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 Pharmaceutical unit of the World Health Organization within four months of the date of their publication in the WHO Chronicle, e.g. for List 48 Prop. INN not later than 28 February 1983.

The inclusion of a name in the lists of proposed international nonproprietary names does not imply any recommendation for the use of the substance in medicine or pharmacy.

Proposed International Nonproprietary Names (Prop. INN): List 48

<table>
<thead>
<tr>
<th>Proposed International Nonproprietary Name (Latin, English)</th>
<th>Chemical Name or Description, Molecular and Graphic Formulæ</th>
<th>Chemical Abstracts Service (CAS) registry number</th>
</tr>
</thead>
</table>

Comprehensive information on the INN programme can be found in WHO Technical Report Series, No. 581, 1975 (Nonproprietary Names for Pharmaceutical Substances: Twentieth Report of the WHO Expert Committee). ISBN 92 4 120061 4 (price Sw. fr. 6.00), an account of this publication will be found on page 27 of this supplement (Annex 1). All names from Lists 1-47 of Proposed International Nonproprietary Names, together with a molecular formula index, will be found in International Nonproprietary Names for Pharmaceutical Substances: Cumulative list No. 6, 1982, World Health Organisation, Geneva, in press (ISBN 92 4 100013 0) (price Sw. fr. 5.50). The publication consists of a computer printout which groups together all the proposed and recommended international nonproprietary names (INN) in Latin, English, French, Russian, and Spanish—which published up to April 1982. The printout also indicates in which of the 47 individual lists of proposed names and 21 lists of recommended names each INN was originally published, and gives references to national nonproprietary names, pharmacopoeia monographs, and other sources. In addition, the list contains molecular formulas and Chemical Abstracts Service registry numbers. For ease of reference, national nonproprietary names that differ from INN, molecular formula, and Chemical Abstracts Service registry numbers are indexed in a series of annexes. A final annex describes the procedure for selecting recommended INN and outlines the general principles to be followed in devising these names. All the textual material published in this volume appears in both English and French.

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

1 See Annex 1, p. 26.
2 Other lists of proposed and recommended international nonproprietary names can be found in Cumulative list No. 6, 1982, to be published shortly.
<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>
</tr>
</thead>
<tbody>
<tr>
<td>acetylleucinum</td>
<td>N-acetyl-0-leucine</td>
<td>CaH12NO3 99-15-0</td>
</tr>
<tr>
<td>acetylleucine</td>
<td>C6H12NO3 99-15-0</td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="structure1.png" alt="Acetylleucine structure" /></td>
<td></td>
</tr>
<tr>
<td>acidum palmoxincum</td>
<td>(±)-2-tetradecylglycic acid</td>
<td>C17H39O3 68170-97-8</td>
</tr>
<tr>
<td>palmoxic acid</td>
<td><img src="structure2.png" alt="Acidum Palmoxincum structure" /></td>
<td></td>
</tr>
<tr>
<td>acidum pseudomonicum</td>
<td>(E)-(2S,3R,4R,5S)-5-[[2S,3S,4S,5S]-2,3-epoxy-5-hydroxy-4-methylhexyl]tetrahydro-3,4-dihydroxy-2H-pyran-2-carboxylic acid, ester with 9-hydroxy-noronic acid</td>
<td>CaH14NO5 12650-68-0</td>
</tr>
<tr>
<td>pseudomononic acid</td>
<td><img src="structure3.png" alt="Acidum Pseudomonionic structure" /></td>
<td></td>
</tr>
<tr>
<td>acodazole</td>
<td><img src="structure4.png" alt="Acodazolium structure" /></td>
<td></td>
</tr>
<tr>
<td>adafenoxatum</td>
<td>2-(1-adamantylsmino)ethyl (p-chlorophenoxy)acetate</td>
<td>CaH29ClNO3 82168-26-1</td>
</tr>
<tr>
<td>adafenoxate</td>
<td><img src="structure5.png" alt="Adafenoxatum structure" /></td>
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<tr>
<td>Nonproprietary Name</td>
<td>Chemical Name or Description, Molecular and Graphic Formulae</td>
<td>CAS registry number</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>alanosisinum</td>
<td>(-)-{(S)-2-amino-3-(hydroxynitrosamino)propionic acid}</td>
<td>5854-93-3</td>
</tr>
<tr>
<td>alanosina</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="image1.png" alt="alanosisinum" /></td>
<td></td>
</tr>
<tr>
<td>amiflaminum</td>
<td>(+)-4-(dimethylamino)-α,2-dimethylphenethylamine</td>
<td>77518-07-1</td>
</tr>
<tr>
<td>amiflamine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="image2.png" alt="amiflaminum" /></td>
<td></td>
</tr>
<tr>
<td>apovincaminum</td>
<td>methyl (3a,16α)-eburnamine-14-carboxylate or methyl (13αS,13βS)-13α-ethyl-2,3,5,8,13α,13β-hexahydro-1H-indolo[3,2,1-de]pyrido[3,2,1-ij][1,5]naphthyridine-12-carboxylate</td>
<td>4880-92-6</td>
</tr>
<tr>
<td>apovincamine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="image3.png" alt="apovincaminum" /></td>
<td></td>
</tr>
<tr>
<td>arotinololum</td>
<td>(±)-5-[2-[[3-(tert-buty lamino)-2-hydroxypropyl]thio]4-thiazolyl]-2-thiophene-carboxamide</td>
<td>88377-92-4</td>
</tr>
<tr>
<td>arotinolol</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="image4.png" alt="arotinololum" /></td>
<td></td>
</tr>
<tr>
<td>aztreonamum</td>
<td>(Z)-2-[[2-amino-4-thiazolyl][[(2S,3S)-2-methyl-4-oxo-1-sulfo-3-azatidinyl]carbamoylethylene]amino[oxy]-2-methylpropionic acid</td>
<td>78110-38-0</td>
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<tr>
<td>aztreonam</td>
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</tr>
<tr>
<td></td>
<td><img src="image5.png" alt="aztreonamum" /></td>
<td></td>
</tr>
</tbody>
</table>
**Proposed International Nonproprietary Name (Latin, English)**

- **balsalazidum**
- **balsalazide**

(E)-5-[[p-[(2-carboxyethyl)carbamoyl]phenyl]azo]salicylic acid
C<sub>24</sub>H<sub>19</sub>N<sub>3</sub>O<sub>5</sub>  80573-04-2

![Chemical Structure](image)

- **bendamusthum**
- **bendamustine**

5-[[bis[2-chloroethyl]amino]-1-methyl-2-benzimidazolbutyric acid
C<sub>18</sub>H<sub>16</sub>Cl<sub>2</sub>N<sub>4</sub>O<sub>3</sub>  16906-27-7

![Chemical Structure](image)

- **biprofenidum**
- **biprofenide**

(±)-N-[2-(diethylamino)ethyl]-α-methyl-4-biphenylacetamide
C<sub>26</sub>H<sub>26</sub>N<sub>2</sub>O  70976-76-0

![Chemical Structure](image)

- **biprolulolum**
- **biprolol**

(±)-1-[[α-(2-isopropyloxy)phenyl]oxy]-3-[isopropylamino]-2-propanol
C<sub>25</sub>H<sub>31</sub>N<sub>2</sub>O<sub>2</sub>  66722-44-9

![Chemical Structure](image)
<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>
</tr>
</thead>
<tbody>
<tr>
<td>bucromaronum</td>
<td>2-[[4-{3-[(dibutylamino)propoxy]-3,5-dimethylbenzoyl}chromone]</td>
<td>78371-66-1</td>
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<tr>
<td>bucromarone</td>
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<td></td>
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<tr>
<td>Antronum</td>
<td>10-butyryl-1,8-dihydroxanthrone</td>
<td>75404-11-8</td>
</tr>
<tr>
<td>butantrone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>carboplatinum</td>
<td>cis-diammine(1,1-cyclobutane dicarboxylato)platinum</td>
<td>41575-84-4</td>
</tr>
<tr>
<td>carboplatin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>carbaperazonum</td>
<td>(8R,JS)-7-[[2R,3S]-2-[4-ethyl-2,3-dioxo-1-piperazin-4-ylcarboxamido]-3-hydroxybutyramido]-7-methoxy-3-[[1-methyl-1H-tetrazol-5-yl]thio][methyl] 8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid</td>
<td>78610-84-9</td>
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<tr>
<td>carbaperazone</td>
<td></td>
<td></td>
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<tr>
<td>Chemical Name or Description, Molecular and Graphic Formulæ</td>
<td>Proposed International Nonproprietary Name (Latin, English)</td>
<td>Chemical Abstracts Service (CAS) registry number</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>choline hydroxide, (R)-2,3-dihydroxypropyl hydrogen phosphate, inner salt or sn-glycerol(3)phosphocholine</td>
<td>choline glycerophosphas choline glycerophosphate</td>
<td>C₂H₆NO₅P 28319-77-9</td>
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<tr>
<td>(±)-1-[p-[2-(cyclopropylmethoxy)ethoxy]phenoxy]-3-(isopropylamino)-2-prop-anol</td>
<td>cicloprolol cicloprolol</td>
<td>C₂H₂₀NO₅ 63859-12-1</td>
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<tr>
<td>4-amino-6-(trichlorovinyl)-m-benzensulfonamide</td>
<td>clorsulon clorsulon</td>
<td>C₆H₇Cl₂N₃O₄S₂ 60000-06-8</td>
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<td>crosslinked carmelloose (cellulose carboxymethyl ether)</td>
<td>crosnarmellosum crosnarmellose</td>
<td>5000-11-7</td>
</tr>
<tr>
<td>10-(N,N-dimethylglycyl)phenothiazine</td>
<td>decemazine decemazine</td>
<td>C₁₇H₁₹N₃OS 518-81-8</td>
</tr>
<tr>
<td>Proposed International Nonproprietary Name (Latin, English)</td>
<td>Chemical Name or Description, Molecular and Graphic Formulae Chemical Abstracts Service (CAS) registry number</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
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</tr>
</tbody>
</table>
| dencimolium danazol | \( \{ \pm \} \alpha -(p\text{-phenethylylphenyl})\text{imidazole}-1\text{-ethanol} \)  
\[ \text{C}_{17}\text{H}_{22}\text{N}_{4}\text{O} \]  
73931-96-1 |
| dextrofanidinium dextrofexidine | \( \{ \pm \}\{5\}\text{-}2\text{-}[1\text{-(2,6-dichlorophenoxyl)ethyl}]\text{2-imidazole} \)  
\[ \text{C}_{15}\text{H}_{12}\text{Cl}_{2}\text{N}_{2}\text{O} \]  
81447-79-2 |
| diprafenon drapecline | \( \{ \pm \} \text{2'-[2-hydroxy-3-\{tert-pentylemino\}propoxy]-3-phenylpropiophenone} \)  
\[ \text{C}_{22}\text{H}_{29}\text{NO}_{2} \]  
81447-80-5 |
| doqualastum doqualast | \( 11\text{-oxo-11H-pyrido[2,1-b]quinazoline-2-carboxylic acid} \)  
\[ \text{C}_{17}\text{H}_{13}\text{N}_{3}\text{O}_{3} \]  
64019-05-0 |
<table>
<thead>
<tr>
<th>Proposed International Nonproprietary Name (Latin, English)</th>
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<th>Chemical Abstracts Service (CAS) registry number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>famotidium</strong></td>
<td>[1-amino-3-[[2-(((diaminomethylene)amino)-4-thiazolyl)methyl]thio]propyliden]-sulfamida</td>
<td>76824-35-6</td>
</tr>
<tr>
<td><strong>famotidine</strong></td>
<td><img src="image1" alt="Chemical Structure" /></td>
<td></td>
</tr>
<tr>
<td><strong>fenetizolum</strong></td>
<td>2-(phenethylamino)-4-phenylthiazole</td>
<td>79059-94-6</td>
</tr>
<tr>
<td><strong>fenetizole</strong></td>
<td><img src="image2" alt="Chemical Structure" /></td>
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<td><strong>fenprinastum</strong></td>
<td>4-(p-chlorobenzyl)-1,4,6,7-tetrahydro-6,8-dimethyl-9H-imidazo[1,2-a]purin-9-one</td>
<td>75184-94-0</td>
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<td><strong>fenprinast</strong></td>
<td><img src="image3" alt="Chemical Structure" /></td>
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<tr>
<td><strong>flavodilolum</strong></td>
<td>(+)-7-[2-hydroxy-3-(propylamino)propoxy]flavone</td>
<td>79619-31-1</td>
</tr>
<tr>
<td><strong>flavodilol</strong></td>
<td><img src="image4" alt="Chemical Structure" /></td>
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flordipinum
flordipine

diethyl 1,4-dihydro-2,6-dimethyl-1-(2-morpholinoethyl)-4-(α,α,α-trifluoro-α-
tolyl)3,5-pyridinedicarboxylate
C₂₆H₂₇F₃N₂O₆  77590-96-8

fenitazinum
floretazine

(+)-4-[bis(p-fluorophenyl)methyl]-α-(p-tert-butylphenyl)-1-piperazinebutanol
C₃₀H₂₇F₂N₂O₃  82190-92-9

fludarabinum
fludarabine

9-β-α-arabinofuranosyl-2-fluoroadenine
C₉H₈F₈N₇O₇  21679-14-1

fluyllinium
fluylline

7-[2-[4-[(p-fluorobenzoyl)piperidino]ethyl]theophylline
C₂₉H₂₆F₂N₂O₇  82190-91-8
<table>
<thead>
<tr>
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<th>Chemical Abstracts Service (CAS) registry number</th>
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</thead>
<tbody>
<tr>
<td>fluradolinum/ fluradoline</td>
<td>2-[[8-fluorodibenzo[b,f]oxepin-10-y]thio]-N'-methylthylamine</td>
<td>71316-84-2</td>
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<td></td>
<td><img src="image" alt="Fluradoline structure" /></td>
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</tr>
<tr>
<td>fotretaminum/ fotretamine</td>
<td>2,2,4,6-pentakis(1-aziridinyl)-2,2,4,6,6-hexahydro-6-morpholino-1,3,5,2,4,6-triazatetraphosphorine</td>
<td>37132-72-2</td>
</tr>
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<td></td>
<td><img src="image" alt="Fotretamine structure" /></td>
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</tr>
<tr>
<td>furafyllinum/ furafylline</td>
<td>3-furfuryl-1,8-dimethylxanthine</td>
<td>80288-49-9</td>
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<tr>
<td></td>
<td><img src="image" alt="Furafylline structure" /></td>
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<tr>
<td>gaboxadolium/ gaboxadol</td>
<td>4,5,6,7-tetrahydroisoxazole[5,4-c]pyridin-3-ol</td>
<td>84603-91-4</td>
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<td><img src="image" alt="Gaboxadol structure" /></td>
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<td>Proposed International Nonproprietary Name (Latin, English)</td>
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<td>Chemical Abstracts Service [CAS] registry number</td>
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<td>------------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>------------------------------------------------</td>
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<tr>
<td>hyprolosum hyprolose</td>
<td>cellulose 2-hydroxypropyl ether</td>
<td>9004-64-2</td>
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<td><img src="image" alt="Cellulose 2-Hydroxypropyl Ether" /></td>
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<td>indopenolol indopenol</td>
<td>(+)-1-[(3-chloro-2-methylindol-4-yl)oxy]-3-[(2-phenoxylethyl)amino]-2-propanol</td>
<td>69907-17-1</td>
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<td></td>
<td><img src="image" alt="Indopenolol" /></td>
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<td>insulinen humananum</td>
<td>a protein having the normal structure of the natural antidiabetic principle produced by the human pancreas.</td>
<td>11061-68-0</td>
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<tr>
<td>insulin human</td>
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<td></td>
</tr>
<tr>
<td>iodecol iodecol</td>
<td>5,5'-(malonylbis[(2-hydroxyethyl)limino])bis[N,N'-bis[2-hydroxy-1-(hydroxyethyl)ethyl]-2,4,6-triiodosophtalamide]</td>
<td>81046-33-2</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Iodecol" /></td>
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ipsalazidum
ipsalazide
{(E)-p-[3-carboxy-4-hydroxyphenyl]azo]hippuric acid
C₁₉H₁₆N₂O₅ 80573-03-1

iamtidinum
iamidine
1-[m-{3-[3-amino-1-methyl-1H-1,2,4-triazol-5-yl]amino}propoxy]benzyl]pipen-
dine
C₁₉H₁₈N₄O 73278-54-3

levofloxidinum
levofloxidina
(−)-(R)-2-[1-(2,6-dichlorophenoxy)ethyl]-2-imidazoline
C₁₈H₁₈Cl₂N₂O 81447-78-1

linoglidium
linoglide
N-[1-methyl-2-pyridimidene]-N'-phenyl-4-morpholinecarboxamidine
C₁₉H₁₇N₄O 75358-37-1
<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>
</tr>
</thead>
<tbody>
<tr>
<td>lomevactonum lomevactone</td>
<td>4-(p-chlorophenyl)tetrahydro-6-methyl-3-phenyl-2H-pyran-2-one or p-chloro-β-(2-hydroxypropyl)-α-phenylhydrocinnamic acid, δ-lactone</td>
<td>C₉H₉ClO₂ 81478-25-3</td>
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<tr>
<td>lorzafonum lorzafone</td>
<td>2-[2-aminoacetamido]-4-chloro-2-[(p-chlorobenzoyl)-N-methylacetanilide</td>
<td>C₇H₇ClNO₂ 59179-95-2</td>
</tr>
<tr>
<td>loxidinum loxidine</td>
<td>1-methyl-5-[[3-[[α-piperidino-m-tolyl]oxy[propyl]amino]-1H-1,2,4-triazole-3-methanol</td>
<td>C₉H₁₃N₂O₆ 76956-02-0</td>
</tr>
<tr>
<td>mefenidilum mefenidal</td>
<td>5-methyl-2-phenylimidazole-4-acetonitrile</td>
<td>C₉H₁₀N₃ 58261-91-9</td>
</tr>
</tbody>
</table>
mexafyllinum
mexafylline

3-(3-cyclohexen-1-ylmethyl)-1,8-dimethylxanthine
C_{14}H_{18}N_{2}O_{2}  80294-26-3

milacemidum
milacemide

2-(pentylamino)acetamide
C_{10}H_{16}N_{2}O  78990-56-2

mitindomidum
mitindomide

tricyclo[4.2.2.0^{2,5}]dec-9-ene-3,4,7,8-tetraacetic acid 3,4,7,8-tetraamide
C_{15}H_{18}N_{4}O_{4}  10403-51-7

moxonidinum
moxonidine

4-chloro-5-(2-imidazolin-2-ylamino)-5-methoxy-2-methylpyrimidine
C_{12}H_{12}ClN_{3}O  75436-57-2
nicogrelatum
nicogrelate

\( \{+\}-[E]-3\text{-imidazol-1-yl-1-pentyl-1\text{-llyl nicotinate}} \)
\[ C_{17}H_{24}N_{2}O_3 \quad \text{88814-21-7} \]

nizatidinium
nizatidine

\( N-2-[[2-[[\text{dimethylamino}][\text{methyl]}-4\text{-thiazolyl}][\text{methyl]}\text{thio}][\text{ethyl]}-N'-\text{methyl}-2\text{-nitro-1,1-ethenedi-}} \)
\[ C_{19}H_{19}N_{3}O_3 S_2 \quad 76953-41-2 \]

parvaquonum
parvaquone

\( 2\text{-cyclohexyl-3-hydroxy-1,4-naphthoquinone} \)
\[ C_{20}H_{16}O_8 \quad 4042-30-2 \]

piconolum
piconol

\( 2\text{-pyridinemethanol} \)
\[ C_{7}H_{7}NO \quad 586-88-1 \]
<table>
<thead>
<tr>
<th>Proposed International Nonproprietary Name (Latin, English)</th>
<th>Chemical Name or Description, Molecular and Graphic Formulae</th>
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</tr>
</thead>
<tbody>
<tr>
<td>pildralazinum pildralazine</td>
<td>(±)-1-[(6-hydrazino-3-pyridazinyl)methylamino]-2-propanol</td>
<td>64000-73-3</td>
</tr>
<tr>
<td></td>
<td><img src="image1" alt="Chemical Structure" /></td>
<td></td>
</tr>
<tr>
<td>pirepololium pirepolol</td>
<td>(±)-6-[[2-[3-(p-butoxyphenoxy)-2-hydroxypropyl]amino]ethylamino]-1,3-dimethyluracil</td>
<td>69479-26-1</td>
</tr>
<tr>
<td></td>
<td><img src="image2" alt="Chemical Structure" /></td>
<td></td>
</tr>
<tr>
<td>purnitapum purnitapa</td>
<td>(P,P)-bis[(1-aziridinyl)-N-[2-(dimethylamino)-7-methylpurin-6-yl]phosphinic amide</td>
<td>42061-52-9</td>
</tr>
<tr>
<td></td>
<td><img src="image3" alt="Chemical Structure" /></td>
<td></td>
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<tr>
<td>Nonproprietary Name (Latin, English)</td>
<td>Chemical Name or Description, Molecular and Graphic Formulae</td>
<td>Chemical Abstracts Service (CAS) registry number</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>rofelodinium</td>
<td>(+)-2,6,7,8-tetrahydro-7-phenylpyrrolo[1,2-a]pyrimidin-4(3H)-one</td>
<td>76896-87-4</td>
</tr>
<tr>
<td>rofelodine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rosprostolum</td>
<td>2-hexyl-5-hydroxycyclopentaneheptanoic acid</td>
<td>56695-65-9</td>
</tr>
<tr>
<td>proprostol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>satranidazolum</td>
<td>1-[(1-methyl-5-nitroimidazol-2-yl)-3-(methysulfonyl)-2-imidazolidinone</td>
<td>56302-13-7</td>
</tr>
<tr>
<td>satranidazole</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Proposed International Nonproprietary Name (Latin, English) | Chemical Name or Description, Molecular and Graphic Formulae | Chemical Abstracts Service (CAS) registry number
---|---|---
sertraline | (1S,4S)-4-(3,4-dichlorophenyl)-1,2,3,4-tetrahydro-N-methyl-1-naphthylamine | C_{41}H_{30}ClN | 73617-96-2

Spiroplatin | cis-[1,1-cyclohexanedis(methylamine)][sulfato]platinum | C_{41}H_{30}NiN_{2}O_{4}PtS | 74790-08-2

Sultamicilin | hydroxymethyl (2S,5R,6R)-6-[(R)-{2-[(2-aminoo-2-phenylacetamido)]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylato(2-)5R-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate (ester), S,S-dioxide | C_{53}H_{57}N_{2}O_{11}S_{2} | 76497-13-7

Tazprinone | (±)-N-[4(R^1,4aR^a,9bS^b)-1,2,3,4,4a,9b-hexahydro-8,9b-dimethyl-3-oxo-4-dibenzo[| C_{50}H_{49}N_{2}O_{5}S | 79253-92-2
Proposed International Name (Latin, English) | Chemical Name or Description, Molecular and Graphic Formulse | Chemical Abstracts Service (CAS) registry number
--- | --- | ---
tefludazinum | trans-4-[3-(p-fluorophenyl)-6-(trifluoromethyl)-1-indanyl]-1-piperazineethanol | 80980-06-4

tefludazine

[Chemical structure image]

tertatolium | (±)-1-(tert-butylamino)-3-(thiochroman-8-yl oxy)-2-propanol | 34784-94-0

tertatoul

[Chemical structure image]

tiazofurinum | 2-β-D-ribofuranosyl-4-thiazolecarboxamide | 63084-10-8

tiazofurine

[Chemical structure image]

tibalosinum | (±)-erythro-2,3-dihydro-α-[1-(4-phenylbutyl)amino]ethyl]benzo[b]thiophene-5-methanol | 63996-84-9
	| tibalosin

[Chemical structure image]
ticabesonum
ticabesone

$\text{S-methyl 6a,9-difluoro-16\beta,17-dihydroxy-16\alpha-methyl-3-oxoandrosta-1,4-diene-}
\text{17\beta-carbothioate}$

\[
\text{C}_9\text{H}_9\text{F}_2\text{O}_5\text{S} \quad 74131-77-4
\]

tifuadomum
tifuadom

$\text{[}\pm\text{-N-}[5\text{-o-fluorophenyl}]-2,3\text{-dihydro-1-methyl-1H,1,4-benzodiazepin-2-}
\text{yl[methyl]}\text{-3-thiophenecarboxamidine}$

\[
\text{C}_9\text{H}_9\text{F}_2\text{N}_2\text{O}_5\text{S} \quad 81656-30-6
\]

tiprostanidum
tiprostanide

$\text{[15,2R,3R]-3-hydroxy-2-[(2-hydroxy-2-methylheptyl)thio]-5-oxocyclopentane-}
\text{heptanoic acid, ester with 4'-hydroxybenzanilate or p-benzamidophenyl}
\text{[15,2R,3R]-3-hydroxy-2-[(2-hydroxy-2-methylheptyl)thio]-5-oxocyclopentane-}
\text{heptanoate}$

\[
\text{C}_{19}\text{H}_{25}\text{NO}_5 \quad 67040-53-3
\]

tivanidazoleum
tivanidazole

$\text{(E)-2-ethyl-5-[1-methyl-2-(1-methyl-5-nitroimidazol-2-yl)vinyl]-1,3,4-thiadiazole}$

\[
\text{C}_{16}\text{H}_{16}\text{N}_2\text{O}_5 \quad 80880-05-3
\]
<table>
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<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>
</tr>
</thead>
<tbody>
<tr>
<td>tolpadolum</td>
<td>( N,N'\text{-} (1,2\text{-}d\text{-}4\text{-}pyridylethylene)\text{bis}[\alpha\text{-}toluamide] )</td>
<td>77502-27-3</td>
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<tr>
<td>tolpadol</td>
<td>( \text{C}<em>{19}\text{H}</em>{16}\text{NaO}_{2} )</td>
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</tr>
<tr>
<td></td>
<td>[Image of molecule]</td>
<td></td>
</tr>
<tr>
<td>trenizinium</td>
<td>( \pm\text{-}\alpha\text{-}(\alpha\text{-}\text{tert}\text{-}butylphenyl)\text{-}4\text{-(diphenylmethyl)}\text{-}1\text{-}piperazinebutanol )</td>
<td>82190-53-0</td>
</tr>
<tr>
<td>trenizine</td>
<td>( \text{C}<em>{19}\text{H}</em>{16}\text{N}_{2}\text{O} )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Image of molecule]</td>
<td></td>
</tr>
<tr>
<td>tropapridium</td>
<td>( N\text{-}(8\text{-}\text{benzyl}\text{-}1\alpha\text{H},5\alpha\text{-}\text{nortropan}-3\beta\text{-}yl)\text{-}\alpha\text{-}veratramide )</td>
<td>76352-13-1</td>
</tr>
<tr>
<td>tropapride</td>
<td>( \text{C}<em>{19}\text{H}</em>{16}\text{NaO}_{3} )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Image of molecule]</td>
<td></td>
</tr>
<tr>
<td>ubidecarenonum</td>
<td>( 2\text{-(3,7,11,15,19,23,27,31,35,39\text{-}decamethyl\text{-}2,6,10,14,18,22,26,30,34,38\text{-}tetracon-tadecacyl)-5,9\text{-}dimethoxy-3\text{-}methyl-p\text{-}benzoquinone} )</td>
<td>303-88-0</td>
</tr>
<tr>
<td>ubidecarenone</td>
<td>( \text{C}<em>{19}\text{H}</em>{16}\text{O}_{5} )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Image of molecule]</td>
<td></td>
</tr>
</tbody>
</table>
vanprinum
vaneprin

\((\pm)-\alpha-[4\text{-amino}-5\text{-}-(3,4,5\text{-trimethoxybenzyl})\text{-}2\text{-pyrimidinyl}l\text{-}amino]-3\text{-etoxy}4\text{-hydroxy}\alpha\text{-toluenesulfonic acid}\)
\(\text{C}_{27}\text{H}_{33}\text{N}_{4}\text{O}_{6}\text{S} \quad 81523\text{-}49\text{-}1\)

\[
\begin{align*}
\text{O} & \text{C} \quad \text{O} \\
\text{H} & \text{H} \\
\text{N} & \text{N} \\
\text{H} & \text{H} \\
\text{O} & \text{H} \\
\end{align*}
\]

xamoterolum
xamoterol

\((\pm)-N\text{-}[2\text{-}([2\text{-}hydroxy}3\text{-}(\rho\text{-hydroxyphenoxy})\text{propyl}]\text{amino}][\text{ethyl}]-4\text{-morpholinecarboxamide}\)
\(\text{C}_{28}\text{H}_{36}\text{N}_{6}\text{O}_{3} \quad 81801\text{-}12\text{-}9\)

\[
\begin{align*}
\text{O} & \text{C} \quad \text{C} \\
\text{H} & \text{H} \\
\text{N} & \text{N} \\
\text{H} & \text{H} \\
\text{H} & \text{H} \\
\text{O} & \text{H} \\
\end{align*}
\]

xibenolum
xibenolol

\((\pm)-1\text{-}[(\text{tert\text{-}butylamino})\text{-}3\text{-}(2,3\text{-xyloxy})\text{-}2\text{-propanol}\]
\(\text{C}_{33}\text{H}_{52}\text{NO}_{2} \quad 81584\text{-}06\text{-}7\)

\[
\begin{align*}
\text{O} & \text{C} \quad \text{C} \quad \text{O} \\
\text{H} & \text{H} \\
\text{N} & \text{N} \\
\text{H} & \text{H} \\
\text{H} & \text{H} \\
\text{H} & \text{H} \\
\end{align*}
\]

xorphanolium
xorphanol

17\text{-}\{(\text{cyclobutylmethyl})\text{-}8\beta\text{-methyl}6\text{-methylene}\text{morphinan}\text{-}3\text{-ol}\]
\(\text{C}_{29}\text{H}_{30}\text{NO} \quad 77287\text{-}89\text{-}9\)


**Names for Radicals and Groups**

Some substances for which a proposed international nonproprietary name has been established may be used in the form of salts or esters. The radicals or groups involved may be of complex composition and it is then inconvenient to refer to them in systematic chemical nomenclature. Consequently, shorter nonproprietary names for some radicals and groups have been devised or selected, and they are suggested for use with the proposed international nonproprietary names.

- **axetilum**
  
  \[
  \text{axetil} \quad 
  \begin{array}{c}
  \text{CH}_3 \\
  \text{O} \\
  \text{C} \\
  \text{H}_2 \\
  \text{C} \\
  \text{O} \\
  \text{CH}_3 \\
  \end{array}
  \]

- **axetil**
  
  \[
  \text{CH}_3 \\
  \text{O} \\
  \text{C} \\
  \text{H}_2 \\
  \text{C} \\
  \text{O} \\
  \text{CH}_3 \\
  \]

- **dibunatum**
  
  \[
  \text{CH}_3 \\
  \text{O} \\
  \text{C} \\
  \text{H}_3 \\
  \text{C} \\
  \text{O} \\
  \text{C} \\
  \text{H}_3 \\
  \]

- **dibunate**
  
  \[
  \text{CH}_3 \\
  \text{O} \\
  \text{C} \\
  \text{H}_3 \\
  \text{C} \\
  \text{O} \\
  \text{C} \\
  \text{H}_3 \\
  \]

- **2,6-di-tert-butyl-1-naphthalenesulfonate**
  
  \[
  \text{CH}_3 \\
  \text{O} \\
  \text{C} \\
  \text{H}_3 \\
  \text{C} \\
  \text{O} \\
  \text{C} \\
  \text{H}_3 \\
  \]

- **4,9-dihydro-1,3-dimethyl-4-[(4-methyl-1-piperazinyl)acetyl]pyrazolo[4,3-
  \text{H}]1,5-benzodiazepin-10(1'H)-one**
  
  \[
  \text{C}_9\text{H}_{12}\text{N}_2\text{O}_3 \\
  76208-13-6
  \]
AMENDMENTS TO PREVIOUS LISTS

Cumulative List No. 3, 1971

International Nonproprietary Names for Pharmaceutical substances:

p. 136  urokinase
        urokinasum

\textit{replace definition by: a plasminogen activator isolated from human sources}

Vol. 30, No. 9

International Nonproprietary Names (Prop. INN): List 36

p. 23  delete
       zimeldinum
       zimeldine

\textit{insert}
       zimeldinum
       zimeldine

Supplement to Vol. 33, No. 9

International Nonproprietary Names (Prop. INN): List 42

p. 7  delete
      demetacumin
      demetacin

\textit{insert}
      delmetacumin
      delmetacin

Supplement to Vol. 34, No. 9

International Nonproprietary Names (Prop. INN): List 44

p. 7  cefotetanum
      cefotetan

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

Supplement to Vol. 35, No. 3

International Nonproprietary Names (Prop. INN): List 45

p. 10  delete
       pentamustinum
       pentamustine

\textit{insert}
       neptamustinum
       neptamustine

Supplement to Vol. 35, No. 5

International Nonproprietary Names (Prop. INN): List 46

p. 5  delete
      ciloprostum
      ciloprost

\textit{insert}
      iloprostum
      iloprost

p. 6  desocryptinum
      desocryptine

\textit{in left part of graphic formula replace } \text{O}_2 \text{ by } \text{O}

\textit{in graphic formula replace } P - \text{O-CH}_2 \text{ by } P - \text{CH}_3
\textit{(This cancels amendment published on p. 16 of List 47 Prop. INN)}
Supplement to Vol. 36, No. 2

International Nonproprietary Names (Prop. INN): List 47

p. 7  
-3  clonengolimum  replace graphic formula by:
    clonengoline

-7  falipamil  replace CAS reg. no. by 77862-92-1
    falipamil

p. 11  
delete  moxifadolum  insert  moxifadol

p. 13  
delete  picurubicinum  insert  epirubicin
    picorubicin  epirubicin
    pirilmycinum  pirimycin
    in the graphic formula complete the N of the piperidine cycle with an H

p. 14  
delete  spiromustrium  insert  spiromustine
    tectoplaiminum  tectoplanin
    tectoplanin
Annex I

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 WHA31.11:

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.

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 anyone 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 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 4 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. 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.


† The title of this publication was changed to WHO Chronicle in January 1986.
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 on the amine-salt style of naming. The use of an isolated letter or number should be avoided, hyphenated construction is also undesirable. To facilitate the translation and pronunciation of INN, "I" should be used instead of "ph"; "T" instead of "th"; "e" instead of "an" or "oe"; and "i" instead of "y", the use of the letters "h" and "k" should be avoided.

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.

<table>
<thead>
<tr>
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### Annex 2

**NONPROPRIETARY NAMES FOR PHARMACEUTICAL SUBSTANCES: TWENTIETH REPORT OF THE WHO EXPERT COMMITTEE**

In its twentieth report, the WHO Expert Committee on Nonproprietary Names for Pharmaceutical Substances reviewed the general principles for devising, and the procedures for selecting, international nonproprietary names (INN) in the light of developments in pharmaceutical compounds in recent years. The most significant recent change has been the extension to the naming of synthetic chemical substances of the practice previously used for substances originating in or derived from natural products. This practice involves employing a characteristic "stem" indicative of a common property of the members of a group. The reasons for, and the implications of, the change are fully discussed. Also reported is the intention to change the practice with regard to the nomenclature of individual members of polymeric series.

Other sections of the report concern instructions to be followed by bodies making application for international nonproprietary names, the availability of computer-printed cumulative lists of international nonproprietary names, information supplied by WHO Member States concerning their official use of national or interna-
Tional names for pharmaceutical products, and proposals relative to
the withdrawal of international non-
proprietary names allocated to sub-
stances that are no longer in use.

The official texts relating to the
procedures for selecting, and general
guidance for devising, international
proprietary names are reproduced
in two annexes to the report. Other
annexes give examples of interna-
tional nonproprietary names that in-
corporate selected stems, the most
frequently used initial groups of let-
ters in international nonproprietary
names, a historical review of the pro-
grame of selecting international
proprietary names, some useful
literature references, and a model of
the form to be used in all applications
for international nonproprietary
names.

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