International Nonproprietary Names for Pharmaceutical Substances

Notice is hereby given that, in accordance with article 3 of the Procedure for the Selection of Recommended International Nonproprietary Names for Pharmaceutical Substances (see Annexes), the following names are under consideration by the World Health Organization as Proposed International Nonproprietary Names. The inclusion of a name in the lists of Proposed International Nonproprietary Names does not imply any recommendation of the use of the substance in medicine or pharmacy.

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 *WHO Drug Information*, i.e., for List 65 Prop. INN not later than 31 January 1992.

### Proposed International Nonproprietary Names: List 65

Lists of proposed (1–58) and recommended (1–27) international nonproprietary names can be found in Cumulative List No. 7, 1988.

<table>
<thead>
<tr>
<th>Proposed International Nonproprietary Name (Latin, English)</th>
<th>Chemical Name or Description, Molecular and Graphic formulae</th>
<th>Chemical Abstracts Service (CAS) registry number</th>
<th>Action and Use*</th>
</tr>
</thead>
<tbody>
<tr>
<td>acenacuric acid</td>
<td>(-)-5-acetamido-3,5-dideoxy-o-glycerol-D-galacto-nonulosonic acid</td>
<td>C_{11}H_{12}NO_{5}</td>
<td>131-48-6</td>
</tr>
</tbody>
</table>

*Action and Use: The statements in italics indicating the action and use are based largely on information supplied by the manufacturer. The information is meant to provide an indication of the potential use of new substances at the time they are accorded Proposed International Nonproprietary Names. WHO is not in a position either to uphold these statements or to comment on the efficacy of the action claimed. Because of their provisional nature, these descriptors will be neither revised nor included in the Cumulative Lists of INNs.
<table>
<thead>
<tr>
<th>Chemical Name or Description, Molecular and Graphic Formulae</th>
<th>Proposed International Nonproprietary Name (Latin, English)</th>
<th>Chemical Abstracts Service (CAS) registry number</th>
<th>Action and use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(+)-7,8,9,9a,10,11-hexahydro-6,11-dihydroxy-5,12-naphthacenedione</td>
<td>amrubicinum, amrubicin</td>
<td>C_{22}H_{23}NO_{5}</td>
<td>110257-91-7</td>
</tr>
<tr>
<td>N-(1-methyl-5-phenylpyrrole-2-yl)acetyl]glycine (\text{\textit{O}})-methoxyphosphoryl ester</td>
<td>antilmometin guacolium, antilmometin guaci</td>
<td>C_{20}H_{24}N_{2}O_{5}</td>
<td>67344-06-7</td>
</tr>
<tr>
<td>((\pm))-(\text{\textit{O}})-carboxyanilino)hydratropic acid</td>
<td>araprofenum, araprofen</td>
<td>C_{18}H_{12}NO_{4}</td>
<td>15280-13-2</td>
</tr>
<tr>
<td>((\pm))-1-[(\text{\textit{O}})-chloro-(\text{\textit{O}})-benzofuran-2-yl]benzyl]imidazole</td>
<td>becliconazoleum, becliconazole</td>
<td>C_{17}H_{10}Cl_{2}N_{2}O</td>
<td>112893-26-2</td>
</tr>
<tr>
<td>Proposed International Nonproprietary Name (Latin, English)</td>
<td>Chemical Name or Description, Molecular and Graphic Formulae</td>
<td>Chemical Abstracts Service (CAS) registry number</td>
<td>Action and use</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>binospironum binospirone</td>
<td>$\pm\cdot N\cdot [2\cdot (1\cdot 4\cdot benzodiazen-2\cdot ylmethyl)amino[ethyl]-1\cdot 1\cdot cyclopentane-diacetamide$</td>
<td>102908-59-8</td>
<td>anxiolytic</td>
</tr>
<tr>
<td>peridolium peridol</td>
<td>hydrogen $[\pm\cdot10\cdot (2\cdot hydroxypropyl)-1\cdot 4\cdot 7\cdot 10\cdot tetraazacyclododecane-1\cdot 4\cdot 7\cdot triacetato[3\cdot 3\cdot 3\cdot ]$</td>
<td>1352722-73-7</td>
<td>chelating agent</td>
</tr>
<tr>
<td>casokefamidum casokefamide</td>
<td>(\cdot l\cdot tyrosyl-l\cdot alanyl-l\cdot phenylalanyl-l\cdot alanyl-l\cdot tyrosinamide)</td>
<td>98815-38-4</td>
<td>antidiarrheal</td>
</tr>
<tr>
<td>celmoieukinum celmoieukin</td>
<td>interleukin 2 (human clone pTL2-21a, protein moiety)</td>
<td>94218-72-1</td>
<td>immunomodulator</td>
</tr>
<tr>
<td>cioteronelium cioterone</td>
<td>$\pm\cdot hexahydro-4\cdot (5\cdot methoxyheptyl)-2\cdot (1\cdot H\cdot penta)$</td>
<td>88672-11-7</td>
<td>antiandrogen</td>
</tr>
</tbody>
</table>
Proposed International Nonproprietary Name (Latin, English)  Chemical Name or Description, Molecular and Graphic Formulae  Chemical Abstracts Service (CAS) registry number  Action and use

dapoxetine  \((+)-(S)-N,N\text{-dimethyl}-2-[2\text{-}1\text{-naphthyl}oxy\text{-}ethyl]\text{benzyl}amine\)  \(\text{C}_{20}\text{H}_{25}\text{NO}\)  119356-77-3  antidepressant

debropolum  \((\pm)\text{-}2\text{-}bromo\text{-}2\text{-}nitro\text{-}1\text{-}propanol\)  \(\text{C}_{8}\text{H}_{8}\text{BrNO}_{2}\)  24403-04-1  antiseptic

deramoclanum  \(N,N\text{-}dimethyl\text{-}2\text{-}[(1\text{R},2\text{S},4\text{R})\text{-}2\text{-}phenyl\text{-}2\text{-}bornyl]oxy\text{ethyl}amine\)  \(\text{C}_{22}\text{H}_{24}\text{NO}\)  120444-71-5  anxiolytic

dexloxiциальнium  \((R)\text{-}4\text{-}(3,4\text{-}dichlorobenzamido)\text{-}N\text{-}[(3\text{-}methoxypropyl)\text{-}N\text{-}pentyIglutaramic acid\)  \(\text{C}_{21}\text{H}_{22}\text{Cl}_{2}\text{N}_{2}\text{O}_{3}\)  119817-90-2  cholecystokinin receptor antagonist

dexnafenodonum  \((+)-(3)-2\text{-}[2\text{-}\text{dimethylamino}ethyl]\text{-}3,4\text{-}dihydro\text{-}2\text{-}phenyl\text{-}1\text{(2H)\text{-}naphthalenone\)  \(\text{C}_{22}\text{H}_{25}\text{NO}\)  92029-67-3  antidepressant
Proposed International Nonproprietary Name (Latin, English) | Chemical Name or Description, Molecular and Graphic Formulae
---|---
dexverapamil | $(+)-(R)-5\{[3,4\text{-dimethoxyethyl}]\text{methylamino}\}-2\{[3,4\text{-dimethoxyphenyl}]\text{-2-isopropylvaleronitrile}\}
C_{29}H_{36}N_2O_4 | 38321-02-7 | calcium channel blocker

dolasetronum | Indole-3-carboxylic acid, ester with \((\beta\)-hexahydro-8-hydroxy-2,8-methano-2H-quinolin-3(4\text{-H})-one\)
C_{14}H_{14}N_2O_3 | 115956-12-2 | serotonin receptor antagonist

equalenum | 3-ethyl-7-isopropyl-1-azulenesulfonic acid
C_{24}H_{24}O_6S | 95067-30-6 | antiulcer

citanolonom | 3a-hydroxy-5β-pregnan-20-one
C_{21}H_{30}O_3 | 126-20-1 | anaesthetic

entacaponum | \((\text{E})-\alpha\text{-cyano-N,N-diethyl-3,4-dihydroxy-5-nitrocinnamamide}\)
C_{14}H_{19}N_2O_5 | 130929-57-0 | antiparkinsonian
<table>
<thead>
<tr>
<th>Chemical Name or Description, Molecular and Graphic Formulae</th>
<th>Action and use</th>
</tr>
</thead>
<tbody>
<tr>
<td>espatropatum espatropate (R)-3-quinitidinyl (R)-α-(hydroxymethyl)-α-phenylimidazole-1-acetate</td>
<td>bronchodilator</td>
</tr>
<tr>
<td>etonogestrelum etonogestrel 13-ethyl-17-hydroxy-11-methylene-18,19-dinor-17α-pregn-4-en-20-yn-3-one</td>
<td>progestogen</td>
</tr>
<tr>
<td>exomesatanum exemestane 6-methyloandrosta-1,4-diene-3,17-dione</td>
<td>antineoplastic</td>
</tr>
<tr>
<td>flusazuronum flusazuron 1-[4-chloro-3-[[3-chloro-5-[[trifluoromethyl]-2-pyridyl]oxy]phenyl]-3-(2,6-difluorobenzoyl)]urea</td>
<td>antiparasit (vet.)</td>
</tr>
<tr>
<td>galocitabinum galocitabine N-(1-[6-deoxy-β-D-ribofuranosyl]-5-fluoro-1,2-dihydro-2-oxo-4-pyrimidinyl)-3,4,5-trimethoxybenzamide</td>
<td>antineoplastic</td>
</tr>
</tbody>
</table>
**Proposed International Nonproprietary Name (Latin, English)**

- **ganirelixum**
- **ganirelix**

**Chemical Name or Description, Molecular and Graphic Formulae**

- N-acetyl-3-(2-naphthyl)-o-alanyl-p-chloro-e-phenylalanyl-3-(3-pyridyl)-o-alanyl-
  i-seriyl-t-tyrosyl-M^+-(N,N'-diethylamidino)-o-lysyl-l-leucyl-M^+-(N,N'-diethylamidino)-
  l-lysyl-l-prolyl-p-alaninamide

**Chemical Abstracts Service (CAS) registry number**

- C_{26}H_{31}C_{15}N_{15}O_{13}  124904-93-4

**Action and use**

- luteinizing-hormone-releasing-hormone antagonist

---

**levoclosporinum**

- **levoclosporine**

**Chemical Name or Description, Molecular and Graphic Formulae**

- (S)-4-amino-3-isoaxolidinone

**Chemical Abstracts Service (CAS) registry number**

- C_{6}H_{4}N_{2}O_{2}  339-72-0

**Action and use**

- glucocerebrosidase synthesis inhibitor

---

**levodobutaminum**

- **levodobutamine**

**Chemical Name or Description, Molecular and Graphic Formulae**

- 4\{-[(S)-3-(p-hydroxyphenyl)-1-methylpropyl]amino\}ethyl\}pyrocatechol

**Chemical Abstracts Service (CAS) registry number**

- C_{16}H_{20}NO_{3}  61891-05-1

**Action and use**

- cardiac stimulant

---

**lexithromycinum**

- **lexithromycin**

**Chemical Name or Description, Molecular and Graphic Formulae**

- erythromycin S-\(\beta\)-methylloxime

**Chemical Abstracts Service (CAS) registry number**

- C_{31}H_{47}N_{2}O_{13}  53088-26-5

**Action and use**

- antiviral
linarotene
5',6',7',8'-tetrahydro-5',5,8',8'-tetramethyl-2'-acetonaphthone (E)-[p-
(methylsulfonyl)phenyl]hydrazone
C_{32}H_{38}N_{2}O_{5} 127304-28-3 dermatological

lontopride
4-amino-5-chloro-N-[[1-ethyl-2-imidazol[1-2-y)]methyl]-o-anisamide
C_{10}H_{14}CIN_{2}O_{2} 107426-83-0 antiemetic

lobaplatin
Cis-[trans-1,2-cyclobutanebis(methylamine)][(S)-lactato-O',O']platinum
C_{32}H_{38}N_{2}O_{5}Pt 135558-11-1 antineoplastic

lufenuron
1-[2,5-dichloro-4-[(1,1,2,3,3,3-hexafluoropropoxy)phenyl]-3-(2,6-difluoro-
benzoyl)urea
C_{30}H_{25}F_{2}N_{2}O_{2} 103056-07-8 antiparasitic (vet.)

marbolloxacinum
9-fluoro-2,3-dihydro-3-methyl-10-(4-methyl-1-piperazinyl)-7-oxo-7H-
pyrido[3,2,1-i][4,1,2]benzoxadiazine-6-carboxylic acid
C_{18}H_{18}F_{2}N_{4}O_{3} 115550-35-1 antibiotic (vet.)

mirimostim
1-241-colony-stimulating factor 1 (human clone P3ACSF-99 protein moiety
reduced), homodimer
C_{41}H_{75}N_{29}O_{44}S_{4} 121547-04-4 immunomodulator
(for non-glycosylated protein)
<table>
<thead>
<tr>
<th>Nonproprietary Name (Latin, English)</th>
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<th>Chemical Abstracts Service (CAS) registry number</th>
<th>Action and use</th>
</tr>
</thead>
<tbody>
<tr>
<td>modipatantum</td>
<td>ethyl (++)-4-(o-chlorophenyl)-1,4-dihydro-6-methyl-2-p-(2-methyl-1H-imidazo[4,5-c]pyridin-1-yl)phenyl]-5-[2-pyridyl(carbamoyl)nicotinate</td>
<td>122857-06-6</td>
<td>platelet-activating-factor antagonist</td>
</tr>
<tr>
<td>modipant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>naglivanum</td>
<td>bis[2-amino-3-mercapto-N-ocetylpropionamido(1)-]oxovanadium</td>
<td>122857-26-4</td>
<td>antidiabetic</td>
</tr>
<tr>
<td>naglivan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>panadiplonum</td>
<td>3-(5-cyclopropyl-1,2,4-oxadiazol-3-yl)-5-isopropylimidazo[1,5-a]quinoxalin-4[H]-one</td>
<td>124423-84-3</td>
<td>partial benzodiazepine receptor agonist</td>
</tr>
<tr>
<td>panadiplon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parcetasalum</td>
<td>(+)-4'-(2-methyl-4-oxo-1,3-benzodioxin-2-yloxy)acetanilide</td>
<td>87549-56-8</td>
<td>non-steroidal anti-inflammatory, analgesic</td>
</tr>
<tr>
<td>parcetasal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pirsidominum</td>
<td>N-p-anisoyl-3-(cis-2,6-dimethylpiperidino)sydnone imine</td>
<td>132722-74-8</td>
<td>cardiac stimulant</td>
</tr>
<tr>
<td>pirsidomine</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
polifeprosanum
polifeprosan

4,4'-[trimethylenedioxy]dibenzonic acid, polymer with sebacic acid
(C18H16O8)n (C10H8O4). 90499-78-2 pharmaceutical aid

remiprostolum
remiprostol

(±)-methyl (2S)-7-[(1R,2R,3R)-2-[(1E,5E)-(4RS)-6-{1-cyclopenten-1-yl)-4-
hydroxy-4-methyl-1,5-hexadienyl]-3-hydroxy-5-oxocyclopentyl]-4-heptenoate
C29H34O8S 110845-89-1 antilulcer

repaglinidum
repaglinide

(+)-2-ethoxy-o-[[S]-a-isobutyl-o-piperidinobenzyl]carbamoyl]-p-toluic acid
C27H32N2O4S 135062-02-1 antidiabetic

rilmakalimum
rilmakalim

(+)-1-(3,5,4R)-3-hydroxy-2,2-dimethyl-6-(phenylsulfonyl)-4-chromanyl]-2-
pyrrolidinone C48H52N2O8S 132014-21-2 potassium channel activator

rogielimidum
rogielimide

(+)-2-ethyl-2-(4-pyridyl)glutarimide C24H28N2O2 121940-95-7 antineoplastic
<table>
<thead>
<tr>
<th>Chemical Name or Description, Molecular and Graphic Formulee</th>
<th>Proposed International Nonproprietary Name (Latin, English)</th>
<th>Chemical Abstracts Service (CAS) registry number</th>
<th>Action and use</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,6-dihydro-7-ylmidazol-1-yl-2-naphthoic acid</td>
<td>rolafagrelum</td>
<td>89751-55-9</td>
<td>thromboxane synthetase inhibitor</td>
</tr>
<tr>
<td>1-methyl-4-(o-phenyl-o-toly) piperazine</td>
<td>silaprazinum</td>
<td>151035-08-8</td>
<td>antidepressant</td>
</tr>
<tr>
<td>N\textsubscript{3}-[N\textsuperscript{3}-N\textsuperscript{3}-glycyl-L-alanyl]-L-arginyl</td>
<td>siliteplasm</td>
<td></td>
<td>thrombolytic</td>
</tr>
<tr>
<td>Glycosylated protein (human tissue-type protein moiety reduced), glycoform</td>
<td>(for non-glycosylated protein)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-(2,3-dideoxy-(\beta)-glycero-pent-2-enofuranosyl) thymine</td>
<td>stavudinum</td>
<td>3056-17-5</td>
<td>antiviral</td>
</tr>
<tr>
<td>(+)-(5Z,7E,24R)-9,10-saccharo-(-) 5,7,10(19)-trienone-1(\alpha),3(\beta),24-triol</td>
<td>tacalcitium</td>
<td>57333-98-7</td>
<td>antipsoriatic</td>
</tr>
</tbody>
</table>
terdecamycin

terdecamycin

- 4-methyl-1-piperazinecarboxylic acid, 7-ester with (-)-N-
[12(R)-3(E),5(E),7(E),9(E),11(E),13(S),15(R),19(R)-7,13-
dihydroxy-1,4,10,19-tetramethyl-17,18-dioxo-16-oxabicyclo[13.2.2]nonadeca-
3,5,9,11-tetraen-2-yl]pyruvamide or (-)-N(12(R),3(E),5(E),7(E),
9(E),11(E),13(S),15(R),19(R)-7,13-
dihydroxy-1,4,10,19-tetramethyl-17,18-dioxo-16-oxabicyclo[13.2.2]nonadeca-
3,5,9,11-tetraen-2-yl]pyruvamide 7-(4-methyl-1-piperazinecarboxylate)
C_{32}H_{43}N_{3}O_{4}  113167-81-6  antibiotic

tinzaparinum natricum
	tinzaparin sodium

- Sodium salt of depolymerized heparin obtained by heparinase from
- Flavobacterium heparinum (heparin lyase. EC 4.2.2.7) degradation of
- heparin from porc intestinal mucosa; the majority of the components have a
2-O-sulfo-4-eneyanosuronic acid structure at the non-reducing end and a
2-N,O-disulfo-α-glucosamine structure at the reducing end of their chain;
the relative molecular mass is 4500 ± 1500, 70 per cent of which ranging
between 1500 and 10 000; the degree of sulfatation is 2 to 2.5 per
disaccharide unit.

- anticoagulant

tolterodinum
	tolterodine

- (+)-(R)-2-(α-[2-(diisopropylamino)ethyl]benzyl)p-oreol
C_{30}H_{42}NO  124937-51-5  muscarine receptor antagonist


topotecanum
	topotecan

- (S)-(dimethylamino)methyl)-4-ethyl-4,9-dihydroxy-1H-
pyrano[3,4-b]quinoline-3,14(4H,12H)-dione
C_{22}H_{25}N_{3}O_{3}  123849-87-8  antineoplastic

utiaprilatum
	utiaprilat

- (S)-2-tert-butyl-4-(S)-N-[[5]-carboxy-3-phenylpropyl]alanin-4'-1,3,4-
thiadiazol-5-carboxylic acid
C_{30}H_{29}N_{3}O_{5}  109683-79-6  angiotensin-converting enzyme
inhibitor
**Proposed International Nonproprietary Name (Latin, English)**

<table>
<thead>
<tr>
<th>Nonproprietary Name (Latin, English)</th>
<th>Chemical Name or Description, Molecular and Graphic Formulae</th>
<th>Chemical Abstracts Service (CAS) registry number</th>
<th>Action and use</th>
</tr>
</thead>
<tbody>
<tr>
<td>verlukastum</td>
<td>3-([(aR)-m-[(E)-2-(7-chloro-2-quinolyl)vinyl]-a-[[2-(dimethylcarbamoyl)]ethyl][thio]benzyl][thio])propionic acid</td>
<td>120449-16-6</td>
<td>antiallergic, antiallergic</td>
</tr>
<tr>
<td>verlukast</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>voglibosum</td>
<td>3,4-dideoxy-4-[(2-hydroxy-1-(hydroxymethyl)ethyl]amino]-2-C-(hydroxymethyl)-D-ribo-hexose</td>
<td>83480-29-9</td>
<td>antidiabetic</td>
</tr>
<tr>
<td>voglibose</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.

docosatetraepentane-1,6-diyl hydrogen phosphate

C₄₀H₈₀O₅P

Octadecyl hydrogen phosphate

C₁₈H₃₇O₂P

Molecular

2-morpholinoethyl

C₄H₈NO

Octyl

C₈H₁₇
AMENDMENTS
TO PREVIOUS LISTS

WHO Chronicle Vol. 17, No. 10, 1963

Proposed International Nonproprietary Names (Prop. INN): List 13

p 393 galantaminum
    galantamine
    replace the chemical name by the following:
    1,2,3,4,6,7,7,11-octahydro-9-methoxy-2-methylbenzofuro[3a,3,2-ef][2]-
    benzazepin-6-ol

Supplement to WHO Chronicle, Vol. 34, No. 9, 1980

Proposed International Nonproprietary Names (Prop. INN): List 44

p 3 amistostinum
    amilstostine
    replace the chemical name, the molecular formula, the graphic formula and
    the CAS registry number by the following:
    S-2-[(3-aminopropyl)amino]ethyl dihydrogen phosphorothioate
    C₃H₁₈N₃O₇PS    20537-88-6

Supplement to WHO Chronicle, Vol. 39, No. 4, 1985

Proposed International Nonproprietary Names (Prop. INN): List 54

p 17 roxistadinum
    roxistidine
    insert the following CAS registry number:
    79273-80-0

Supplement to WHO Chronicle, Vol. 40, No. 1, 1986

Proposed International Nonproprietary Names (Prop. INN): List 55

p. 7 epalrestatum
    epalrestat
    replace the chemical name and the graphical formula by the following:
    5-[(Z,E)-β-methylcinnamylidene]-4-oxo-2-thioxo-3-thiazolidineacetic acid


Proposed International Nonproprietary Names (Prop. INN): List 59

p. 3 beraprostum
    beraproat
    replace the chemical name and graphical formula by the following:
    (±)-(1R,2R,3aS,8bS)-2,3,3a 8b-tetrahydro-2-hydroxy-1-[(E)-(3S,4R)-3-hydroxy-
    4-methyl-1-octen-8-ynyl]-1H-cyclopenta[2]benzoduran-5-butyric acid
Proposed International Nonproprietary Names (Prop. INN): List 63

p. 3 caldiamidum
caldiamide
replace the graphical formula by the following:

\[
\text{Caldiamidum} = \text{Caldiamide}
\]

p. 10 propageranium
propageranium
replace the graphical formula by the following:

\[
\text{Propageranium} = \text{Propageranium}
\]

WHO Drug Information, Vol. 4, No. 4, 1990

Proposed International Nonproprietary Names (Prop. INN): List 64

p. 2 acidum gadobenicum
gadobenic acid
replace the chemical name and the graphic formula by the following:
dihydrogen \([(\pm)-4\text{-carboxy-5,8,11-tris(carboxymethyl)-1-phenyl-2-oxa-5,8,11-triazatridecan-13-oato(3\text{-})}]\text{gadolinite(2\text{-})}

\[
\text{Acidum gadobenicum} = \text{Gadobenic Acid}
\]

p. 3 angiotensin II
angiotensin II
replace the graphic formula by the following:

\[
\text{Angiotensin II} = \text{Angiotensin II}
\]

p. 6 carperitidum
carperitide
replace the graphic formula by the following:

\[
\text{Carperitidum} = \text{Carperitide}
\]
Cefaloxime
Cefaloxime

Ceforexatum
Ceforexil

Dofetilidum
Dofetilide

Draflazinum
Draflazine

Eberconazolum
Eberconazole

Enioplatinum
Enioplatin

Replace the chemical name by the following and insert the CAS registry number:
(+)-(6R,7R)-7-{2-(2-amino-4-thiazolyl)glyoxylamido}-3-{methoxymethyl}-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7R-oxime
80195-36-4

Insert the CAS registry number and replace the graphic formula by the following:
120287-85-6

Replace the graphic formula by the following:

Replace the graphic formula by the following:

Replace the graphic formula by the following:

Replace the graphic formula by the following.
p. 11  fentofarone  

"replace the graphical and the molecular formula by the following:
C_{23}H_{32}N_{3}O_{6}S"

p. 13  leurubicin

"replace the graphic formula by the following:

p. 14  latoprednol

"replace the chemical name and the molecular formula by the following:
chloromethyl 11β,17-dihydroxy-3-oxoandrosta-1,4-dione-17β-carboxylate
C_{22}H_{27}ClO_{3}"

p. 17  nadropranin sodium

"insert
natropranin calcium"

p. 18  parnaparin sodium

"insert
parnaparin sodium"

"Sodium salt of depolymerized heparin obtained by hydrogen peroxide and
cupric acetate degradation of heparin from bovine and pork intestinal
mucosa, the majority of the components have a 2-O-sulfo-a-
diopyranosuronic acid structure at the non-reducing end and a 2-N,N-
disulfo-a-glucosamine structure at the reducing end of their chain; the
average relative molecular mass is between 4000 and 6000 (5000 ± 20 per
cent); the degree of sulfation is 2,15 (± 10 per cent) per disaccharidic unit.
antiocoagulant"

p. 19  picrometerol

"replace the graphic formula by the following:

p. 20  quinupristin

"replace the chemical name by the following:
N’[(6R,9S,10R,15S,15aS,22S,24aS)-22-(p-dimethylamino)benzyl]-6-ethyl-
docosahydro-10,23-dimethyl-5,8,12,15,17,21,24-heptaaxo-13-phenyl-16-[(3S)-
quinuclidinylthio]methyl]-12H-pyrido[2,1-][pyrrolo[2,1-]][1,4,7,10,13,16]oxa-
penazacycloheptadecen-9-yl]-3-hydroxypicolinamide"

regramostim

"replace the molecular formula by the following:
C_{32}H_{48}N_{4}O_{7}S_{3}"
p. 20  delete  
reviparnum natrium  
reviparin sodium  
insert  
reviparinum natrium  
reviparin sodium

p. 22  tamsulosinum  
tamsulosin  
replace the graphic formula by the following:

```
\[ \text{Chemical Structure} \]
```

replace the graphic formula by the following:

```
\[ \text{Chemical Structure} \]
```

p. 23  terikalantium  
terikalant  
insert the following CAS registry number.  
121277-96-1

p. 24  vinleucinolum  
vinleucinol  
replace the chemical name and the graphic formula by the following, and  
insert the CAS registry number.  
[23(1S,2S)]-4-deacetyl-3-[(1-carboxy-2-methylbutyl)carbamoyl]-3-de(methoxycarbonyl)vincaleukoblastine, ethyl ester  
81571-28-0

p. 25  zenarestatum  
zenarestat  
replace the graphic formula by the following.

```
\[ \text{Chemical Structure} \]
```
p. 26  delete  pivotilum  pivotil
        insert  pentexil
        pentexium
        replace the molecular formula by the following:
        C₅H₁₂O₆

p. 27  delete  enoxaparium natrium  enoxaparin sodium
        insert  enoxaparium natrium  enoxaparin sodium
        replace the chemical name by the following:
        25,27,29-cyclohexyl-5,8,10,11,13,15,17a,20,20a,20b-dodecahydro-20b-dihydroxy-5',8,8,19-
        tetramethyl-17-oxapirro[11,15-methano-2H,17H-furo-
        [4,3,2-pq][2,8]benzodioxacyclocotadecin-12,2'-[2H]pyran]-7-yl 2,6-dideoxy-4-
        O-(2,6-dideoxy-3-O-methyl-L-arabino-hexopyranosyl)-3-O-methyl-L-arabino-hexopyranoside
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 Pharmacopeia 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 and by letter to Member States and to national pharmacopoiea commissions or other bodies designated by Member States.

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

   B. Such notice shall:

      (i) set forth the name under consideration;

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

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

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

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

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

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

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

   A. Such objection shall:

      (i) identify the person objecting;

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† The title of this publication was changed to WHO Chronicle in January 1959. From 1967 onwards lists of INNs are published in WHO Drug Information.
(i) state his interest in the name;

(ii) 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.

Annex 2

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.

* In its twentieth report (WHO Technical Report Series, No. 581, 1975), 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 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.
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, "t" should be used instead of "ph", "th", "th", "e" instead of "ae" or "oe", and "y" instead of "i": 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 common stem. The following list contains examples of stems for groups of substances, particularly for new groups. There are many other stems in active use. Where a stem is shown without any hyphens it may be used anywhere in the name.

<table>
<thead>
<tr>
<th>Latin</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>-acum</td>
<td>-ac                          anti-inflammatory agents of the ibufanac group</td>
</tr>
<tr>
<td>-acidum</td>
<td>-acide                       synthetic polypeptides with a corticotrophin-like action</td>
</tr>
<tr>
<td>-adol</td>
<td>-adol                      analgesics</td>
</tr>
<tr>
<td>-adol-</td>
<td>-adol                      anti-asthmatic, anti-allergic substances not acting primarily as antihistamines</td>
</tr>
<tr>
<td>-ast</td>
<td>-ast                      antihistaminics</td>
</tr>
<tr>
<td>-astinum</td>
<td>-astine                   substances of the diazepam group</td>
</tr>
<tr>
<td>-bactamum</td>
<td>-bactam       β-lactamase inhibitors</td>
</tr>
<tr>
<td>-bol</td>
<td>-bol                      steroids, anabolic</td>
</tr>
<tr>
<td>-buzonum</td>
<td>-buzone                   anti-inflammatory analgesics of the phenylbutazone group</td>
</tr>
<tr>
<td>-cain-</td>
<td>-cain                     antifibrillant substances with local anaesthetic activity</td>
</tr>
<tr>
<td>-cainum</td>
<td>-caine                   local anaesthetics</td>
</tr>
<tr>
<td>-calf</td>
<td>-cel                    antibiotics, derivatives of cephalosporanic acid</td>
</tr>
<tr>
<td>-cillinum</td>
<td>-cillin     antibiotics, derivatives of 6-amino penicillinic acid</td>
</tr>
<tr>
<td>-conazolium</td>
<td>-conazole   systematic antifungal agents of the miconazole group</td>
</tr>
<tr>
<td>-cort</td>
<td>-cort                   corticosteroids, except those of the prednisolone group</td>
</tr>
<tr>
<td>-dipine</td>
<td>-dipine        calcium antagonists of the nifedipine group</td>
</tr>
<tr>
<td>-fibratium</td>
<td>-fibrate    substances of the clofibrate group</td>
</tr>
<tr>
<td>-gest</td>
<td>-gest                   stioids, progestogens</td>
</tr>
<tr>
<td>-gli-</td>
<td>-glic                   sulfonamide hypoglycemics</td>
</tr>
<tr>
<td>-io-</td>
<td>-io                      iodine-containing contrast media</td>
</tr>
<tr>
<td>-ium</td>
<td>-ium                    quaternary ammonium compounds</td>
</tr>
<tr>
<td>-metacin</td>
<td>-metacin     anti-inflammatory substances of the indoemetacin group</td>
</tr>
<tr>
<td>-mycinum</td>
<td>-mycin       antibiotics, produced by Streptomycyes strains</td>
</tr>
<tr>
<td>-nidozolium</td>
<td>-nidozole  antiprotozoal substances of the metronidozole group</td>
</tr>
<tr>
<td>-olol</td>
<td>-olol                   β-adrenergic blocking agents</td>
</tr>
<tr>
<td>-oxacin</td>
<td>-oxacin    antibacterial agents of the nalidix acid group</td>
</tr>
<tr>
<td>-pridum</td>
<td>-prie                  sulphone derivates</td>
</tr>
<tr>
<td>-pr(-at)um</td>
<td>-pr(at)           angiotensin-converting enzyme inhibitors</td>
</tr>
<tr>
<td>-profenum</td>
<td>-profen       anti-inflammatory substances of the ibuprofen group</td>
</tr>
<tr>
<td>-prost</td>
<td>-prost                prostaglandins</td>
</tr>
<tr>
<td>-relinum</td>
<td>-relin           hyophyseal hormone release-stimulating peptides</td>
</tr>
<tr>
<td>-terolium</td>
<td>-terol      bronchodilators, phenethylamine derivatives</td>
</tr>
<tr>
<td>-tidinum</td>
<td>-tide            H₂-receptor antagonists</td>
</tr>
<tr>
<td>-trexatatum</td>
<td>-trexate   folic acid antagonists</td>
</tr>
<tr>
<td>-verinem</td>
<td>-verine         spasmyotics with a papavene-like action</td>
</tr>
<tr>
<td>-vin-</td>
<td>-vin         vinca type alkaloids</td>
</tr>
</tbody>
</table>

1 A more extensive listing of stems is contained in the working document Pharm. S/Nom.15 which is regularly updated and can be requested from Pharmaceuticals, WHO, Geneva.
International Nonproprietary Names (INN)  
for Pharmaceutical Substances  
Cumulative List No. 7  

World Health Organization, Geneva, 1988  
ISBN 92 4 0560149  price: Sw. fr. 65.–

This publication groups together all international nonproprietary names (INN) in Latin, English French, Russian and Spanish published up to March 1988, together with references to the lists of proposed and recommended INNs in which they have been published. It also includes references to other generic names, such as national nonproprietary names and names used by the International Organization of Standardization, pharmacopoeial monographs, the List of Narcotic Drugs under International Control, and other sources. Indexes of molecular formulae and of Chemical Abstracts Service registry numbers are also included.

The procedure for selecting recommended INNs is described and the general principles to be followed in devising these names are outlined. All the textual material published in this volume appears in both English and French.

These publications may be obtained from:  
World Health Organization, Distribution and Sales Service,  
1211 Geneva 27, Switzerland.