

# 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 67 Prop. INN not later than 30 November 1992**.

## Proposed International Nonproprietary Names: List 67

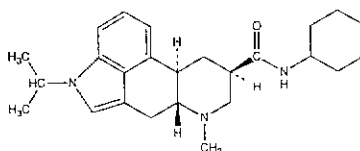
*Lists of proposed (1–58) and recommended (1–27) international nonproprietary names can be found in Cumulative List No. 7, 1988.*

*Proposed International  
Nonproprietary Name  
(Latin, English)*

*Chemical Name or Description, Molecular and Graphic formulae  
Chemical Abstracts Service (CAS) registry number  
Action and Use\**

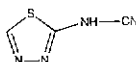
amesergidum  
amesergide

*N*-cyclohexyl-1-isopropyl-6-methylergoline-8β-carboxamide  
C<sub>25</sub>H<sub>35</sub>N<sub>3</sub>O 121588-75-8 *serotonin receptor antagonist*



amitivrium  
amitivr

1,3,4-thiadiazole-2-carbamionitrile  
C<sub>3</sub>H<sub>2</sub>N<sub>4</sub>S 111393-84-1 *antiviral*



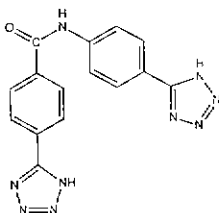
\* *Action and Use: The statements in italics indicating the action and use are based largely on information supplied by the manufacturer. The information is meant to provide an indication of the potential use of new substances at the time they are accorded Proposed International Nonproprietary Names. 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.*

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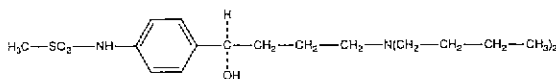
andolastum  
andolast

4,4'-di-1*H*-tetrazol-5-ylbenzanilide  
C<sub>15</sub>H<sub>11</sub>N<sub>5</sub>O 132640-22-3 *antiallergic*



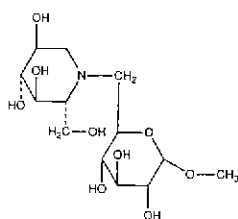
artilidum  
artilide

(+)-4'-[(*R*)-4-(dibutylamino)-1-hydroxybutyl]methanesulfonanilide  
C<sub>19</sub>H<sub>34</sub>N<sub>2</sub>O<sub>3</sub>S 133267-19-3 *antiarrhythmic*



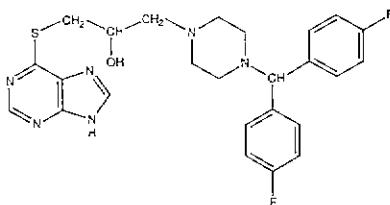
camiglibosum  
camiglibose

methyl 6-deoxy-6-[(2*R*,3*R*,4*R*,5*S*)-3,4,5-trihydroxy-2-(hydroxymethyl)piperidino]- $\alpha$ -D-glucopyranoside  
C<sub>13</sub>H<sub>25</sub>NO<sub>9</sub> 127214-23-7 *antidiabetic*



carsatrinum  
carsatrin

4-[bis(*p*-fluorophenyl)methyl]- $\alpha$ -[(9*H*-purin-6-ylthio)methyl]-1-piperazineethanol  
C<sub>25</sub>H<sub>26</sub>F<sub>2</sub>N<sub>6</sub>OS 125363-87-3 *cardiac stimulant*

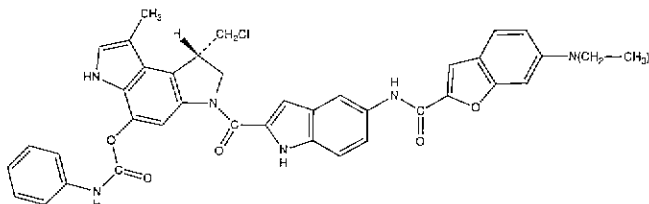


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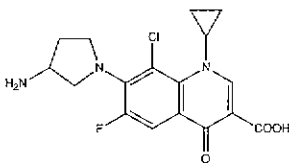
carzelesinum  
carzelesin

N-[2-[[[(S)-1-(chloromethyl)-1,6-dihydro-5-hydroxy-8-methyl =  
benzo[1,2-*b*:4,3-*b'*]dipyrrol-3(2*H*)-yl]carbonyl]indol-5-yl]-6-(diethylamino)-  
2-benzofurancarboxamide carbanilate (ester)  
C<sub>41</sub>H<sub>37</sub>ClN<sub>5</sub>O<sub>5</sub> 119813-10-4 *antineoplastic*



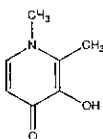
clinafloxacinum  
clinafloxacin

(±)-7-(3-amino-1-pyrrolidiny)-8-chloro-1-cyclopropyl-6-fluoro-1,4-dihydro-  
4-oxo-3-quinolinecarboxylic acid  
C<sub>17</sub>H<sub>17</sub>ClFN<sub>3</sub>O<sub>3</sub> 105956-97-6 *antibacterial*



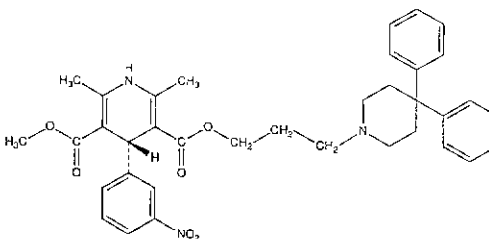
deferipronum  
deferiprone

3-hydroxy-1,2-dimethyl-4(1*H*)-pyridone  
C<sub>7</sub>H<sub>8</sub>NO<sub>2</sub> 30652-11-0 *chelating agent*



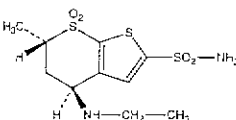
dexniguldipinum  
dexniguldipine

(+)-(R)-3-(4,4-diphenylpiperidino)propyl methyl 1,4-dihydro-2,6-dimethyl-  
4-(*m*-nitrophenyl)-3,5-pyridinedicarboxylate  
C<sub>36</sub>H<sub>39</sub>N<sub>3</sub>O<sub>6</sub> 120054-86-6 *antineoplastic*



dorzolamidum  
dorzolamide

(4*S*,6*S*)-4-(ethylamino)-5,6-dihydro-6-methyl-4*H*-thieno[2,3-*b*]thiopyran-  
2-sulfonamide 7,7-dioxide  
C<sub>10</sub>H<sub>16</sub>N<sub>2</sub>O<sub>4</sub>S<sub>3</sub> 120279-96-1 *antiglaucoma*

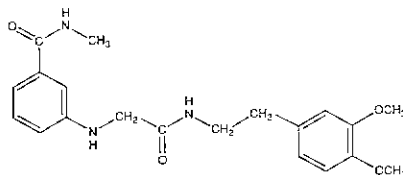


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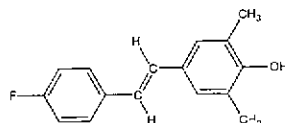
ecabapidum  
ecabapide

*m*-[[[(3,4-dimethoxyphenethyl)carbamoyl]methyl]amino]-*N*-methylbenzamide  
C<sub>20</sub>H<sub>25</sub>N<sub>3</sub>O<sub>4</sub> 104775-36-2 *antiulcer agent*



enofelastum  
enofelast

(*E*)-4'-fluoro-3,5-dimethyl-4-stilbenol  
C<sub>16</sub>H<sub>15</sub>FO 127035-60-3 *antialsthmatic, anti-inflammatory*

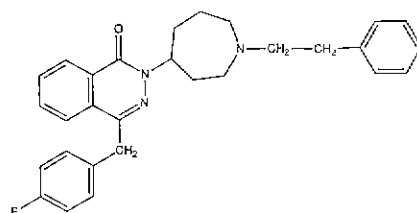


epoetinum gamma  
epoetin gamma

1-165-erythropoietin (human clone λHEPOFL13 protein moiety), glycoform γ  
C<sub>5609</sub>H<sub>13011</sub>N<sub>2225</sub>O<sub>2410</sub>S<sub>5</sub> 130455-76-4 *antianaemic*  
(for non-glycosylated protein)

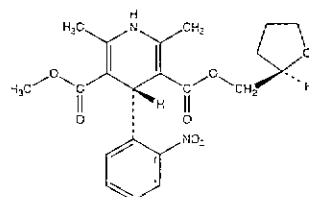
flezelastinum  
flezelastine

(±)-4-(*p*-fluorobenzyl)-2-(hexahydro-1-phenethyl-1*H*-azepin-4-yl)-1(2*H*)-  
phthalazinone  
C<sub>29</sub>H<sub>30</sub>FN<sub>3</sub>O 135381-77-0 *antialsthmatic*



furnidipinum  
furnidipine

(±)-methyl tetrahydrofurfuryl,1,4-dihydro-2,6-dimethyl-4-(*o*-nitrophenyl)-  
3,5-pyridinedicarboxylate  
C<sub>21</sub>H<sub>24</sub>N<sub>2</sub>O<sub>7</sub> 138661-03-7 *calcium channel blocker*



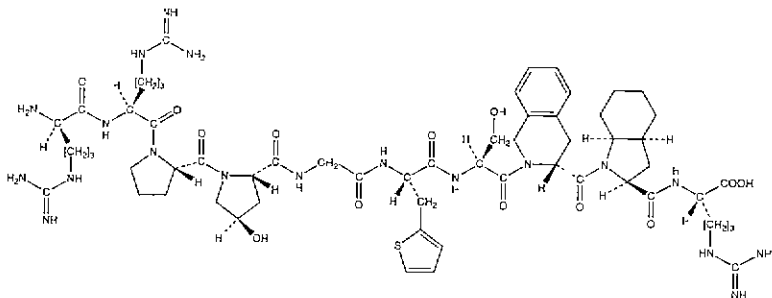
and enantiomer

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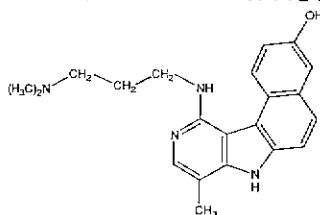
icatibantum  
icatibant

(*R*)-arginy-(*S*)-arginy-(*S*)-prolyl-(2*S*,4*R*)-(4-hydroxyprolyl)glycyl-(*S*)-  
[3-(2-thienyl)alanyl]-(*S*)-seryl-(*R*)-[(1,2,3,4-tetrahydro-3-isoquinolyl)carbonyl]-  
(2*S*,3*aS*,7*aS*)-[(hexahydro-2-indolyl)carbonyl]-(*S*)-arginine  
 $C_{59}H_{89}N_{19}O_{13}S$  130308-48-4 *bradykinin antagonist*



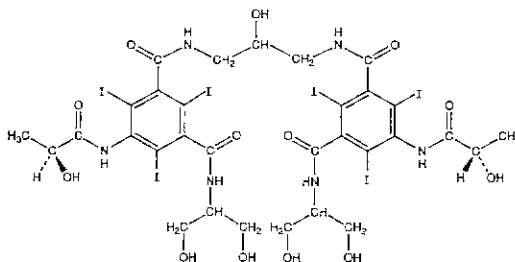
toplicinum  
toplicine

11-[[3-(dimethylamino)propyl]amino]-8-methyl-7*H*-benzo[*e*]pyrido[4,3-*b*]=  
indol-3-ol  
 $C_{21}H_{24}N_4O$  125974-72-3 *antineoplastic*



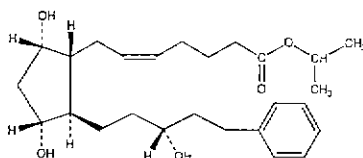
iofratolum  
iofratol

*N,N'*-(2-hydroxytrimethylene)bis[*N'*-(2-hydroxy-1-(hydroxymethyl)ethyl)]-2,4,6-  
triiodo-5-[(*S*)-lactamido]isophthalamide}  
 $C_{37}H_{36}I_3N_6O_{13}$  141660-63-1 *contrast medium*



latanoprostum  
latanoprost

isopropyl (*Z*)-7-[(1*R*,2*R*,3*R*,5*S*)-3,5-dihydroxy-2-[(3*R*)-3-hydroxy-  
5-phenylpentyl]cyclopentyl]-5-heptenoate  
 $C_{26}H_{40}O_5$  130209-82-4 *antiglaucoma*

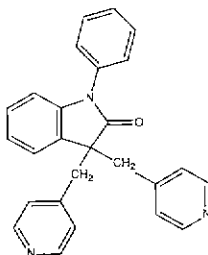


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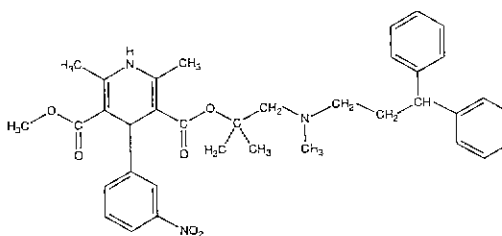
linopirdinum  
linopirdine

1-phenyl-3,3-bis(4-pyridylmethyl)-2-indolinone  
 $C_{26}H_{21}N_3O$  105431-72-9 *nootropic agent*



masnidipinum  
masnidipine

(±)-2-[(3,3-diphenylpropyl)methylamino]-1,1-dimethylethyl methyl  
1,4-dihydro-2,6-dimethyl-4-(*m*-nitrophenyl)-3,5-pyridinedicarboxylate  
 $C_{36}H_{47}N_3O_6$  100427-26-7 *calcium channel blocker*

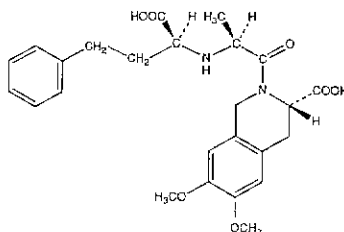


mideplaninum  
mideplanin

a mixture of six substances of which 70% is:  
34-[(2-acetamido-2-deoxy-β-D-glucopyranosyl)oxy]-15-amino-22,31-dichloro-  
56-[[2-deoxy-2-(8-methylnonanamido)-β-D-glucopyranosyl]oxy]-N-  
[3-(dimethylamino)propyl]-2,3,16,17,18,19,35,36,37,38,48,49,50,50a-tetradeca-  
hydro-6,11,40,44-tetrahydroxy-42-(α-D-mannopyranosyloxy)-2,16,36,50,51,59-  
hexaexo-1*H*,15*H*,34*H*-20,23,30,33-dietheno-3,18:35,48-bis(iminomethano)-  
4,8,10,14,25,28,43,47-tetrametheno-28*H*-[1,14,6,22]dioxadiazacycloocta-  
cosino[4,5-*m*][10,2,16]benzoxadiazacyclotetracosine-38-carboxamide.  
 $C_{93}H_{109}Cl_2N_{11}O_{32}$  122173-74-4 *antibiotic*

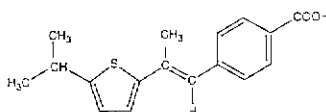
moexiprilatum  
moexiprilat

(3*S*)-2-[(2*S*)-N-[(1*S*)-1-carboxy-3-phenylpropyl]alanyl]-1,2,3,4-tetrahydro-  
6,7-dimethoxy-3-isoquinolinecarboxylic acid  
 $C_{25}H_{30}N_2O_7$  103775-14-0 *angiotensin-converting-enzyme inhibitor*



namirotenum  
namirotene

*p*-[(*E*)-2-(5-isopropyl-2-thienyl)propenyl]benzoic acid  
 $C_{17}H_{18}O_2S$  101506-83-6 *vitamin*

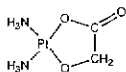


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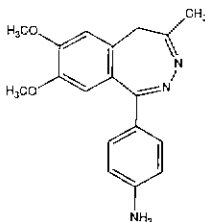
nedaplatinum  
nedaplatin

*cis*-diammine(glycolato-*O*<sup>1</sup>,*O*<sup>2</sup>)platinum  
 $C_2H_8N_2O_3Pt$  95734-82-0 *antineoplastic*



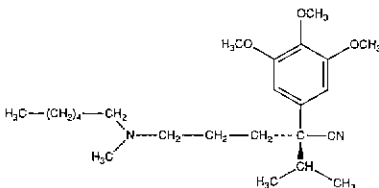
nerisopamum  
nerisopam

1-(*p*-aminophenyl)-7,8-dimethoxy-4-methyl-5*H*-2,3-benzodiazepine  
 $C_{18}H_{19}N_3O_2$  102771-12-0 *anxiolytic*



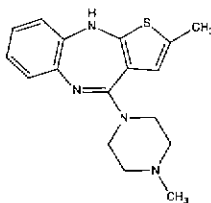
nexopamilum  
nexopamil

(2*S*)-5-(hexylmethylamino)-2-isopropyl-2-(3,4,5-trimethoxyphenyl)valeronitrile  
 $C_{24}H_{40}N_2O_3$  136033-49-3 *antihypertensive, antianginal*



olanzapinum  
olanzapine

2-methyl-4-(4-methyl-1-piperazinyl)-10*H*-thieno[2,3-*b*][1,5]benzodiazepine  
 $C_{17}H_{20}N_4S$  132539-06-1 *dopamine receptor antagonist*

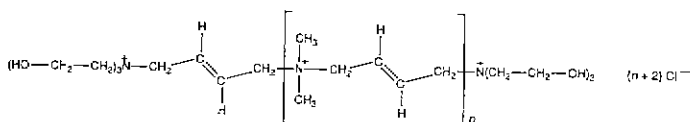


pegaldesleukinum  
pegaldesleukin

125-L-serine-2-133-interleukin 2 (human reduced), reaction product with glutaric anhydride, esters with polyethylene glycol monomethyl ester  
*antiviral, immunomodulator*

polidroninii chloridum  
polidronium chloride

$\alpha$ -[(*E*)-4-[tris(2-hydroxyethyl)ammonio]-2-butenyl- $\omega$ -[tris(2-hydroxyethyl)ammonio]poly[(dimethyliminio)](*E*)-2-butenylene] chloride  
 $(C_8H_{12}ClN)_n \cdot C_{18}H_{35}Cl_2N_2O_6$  75345-27-6 *antimicrobial*

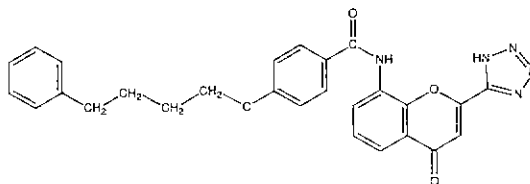


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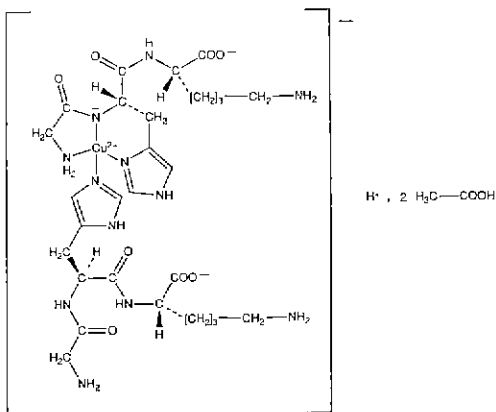
pranlukastum  
pranlukast

*N*-[4-oxo-2-(1*H*-tetrazol-5-yl)-4*H*-1-benzopyran-8-yl]-*p*-(4-phenylbutoxy) =  
benzamide  
 $C_{27}H_{23}N_5O_4$  103177-37-3 *antiasthmatic, antiallergic*



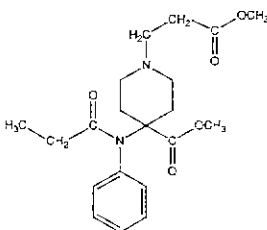
prezatidi cupric acetat  
prezatide copper acetate

hydrogen [*N*<sup>2</sup>-(*N*-glycyl-L-histidyl)-L-lysinato][*N*<sup>2</sup>-(*N*-glycyl-L-histidyl)-  
L-lysinato(2-)]cuprate(1-), diacetate  
 $C_{26}H_{48}CuN_{12}O_8 \cdot 2 C_2H_4O_2$  130120-57-9 *immunomodulator*



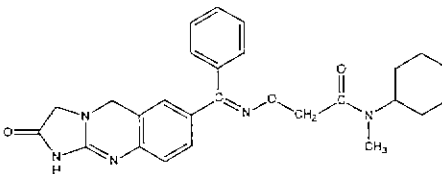
remifentanilum  
remifentanil

4-carboxy-4-(*N*-phenylpropionamido)-1-piperidinepropionic acid, dimethyl  
ester  
 $C_{26}H_{28}N_2O_5$  132875-61-7 *anaesthetic*



revizinonum  
revizinone

(*E*)-*N*-cyclohexyl-*N*-methyl-2-[[[ $\alpha$ -(1,2,3,5-tetrahydro-2-oxoimidazo[2,1-*b*]=  
quinazolin-7-yl)benzylidene]amino]oxy]acetamide  
 $C_{26}H_{28}N_5O_3$  133718-29-3 *cardiac stimulant*



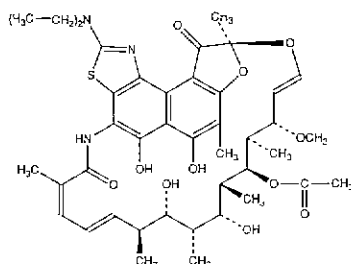


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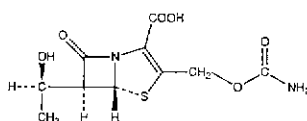
rifamexilum  
rifamexil

(9*S*,12*E*,14*S*,15*R*,16*S*,17*R*,18*R*,19*R*,20*S*,21*S*,22*E*,24*Z*)-2-(diethylamino)-5,6,16,18,20-pentahydroxy-14-methoxy-7,9,15,17,19,21,25-heptamethyl-9,4-(epoxypentadeca[1,11,13]trienimino)furo[2',3':7,8]naphtho[1,2-*d*]thiazole-10,26(9*H*)-dione, 16-acetate  
 $C_{42}H_{55}N_3O_{11}S$  113102-19-5 *antibacterial*



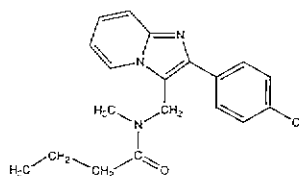
ceftazidim  
ceftazidim

(5*R*,6*S*)-6-[(1*R*)-1-hydroxyethyl]-3-(hydroxymethyl)-7-oxo-4-thia-1-aza-bicyclo[3.2.0]hept-2-ene-2-carboxylic acid, 3-carbamate  
 $C_{10}H_{12}N_2O_6S$  84845-57-8 *antibiotic*



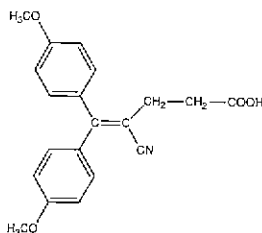
saripidemum  
saripidem

*N*-[[2-(*p*-chlorophenyl)imidazo[1,2-*a*]pyridin-3-yl]methyl]-*N*-methylbutyramide  
 $C_{19}H_{20}ClN_3O$  103844-86-6 *anxiolytic*



satigrelum  
satigrel

4-cyano-5,5-bis(*p*-methoxyphenyl)-4-pentenoic acid  
 $C_{20}H_{19}NO_4$  111753-73-2 *platelet aggregation inhibitor*



satumomabum  
satumomab

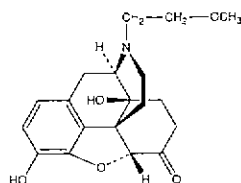
immunoglobulin G 1 (mouse monoclonal B72.3 anti-human glycoprotein TAG-72), disulfide with mouse monoclonal B72.3 light chain, dimer  
*diagnostic agent*

Proposed International  
Nonproprietary Name  
(Latin, English)

Chemical Name or Description, Molecular and Graphic formulae  
Chemical Abstracts Service (CAS) registry number  
Action and Use\*

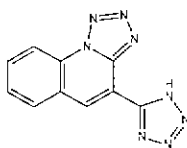
semorphonum  
semorphone

(-)-4,5 $\alpha$ -epoxy-3,14-dihydroxy-17-(2-methoxyethyl)morphinan-6-one  
C<sub>19</sub>H<sub>23</sub>NO<sub>5</sub> 88939-40-6 *analgesic*



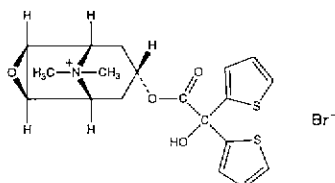
tetrazolastum  
tetrazolast

4-(1*H*-tetrazol-5-yl)tetrazolo[1,5-*a*]quinoline  
C<sub>10</sub>H<sub>6</sub>N<sub>8</sub> 95104-27-1 *antiallergic, antiasthmatic*



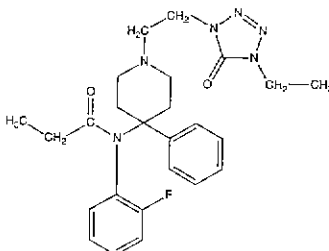
tiotropii bromidum  
tiotropium bromide

6 $\beta$ ,7 $\beta$ -epoxy-3 $\beta$ -hydroxy-8-methyl-1 $\alpha$ H,5 $\alpha$ H-tropanium bromide,  
di-2-thienylglycolate  
C<sub>19</sub>H<sub>22</sub>BrNO<sub>4</sub>S<sub>2</sub> 139404-48-1 *anticholinergic*



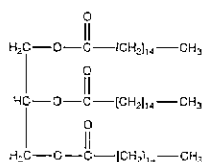
trefentanilum  
trefentanil

*N*-[1-[2-(4-ethyl-5-oxo-1*H*-tetrazolin-1-yl)ethyl]-4-phenyl-4-piperidyl]-  
2'-fluoropropionanilide  
C<sub>25</sub>H<sub>31</sub>FN<sub>6</sub>O<sub>2</sub> 120656-74-8 *analgesic*



tripalmitinum  
tripalmitin

tripalmitin or 1,2,3-propanetriyl trihexadecanoate  
C<sub>51</sub>H<sub>98</sub>O<sub>6</sub> 555-44-2 *pharmaceutical aid*

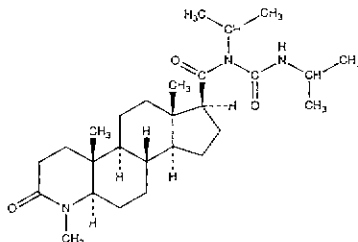


Proposed International  
Nonproprietary Name  
(Latin, English)

Chemical Name or Description, Molecular and Graphic formulae  
Chemical Abstracts Service (CAS) registry number  
Action and Use\*

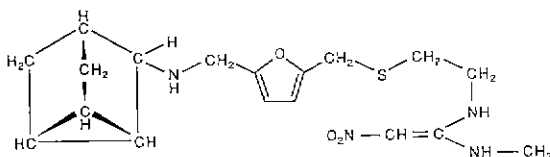
turosteridum  
turosteride

1,3-diisopropyl-1-[(4-methyl-3-oxo-4-aza-5 $\alpha$ -androstan-17 $\beta$ -yl)carbonyl]urea  
 $C_{27}H_{45}N_3O_3$  137099-09-3 *testosterone reductase inhibitor*



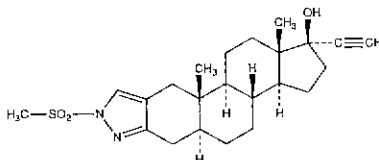
venritidinum  
venritidine

( $\pm$ )-(Z)-N-methyl-2-nitro-N'-[2-[[5-[(tricyclo[2.2.1.0<sup>2,6</sup>]hept-3-ylamino)=methyl]furfuryl]thio]ethyl]-1,1-ethenediamine  
 $C_{18}H_{26}N_4O_3S$  93064-63-2 *histamine H<sub>2</sub>-receptor antagonist*



zanoteronom  
zanoterone

1'-(methylsulfonyl)-1'-H-5 $\alpha$ ,17 $\alpha$ -pregn-20-yno[3,2-c]pyrazol-17-ol  
 $C_{23}H_{32}N_2O_3S$  107000-34-0 *antiandrogen*

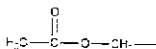


## Names for Radicals and Groups

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.

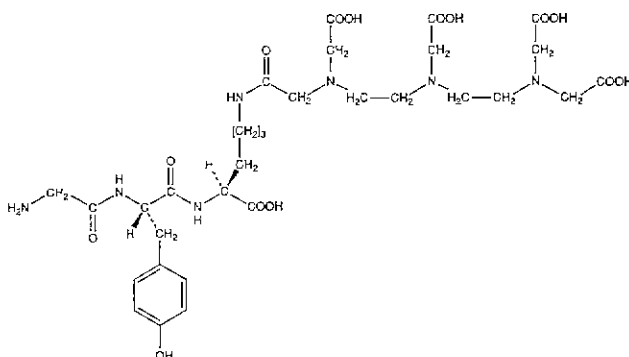
acoxilum  
acoxil

acetoxymethyl  
 $C_3H_5O_2$



pendetidum  
pendetide

$N^6$ -[ $N$ -[2-[[2-[bis(carboxymethyl)amino]ethyl](carboxymethyl)amino]ethyl]- $N$ -(carboxymethyl)glycyl]- $N^2$ -( $N$ -glycyl-L-tyrosyl)-L-lysine  
 $C_{31}H_{47}N_7O_{14}$



## AMENDMENTS TO PREVIOUS LISTS

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

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

p. 19 teceleukinum  
teceleukin

*replace the chemical name and the molecular formula by the following:*

$N$ -L-methionylinterleukin 2 (human)

$C_{698}H_{1127}N_{179}O_{204}S_8$

Supplement to WHO Chronicle, Vol. 40, No. 5, 1986

### Proposed International Nonproprietary Names (Prop. INN): List 56

p. 9 limaprostum  
limaprost

*replace the chemical name by the following:*

( $E$ )-7-[(1*R*,2*R*,3*R*)-3-hydroxy-2-[( $E$ )-(3*S*,5*S*)-3-hydroxy-5-methyl-1-nonenyl]-5-oxocyclopentyl]-2-heptenoic acid

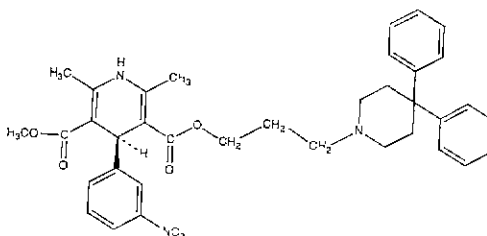
WHO Drug Information, Vol. 2, No. 4, 1988

### Proposed International Nonproprietary Names (Prop. INN): List 60

p. 22 niguldipinum  
niguldipine

*replace the chemical name and the graphic formula by the following:*

(-)-( $S$ )-3-(4,4-diphenylpiperidino)propyl methyl 1,4-dihydro-2,6-dimethyl-4-( $m$ -nitrophenyl)-3,5-pyridinedicarboxylate



WHO Drug Information, Vol. 4, No. 2, 1990

### Proposed International Nonproprietary Names (Prop. INN): List 63

- |      |                             |   |
|------|-----------------------------|---|
| p. 4 | cilobradinum<br>cilobradine | <i>replace the CAS registry number by the following:</i><br>109859-78-1 |
|------|-----------------------------|---|

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

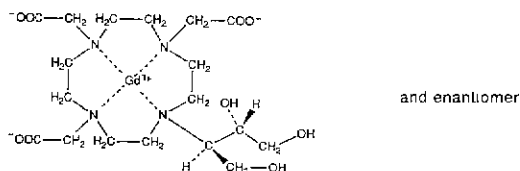
### Proposed International Nonproprietary Names (Prop. INN): List 64

- |      |                                |  |
|------|--------------------------------|--|
| p. 8 | daifopristinum<br>daifopristin | replace the chemical name by the following:<br>(3 <i>R</i> ,4 <i>R</i> ,5 <i>E</i> ,10 <i>E</i> ,12 <i>E</i> ,14 <i>S</i> ,26 <i>R</i> .26 <i>aS</i> )-26-[[2-(diethylamino)ethyl]sulfonyl]-8,9,14,15,24,25,26,26 <i>a</i> -octahydro-14-hydroxy-3-isopropyl-4,12-dimethyl-3 <i>H</i> -21,18-nitrilo-1 <i>H</i> ,22 <i>H</i> -pyrrolo[2,1 <i>c</i> ][1,8,4,19]dioxadiazacyclotetracosine-1,7,16,22(4 <i>H</i> ,17 <i>H</i> )-tetrone |
|------|--------------------------------|--|

WHO Drug Information, Vol. 5, No. 4, 1991

### Proposed International Nonproprietary Names (Prop. INN): List 66

- |      |                              |  |
|------|------------------------------|--|
| p. 6 | gadobutrololum<br>gadobutrol | replace the chemical name and the graphic formula by the following:<br>[10-[(1 <i>RS</i> ,2 <i>SR</i> )-2,3-dihydroxy-1-(hydroxymethyl)propyl]-1,4,7,10-tetraazacyclo-<br>dodecane-1,4,7-triacetato[3-]]gadolinium |
|------|------------------------------|--|



## 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*<sup>1</sup> 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*.<sup>1</sup>

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*.<sup>1</sup>

A. Such objection shall:

(i) identify the person objecting;

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\* Text adopted by the Executive Board of WHO in resolution EB15.R7 (*Off. Rec. Wld Health Org.*, 1955, 60, 3) and amended by the Board in resolution EB43.R9 (*Off. Rec. Wld Hlth Org.*, 1969, 173, 10)

<sup>1</sup> The title of this publication was changed to *WHO Chronicle* in January 1959. From 1987 onwards lists of INNs are published in *WHO Drug Information*.

(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.

## 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, "f" should be used instead of "ph", "l" 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 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.<sup>1</sup> Where a stem is shown without any hyphens it may be used anywhere in the name.

<i>Latin</i>	<i>English</i>	
-acum	-ac	anti-inflammatory agents of the ibufenac group
-actidum	-actide	synthetic polypeptides with a corticotrophin-like action
-adolum	-adol )	analgesics
-adol-	-adol- )	
-astum	-ast	anti-asthmatic, anti-allergic substances not acting primarily as antihistaminics
-astinum	-astine	antihistaminics
-azepamum	-azepam	substances of the diazepam group
-bactamum	-bactam	$\beta$ -lactamase inhibitors
bol	bol	steroids, anabolic
-buzonum	-buzone	anti-inflammatory analgesics of the phenylbutazone group
-cain-	-cain-	antifibrillat substances with local anaesthetic activity
-cainum	-caine	local anaesthetics
cef-	cef-	antibiotics, derivatives of cephalosporanic acid
-cillinum	-cillin	antibiotics, derivatives of 6-aminopenicillanic acid
-conazolum	-conazole	systemic antifungal agents of the miconazole group
cort	cort	corticosteroids, except those of the prednisolone group
-dipinum	-dipine	calcium antagonists of the nifedipine group
-fibratum	-fibrate	substances of the clofibrate group
gest	gest	steroids, progestogens
gli-	gli-	sulfonamide hypoglycemics
io-	io-	iodine-containing contrast media
-ium	-ium	quaternary ammonium compounds
-metacinum	-metacin	anti-inflammatory substances of the indometacin group
-mycinum	-mycin	antibiotics, produced by <i>Streptomyces</i> strains
-nidazolum	-nidazole	antiprotozoal substances of the metronidazole group
-ololum	-olol	$\beta$ -adrenergic blocking agents
-oxacinum	-oxacin	antibacterial agents of the nalidix acid group
-pidum	-pnde	sulpiride derivatives
-pril(at)um	pril(at)	angiotensin-converting enzyme inhibitors
-profenum	-profen	anti-inflammatory substances of the ibuprofen group
prost	prost	prostaglandins
-relinum	-relin	hypophyseal hormone release-stimulating peptides
-terolum	-terol	bronchodilators, phenethylamine derivatives
-tidinum	-tidine	H <sub>2</sub> -receptor antagonists
-trexatum	-trexate	folic acid antagonists
-verinum	-verine	spasmolytics with a papaverine-like action
vin-	vin- )	vinca type alkaloids
-vin-	-vin- )	

<sup>1</sup> 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.