 razoxanum
razoxane

*Replace chemical name and CAS registry No. by the following:*
(±)-4,4′-propylenedi-2,6-piperazinedione
21416-87-5

p. 20 tinofedrinum
tinofedrine

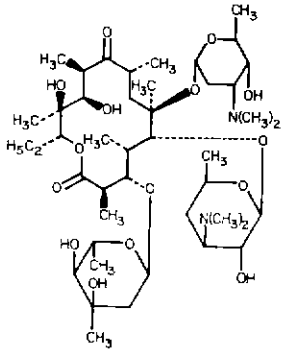
*Replace chemical name and CAS registry No. by the following:*
(+)-(*R*)-α-[(*S*)-1-[(3,3-di-3-thienylallyl)amino]ethyl]benzyl alcohol
66788-41-8

Supplement to Vol. 31, No. 3

## Proposed International Nonproprietary Names (Prop. INN): List 37

p. 10 megalomicinum
megalomicin

*Replace chemical name and graphic formula by the following:*
(3*R*,4*S*,5*S*,6*R*,7*R*,9*R*,11*R*;12*R*,13*S*,14*R*)-4-[(2,6-dideoxy-3-*C*-methyl-α-L-*ribo*-hexopyranosyl)oxy]-14-ethyl-12,13-dihydroxy-3,5,7,9,11,13-hexamethyl-7-[[2,3,6-trideoxy-3-(dimethylamino)-α-L-*ribo*-hexopyranosyl]oxy]-6-[[3,4,6-trideoxy-3-(dimethylamino)-β-D-*xylo*-hexopyranosyl]oxy]-oxacyclotetradecane-2,10-dione



**Proposed International Nonproprietary Names (Prop. INN): List 39**

| | | |
|---|---|---|
| p. 8 | *delete* | *insert* |
| | iomapidolum | iopamidolum |
| | iomapidol | iopamidol |
| p. 15 | norgestimatum | *In Cumulative List 5 replace asterisk by reference to List 17 rec. INN* |

## Annex 1

## 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*.[1]

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*.[1]

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.

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.

* 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.

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

1. International Nonproprietary Names (INN) should be distinctive in sound and spelling. They should not be inconveniently long and should not be liable to confusion with names in common use.

2. The INN 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.

*These primary principles are to be implemented by using the following secondary principles*

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

4. In devising INN 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".

5. INN 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.

For quaternary ammonium substances, the cation and anion should be named appropriately as separate components of a quaternary sub-

stance and not in the amine-salt style.

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

7. To facilitate the translation and pronunciation of INN, "f" should be used instead of "ph", "t" instead of "th", "e" instead of "ae" or "oe", and "i" instead of "y"; the use of the letters "h" and "k" should be avoided.

8. 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.

9. Group relationship in INN (see Guiding Principle 2) should if possible be shown by using a stem from the following list. The stem should only be used for substances of the appropriate group. Where a stem is shown without any hyphens it may be used anywhere in the name.

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

| *Latin* | *English* | *French* | |
|---|---|---|---|
| -actidum | -actide | -actide | synthetic polypeptides with a corticotrophin-like action |
| andr | andr | andr | steroids, androgens |
| -arolum | -arol | -arol | anticoagulants of the dicoumarol group |
| -azepamum | -azepam | -azépam | substances of the diazepam group |
| bol | bol | bol | steroids, anabolic |
| -buzonum | -buzone | -buzone | anti-inflammatory analgesics of the phenylbutazone group |
| -cainum | -caine | -caïne | local anaesthetics |
| cef- | cef- | céf- | antibiotics, derivatives of cefalosporanic acid |
| -cillinum | -cillin | -cilline | antibiotics, derivatives of 6-aminopenicillanic acid |
| cort | cort | cort | corticosteroids, except those of the prednisolone group |
| -cyclinum | -cycline | -cycline | antibiotics of the tetracycline group |
| estr | estr | estr | estrogenic substances |
| -fibratum | -fibrate | -fibrate | substances of the clofibrate group |
| -forminum | -formin | -formine | hypoglycemics of the phenformin group |
| gest | gest | gest | steroids, progestogens |
| gli- | gli- | gli- | sulfonamide hypoglycemics |
| io- | io- | io- | iodine-containing contrast media |
| -ium | -ium | -ium | quaternary ammonium compounds |
| -metacinum | -metacin | -métacine | anti-inflammatory substances of the indometacin group |
| -mycinum | -mycin | -mycine | antibiotics, produced by *Streptomyces* strains |
| -nidazolum | -nidazole | -nidazole | antiprotozoal substances of the metronidazole group |
| -ololum | -olol | -olol | β-adrenergic blocking agents of the propranolol group |
| -onidum | -onide | -onide | steroids for topical use, containing an acetal group |
| -orexum | -orex | -orex | anorexigenic agents, phenethylamine derivatives |
| -praminum | -pramine | -pramine | substances of the imipramine group |
| -profenum | -profen | -profène | anti-inflammatory substances of the ibuprofen group |
| prost | prost | prost | prostaglandins |
| -relinum | -relin | -réline | hypophyseal hormone release-stimulating peptides |
| sulfa- | sulfa- | sulfa- | sulfonamides, anti-infective |
| -terolum | -terol | -térol | bronchodilators, phenethylamine derivatives |
| -tizidum | -tizide | -tizide | diuretics of the chlorothiazide group |
| -verinum | -verine | -vérine | spasmolytics with a papaverine-like action |

## Annex 2

## NONPROPRIETARY NAMES FOR PHARMACEUTICAL SUBSTANCES: TWENTIETH REPORT OF THE WHO EXPERT COMMITTEE

In its twentieth report [1] the WHO Expert Committee on Nonproprietary Names for Pharmaceutical Substances reviewed the general principles for devising, and the procedures for selecting, international nonproprietary names (INN) in the light of developments in pharmaceutical compounds in recent years. The most significant recent change has been the extension to the naming of synthetic chemical substances of the practice previously used for substances originating in or derived from natural products. This practice involves employing a characteristic "stem" indicative of a common property of the members of a group. The reasons for, and the implications of, the change are fully discussed. Also reported is the intention to change the practice with regard to the nomenclature of individual members of polymeric series.

Other sections of the report concern instructions to be followed by bodies making application for international nonproprietary names, the availability of computer-printed cumulative lists of international nonproprietary names, information supplied by WHO Member States concerning their official use of national or international names for pharmaceutical products, and proposals relative to the withdrawal of international nonproprietary names allocated to substances that are no longer in use.

The official texts relating to the procedures for selecting, and general guidance for devising, international nonproprietary names are reproduced in two annexes to the report. Other annexes give examples of international nonproprietary names that incorporate selected stems, the most frequently used initial groups of letters in international nonproprietary names, a historical review of the programme of selecting international nonproprietary names, some useful literature references, and a model of the form to be used in all applications for international nonproprietary names.

[1] WHO Technical Report Series, No. 581, 1975 (*Nonproprietary Names for Pharmaceutical Substances*. Twentieth Report of the WHO Expert Committee), ISBN 92 4 120581 4. Price: Sw. fr. 6 —.