Supplement to *WHO Chronicle*, 1978, Vol. 32, No. 3 (March)

International Nonproprietary Names for Pharmaceutical Substances

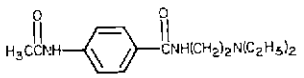
In accordance with article 3 of the Procedure for the Selection of Recommended International Nonproprietary Names for Pharmaceutical Substances,[1] notice is hereby given that the following names are under consideration by the World Health Organization as Proposed International Nonproprietary Names.

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 39 Prop. INN not later than 31 July 1978.

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 39 [2]

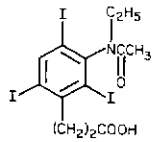
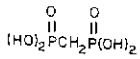
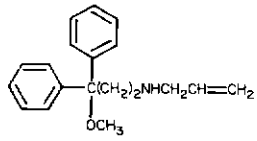
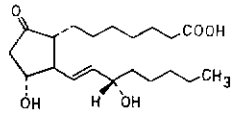
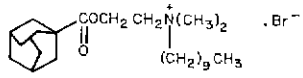
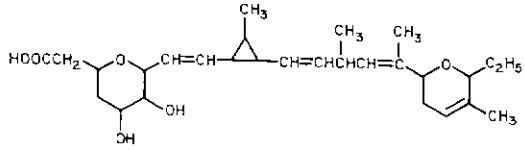
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
acecainidum acecainide	4'-[[2-(diethylamino)ethyl]carbamoyl]acetanilide $C_{15}H_{23}N_3O_2$ 32795-44-1



[1] See Annex 1, p. 17.

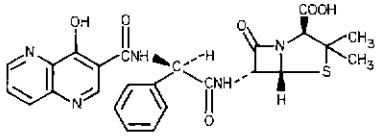
[2] Other lists of proposed international nonproprietary names can be found in *Chron. Wld Hlth Org.*, 1953, 7, 299, 1954, 8, 216, 313; 1956, 10, 28; 1957, 11, 231; 1958, 12, 102; *WHO Chronicle*, 1959, 13, 105, 152; 1960, 14, 168, 244; 1961, 15, 314, 1962, 16, 385; 1963, 17, 389; 1964, 18, 433, 1965,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

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*
acidum ioprocemicum ioprocemic acid	3-(*N*-ethylacetamido)-2,4,6-triiodohydrocinnamic acid $C_{13}H_{14}I_3NO_3$ 1456-52-6 
acidum medronicum medronic acid	methylenediphosphonic acid $CH_6O_6P_2$ 1984-15-2 
alimadolum alimadol	*N*-(3-methoxy-3,3-diphenylpropyl)allylamine $C_{19}H_{23}NO$ 52742-40-2 
alprostadilum alprostadil	(1*R*,2*R*,3*R*)-3-hydroxy-2-[(*E*)-(3*S*)-3-hydroxy-1-octenyl]-5-oxocyclopentaneheptanoic acid $C_{20}H_{34}O_5$ 745-65-3 
amantanii bromidum amantanium bromide	decyl(2-hydroxyethyl)dimethylammonium bromide 1-adamantanecarboxylate $C_{25}H_{46}BrNO_2$ 58158-77-3 
ambruticinum ambruticin	6-[2-[2-[5-(6-ethyl-3,6-dihydro-5-methyl-2*H*-pyran-2-yl)-3-methyl-1,4-hexadienyl]-3-methylcyclopropyl]vinyl]tetrahydro-4,5-dihydroxy-2*H*-pyran-2-acetic acid $C_{28}H_{42}O_6$ 58857-02-6 

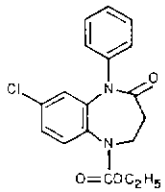
apalcillinum
apalcillin

(2*S*,5*R*,6*R*)-6-[(*R*)-2-(4-hydroxy-1,5-naphthyridine-3-carboxamido)-2-phenylacetamido]-3,3-dimethyl-7-oxo-4-thia-1-azabidyclo[3.2.0]heptane-2-carboxylic acid
$C_{25}H_{23}N_5O_6S$ 63469-19-2



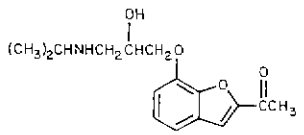
arfendazamum
arfendazam

ethyl 7-chloro-2,3,4,5-tetrahydro-4-oxo-5-phenyl-1*H*-1,5-benzodiazepine-1-carboxylate
$C_{18}H_{17}ClN_2O_3$ 37669-57-1



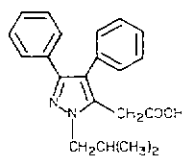
befunololum
befunolol

7-[2-hydroxy-3-(isopropylamino)propoxy]-2-benzofuranyl methyl ketone
$C_{16}H_{21}NO_4$ 39552-01-7



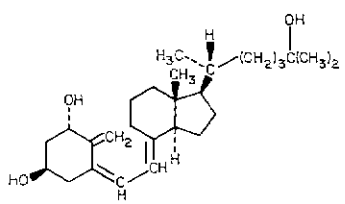
bufezolacum
bufezolac

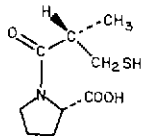
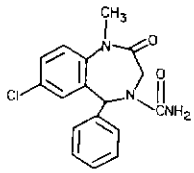
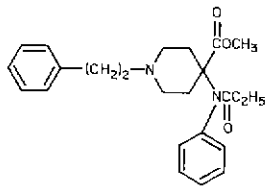
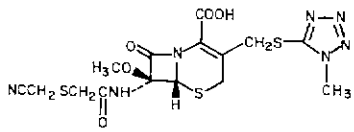
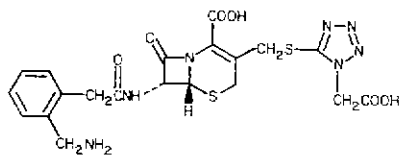
1-isobutyl-3,4-diphenylpyrazole-5-acetic acid
$C_{21}H_{22}N_2O_2$ 50270-32-1



calcitriolum
calcitriol

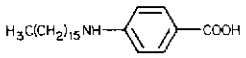
(5*Z*,7*E*)-9,10-secocholesta-5,7,10(19)-triene-1α,3β,25-triol
$C_{27}H_{44}O_3$ 32222-06-3



Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
captoprilum captopril	1-[(2*S*)-3-mercapto-2-methylpropionyl]-L-proline $C_9H_{15}NO_3S$ 62571-86-2 
carburazepamum carburazepam	7-chloro-1,2,3,5-tetrahydro-1-methyl-2-oxo-5-phenyl-4*H*-1,4-benzodiazepine-4-carboxamide $C_{17}H_{16}ClN_3O_2$ 59009-93-7 
carfentanilum carfentanil	methyl 1-phenethyl-4-(*N*-phenylpropionamido)isonipecotate $C_{24}H_{30}N_2O_3$ 59708-52-0 
cefmetazolum cefmetazole	(6*R*,7*S*)-7-[2-[(cyanomethyl)thio]acetamido]-7-methoxy-3-[[(1-methyl-1*H*-tetrazol-5yl)thio]methyl]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid $C_{15}H_{17}N_7O_5S_3$ 56796-20-4 
ceforanidum ceforanide	(6*R*,7*R*)-7-[2-(α-amino-*o*-tolyl)acetamido]-3-[[[1-(carboxymethyl)-1*H*-tetrazol-5-yl]thio]methyl]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid $C_{20}H_{21}N_7O_6S_2$ 60925-61-3 

cetabenum
cetaben

p-(hexadecylamino)benzoic acid
$C_{23}H_{39}NO_2$ 55986-43-1

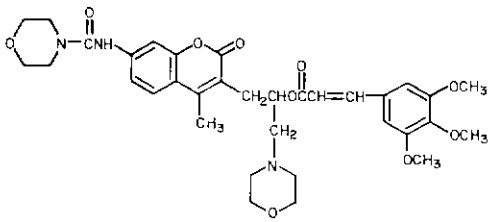


cideferronum
cideferron

macromolecular complex of ferric hydroxide with dextrin and citric acid
64440-87-5

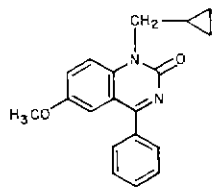
cinecromenum
cinecromen

3,4,5-trimethoxycinnamic acid ester with 3-(2-hydroxy-3-morpholinopropyl)-4-methyl-7-(4-morpholinecarboxamido)coumarin
$C_{34}H_{41}N_3O_{10}$ 62380-23-8



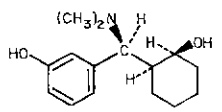
ciproquazonum
ciproquazone

1-(cyclopropylmethyl)-6-methoxy-4-phenyl-2(1*H*)-quinazolinone
$C_{19}H_{18}N_2O_2$ 33453-23-5



cramadolum
cramadol

(-)-(1*R**,2*R**)-2-[(*R**)-α-(dimethylamino)-*m*-hydroxybenzyl]cyclohexanol
$C_{15}H_{23}NO_2$ 63269-31-8

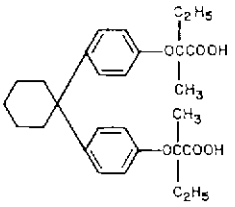


cisplatinum
cisplatin

cis-diamminedichloroplatinum
$Cl_2H_6N_2Pt$ 15663-27-1

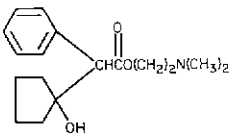
clinofibratum
clinofibrate

2,2'-[cyclohexylidenebis(*p*-phenyleneoxy)]bis[2-methylbutyric acid]
$C_{28}H_{36}O_6$ 30299-08-2



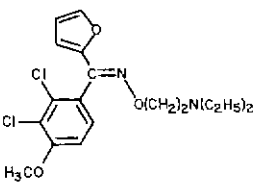
cyclopentolatum
cyclopentolate

2-(dimethylamino)ethyl 1-hydroxy-α-phenylcyclopentaneacetate
$C_{17}H_{25}NO_3$ 512-15-2



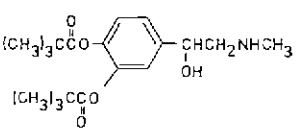
diclofurimum
diclofurime

2,3-dichloro-4-methoxyphenyl 2-furyl ketone (*E*)-*O*-[2-(diethylamino)-ethyl]oxime
$C_{18}H_{22}Cl_2N_2O_3$ 64743-08-4



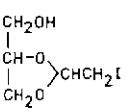
dipivefrinum
dipivefrine

(±)-3,4-dihydroxy-α-[(methylamino)methyl]benzyl alcohol 3,4-dipivalate
$C_{19}H_{29}NO_5$ 52365-63-6



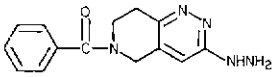
domiodolum
domiodol

2-(iodomethyl)-1,3-dioxolane-4-methanol
$C_5H_9IO_3$ 61869-07-6



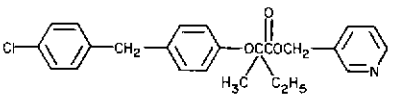
endralazinum
endralazine

6-benzoyl-3-hydrazino-5,6,7,8-tetrahydropyrido[4,3-*c*]pyridazine
$C_{14}H_{15}N_5O$ 39715-02-1



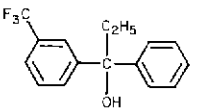
eniclobratum
eniclobrate

3-pyridylmethyl (±)-2-[[α-(*p*-chlorophenyl)-*p*-tolyl]oxy]-2-methylbutyrate
$C_{24}H_{24}ClNO_3$ 60662-18-2



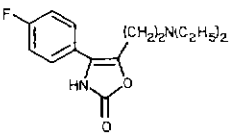
imecinolum
imecinol

α-ethyl-3-(trifluoromethyl)benzhydrol
$C_{16}H_{15}F_3O$ 56430-99-0



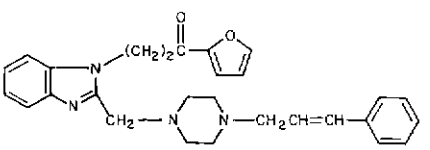
fluzoperinum
fluzoperine

5-[2-(diethylamino)ethyl]-4-(*p*-fluorophenyl)-4-oxazolin-2-one
$C_{15}H_{19}FN_2O_2$ 52867-77-3



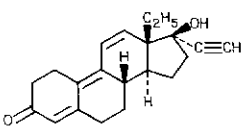
fuprazolum
fuprazole

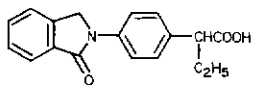
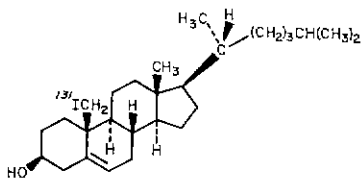
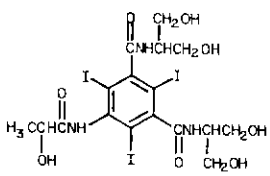
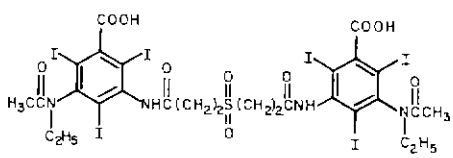
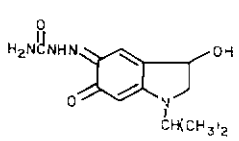
3-[2-[(4-cinnamyl-1-piperazinyl)methyl]-1-benzimidazolyl]-1-(2-furyl)-1-propanone
$C_{28}H_{30}N_4O_2$ 60248-23-9

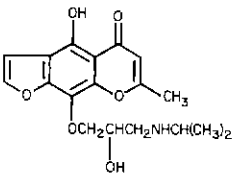
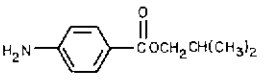
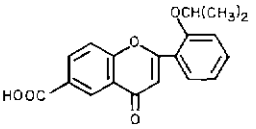
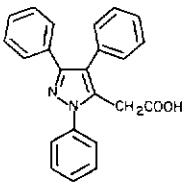
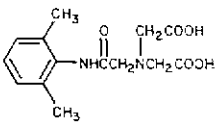
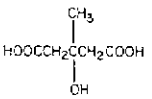


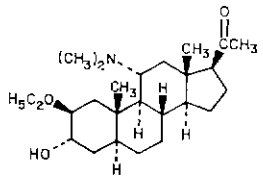
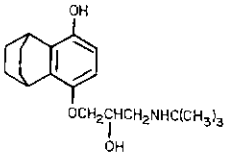
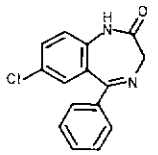
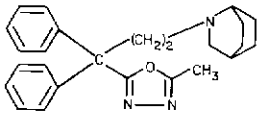
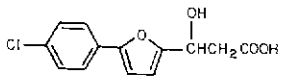
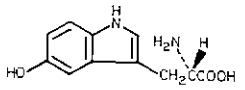
gestrinonum
gestrinone

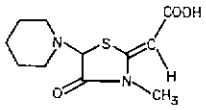
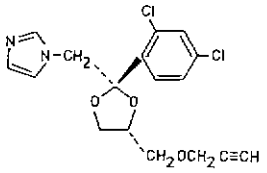
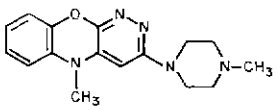
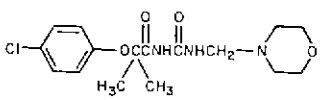
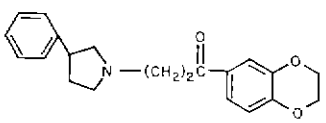
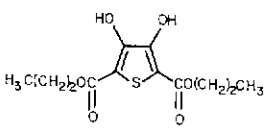
13-ethyl-17-hydroxy-18,19-dinor-17α-pregna-4,9,11-trien-20-yn-3-one
$C_{21}H_{24}O_2$ 40542-65-2

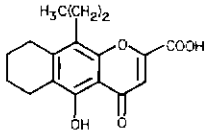
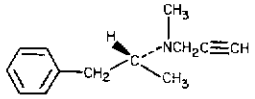
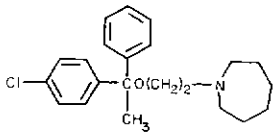
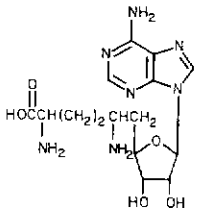
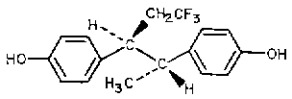


Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
indobufenum indobufen	(±)-2-[*p*-(1-oxo-2-isoindolinyl)phenyl]butyric acid $C_{18}H_{17}NO_3$ 63610-08-2 
iodocholesterolum (^{131}I) iodocholesterol (^{131}I)	19-iodo-^{131}I-cholest-5-en-3β-ol $C_{27}H_{45}{}^{131}IO$ 42220-21-3 
iomapidolum iomapidol	*N,N'*-bis[2-hydroxy-1-(hydroxymethyl)ethyl]-2,4,6-triiodo-5-lactamidoisophthalamide $C_{17}H_{22}I_3N_3O_8$ 62883-00-5 
iosulamidum iosulamide	3,3'-[sulfonylbis(ethylenecarbonylimino)]bis[5-(*N*-ethylacetamido)-2,4,6-triiodobenzoic acid] $C_{28}H_{28}I_6N_4O_{10}S$ 23205-04-1 
iprazochromum iprazochrome	3-hydroxy-1-isopropyl-5,6-indolinedione 5-semicarbazone $C_{12}H_{16}N_4O_3$ 7248-21-7 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
iprocrololum iprocrolol	4-hydroxy-9-[2-hydroxy-3-(isopropylamino)propoxy]-7-methyl-5*H*-furo[3,2-*g*][1]benzopyran-5-one $C_{18}H_{21}NO_6$ 37855-80-4 
isobutambenum isobutamben	isobutyl *p*-aminobenzoate $C_{11}H_{15}NO_2$ 94-14-4 
isocromilum isocromil	2-(*o*-isopropoxyphenyl)-4-oxo-4*H*-1-benzopyran-6-carboxylic acid $C_{19}H_{16}O_5$ 57009-15-1 
isofezolacum isofezolac	1,3,4-triphenylpyrazole-5-acetic acid $C_{23}H_{18}N_2O_2$ 50270-33-2 
lidofeninum lidofenin	[[(2,6-xylylcarbamoyl)methyl]imino]diacetic acid $C_{14}H_{18}N_2O_5$ 59160-29-1 
meglutolum meglutol	3-hydroxy-3-methylglutaric acid $C_6H_{10}O_5$ 503-49-1 

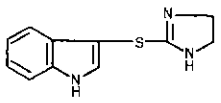
Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
minaxolonum minaxolone	11α-(dimethylamino)-2β-ethoxy-3α-hydroxy-5α-pregnan-20-one $C_{25}H_{43}NO_3$ 62571-87-3 
nafetololum nafetolol	1-(*tert*-butylamino)-3-[(1,2,3,4-tetrahydro-8-hydroxy-1,4-ethanonaphthalen-5-yl)oxy]-2-propanol $C_{19}H_{29}NO_3$ 42050-23-7 
nordazepamum nordazepam	7-chloro-1,3-dihydro-5-phenyl-2*H*-1,4-benzodiazepin-2-one $C_{15}H_{11}ClN_2O$ 1088-11-5 
nufenoxolum nufenoxole	2-[3-(5-methyl-1,3,4-oxadiazol-2-yl)-3,3-diphenylpropyl]-2-azabicyclo-[2.2.2]octane $C_{25}H_{29}N_3O$ 57726-65-5 
orpanoxinum orpanoxin	5-(*p*-chlorophenyl)-2-furanhydracrylic acid $C_{13}H_{11}ClO_4$ 60653-25-0 
oxitriptanum oxitriptan	5-hydroxy-L-tryptophan $C_{11}H_{12}N_2O_3$ 4350-09-8 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
ozolinonum ozolinone	(*Z*)-3-methyl-4-oxo-5-piperidino-$\Delta^{2,\alpha}$-thiazolidineacetic acid $C_{11}H_{16}N_2O_3S$ 56784-39-5 
parconazolum parconazole	*cis*-1-[[2-(2,4-dichlorophenyl)-4-[(2-propynyloxy)methyl]-1,3-dioxolan-2-yl]methyl]imidazole $C_{17}H_{16}Cl_2N_2O_3$ 61400-59-7 
pipofezinum pipofezine	5-methyl-3-(4-methyl-1-piperazinyl)-5*H*-pyridazino[3,4-*b*][1,4]benzoxazine $C_{16}H_{19}N_5O$ 24886-52-0 
plafibridum plafibride	1-[2-(*p*-chlorophenoxy)-2-methylpropionyl]-3-(morpholinomethyl)urea $C_{16}H_{22}ClN_3O_4$ 63394-05-8 
proroxanum proroxan	1-(1,4-benzodioxan-6-yl)-3-(3-phenyl-1-pyrrolidinyl)-1-propanone $C_{21}H_{23}NO_3$ 33743-96-3 
protiofatum protiofate	dipropyl 3,4-dihydroxy-2,5-thiophenedicarboxylate $C_{12}H_{16}O_6S$ 58416-00-5 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
proxicromilum proxicromil	6,7,8,9-tetrahydro-5-hydroxy-4-oxo-10-propyl-4*H*-naphtho[2,3-*b*]pyran-2-carboxylic acid $C_{17}H_{18}O_5$ 60400-92-2 
selegilinum selegiline	(*R*)-(-)-*N*,α-dimethyl-*N*-2-propynylphenethylamine $C_{13}H_{17}N$ 14611-51-9 
setastinum setastine	1-[2-[(*p*-chloro-α-methyl-α-phenylbenzyl)oxy]ethyl]hexahydro-1*H*-azepine $C_{22}H_{28}ClNO$ 64294-95-7 
sinefunginum sinefungin	6,9-diamino-1-(6-amino-9*H*-purin-9-yl)-1,5,6,7,8,9-hexadeoxy-β-D-*ribo*-decofuranuronic acid $C_{15}H_{23}N_7O_5$ 58944-73-3 
terfluranolum terfluranol	4,4′-[(1*R*,2*S*)-1-methyl-2-(2,2,2-trifluoroethyl)ethylene]diphenol $C_{17}H_{17}F_3O_2$ 64396-09-4 

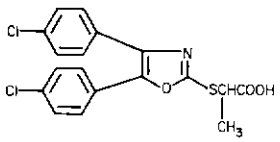
tinazolinum
tinazoline

3-(2-imidazolin-2-ylthio)indole
$C_{11}H_{11}N_3S$ 62882-99-9



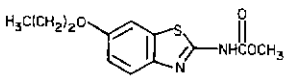
tioxaprofenum
tioxaprofen

2-[[4,5-bis(*p*-chlorophenyl)-2-oxazolyl]thio]propionic acid
$C_{18}H_{13}Cl_2NO_3S$ 40198-53-6



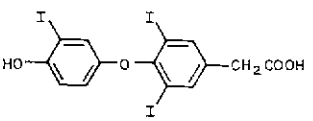
tioxidazolum
tioxidazole

methyl 6-propoxy-2-benzothiazolecarbamate
$C_{12}H_{14}N_2O_3S$ 61570-90-9



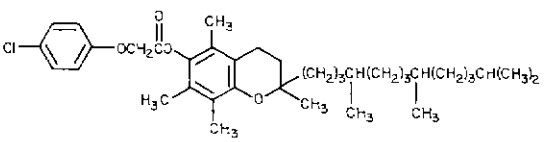
tiratricolum
tiratricol

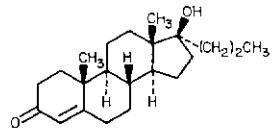
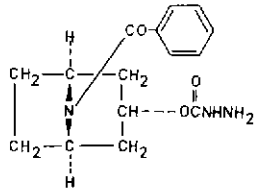
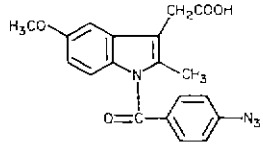
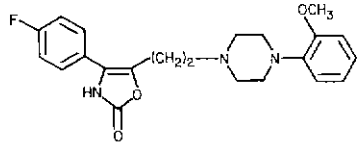
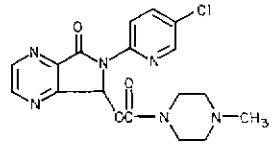
[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl]acetic acid
$C_{14}H_9I_3O_4$ 51-24-1

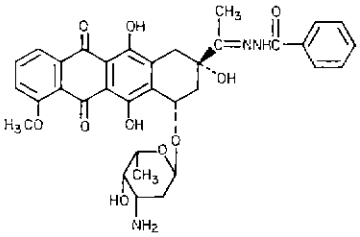


tocofenoxatum
tocofenoxate

all-rac-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-6-chromanyl (*p*-chlorophenoxy)acetate
$C_{37}H_{55}ClO_4$ 61343-44-0



Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
topteronum topterone	17β-hydroxy-17-propylandrost-4-en-3-one $C_{22}H_{34}O_2$ 60607-35-4 
tropabazatum tropabazate	phenyl 3α-hydroxy-8-azabicyclo[3.2.1]octane-8-carboxylate carbazate (ester) $C_{15}H_{19}N_3O_4$ 64294-94-6 
zidometacinum zidometacin	1-(*p*-azidobenzoyl)-5-methoxy-2-methylindole-3-acetic acid $C_{19}H_{16}N_4O_4$ 62851-43-8 
zoloperonum zoloperone	4-(*p*-fluorophenyl)-5-[2-[4-(*o*-methoxyphenyl)-1-piperazinyl]ethyl]-4-oxazolin-2-one $C_{22}H_{24}FN_3O_3$ 52867-74-0 
zopiclonum zopiclone	4-methyl-1-piperazinecarboxylic acid ester with 6-(5-chloro-2-pyridyl)-6,7-dihydro-7-hydroxy-5*H*-pyrrolo[3,4-*b*]pyrazin-5-one $C_{17}H_{17}ClN_6O_3$ 43200-80-2 

Proposed International Nonproprietary Name (Latin, English)	*Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number*
zorubicinum zorubicin	benzoic acid hydrazide, 3-hydrazone with daunorubicin $C_{34}H_{35}N_3O_{10}$ 54083-22-6 

AMENDMENTS
TO PREVIOUS LISTS

International Nonproprietary Names for Pharmaceutical Substances

Cumulative List No. 3, 1971

p. 39	colestipolum colestipol	*Replace the description by*: copolymer of diethylenetriamine and 1-chloro-2,3-epoxypropane

International Nonproprietary Names (INN) for Pharmaceutical Substances:

Cumulative List No. 5, 1977

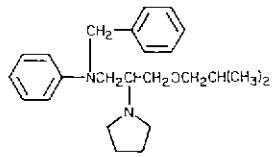
In the following cases the reference to List 16 of recommended INN should be replaced by an asterisk:

bufrolinum
carbantelum
carteololum
cefatrizinum
dimeticonum
elanzepinum
fenofibratum
glutaurinum
nadololum
norgestimatum
prostalenum
trilostanum

p. 121	*Delete* medigoxinum 23 *	*Insert* metildigoxinum 3617
p. 209	*Delete* trimopamum 3416	*Insert* trepipamum 3818

Vol. 27, No. 9

Proposed International Nonproprietary Names (Prop. INN): List 30

p. 383	bepridilum bepridil	*Replace chemical information and CAS registry No. by the following:* β-[(2-methylpropoxy)methyl]-*N*-phenyl-*N*-(phenylmethyl)-1-pyrrolidineethanamine $C_{24}H_{34}N_2O$ 64706-54-3 

Supplement to Vol. 29, No. 3

Proposed International Nonproprietary Names (Prop. INN): List 33

p. 10	dextranomerum dextranomer	*Replace chemical name by the following*: dextran 2,3-dihydroxypropyl 2-hydroxy-1,3-propanediyl ether

Supplement to Vol. 31, No. 9

Proposed International Nonproprietary Names (Prop. INN): List 38

p. 2	*delete* azacortum azacort	*insert* deflazacortum deflazacort
p. 4	betamicinum betamicin	*Replace the center-most ring in the graphic formula by a cyclohexane ring*
p. 5	canbisolum canbisol	*Replace* $(\overset{\vert}{C}H_2)_3$ *in the graphic formula by* $(\overset{\vert}{C}H_3)_2$
	cetocyclinum cetocycline	*In the graphic formula add double bond between positions 2 and 3*
p. 14	pentafluranolum pentafluranol	*Replace CAS registry No. by*: 65634-39-1

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.—.