Supplement to
WHO Chronicle, 1982,
Vol. 36, No. 5 (October)

International Nonproprietary Names for Pharmaceutical Substances

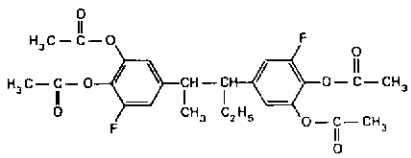
In accordance with article 3 of the Procedure for the Selection of Recommended International Nonproprietary Names for Pharmaceutical Substances,[1] notice is hereby given that the following names are under consideration by the World Health Organization as Proposed International Nonproprietary Names.

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 48 Prop. INN not later than 28 February 1983.

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 48[2]

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
acefluranolum acefluranol	4,4'-[(1*RS*,2*SR*)-1-ethyl-2-methylethylene]bis[6-fluoropyrocatechol] tetraacetate $C_{25}H_{26}F_2O_8$ 80595-73-9

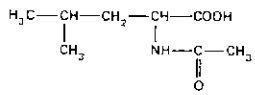
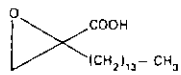
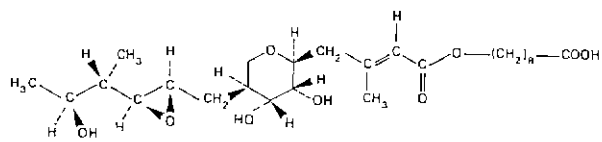
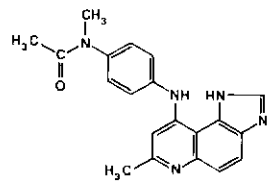
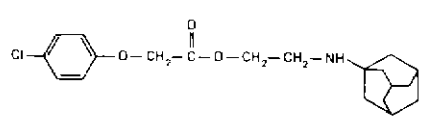


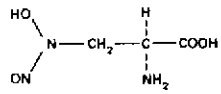
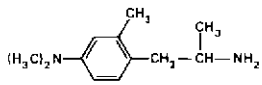
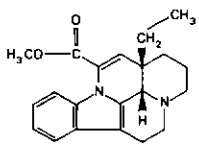
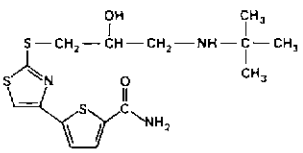
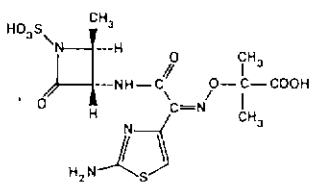
Comprehensive information on the INN programme can be found in WHO Technical Report Series, No. 581, 1975 (*Nonproprietary Names for Pharmaceutical Substances* Twentieth Report of the WHO Expert Committee); ISBN 92 4 120581 4 (price, Sw. fr. 6.–), an account of this publication will be found on page 27 of this Supplement (Annex 2). All names from Lists 1-47 of Proposed International Nonproprietary Names, together with a molecular formula index, will be found in *International Nonproprietary Names for Pharmaceutical Substances Cumulative list No. 6, 1982*, World Health Organization, Geneva, in press (ISBN 92 4 056013 0) (price: Sw. fr. 55.–). 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 April 1982. The printout also indicates in which of the 47 individual lists of proposed names and 21 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.

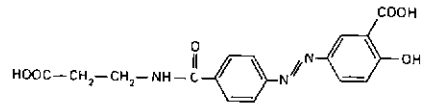
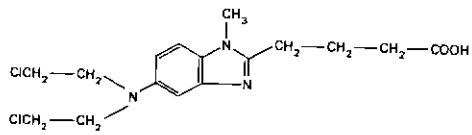
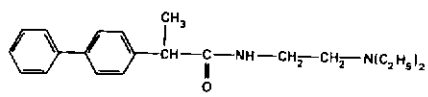
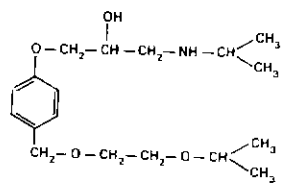
These publications may be obtained, direct or through booksellers, from the sales agents listed on the back cover of the *WHO Chronicle*. Orders from countries where sales agents have not yet been appointed may be addressed to World Health Organization, Distribution and Sales Service, 1211 Geneva 27,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

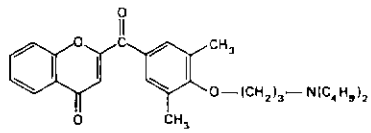
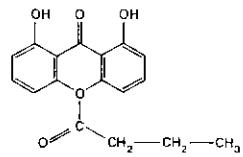
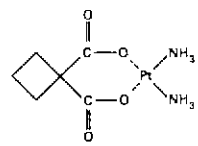
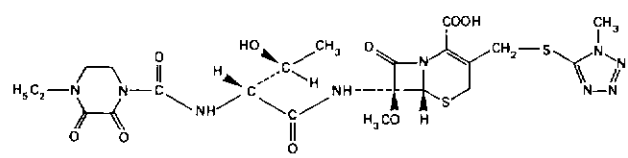
[1] See Annex 1, p. 26.

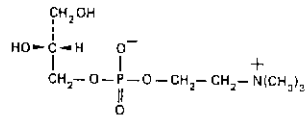
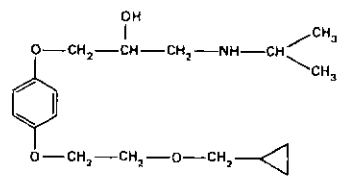
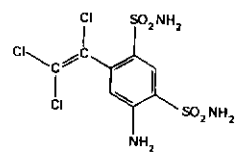
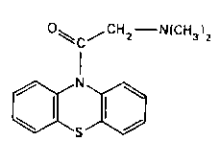
[2] Other lists of proposed and recommended international nonproprietary names can be found in *Cumulative list No. 6, 1982*, to be published shortly.

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
acetylleucinum acetylleucine	*N*-acetyl-DL-leucine $C_8H_{15}NO_3$ 99-15-0 
acidum palmoxiricum palmoxiric acid	(±)-2-tetradecylglycidic acid $C_{17}H_{32}O_3$ 68170-97-8 
acidum pseudomonicum pseudomonic acid	(*E*)-(2*S*,3*R*,4*R*,5*S*)-5-[(2*S*,3*S*,4*S*,5*S*)-2,3-epoxy-5-hydroxy-4-methylhexyl]tetrahydro-3,4-dihydroxy-β-methyl-2*H*-pyran-2-crotonic acid, ester with 9-hydroxynonanoic acid $C_{26}H_{44}O_9$ 12650-69-0 
acodazolum acodazole	*N*-methyl-4′-[(7-methyl-1*H*-imidazo[4,5-*f*]quinolin-9-yl)amino]acetanilide $C_{20}H_{19}N_5O$ 79152-85-5 
adafenoxatum adafenoxate	2-(1-adamantylamino)ethyl (*p*-chlorophenoxy)acetate $C_{20}H_{26}ClNO_3$ 82168-26-1 

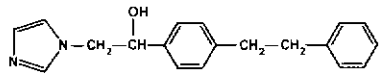
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
alanosinum alanosine	(−)-(*S*)-2-amino-3-(hydroxynitrosamino)propionic acid $C_3H_7N_3O_4$ 5854-93-3 
amiflaminum amiflamine	(+)-4-(dimethylamino)-α,2-dimethylphenethylamine $C_{12}H_{20}N_2$ 77518-07-1 
apovincaminum apovincamine	methyl (3α,16α)-eburnamenine-14-carboxylate *or* methyl (13a*S*,13b*S*)-13a-ethyl-2,3,5,6,13a,13b-hexahydro-1*H*-indolo[3,2,1-*de*]pyrido[3,2,1-*ij*][1,5]naphthyridine-12-carboxylate $C_{21}H_{24}N_2O_2$ 4880-92-6 
arotinololum arotinolol	(±)-5-[2-[[3-(*tert*-butylamino)-2-hydroxypropyl]thio]-4-thiazolyl]-2-thiophenecarboxamide $C_{15}H_{21}N_3O_2S_3$ 68377-92-4 
aztreonamum aztreonam	(*Z*)-2-[[[(2-amino-4-thiazolyl)[[(2*S*,3*S*)-2-methyl-4-oxo-1-sulfo-3-azetidinyl]carbamoyl]methylene]amino]oxy]-2-methylpropionic acid $C_{13}H_{17}N_5O_8S_2$ 78110-38-0 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
balsalazidum balsalazide	(*E*)-5-[[*p*-[(2-carboxyethyl)carbamoyl]phenyl]azo]salicylic acid $C_{17}H_{15}N_3O_6$ 80573-04-2 
bendamustinum bendamustine	5-[bis(2-chloroethyl)amino]-1-methyl-2-benzimidazolebutyric acid $C_{16}H_{21}Cl_2N_3O_2$ 16506-27-7 
biprofenidum biprofenide	(±)-*N*-[2-(diethylamino)ethyl]-α-methyl-4-biphenylacetamide $C_{21}H_{28}N_2O$ 70976-76-0 
bisoprololum bisoprolol	(±)-1-[[α-(2-isopropoxyethoxy)-*p*-tolyl]oxy]-3-(isopropylamino)-2-propanol $C_{18}H_{31}NO_4$ 66722-44-9 

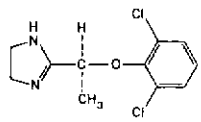
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
bucromaronum bucromarone	2-[4-[3-(dibutylamino)propoxy]-3,5-dimethylbenzoyl]chromone $C_{29}H_{37}NO_4$ 78371-66-1 
[illegible]ntronum butantrone	10-butyryl-1,8-dihydroxyanthrone $C_{18}H_{16}O_4$ 75464-11-8 
carboplatinum carboplatin	*cis*-diammine(1,1-cyclobutanedicarboxylato)platinum $C_6H_{12}N_2O_4Pt$ 41575-94-4 
cefbuperazonum cefbuperazone	(6*R*,7*S*)-7-[(2*R*,3*S*)-2-(4-ethyl-2,3-dioxo-1-piperazinecarboxamido)-3-hydroxybutyramido]-7-methoxy-3-[[(1-methyl-1*H*-tetrazol-5-yl)thio]methyl]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid $C_{22}H_{29}N_9O_9S_2$ 76610-84-9 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
cholini glycerophosphas choline glycerophosphate	choline hydroxide, (*R*)-2,3-dihydroxypropyl hydrogen phosphate, inner salt *or* *sn*-glycero(3)phosphocholine $C_8H_{20}NO_6P$ 28319-77-9 
cicloprololum ciclroprolol	(±)-1-[p-[2-(cyclopropylmethoxy)ethoxy]phenoxy]-3-(isopropylamino)-2-propanol $C_{18}H_{29}NO_4$ 63659-12-1 
clorsulonum clorsulon	4-amino-6-(trichlorovinyl)-*m*-benzenedisulfonamide $C_8H_8Cl_3N_3O_4S_2$ 60200-06-8 
croscarmellosum croscarmellose	crosslinked carmellose (cellulose carboxymethyl ether) 9000-11-7
dacemazinum dacemazine	10-(*N,N*-dimethylglycyl)phenothiazine $C_{18}H_{18}N_2OS$ 518-61-6 

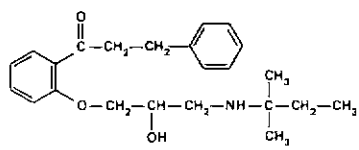
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
denzimolum denzimol	(±)-α-(*p*-phenethylphenyl)imidazole-1-ethanol $C_{19}H_{20}N_2O$ 73931-96-1



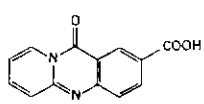
dexlofexidinum dexlofexidine	(+)-(*S*)-2-[1-(2,6-dichlorophenoxy)ethyl]-2-imidazoline $C_{11}H_{12}Cl_2N_2O$ 81447-79-2

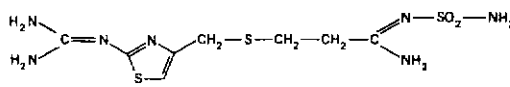
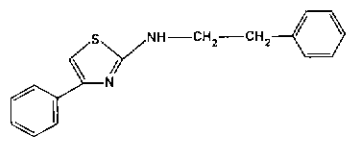
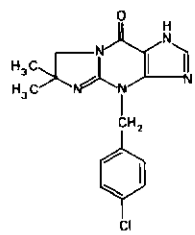
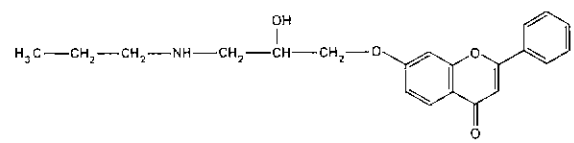


diprafenonum diprafenone	(±)-2′-[2-hydroxy-3-(*tert*-pentylamino)propoxy]-3-phenylpropiophenone $C_{23}H_{31}NO_3$ 81447-80-5

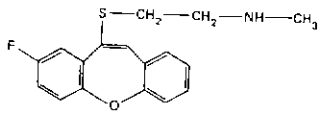
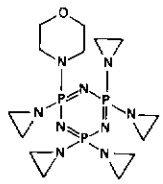
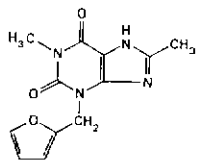
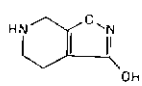


doqualastum doqualast	11-oxo-11*H*-pyrido[2,1-*b*]quinazoline-2-carboxylic acid $C_{13}H_8N_2O_3$ 64019-03-0

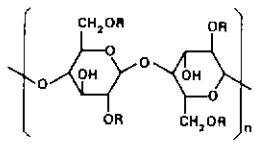


Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
famotidinum famotidine	[1-amino-3-[[[2-[(diaminomethylene)amino]-4-thiazolyl]methyl]thio]propylidene]-sulfamide $C_8H_{15}N_7O_2S_3$ 76824-35-6 
fanetizolum fanetizole	2-(phenethylamino)-4-phenylthiazole $C_{17}H_{16}N_2S$ 79069-94-6 
fenprinastum fenprinast	4-(*p*-chlorobenzyl)-1,4,6,7-tetrahydro-6,6-dimethyl-9*H*-imidazo[1,2-*a*]purin-9-one $C_{16}H_{16}ClN_5O$ 75184-94-0 
flavodilolum flavodilol	(±)-7-[2-hydroxy-3-(propylamino)propoxy]flavone $C_{21}H_{23}NO_4$ 79619-31-1 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
flordipinum flordipine	diethyl 1,4-dihydro-2,6-dimethyl-1-(2-morpholinoethyl)-4-(α,α,α-trifluoro-*o*-tolyl)3,5-pyridinedicarboxylate $C_{28}H_{33}F_3N_2O_5$ 77590-96-6
...renizinum flotrenizine	(±)-4-[bis(*p*-fluorophenyl)methyl]-α-(*p*-*tert*-butylphenyl)-1-piperazinebutanol $C_{31}H_{38}F_2N_2O$ 82190-92-9
fludarabinum fludarabine	9-β-D-arabinofuranosyl-2-fluoroadenine $C_{10}H_{12}FN_5O_4$ 21679-14-1
flufyllinum flufylline	7-[2-[4-(*p*-fluorobenzoyl)piperidino]ethyl]theophylline $C_{21}H_{24}FN_5O_3$ 82190-91-8

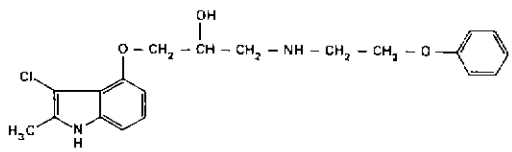
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
fluradolinum fluradoline	2-[(8-fluorodibenz[*b*,*f*]oxepin-10-yl)thio]-*N*-methylethylamine $C_{17}H_{16}FNOS$ 71316-84-2 
fotretaminum fotretamine	2,2,4,4,6-pentakis(1-aziridinyl)-2,2,4,4,6,6-hexahydro-6-morpholino-1,3,5,2,4,6-triazatriphosphorine $C_{14}H_{28}N_9OP_3$ 37132-72-2 
furafyllinum furafylline	3-furfuryl-1,8-dimethylxanthine $C_{12}H_{12}N_4O_3$ 80288-49-9 
gaboxadolum gaboxadol	4,5,6,7-tetrahydroisoxazole[5,4-*c*]pyridin-3-ol $C_6H_8N_2O_2$ 64603-91-4 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
hyprolosum hyprolose	cellulose 2-hydroxypropyl ether 9004-64-2



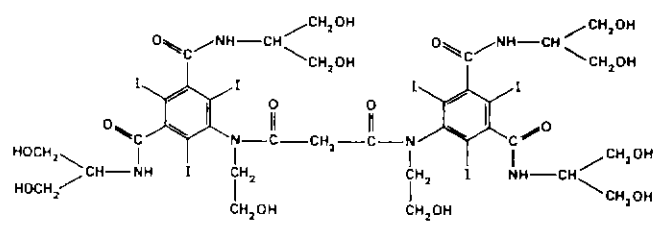
R = —H or $-CH_2-CHOH-CH_3$

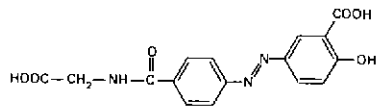
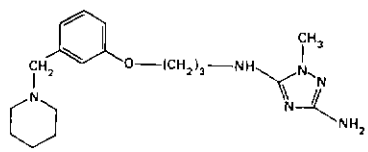
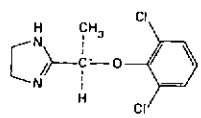
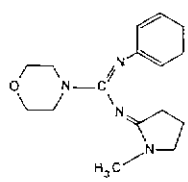
indopanololum indopanolol	(±)-1-[(3-chloro-2-methylindol-4-yl)oxy]-3-[(2-phenoxyethyl)amino]-2-propanol $C_{20}H_{23}ClN_2O_3$ 69907-17-1



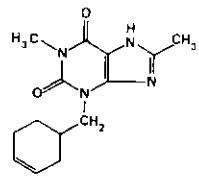
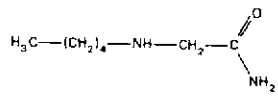
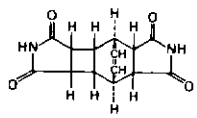
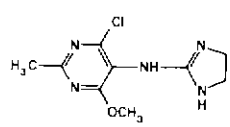
insulinum humanum insulin human	a protein having the normal structure of the natural antidiabetic principle produced by the human pancreas. 11061-68-0

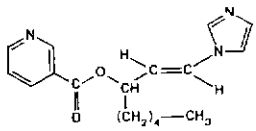
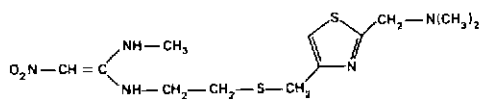
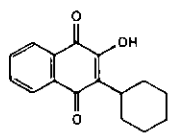
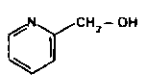
iodecolum iodecol	5,5′-[malonylbis[(2-hydroxyethyl)imino]]bis[*N*,*N*′-bis[2-hydroxy-1-(hydroxymethyl)ethyl]-2,4,6-triiodoisophthalamide] $C_{35}H_{44}I_6N_6O_{16}$ 81045-33-2

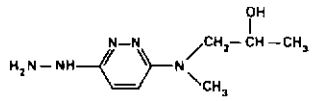
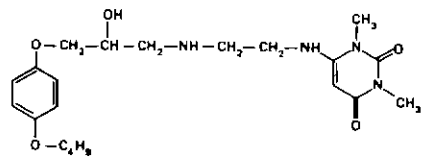
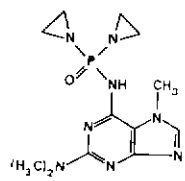


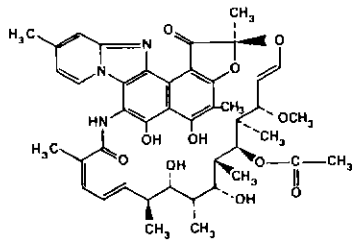
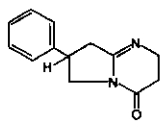
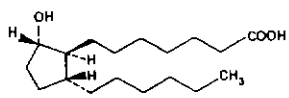
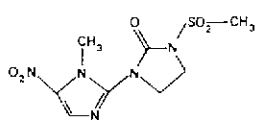
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
ipsalazidum ipsalazide	(*E*)-*p*-[(3-carboxy-4-hydroxyphenyl)azo]hippuric acid $C_{16}H_{13}N_3O_6$ 80573-03-1 
lamtidinum lamtidine	1-[*m*-[3-[(3-amino-1-methyl-1*H*-1,2,4-triazol-5-yl)amino]propoxy]benzyl]piperidine $C_{18}H_{28}N_6O$ 73278-54-3 
levlofexidinum levlofexidine	(−)-(*R*)-2-[1-(2,6-dichlorophenoxy)ethyl]-2-imidazoline $C_{11}H_{12}Cl_2N_2O$ 81447-78-1 
linogliridum linogliride	*N*-(1-methyl-2-pyrrolidinylidene)-*N'*-phenyl-4-morpholinecarboxamidine $C_{16}H_{22}N_4O$ 75358-37-1 

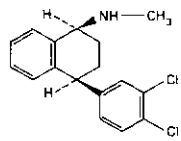
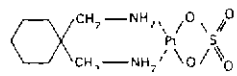
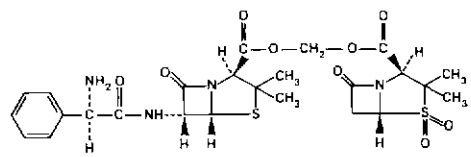
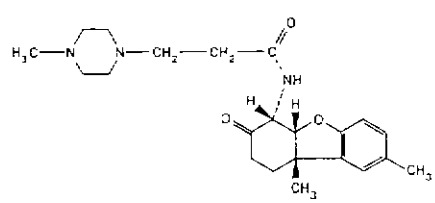
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
lomevactonum lomevactone	4-(*p*-chlorophenyl)tetrahydro-6-methyl-3-phenyl-2*H*-pyran-2-one *or* *p*-chloro-*β*-(2-hydroxypropyl)-*α*-phenylhydrocinnamic acid, *δ*-lactone $C_{18}H_{17}ClO_2$ 81478-25-3
lorzafonum lorzafone	2-(2-aminoacetamido)-4′-chloro-2′-(*o*-chlorobenzoyl)-*N*-methylacetanilide $C_{18}H_{17}Cl_2N_3O_3$ 59179-95-2
loxtidinum loxtidine	1-methyl-5-[[3-[(*α*-piperidino-*m*-tolyl)oxy]propyl]amino]-1*H*-1,2,4-triazole-3-methanol $C_{19}H_{29}N_5O_2$ 76956-02-0
mefenidilum mefenidil	5-methyl-2-phenylimidazole-4-acetonitrile $C_{12}H_{11}N_3$ 58261-91-9

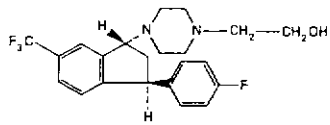
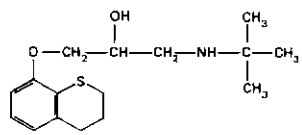
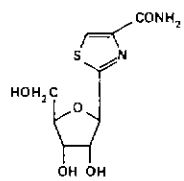
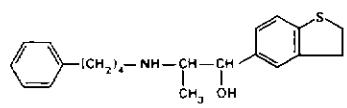
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
mexafyllinum mexafylline	3-(3-cyclohexen-1-ylmethyl)-1,8-dimethylxanthine $C_{14}H_{18}N_4O_2$ 80294-25-3 
milacemidum milacemide	2-(pentylamino)acetamide $C_7H_{16}N_2O$ 76990-56-2 
mitindomidum mitindomide	tricyclo[4.2.2.0^{2,5}]dec-9-ene-3,4,7,8-tetracarboxylic 3,4:7,8-diimide $C_{14}H_{12}N_2O_4$ 10403-51-7 
moxonidinum moxonidine	4-chloro-5-(2-imidazolin-2-ylamino)-6-methoxy-2-methylpyrimidine $C_9H_{12}ClN_5O$ 75438-57-2 

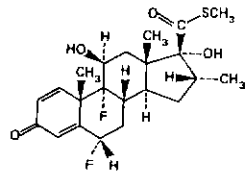
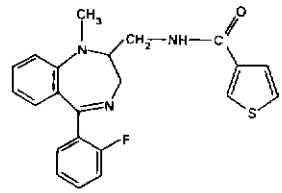
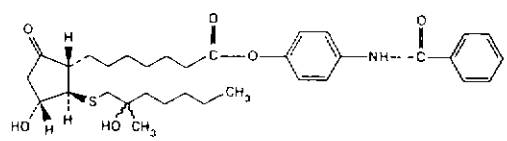
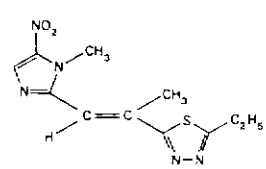
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
nicogrelatum nicogrelate	(±)-(*E*)-3-imidazol-1-yl-1-pentylallyl nicotinate $C_{17}H_{21}N_3O_2$ 80614-21-7 
nizatidinum nizatidine	*N*-[2-[[[2-[(dimethylamino)methyl]-4-thiazolyl]methyl]thio]ethyl]-*N'*-methyl-2-nitro-1,1-ethenediamine $C_{12}H_{21}N_5O_2S_2$ 76963-41-2 
parvaquonum parvaquone	2-cyclohexyl-3-hydroxy-1,4-naphthoquinone $C_{16}H_{16}O_3$ 4042-30-2 
piconolum piconol	2-pyridinemethanol C_6H_7NO 586-98-1 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
pildralazinum pildralazine	(±)-1-[(6-hydrazino-3-pyridazinyl)methylamino]-2-propanol $C_8H_{15}N_5O$ 64000-73-3 
pirepololum pirepolol	(±)-6-[[2-[[3-(*p*-butoxyphenoxy)-2-hydroxypropyl]amino]ethyl]amino]-1,3-dimethyluracil $C_{21}H_{32}N_4O_5$ 69479-26-1 
pumitepum pumitepa	*P,P*-bis(1-aziridinyl)-*N*-[2-(dimethylamino)-7-methylpurin-6-yl]phosphinic amide $C_{12}H_{19}N_8OP$ 42061-52-9 

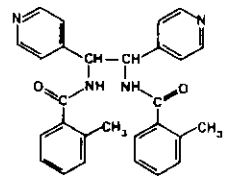
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
rifaxidinum rifaxidin	(2*S*,16*Z*,18*E*,20*S*,21*S*,22*R*,23*R*,24*R*,25*S*,26*S*,27*S*,28*E*)-5,6,21,23,25-pentahydroxy-27-methoxy-2,4,11,16,20,22,24,26-octamethyl-2,7-(epoxypentadeca[1,11,13]trien-imino)benzofuro[4,5-*e*]pyrido[1,2-*a*]benzimidazole-1,15(2*H*)-dione, 25-acetate $C_{43}H_{51}N_3O_{11}$ 80621-81-4 
rofelodinum rofelodine	(±)-2,6,7,8-tetrahydro-7-phenylpyrrolo[1,2-*a*]pyrimidin-4(3*H*)-one $C_{13}H_{14}N_2O$ 76696-97-4 
rosaprostolum rosaprostol	2-hexyl-5-hydroxycyclopentaneheptanoic acid $C_{18}H_{34}O_3$ 56695-65-9 
satranidazolum satranidazole	1-(1-methyl-5-nitroimidazol-2-yl)-3-(methylsulfonyl)-2-imidazolidinone $C_8H_{11}N_5O_5S$ 56302-13-7 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
sertralinum sertraline	(1*S*,4*S*)-4-(3,4-dichlorophenyl)-1,2,3,4-tetrahydro-*N*-methyl-1-naphthylamine $C_{17}H_{17}Cl_2N$ 79617-96-2 
spiroplatinum spiroplatin	*cis*-[1,1-cyclohexanebis(methylamine)](sulfato)platinum $C_8H_{16}N_2O_4PtS$ 74790-08-2 
sultamicillinum sultamicillin	hydroxymethyl (2*S*,5*R*,6*R*)-6-[(*R*)-(2-amino-2-phenylacetamido)]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate,(2*S*,5*R*)-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate (ester), *S*,*S*-dioxide $C_{25}H_{30}N_4O_9S_2$ 76497-13-7 
taziprinonum taziprinone	(±)-*N*-[(4*R**,4a*R**,9b*S**)-1,2,3,4,4a,9b-hexahydro-8,9b-dimethyl-3-oxo-4-dibenzofuranyl]-4-methyl-1-piperazinepropionamide $C_{22}H_{31}N_3O_3$ 79253-92-2 

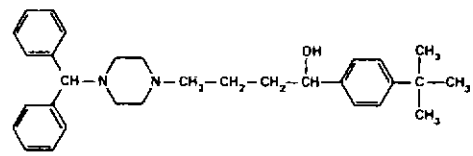
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
tefludazinum tefludazine	*trans*-4-[3-(*p*-fluorophenyl)-6-(trifluoromethyl)-1-indanyl]-1-piperazineethanol $C_{22}H_{24}F_4N_2O$ 80680-06-4 
tertatololum tertatolol	(±)-1-(*tert*-butylamino)-3-(thiochroman-8-yloxy)-2-propanol $C_{16}H_{25}NO_2S$ 34784-64-0 
tiazofurinum tiazofurine	2-β-D-ribofuranosyl-4-thiazolecarboxamide $C_8H_{12}N_2O_5S$ 60084-10-8 
tibalosinum tibalosin	(±)-*erythro*-2,3-dihydro-α-[1-[(4-phenylbutyl)amino]ethyl]benzo[*b*]thiophene-5-methanol $C_{21}H_{27}NOS$ 63996-84-9 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
ticabesonum ticabesone	*S*-methyl 6α,9-difluoro-11β,17-dihydroxy-16α-methyl-3-oxoandrosta-1,4-diene-17β-carbothioate $C_{22}H_{28}F_2O_4S$ 74131-77-4 
tifluadomum tifluadom	(±)-*N*-[[5-(*o*-fluorophenyl)-2,3-dihydro-1-methyl-1*H*-1,4-benzodiazepin-2-yl]methyl]-3-thiophenecarboxamide $C_{22}H_{20}FN_3OS$ 81656-30-6 
tiprostanidum tiprostanide	(1*S*,2*R*,3*R*)-3-hydroxy-2-[(2-hydroxy-2-methylheptyl)thio]-5-oxocyclopentane-heptanoic acid, ester with 4′-hydroxybenzanilide *or p*-benzamidophenyl (1*S*,2*R*,3*R*)-3-hydroxy-2-[(2-hydroxy-2-methylheptyl)thio]-5-oxocyclopentane-heptanoate $C_{33}H_{45}NO_6S$ 67040-53-3 
tivanidazolum tivanidazole	(*E*)-2-ethyl-5-[1-methyl-2-(1-methyl-5-nitroimidazol-2-yl)vinyl]-1,3,4-thiadiazole $C_{11}H_{13}N_5O_2S$ 80680-05-3 

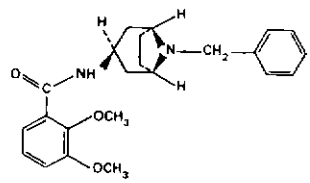
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
tolpadolum tolpadol	*N,N'*-(1,2-di-4-pyridylethylene)bis[*o*-toluamide] $C_{28}H_{26}N_4O_2$ 77502-27-3



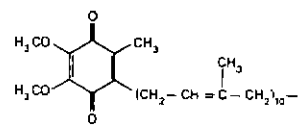
trenizinum trenizine	(±)-α-(*p*-*tert*-butylphenyl)-4-(diphenylmethyl)-1-piperazinebutanol $C_{31}H_{40}N_2O$ 82190-93-0

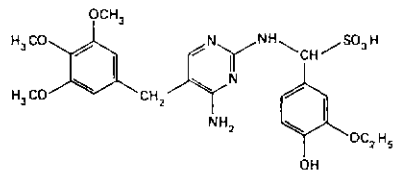
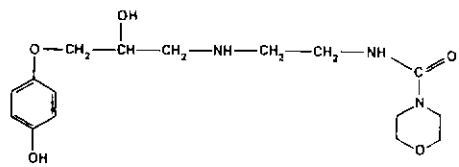
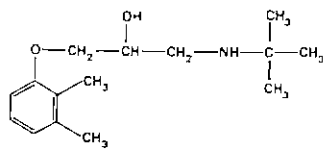
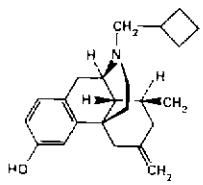


tropapridum tropapride	*N*-(8-benzyl-1α$_H$,5α$_H$-nortropan-3β-yl)-*o*-veratramide $C_{23}H_{28}N_2O_3$ 76352-13-1

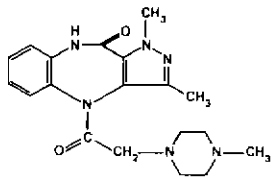


ubidecarenonum ubidecarenone	2 (3,7,11,15,19,23,27,31,35,39-decamethyl-2,6,10,14,18,22,26,30,34,38-tetracontadecaenyl)-5,6-dimethoxy-3-methyl-*p*-benzoquinone $C_{59}H_{90}O_4$ 303-98-0



Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
vaneprimum vaneprim	(±)-α-[[4-amino-5-(3,4,5-trimethoxybenzyl)-2-pyrimidinyl]amino]-3-ethoxy-4-hydroxy-α-toluenesulfonic acid $C_{23}H_{28}N_4O_8S$ 81523-49-1 
xamoterolum xamoterol	(±)-*N*-[2-[[2-hydroxy-3-(*p*-hydroxyphenoxy)propyl]amino]ethyl]-4-morpholinecarboxamide $C_{16}H_{25}N_3O_5$ 81801-12-9 
xibenololum xibenolol	(±)-1-(*tert*-butylamino)-3-(2,3-xylyloxy)-2-propanol $C_{15}H_{25}NO_2$ 81584-06-7 
xorphanolum xorphanol	17-(cyclobutylmethyl)-8β-methyl-6-methylenemorphinan-3-ol $C_{23}H_{31}NO$ 77287-89-9 

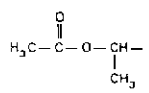
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
zolenzepinum zolenzepine	4,9-dihydro-1,3-dimethyl-4-[(4-methyl-1-piperazinyl)acetyl]pyrazolo[4,3-*b*][1,5]benzodiazepin-10(1*H*)-one $C_{19}H_{24}N_6O_2$ 78208-13-6



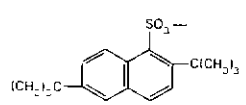
Names for Radicals and Groups

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.

axetilum axetil	1-acetoxyethyl $C_4H_7O_2$



dibunatum dibunate	2,6-di-*tert*-butyl-1-naphthalenesulfonate $C_{18}H_{23}O_3S$



AMENDMENTS TO PREVIOUS LISTS

Cumulative List No. 3, 1971

International Nonproprietary Names for Pharmaceutical substances:

p 136	urokinasum urokinase	*replace definition by:* a plasminogen activator isolated from human sources

Vol. 30, No. 9

International Nonproprietary Names (Prop. INN): List 36

p. 23	*delete*	*insert*
	zimelidinum zimelidine	zimeldinum zimeldine

Supplement to Vol. 33, No. 9

International Nonproprietary Names (Prop. INN): List 42

p. 7	*delete*	*insert*
	demetacinum demetacin	delmetacinum delmetacin

Supplement to Vol. 34, No. 9

International Nonproprietary Names (Prop. INN): List 44

p. 7	cefotetanum cefotetan	*replace chemical name by:* (6*R*,7*S*)-4-[[2-carboxy-7-methoxy-3-[[(1-methyl-1*H*-tetrazol-5-yl)thio]methyl]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-7-yl]carbamoyl]-1,3-dithietane-$\Delta^{2,\alpha}$-malonamic acid

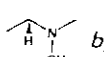
Supplement to Vol. 35, No. 3

International Nonproprietary Names (Prop. INN): List 45

p. 10	*delete*	*insert*
	pentamustinum pentamustine	neptamustinum neptamustine

Supplement to Vol. 35, No. 5

International Nonproprietary Names (Prop. INN): List 46

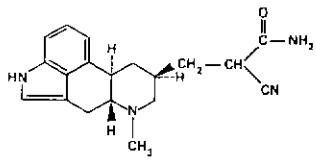
p. 5	*delete*	*insert*
	ciloprostum ciloprost	iloprostum iloprost
p. 6	desocriptinum desocriptine	*in left part of graphic formula replace*  *by* 
p 10	fosenazidum fosenazide	*in graphic formula replace* P-O-CH_2 *by* P-CH_2 *(This cancels amendment published on p. 16 of List 47 Prop. INN)*

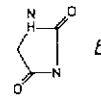
p 15	*delete*	*insert*
	probicromilum probicromil	ambicromilum ambicromil
p 16	*delete*	*insert*
	ricainidum ricainide	indecainidum indecainide
	delete	*insert*
	ridaflonum ridaflone	ridiflonum ridiflone

Supplement to Vol. 36, No. 2

International Nonproprietary Names (Prop. INN): List 47

p. 3	cianergolinum cianergoline	*replace graphic formula by:*



p. 7	falipamilum falipamil	*replace CAS reg. no by* 77862-92-1
p. 11	*delete*	
	moxifadolum moxifadol	
p 13	*delete*	*insert*
	pidorubicinum pidorubicin	epirubicinum epirubicin
	pirlimycinum pirlimycin	*in the graphic formula complete the* N *of the piperidine cycle with an* H
p. 14	spiromustinum spiromustine	*in graphic formula replace*  *by* 
	delete	*insert*
	tecoplaninum tecoplanin	teicoplaninum teicoplanin

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 substance 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
-bactamum	-bactam	-bactame	β-lactamase inhibitors
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 tropical use, containing an acetal group
-orexum	-orex	-orex	anorexigenic agents, phenethylamine derivates
-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 derivates
-tidinum	-tidine	-tidine	H_2-receptor antagonists
-tizidum	-tizide	-tizide	diuretics of the chlorothiazide group
-trexatum	-trexate	-trexate	folic acid antagonists
-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 interna-

tional 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.–