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, 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.

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. I.N.N.): LIST 25**

<table>
<thead>
<tr>
<th>Proposed International Nonproprietary Name</th>
<th>Chemical Name or Description, Molecular and Graphical Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>acidum bromelicum</td>
<td>(E)-3-p-anisoyl-3-bromoacrylic acid</td>
</tr>
<tr>
<td>bromelic acid</td>
<td>C&lt;sub&gt;11&lt;/sub&gt;H&lt;sub&gt;15&lt;/sub&gt;BrO&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

![Chemical structure of acidum bromelicum](image)

| acidum capobenicum | 6-(3,4,5-trimethoxybenzamido)hexanoic acid |
| capobenic acid | C<sub>13</sub>H<sub>23</sub>NO<sub>6</sub> |

![Chemical structure of acidum capobenicum](image)

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**Proposed International Nonproprietary Name**

- aciddum cinameticum: cinametic acid
- aciddum tienillicum: tienillic acid
- allibendolum: allibendiol
- alletorphinum: alletorphine γ

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

1. **aciddum cinameticum**
   - cinametic acid
   - \( \text{C}_{13}\text{H}_{14}\text{O}_3 \)
   - \[
     \begin{array}{c}
     \text{CH} = \text{CH} - \text{COOH} \\
     \text{O} - \text{CH}_2 - \text{CH}_2 \text{OH}
     \end{array}
   \]

2. **aciddum tienillicum**
   - tienillic acid
   - \( \text{C}_{13}\text{H}_8\text{Cl}_2\text{O}_4\text{S} \)
   - \[
     \begin{array}{c}
     \text{O} - \text{CH}_2 - \text{COOH} \\
     \text{Cl} \\
     \text{Cl}
     \end{array}
   \]

3. **allibendolum**
   - allibendiol
   - \( \text{C}_{13}\text{H}_{17}\text{NO}_4 \)
   - \[
     \begin{array}{c}
     \text{CO} - \text{NH} - \text{CH}_2 - \text{CH}_2 \text{OH} \\
     \text{HO} \\
     \text{H}_2\text{C} = \text{CH} - \text{C} - \text{OH}_3
     \end{array}
   \]

4. **alletorphinum**
   - alletorphine γ
   - \( \text{C}_{27}\text{H}_{39}\text{NO}_4 \)
   - \[
     \begin{array}{c}
     \text{HO} \\
     \text{N} - \text{CH}_2 - \text{CH} = \text{CH}_2 \\
     \text{H}_3\text{CO} - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 \text{OH}_3
     \end{array}
   \]
<table>
<thead>
<tr>
<th>Proposed International Nonproprietary Name (Latin, English)</th>
<th>Chemical Name or Description, Molecular and Graphic Formulae</th>
</tr>
</thead>
<tbody>
<tr>
<td>amadinonum amadinone</td>
<td>6-chloro-17-hydroxy-19-norpregna-4,6-diene-3,20-dione C_{20}H_{25}ClO_{3}</td>
</tr>
<tr>
<td></td>
<td><img src="structure1.png" alt="Chemical Structure" /></td>
</tr>
<tr>
<td>amcinafalum amcinafal</td>
<td>9-fluoro-11\beta,16\alpha,17,21-tetrahydroxypregna-1,4-diene-3,20-dione cyclic 16,17-acetal with 3-pentanone C_{28}H_{36}F_{5}O_{6}</td>
</tr>
<tr>
<td></td>
<td><img src="structure2.png" alt="Chemical Structure" /></td>
</tr>
<tr>
<td>amcinafidum amcinafide</td>
<td>9-fluoro-11\beta,16\alpha,17,21-tetrahydroxypregna-1,4-diene-3,20-dione cyclic 16,17-acetal with acetophenone C_{28}H_{36}F_{5}O_{6}</td>
</tr>
<tr>
<td></td>
<td><img src="structure3.png" alt="Chemical Structure" /></td>
</tr>
<tr>
<td>amedalinum amedalin</td>
<td>3-methyl-3-[3-(methylamino)propyl]-1-phenyl-2-indolinone C_{19}H_{22}N_{2}O</td>
</tr>
<tr>
<td></td>
<td><img src="structure4.png" alt="Chemical Structure" /></td>
</tr>
</tbody>
</table>
amoxapinum
amoxapine

2-chloro-11-(1-piperazinyl)dibenzo[b,f][1,4]oxazepine
C_{17}H_{19}ClN_{3}O

aspartamum
aspartame

3-amino-N-(α-carboxyphenethyl)succinamic acid N-methyl ester
C_{14}H_{14}N_{2}O_{5}

azaprocium
azaprocin

3-cinnamyl-8-propionyl-3,8-diazabicyclo[3,2,1]octan
C_{16}H_{12}N_{2}O

azaspini chloridum
azaspirium chloride

8,9-dihydro-4,11-dimethoxy-9-methylene-5-oxospiro[5H-furo-
[3',2':6,7][1]benzopyran-3,2-ε]pyridine-7(8H),1'-piperidinium
chloride
C_{32}H_{32}ClN_{6}O_{5}
benfluorex

2-[[α-methyl-m-(trifluoromethyl)phenethyl]amino]ethanol benzoate (ester)
C₁₉H₂₀F₃NO₂

CO−O−CH₂−CH₂−NH−CH−CH₂

benzobarbital

1-benzoyl-5-ethyl-5-phenylbarbituric acid
C₁₉H₁₅N₂O₄

H₅C₂−N−O−C−O

benzoclidine

3-quinuclidinol benzoate (ester)
C₁₄H₁₇NO₂

CH₂

CH₃

O−CO

bromofos

O-(4-bromo-2,5-dichlorophenyl) O,O-dimethyl phosphorothioate
CeH₅BrCl₂O₃PS

H₃CO−P−OCH₂

Cl

Br
Proposed International Nonproprietary Name (Latin, English)

bumecainum
bumecaine

1-butyl-2',4',6'-trimethyl-2-pyrrolidinecarboxamide
C_{18}H_{33}N_3O

butirosinum
butirosin

O-2,6-diamino-2,6-dideoxy-α-D-glucopyranosyl-(1→4)-
O-[β-D-xylofuranosyl-(1→5)]-N^+-(4-amino-2-hydroxybutyryl)-
2-deoxystreptamine (A form) mixture with
O-2,6-diamino-2,6-dideoxy-α-D-glucopyranosyl-(1→4)-
O-[β-D-ribofuranosyl-(1→5)]-N^+-(4-amino-2-hydroxybutyryl)-
2-deoxystreptamine (B form)
C_{21}H_{31}N_6O_{13}

cefacetilum
cefacetile

7-(2-cyanoacetamido)-3-(hydroxymethyl)-8-oxo-5-thia-
1-azabicyclo[4.2.0]oct-2-ene-2-carboxylate acetate (ester)
C_{15}N_{12}O_{16}S

\[ \text{COOH} \]
\[ \text{CH}_2\text{-CO-CH}_3 \]
Proposed International Nonproprietary Name (Latin, English)  

Chemical Name or Description, Molecular and Generic Formula

**Cefazolinum**

**Cefazolin**

3-[[(5-methyl-1,3,4-thiadiazol-2-yl)thio]methyl]-8-oxo-7-
[2-[(1H-tetrazol-1-yl)acetamido]-5-thia-1-azabicyclo[4.2.0]-
oct-2-ene-2-carboxylic acid

C_{14}H_{11}N_{5}O_{4}S_{3}

![Cefazolin Structure](image)

**Clobazamum**

**Clobazam**

7-chloro-1-methyl-5-phenyl-1H-1,5-benzodiazepine-2,4(3H,6H)-
dione

C_{19}H_{15}ClN_{2}O

![Clobazam Structure](image)

**Clobenzepamum**

**Clobenzepam**

7-chloro-10-[-2-(dimethylamino)ethyl]-5,10-dihydro-
11H-dibenzo[b,e][1,4]diazepin-11-one

C_{23}H_{21}ClN_{2}O

![Clobenzepam Structure](image)

**Clorfenolamum**

**Clorfenol**

5-chloro-2-(2,4-dichlorophenoxy)phenol

C_{12}H_{5}Cl_{2}O_{2}

![Clorfenol Structure](image)
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>daledalinum</td>
<td>3-methyl-3-[3-(methylamino)propyl]-1-phenylindoline</td>
</tr>
<tr>
<td>daledalin</td>
<td>C₁₉H₂₄N₂</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>denaverinum</td>
<td>2-(dimethylamino)ethyl (2-ethylbutoxy)diphenylacetate</td>
</tr>
<tr>
<td>denavertine</td>
<td>C₂₄H₃₈O₃</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>disterenolom</td>
<td>(±)-p-hydroxy-α-[[(isopropylamino)methyl]benzyl alcohol</td>
</tr>
<tr>
<td>disterenol</td>
<td>C₁₉H₂₅NO₂</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>dicarbinum</td>
<td>2,3,4,4a,5,9b-hexahydro-2,8-dimethyl-1H-pyrido[4,3-β]indole</td>
</tr>
<tr>
<td>dicarbine</td>
<td>C₁₃H₁₄N₂</td>
</tr>
</tbody>
</table>
dicollin iodide

dicollinium iodide  

2-carboxy-1,1,6-trimethylpiperidinium iodide, ester with diethyl-
(2-hydroxyethyl)methylammonium iodide

\[
\begin{array}{c}
\text{H}_3\text{C} \quad \text{CH}_3 \\
\text{HO} - \text{C} \quad \text{O} - \text{CH}_2 - \text{CH}_2 - \text{N(C}_2\text{H}_5)_2 \\
\text{CH}_3 \\
\end{array}
\]

\[2^{+}\]

\[2^{-}\]  

doxorubicinum

doxorubicin  

an antibiotic obtained from cultures of a mutant of *Streptomyces peuceticus*, or the same substance obtained by any other means (15,35)-3-glycoloyl-1,2,3,4,6,11-hexahydro-3,5,12-trihydroxy-
10-methoxy-8,11-dioxo-1-naphthacenyl 3-amino-2,3,6-trideoxy-
a-L-lyxo-hexopyranoside

\[
\begin{array}{c}
\text{HO} - \text{H}_2\text{C} - \text{C} - \\
\text{HO} \quad \text{O} \\
\text{H} \quad \text{O} \\
\text{C}_2\text{H}_4\text{N} \quad \text{O} _{11} \\
\end{array}
\]

enfluranum

enflurane  

2-chloro-1,1,2-trifluoroethyl difluoromethyl ether

\[
\begin{array}{c}
\text{F} \\
\text{F} \\
\text{F} \\
\end{array}
\]

\[
\begin{array}{c}
\text{F} \\
\text{F} \\
\text{Cl} \\
\end{array}
\]

\[\text{C}_3\text{H}_2\text{ClF}_2\text{O}\]
<table>
<thead>
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<th>Proposed International Nonproprietary Name (Latin, English)</th>
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<tbody>
<tr>
<td>epicillin</td>
<td>6-[2-amino-2-(1,4-cyclohexadien-1-yl)acetamido]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptano-2-carboxylic acid C_{6}H_{12}NaO_{4}S</td>
</tr>
<tr>
<td>epirizole</td>
<td>4-methoxy-2-(5-methoxy-3-methylpyrazol-1-yl)-6-methylpyrimidine C_{11}H_{14}N_{4}O_{2}</td>
</tr>
<tr>
<td>estrofurate</td>
<td>21,23-epoxy-19,24-dinor-17α-chola-1,3,5(10),7,20,22-hexaene-3,17-diol 3-acetate C_{29}H_{28}O_{4}</td>
</tr>
<tr>
<td>etofamide</td>
<td>2,2-dichloro-N-(2-ethoxyethyl)-N'-[(p-nitrophenoxy)benzyl]-acetamide C_{18}H_{26}Cl_{2}N_{2}O_{5}</td>
</tr>
<tr>
<td>Proposed International Nonproprietary Name</td>
<td>Chemical Name or Description, Molecular and Graphic Formulee</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>fexicanum</td>
<td>2-(p-butoxyphenoxy)-N-(o-methoxyphenyl)-N-[2-(1-pyrrolidinyl)ethyl]acetamide</td>
</tr>
<tr>
<td>fexocaine</td>
<td>C_{2s}H_{3s}N_{2s}O_{4s}</td>
</tr>
<tr>
<td>fluacizinum</td>
<td>10-[[3-(diethylamino)propionyl]-2-(trifluoromethyl)phenothiazine</td>
</tr>
<tr>
<td>fluacizine</td>
<td>C_{2s}H_{2s}F_{2s}N_{2s}O_{5s}</td>
</tr>
<tr>
<td>fluocinonidum</td>
<td>6α,9-difluoro-11α,16α,17,21-tetrahydroxyxycuma-1,4-diene-3,20-dione, cyclic 16,17-acetate with acetone, 21-acetate</td>
</tr>
<tr>
<td>fluocinonide</td>
<td>C_{2s}H_{2s}F_{3s}O_{7s}</td>
</tr>
<tr>
<td>fluranterum</td>
<td>2,6-dihydroxy-3-nitro-3',5'-bis(trifluoromethyl)benzanilide</td>
</tr>
<tr>
<td>flurenal</td>
<td>diacetate (ester)</td>
</tr>
<tr>
<td></td>
<td>C_{2s}H_{1s}F_{3s}N_{2s}O_{5s}</td>
</tr>
<tr>
<td>Proposed International Nonproprietary Name (Latin, English)</td>
<td>Chemical Name or Description, Molecular and Graphic Formulas</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>flutizenolum</td>
<td>4-[[3-[(trifluoromethyl)-4H-thieno[2,3-b][1,4]benzothiazin-4-yl]propyl]-1-piperazineethanol</td>
</tr>
<tr>
<td>flutizenol</td>
<td>C$_2$0H$_2$F$_3$N$_3$OS$_2$</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Flutizenol Structure" /></td>
</tr>
<tr>
<td>fosfomycinum</td>
<td>(−)-(1R,2S)-(1,2-epoxypropyl)phosphonic acid</td>
</tr>
<tr>
<td>fosfomycin</td>
<td>C$_3$H$_7$O$_3$P</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Fosfomycin Structure" /></td>
</tr>
<tr>
<td>gliclazidum</td>
<td>1-(3-azabicyclo[3.3.0]oct-3-yl)-3-(p-tolylsulfonyl)urea</td>
</tr>
<tr>
<td>gliclazide</td>
<td>C$<em>{11}$H$</em>{12}$N$_2$O$_3$S</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Gliclazide Structure" /></td>
</tr>
<tr>
<td>guaifenesinum</td>
<td>3-((o-methoxyphenoxy)-1,2-propanediol</td>
</tr>
<tr>
<td>guaifenesin</td>
<td>C$<em>9$H$</em>{12}$O$_4$</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Guaifenesin Structure" /></td>
</tr>
<tr>
<td>Latin, English</td>
<td>Heliomycinum</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Heliomycinum</td>
<td>Homoprenorphinum</td>
</tr>
<tr>
<td>Homoprenorphine</td>
<td>Indoramin</td>
</tr>
<tr>
<td>Indoramin</td>
<td>Letimidum</td>
</tr>
<tr>
<td>Letimide</td>
<td></td>
</tr>
<tr>
<td>Chemical Name or Description</td>
<td>Molecular and Graphic Formulae</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td><strong>lisuridum</strong> lisuride</td>
<td>3-((9,10-didehydro-6-methylergolin-8α-yl)-1,1-diethylurea</td>
</tr>
<tr>
<td></td>
<td><img src="image1.png" alt="Chemical Structure" /></td>
</tr>
<tr>
<td><strong>mezinamidum</strong> mezinamide</td>
<td>N-(α-methylbenzyl)linoleamidine</td>
</tr>
<tr>
<td></td>
<td><img src="image2.png" alt="Chemical Structure" /></td>
</tr>
<tr>
<td><strong>metazidum</strong> metazide</td>
<td>isonicotinic acid 2,2'-methylenedithydrazone</td>
</tr>
<tr>
<td></td>
<td><img src="image3.png" alt="Chemical Structure" /></td>
</tr>
<tr>
<td><strong>metochalconum</strong> metochalcone</td>
<td>2',4,4'-trimethoxychalcone</td>
</tr>
<tr>
<td></td>
<td><img src="image4.png" alt="Chemical Structure" /></td>
</tr>
<tr>
<td>Proposed International Nonproprietary Name (Latin, English)</td>
<td>Chemical Name or Description, Molecular and Graphic Formula</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>minoxidil</td>
<td>6-amino-1,2-dihydro-1-hydroxy-2-imino-4-piperidinopyrimidine</td>
</tr>
<tr>
<td>minoxidil</td>
<td>C$<em>9$H$</em>{15}$N$_3$O</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>mitocarcinum</td>
<td>mitocarcin</td>
</tr>
<tr>
<td>mixidinum</td>
<td>mixidine</td>
</tr>
<tr>
<td></td>
<td>C$<em>{15}$H$</em>{22}$N$_2$O$_2$</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>moracizinum</td>
<td>moracizine</td>
</tr>
<tr>
<td></td>
<td>C$<em>{20}$H$</em>{26}$N$_3$O$_4$S</td>
</tr>
</tbody>
</table>
naproxenum
naproxen

(+)-6-methoxy-α-methyl-2-naphthaleneacetic acid
C₁₄H₁₄O₃

naproxolum
naproxol

(−)-6-methoxy-β-methyl-2-naphthaleneethanol
C₁₄H₁₄O₂

nefopamum
nefopam

3,4,5,6-tetrahydro-5-methyl-1-phenyl-1H-2,5-benzoxazocine
C₁₇H₁₉NO

oxaflozanum
oxaflozane

4-isopropyl-2-(α,α,α-trifluoro-m-toly1)morpholine
C₁₄H₁₃F₃NO
oxazolidinum

oxazolium

10-chloro-2,3,7,11b-tetrahydro-2-methyl-11b-phenyloxazolo-
[3,2-a][1,4]benzodiazepin-6(6H)-one

\[\text{C}_{16}\text{H}_{17}\text{ClN}_{3}\text{O}_{2}\]

oxazolium

oxazolene

7-hydroxy-4-\text{(morpholinomethyl)}coumarin

\[\text{C}_{14}\text{H}_{16}\text{NO}_{4}\]

padimatum

padimate

mixture of pentyl, isopentyl and 2-methylbutyl
\(p\)-(dimethylamino)benzoates

\[\text{C}_{14}\text{H}_{25}\text{NO}_{2}\]

pemeridum

pemerid

4-\text{[3-(dimethylamino)propoxy]-1,2,2,6,6,\text{-pentamethylpiperidin}}

\[\text{C}_{15}\text{H}_{23}\text{N}_{2}\text{O}\]

\[\text{O-CH}_2\text{-CH}_2\text{-CH}_2\text{-N[C\text{H}_3]_2}\]
**Proposed International Nonproprietary Name**  
(Latin, English)

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

penbutolol  
1-(tert-buty lamino)-3-(a-cyclopentylphenoxy)-2-propanol  
\( \text{C}_{10}\text{H}_{13}\text{NNO}_2 \)

peratizole  
1-[[4-(2,4-dimethyl-5-thiazolyl)butyl]-4-(4-methyl-2-thiazolyl)-piperazine  
\( \text{C}_{19}\text{H}_{28}\text{N}_3\text{S}_2 \)

picolaminum  
3-[(aminomethyl)pyridine  
\( \text{C}_{7}\text{H}_{7}\text{N}_2 \)

pipebuzone  
4-butyl-4-[(4-methyl-1-piperazinyl)methyl]-1,2-diphenyl-3,5-pyrazolidinediene  
\( \text{C}_{20}\text{H}_{22}\text{N}_4\text{O}_2 \)
Proposed International Nonproprietary Name
(Latin, English)

chemical Name or Description,
molecular and Graphic Formulas

pipotiazinum
pipotiazine

10-[3-[4-(2-hydroxyethyl)piperidino]propyl]-N,N-dimethyl-
phenothiazino-2-sulfonamide
C_{24}H_{30}N_{5}O_{6}S_{2}

\[
\text{Chemical Structure Image}
\]

piroheptinum
piroheptine

3-[(10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-ylidene)-
1-ethyl-2-methylpyrrolidin]-
C_{22}H_{28}N

\[
\text{Chemical Structure Image}
\]

picrofenorum
picrofenone

methyl a-[(p-(2-piperidinoethoxy)benzoyl)benzoate]
C_{22}H_{26}NO_{4}

\[
\text{Chemical Structure Image}
\]

procinololum
procinolol

1-(a-cyclopropylphenoxy)-3-(isopropylamino)-2-propanol
C_{15}H_{23}NO_{2}

\[
\text{Chemical Structure Image}
\]
quintiofosum
quintiofos

O-ethyl O-(8-quinolyl) phenylphosphonothioate
C_{17}H_{16}NO_{2}PS

robenidinum
robenidine

1,3-bis([p-chlorobenzylidene)amino]guanidine
C_{19}H_{13}Cl_{2}N_{4}

serazidum
serazide

DL-serine 2-(2,3,4-trihydroxybenzyl)hydrazide
C_{10}H_{16}N_{4}O_{5}

savofluranum
savoflurane

fluoromethyl 2,2,2-trifluoro-1-(trifluoromethyl)ethyl ether
C_{4}H_{2}F_{7}O

F H_{2} C \rightarrow O - CH - CF_{3}
\text{CF}_{3}
stirimazolum
stirimazole

$\mu$-[2-(5-nitro-1-vinyl-2-imidazolyl)vinyl]benzoic acid
$\text{C}_4\text{H}_2\text{NO}_2\text{O}_x$

\[
\text{H}_2\text{C}=\text{CH} \\
\text{O}_2\text{N}\text{N}\text{C} \text{CH=CH} \\
\text{COOH}
\]

sulfaclorazolum
sulfaclorazole

$N^1$-[1-(m-chlorophenyl)-3-methyl-5-pyrazolyl]sulfanilamide
$\text{C}_1\text{eH}_1\text{eClN}_4\text{O}_2\text{S}$

\[
\text{O}_2\text{S}=\text{NH} \\
\text{N} \text{CH}_3 \\
\text{NH}_2
\]

sulfaclozinum
sulfaclozine

$N^1$-(6-chloropyrazinyl)sulfanilamide
$\text{C}_1\text{eH}_1\text{eClN}_4\text{O}_2\text{S}$

\[
\text{Cl} \text{N}=\text{NH} \text{SO}_2 \\
\text{NH}_2
\]

suncillinium
suncillin

3,3-dimethyl-7-oxo-6-[2-phenyl-9-2-(sulfoamino)acetamido]-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid
$\text{C}_1\text{eH}_1\text{eN}_5\text{O}_7\text{S}_2$

\[
\text{SO}_3\text{H} \\
\text{NH} \text{CO-CH=CH}_3 \\
\text{COOH}
\]
<table>
<thead>
<tr>
<th>Latin, English</th>
<th>Chemical Name or Description, Molecule, and Structural Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>suxemeridum</td>
<td>bis(1,2,6,6'-pentamethyl-4'-piperidyl) succinate C_{20}H_{24}N_2O_4</td>
</tr>
<tr>
<td>suxemider</td>
<td></td>
</tr>
<tr>
<td>tesicamum</td>
<td>4'-chloro-1,2,3,4-tetrahydro-1,3-dioxo-4-isoquinolinecarboxanilide C_{18}H_{15}ClN_2O_3</td>
</tr>
<tr>
<td>tesicam</td>
<td></td>
</tr>
<tr>
<td>ticarbodinum</td>
<td>o,o,o-trifluoro-2,6-dimethylthio-1-piperidinecarboxy-m-toluidide C_{18}H_{15}F_3N_2S</td>
</tr>
<tr>
<td>ticarboine</td>
<td></td>
</tr>
<tr>
<td>tinoridinum</td>
<td>ethyl 2-amino-6-benzyl-4,5,6,7-tetrahydrothieno[2,3-c]pyridine-3-carboxylate C_{17}H_{15}N_2O_3S</td>
</tr>
<tr>
<td>tinordine</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Chemical Name or Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------</td>
</tr>
<tr>
<td>tofisolinum</td>
<td>1-(3,4-dimethoxyphenyl)-4-ethyl-6,7-dimethoxy-3-methylisoquinoline 2-imide</td>
</tr>
<tr>
<td>tofisoline</td>
<td></td>
</tr>
<tr>
<td>tolpiprazolium</td>
<td>1-[(2-(5-methylpyrazol-3-yl)ethyl]-4-m-tolypiperazine</td>
</tr>
<tr>
<td>tolpiprazole</td>
<td></td>
</tr>
<tr>
<td>toprilidinum</td>
<td>1-[3-(2-pyridyloxoy)propyl]-4-o-tolypiperazine</td>
</tr>
<tr>
<td>toprilidene</td>
<td></td>
</tr>
<tr>
<td>treloxinatum</td>
<td>methyl 2,10-dichloro-12H-dibenzo[de;g][1,3]dioxocin-6-carboxylate</td>
</tr>
<tr>
<td>treloxinate</td>
<td></td>
</tr>
</tbody>
</table>
trepilii iodidum
trepilium iodide

2-carboxy-1,1-dimethylpyrrolidinium iodide, ester with (2-hydroxyethyl)trimethylammonium iodide
C$_{12}$H$_{26}$I$_{2}$N$_{2}$O$_{2}$

\[
\begin{array}{c}
\text{H}_3\text{C} \hspace{1cm} \text{H}_2\text{C} \hspace{1cm} \text{CH}_2 \hspace{1cm} \text{O} \hspace{1cm} \text{CH} \hspace{1cm} \text{N} (\text{CH}_3) \hspace{1cm} \text{CH}_3 \\
\end{array}
\]

17β-hydroxy-7α-methylestr-4-en-3-one
C$_{19}$H$_{28}$O$_2$

\[\text{O} \hspace{1cm} \text{H}_2\text{O} \hspace{1cm} \text{OH} \hspace{1cm} \text{CH}_3 \hspace{1cm} \text{CH}_3 \]

tretinoinum
tretinoin

all trans-retinoic acid
C$_{20}$H$_{28}$O$_2$

\[
\begin{array}{c}
\text{CH}_3 \hspace{1cm} \text{CH}_3 \hspace{1cm} \text{CH}_3 \hspace{1cm} \text{CH} \hspace{1cm} \text{COOH} \hspace{1cm} \text{CH}_3 \hspace{1cm} \text{CH}_3 \hspace{1cm} \text{CH}_3 \hspace{1cm} \text{CH}_3 \\
\end{array}
\]

trospilii chloridum
trospium chloride

3α-hydroxyspiro[1αH,5αH-nortropane-9,1'-pyrrolidinium] chloride benzoate
C$_{66}$H$_{96}$Cl$_3$NO$_3$

\[
\begin{array}{c}
\text{C}_6\text{H}_5 \hspace{1cm} \text{O} \hspace{1cm} \text{C} \hspace{1cm} \text{O} \hspace{1cm} \text{C} \hspace{1cm} \text{OH} \hspace{1cm} \text{Cl}^- \\
\end{array}
\]
Proposed International Nonproprietary Name
(Latin, English)\hline
\textit{vimineolum} & \textit{vimineol} & 1-(o-chlorobenzyl)-a-[(di-sec-butylamino)methyl]pyrrole-
2-methanol & 
\[
\begin{align*}
\text{Cl} & \\
\text{CH}_2 & \\
\text{N} & \text{-CHOH-CH}_2\text{-N(}-\text{CH-C}_2\text{H}_5\text{)}_2 \\
\text{CH}_2 &
\end{align*}
\]
\hline
\textit{viquidilium} & \textit{viquidil} & 1-(6-methoxy-4-quinolyl)-3-(3-vinyl-4-piperidyl)-1-propanone & 
\[
\begin{align*}
\text{H}_3\text{CO} & \\
\text{CO-CH}_2\text{-CH}_2 &
\end{align*}
\]
\hline
\textit{vistatolonom} & \textit{vistatolon} & an antiviral antibiotic obtained from cultures of \textit{Penicillium stoloniferum}, or the same substance produced by any other means & 

### Names for Radicals and Groups

Some preparations 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. The following shorter nonproprietary names for some such radicals and groups have been devised or selected, and they are suggested for use with the proposed international nonproprietary names.

2,6-di-tert-butyl-1,5-naphthalendisulfonate & dibudinate & 
\[
\begin{align*}
\text{(H}_3\text{C)}_2\text{C} & \\
\text{SO}_2\text{-O} & \\
\text{C(CH}_3\text{)}_2 & \\
\text{SO}_2\text{-O} &
\end{align*}
\]
AMENDMENTS TO PREVIOUS LIST

Vol. 23, No. 9

Proposed International Nonproprietary Names (Prop. I.N.N.): List 22

p. 427 delete  insert
dexbenzetimidum  dexetimidum
dexbenzetimide  dexetimide

p. 445 Names for Radicals and Groups

delete  insert
trisamine  trolamine

Vol. 24, No. 3

Proposed International Nonproprietary Names (Prop. I.N.N.): List 23

p. 119 delete  insert
acidum difenoxilicum  difenoxinum
difenoxic acid  difenoxin

Vol. 24, No. 9

Proposed International Nonproprietary Names (Prop. I.N.N.): List 24

p. 430 delete  insert
afroxanidum  rafroxanidum
afoxanide  rafoxanide

Reprint of List 24

p. 20 delete  insert
tiloronum  tiloronum
tilorne  tilorne

International Nonproprietary Names for Pharmaceutical Preparations

Cumulative List No. 2, 1967

p. 31 delete  insert
demethylchleltetacyclinum  demecyclinum
demethylchleltetacycline  demecycline
Annex

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 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.

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;

      (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

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† The title of this publication was changed to WHO Chronicle in January 1929.
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.

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

1. Names should be distinctive in sound and spelling. They should not be inconveniently long and should not be liable to confusion with names already in common use.

2. The name 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.

   The above primary principles are to be implemented by utilization of the following secondary principles.

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

4. In devising a name from the systematic chemical name of a substance, syllables such as “ methylhydro”, “ methoxy” and “ chlor” should preferably be abbreviated, for example, to “ medro”, “ meto”, and “ clo”; the derived name should not be chemically misleading.

5. In the naming of substances which are acids, existing names generally used in chemistry which include the word “ acidum” (“ acid” ) should be used, if the name is adequate for practical use in therapy and pharmacy. In other circumstances, the substance should be named by a single word and not by a name which includes the word “ acid”. Where the word “ acid” is not used in the name, as is customary in the penicillin series, a salt should preferably be named without modification of the parent acid name, e.g., “ oxacillin” and “ oxacillin sodium”.

6. Names 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). Exceptions may have to be made for those cases in which pharmacological activity may reside in both parts of the salt or ester.

   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.

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

8. To facilitate translation and pronunciation, “ f ” should preferably be used instead of “ ph ”, “ t ” instead of “ th ”, “ oe ” instead of “ oe ”, “ i ” instead of “ y ”.

9. 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.

10. Group relationship in names (see item 2) should preferably be shown by using common syllables in the following list. Where a syllable or a group of syllables is shown without any hyphens it may be used.

* Text revised by the Expert Committee on Nonproprietary Names for Pharmaceutical Substances (unpublished reports WHO/P/Pharm/67.445, WHO/P/Pharm/68.447, and WHO/P/Pharm/70.458).
anywhere in the name. The syllable, or group of syllables, should, if possible, be used only for such substance.

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

At the end of the list are general chemical syllables. Should they come into conflict with other suggested syllables, the suffix conveying the best information should be used.

<table>
<thead>
<tr>
<th>Latin</th>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>-actidum</td>
<td>actide</td>
<td>synthetic polypeptides with a corticotrophin-like action</td>
</tr>
<tr>
<td>-andr-</td>
<td>andr-</td>
<td>steroids, androgenic</td>
</tr>
<tr>
<td>or -stan-</td>
<td>or stan-</td>
<td>(barbituric acids, hypnotic activity)</td>
</tr>
<tr>
<td>or -ster-</td>
<td>or ster-</td>
<td>anabolic steroids</td>
</tr>
<tr>
<td>-acrolum</td>
<td>acrol</td>
<td>anticoagulants of the coumarin types</td>
</tr>
<tr>
<td>-bamatum</td>
<td>-bamate</td>
<td>tranquilizers of the propanediol and pantanediol series</td>
</tr>
<tr>
<td>barb</td>
<td>barb</td>
<td>barbituric acids, hypnotic activity</td>
</tr>
<tr>
<td>bol</td>
<td>bol</td>
<td>anabolic steroids</td>
</tr>
<tr>
<td>-catinum</td>
<td>catine</td>
<td>local anaesthetics</td>
</tr>
<tr>
<td>cef-</td>
<td>cef-</td>
<td>antibiotics with cephalosporanic acid nucleus</td>
</tr>
<tr>
<td>-cillium</td>
<td>cilline</td>
<td>penicillins: derivatives of 6-amino-penicillanic acid</td>
</tr>
<tr>
<td>cort</td>
<td>cort</td>
<td>steroids, glucocorticoids and mineralocorticoids, other than prednisolone derivatives</td>
</tr>
<tr>
<td>-cinum</td>
<td>-cline</td>
<td>acetil derivatives</td>
</tr>
<tr>
<td>-curium</td>
<td>-curine</td>
<td>curare-like drugs</td>
</tr>
<tr>
<td>-cyclinum</td>
<td>-cycline</td>
<td>antibiotics, tetracycline derivatives</td>
</tr>
<tr>
<td>-estri-</td>
<td>-estri-</td>
<td>estrogenic drugs</td>
</tr>
<tr>
<td>-forminum</td>
<td>-formine</td>
<td>guanidino oral antiabetic drugs</td>
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<tr>
<td>gest-</td>
<td>gest</td>
<td>steroids, progestative</td>
</tr>
<tr>
<td>gli-</td>
<td>gli-</td>
<td>sulfonamid oral antiglidic properties</td>
</tr>
<tr>
<td>lo-</td>
<td>lo-</td>
<td>iodine-containing contrast media</td>
</tr>
<tr>
<td>mor-</td>
<td>mor-</td>
<td>mercury-containing drugs, antimicrobial or diuretic</td>
</tr>
<tr>
<td>-moxinum</td>
<td>-moxine</td>
<td>monoamine oxidase inhibitors</td>
</tr>
<tr>
<td>-mycin</td>
<td>-mycine</td>
<td>antimicrobial antibiotics, produced by <em>Streptomyces</em> strains</td>
</tr>
<tr>
<td>nitr-</td>
<td>nitr-</td>
<td>5-nitrofen derivatives</td>
</tr>
<tr>
<td>oroxin</td>
<td>orox-</td>
<td>anorexiogenic agents</td>
</tr>
<tr>
<td>-praminum</td>
<td>-pramine</td>
<td>dibenzazepines, compounds of the imipramine type</td>
</tr>
<tr>
<td>-quinum</td>
<td>-quins</td>
<td>quinoline derivatives</td>
</tr>
<tr>
<td>-serpinum</td>
<td>-serpines</td>
<td>derivatives of <em>Rauwolfa</em> alkaloids</td>
</tr>
<tr>
<td>sulf-</td>
<td>sulf-</td>
<td>sulfonamides, used as antimicrobials</td>
</tr>
<tr>
<td>-tizidum</td>
<td>-tizide</td>
<td>diuretics which are thiazide derivatives</td>
</tr>
<tr>
<td>-tocinum</td>
<td>-toine</td>
<td>antispasmodics which are hydantoin derivatives</td>
</tr>
<tr>
<td>-verinum</td>
<td>-verine</td>
<td>spasmolytics with a papaverine-like action</td>
</tr>
<tr>
<td>-num</td>
<td>-ine</td>
<td>alkaloids and organic bases</td>
</tr>
<tr>
<td>-onium</td>
<td>-one</td>
<td>ketones</td>
</tr>
<tr>
<td>-ium</td>
<td>-ium</td>
<td>quaternary ammonium compounds</td>
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</table>