VOL. 25, No. 9 SEPTEMBER 1971

# WHO CHRONICLE



WORLD HEALTH ORGANIZATION
GENEVA

# *International Nonproprietary Names for Pharmaceutical Substances*

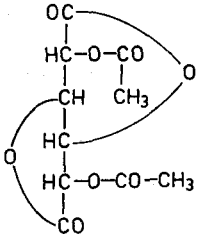
In accordance with article 3 of the Procedure for the Selection of Recommended International Nonproprietary Names for Pharmaceutical Substances,[1] notice is hereby given that the following names are under consideration by the World Health Organization as Proposed International Nonproprietary Names.

Comments on, or formal objections to, the proposed names may be forwarded by any person to the Pharmaceuticals unit of the World Health Organization within four months of the date of their publication in the *WHO Chronicle*.

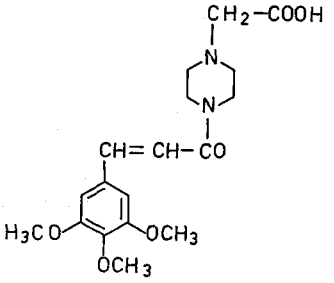
The inclusion of a name in the lists of proposed international nonproprietary names does not imply any recommendation for the use of the substance in medicine or pharmacy.

## PROPOSED INTERNATIONAL NONPROPRIETARY NAMES (*Prop. I.N.N.*): LIST 26 [2]

| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| aceglatonum<br>aceglatone | D-glucaric acid 1,4 : 6,3-dilactone diacetate<br>$C_{10}H_{10}O_8$ |



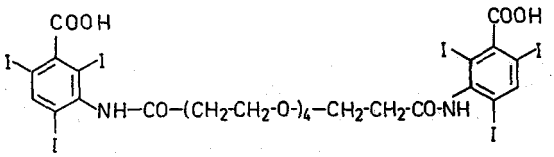
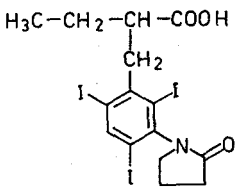
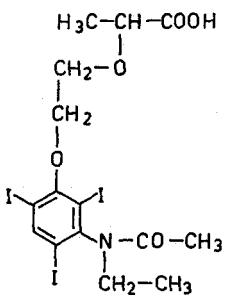
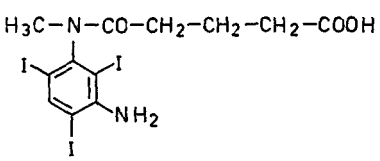
| | |
|---|---|
| acidum cinepazicum<br>cinepazic acid | 4-(3,4,5-trimethoxycinnamoyl)-1-piperazineacetic acid<br>$C_{18}H_{24}N_2O_6$ |



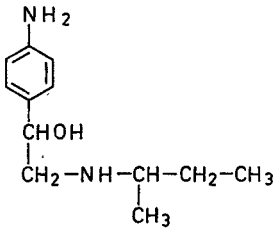
[1] See Annex, p. 436.

[2] Other lists of proposed international nonproprietary names can be found in *Chron. Wld Hlth Org.*, 1953, **7**, 299; 1954, **8**, 216, 313; 1956, **10**, 28; 1957, **11**, 231; 1958, **12**, 102; *WHO Chronicle*, 1959, **13**, 105, 152; 1960, **14**, 168, 244; 1961, **15**, 314; 1962, **16**, 385; 1963, **17**, 389; 1964, **18**, 433; 1965, **19**, 446; 1966, **20**, 216; 1967, **21**, 70, 478; 1968, **22**, 112, 407; 1969, **23**, 183, 418; 1970, **24**, 119, 413; 1971, **25**, 123.

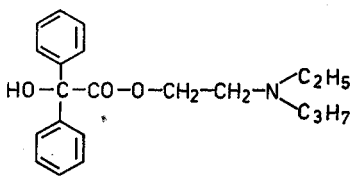
Lists of recommended international nonproprietary names were published in *Chron. Wld Hlth Org.*, 1955, **9**, 185; *WHO Chronicle*, 1959, **13**, 106, 463; 1962, **16**, 101; 1965, **19**, 165, 206, 249; 1966, **20**, 421; 1967, **21**, 538; 1968, **22**, 463; 1969, **23**, 490; 1970, **24**, 526.

| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| acidum iodoxamicum<br>iodoxamic acid | 3,3′-[ethylenebis(oxyethyleneoxyethylenecarbonylimino)]-bis[2,4,6-triiodobenzoic acid]<br>$C_{26}H_{26}I_6N_2O_{10}$<br>  |
| acidum iolidonicum<br>iolidonic acid | α-ethyl-2,4,6-triiodo-3-(2-oxo-1-pyrrolidinyl)hydrocinnamic acid<br>$C_{15}H_{16}I_3NO_3$<br>  |
| acidum iolixanicum<br>iolixanic acid | 2-[2-[3-(*N*-ethylacetamido)-2,4,6-triiodophenoxy]ethoxy]-propionic acid<br>$C_{15}H_{18}I_3NO_5$<br>  |
| acidum iomeglamicum<br>iomeglamic acid | 3′-amino-2′,4′,6′-triiodo-*N*-methylglutaranilic acid<br>$C_{12}H_{13}I_3N_2O_3$<br>  |

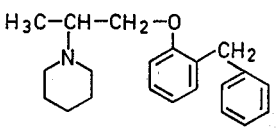
| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| amiterolum<br>amiterol | DL-*p*-amino-α-[(*sec*-butylamino)methyl]benzyl alcohol<br>$C_{12}H_{20}N_2O$ |



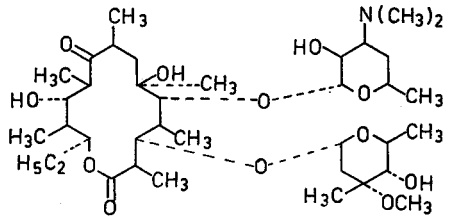
| | |
|---|---|
| azalomycinum<br>azalomycin | an antibiotic obtained from cultures of *Streptomyces hygroscopicus* var. *azalomyceticus*, or the same substance produced by any other means |
| benaprizinum<br>benaprizine | 2-(ethylpropylamino)ethyl benzilate<br>$C_{21}H_{27}NO_3$ |



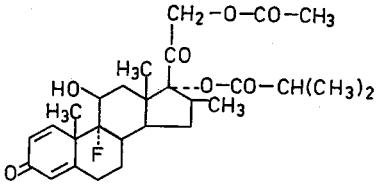
| | |
|---|---|
| benproperinum<br>benproperine | 1-[2-(2-benzylphenoxy)-1-methylethyl]piperidine<br>$C_{21}H_{27}NO$ |



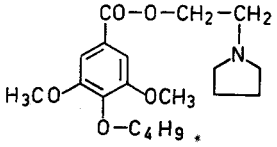
| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| berythromycinum<br>berythromycin | erythromycin B; 12-deoxyerythromycin<br>$C_{37}H_{67}NO_{12}$ |



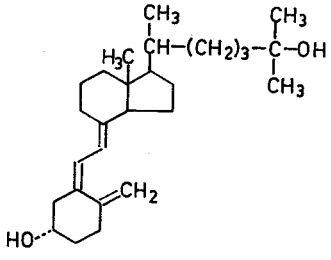
| | |
|---|---|
| betamethasoni acibutas<br>betamethasone acibutate | 9-fluoro-11$\beta$,17,21-trihydroxy-16$\beta$-methylpregna-1,4-diene-3,20-dione 21-acetate 17-isobutyrate<br>$C_{28}H_{37}FO_7$ |

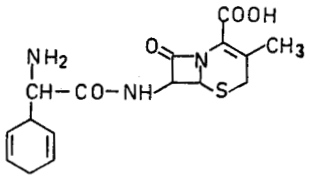
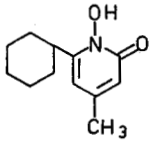
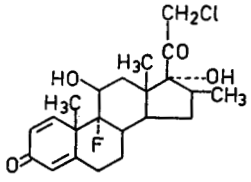


| | |
|---|---|
| burodilinum<br>burodiline | 1-pyrrolidineethanol 4-butoxy-3,5-dimethoxybenzoate (ester)<br>$C_{19}H_{29}NO_5$ |

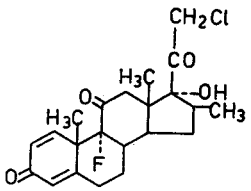


| | |
|---|---|
| calcifediolum<br>calcifediol | 9,10-secocholesta-5,7,10(19)-triene-3$\beta$,25-diol<br>$C_{27}H_{44}O_2$ |

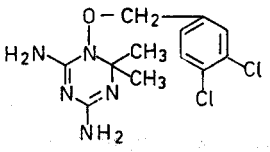


| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| cefradinum<br>cefradine | 7-[2-amino-2-(1,4-cyclohexadien-1-yl)acetamido]-3-methyl-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid<br>$C_{16}H_{19}N_3O_4S$ |
| |  |
| chymopapainum<br>chymopapain | a proteolytic enzyme isolated from papaya latex; differs from papain only slightly in general behaviour, such as substrate specificity, activation, inhibition, etc. |
| ciclopiroxum<br>ciclopirox | 6-cyclohexyl-1-hydroxy-4-methyl-2(1*H*)-pyridone<br>$C_{12}H_{17}NO_2$ |
| |  |
| clobetasolum<br>clobetasol | 21-chloro-9-fluoro-11 $\beta$,17-dihydroxy-16 $\beta$-methylpregna-1,4-diene-3,20-dione<br>$C_{22}H_{28}ClFO_4$ |
| |  |

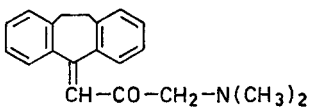
| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| clobetasonum<br>clobetasone | 21-chloro-9-fluoro-17-hydroxy-16$\beta$-methylpregna-1,4-diene-3,11,20-trione<br>$C_{22}H_{26}ClFO_4$ |



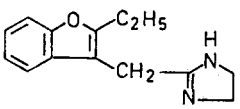
| | |
|---|---|
| clociguanilum<br>clociguanil | 4,6-diamino-1-[(3,4-dichlorobenzyl)oxy]-1,2-dihydro-2,2-dimethyl-*s*-triazine<br>$C_{12}H_{15}Cl_2N_5O$ |



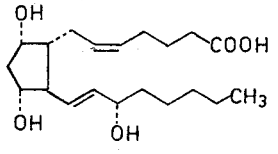
| | |
|---|---|
| cotriptylinum<br>cotriptyline | 1-(dimethylamino)-3-(10,11-dihydro-5*H*-dibenzo[*a*,*d*]cyclohepten-5-ylidene)-2-propanone<br>$C_{20}H_{21}NO$ |



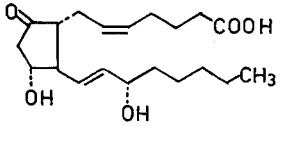
| | |
|---|---|
| coumazolinum<br>coumazoline | 2-[(2-ethylbenzofuran-3-yl)methyl]-2-imidazoline<br>$C_{14}H_{16}N_2O$ |



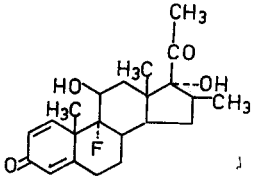
| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| dinoprostum<br>dinoprost | 7-[3,5-dihydroxy-2-(3-hydroxy-1-octenyl)cyclopentyl]-5-heptenoic acid or prostaglandin $F_{2\alpha}$<br>$C_{20}H_{34}O_5$ |



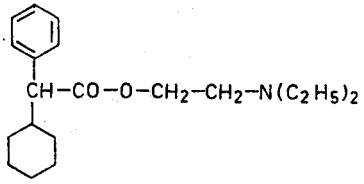

| | |
|---|---|
| dinoprostonum<br>dinoprostone | 7-[3-hydroxy-2-(3-hydroxy-1-octenyl)-5-oxocyclopentyl]-5-heptenoic acid or prostaglandin $E_2$<br>$C_{20}H_{32}O_5$ |

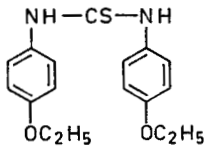
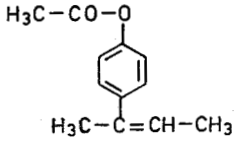
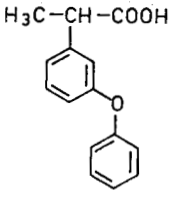
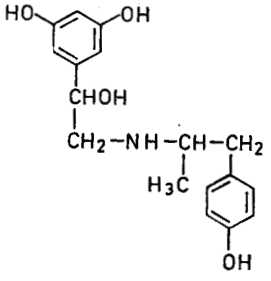



| | |
|---|---|
| doxibetasolum<br>doxibetasol | 9-fluoro-11$\beta$,17-dihydroxy-16$\beta$-methylpregna-1,4-diene-3,20-dione<br>$C_{22}H_{29}FO_4$ |

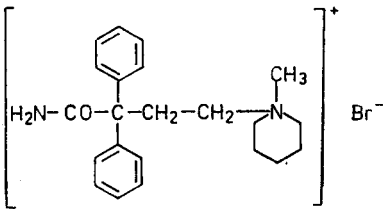



| | |
|---|---|
| drofeninum<br>drofenine | 2-(diethylamino)ethyl $\alpha$-phenylcyclohexaneacetate<br>$C_{20}H_{31}NO_2$ |

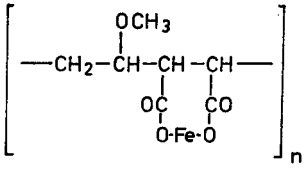


| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| etocarlidum<br>etocarlide | 4,4′-diethoxythiocarbanilide<br>$C_{17}H_{20}N_2O_2S$<br>  |
| fenabutenum<br>fenabutene | *p*-(1-methylpropenyl)phenyl acetate<br>$C_{12}H_{14}O_2$<br>  |
| fenoprofenum<br>fenoprofen | (±)-*m*-phenoxyhydratropic acid<br>$C_{15}H_{14}O_3$<br>  |
| fenoterolum<br>fenoterol | 3,5-dihydroxy-α-[[(*p*-hydroxy-α-methylphenethyl)amino]methyl]-benzyl alcohol<br>$C_{17}H_{21}NO_4$<br>  |

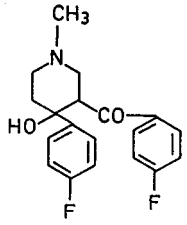
| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| fenpiverinii bromidum<br>fenpiverinium bromide | 1-(3-carbamoyl-3,3-diphenylpropyl)-1-methylpiperidinium bromide<br>$C_{22}H_{29}BrN_2O$ |



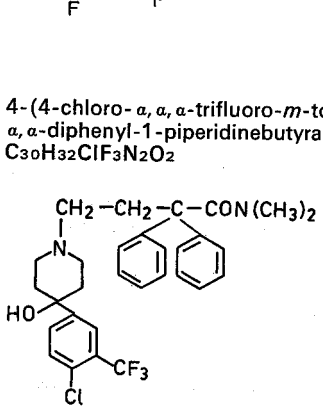
| | |
|---|---|
| ferropolimalerum<br>ferropolimaler | maleic acid polymer with methyl vinyl ether, iron(2+) salt<br>$(C_7H_8FeO_5)n$ |

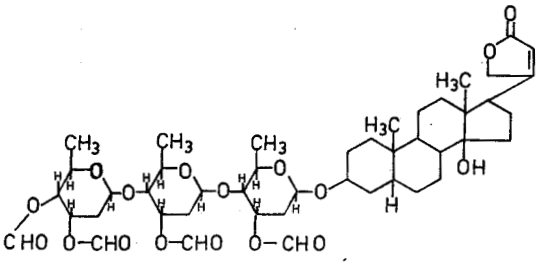
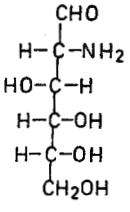
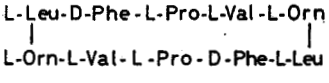


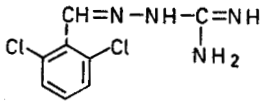
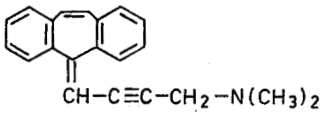
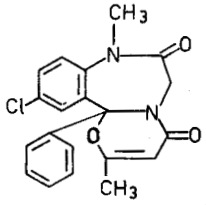
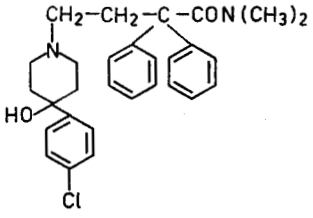
| | |
|---|---|
| flazalonum<br>flazalone | *p*-fluorophenyl 4-(*p*-fluorophenyl)-4-hydroxy-1-methyl-3-piperidyl ketone<br>$C_{19}H_{19}F_2NO_2$ |

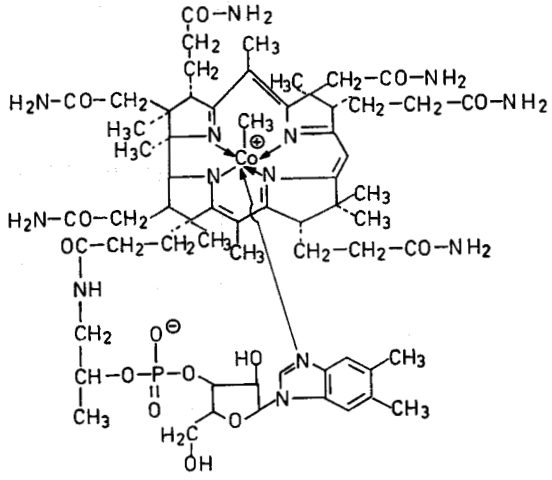
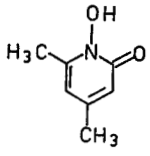
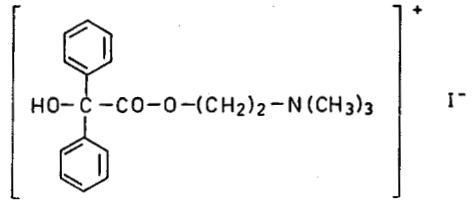


| | |
|---|---|
| fluperamidum<br>fluperamide | 4-(4-chloro-α,α,α-trifluoro-*m*-tolyl)-4-hydroxy-*N*,*N*-dimethyl-α,α-diphenyl-1-piperidinebutyramide<br>$C_{30}H_{32}ClF_3N_2O_2$ |



| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| gitoformatum<br>gitoformate | gitoxin 3′,3″,3‴,4‴,16-pentaformate; 3β-[(2,6-dideoxy-β-D-*ribo*-hexopyranosyl-(1→4)-*O*-2,6-dideoxy-β-D-*ribo*-hexopyranosyl-(1→4)-2,6-dideoxy-β-D-*ribo*-hexopyranosyl)oxy]-14,16β-dihydroxy-5β-card-20(22)-enolide 3′,3″,3‴,4‴,16-pentaformate<br>$C_{46}H_{64}O_{19}$ |
| |  |
| glucosaminum<br>glucosamine | 2-amino-2-deoxy-β-D-glucopyranose<br>$C_6H_{13}NO_5$ |
| |  |
| gramicidinum S<br>gramicidin S | cyclo(L-valyl-L-ornithyl-L-leucyl-D-phenylalanyl-L-prolyl-L-valyl-L-ornithyl-L-leucyl-D-phenylalanyl-L-prolyl)<br>$C_{60}H_{92}N_{12}O_{10}$ |
| |  |

| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| guanabenzum<br>guanabenz | [(2,6-dichlorobenzylidene)amino]guanidine<br>$C_8H_8Cl_2N_4$<br>  |
| intriptylinum<br>intriptyline | 4-(5*H*-dibenzo[*a*,*d*]cyclohepten-5-ylidene)-*N*,*N*-dimethyl-2-butynylamine<br>$C_{21}H_{19}N$<br>  |
| ketazolamum<br>ketazolam | 11-chloro-8,12b-dihydro-2,8-dimethyl-12b-phenyl-4*H*-[1,3]-oxazino[3,2-*d*][1,4]benzodiazepine-4,7(6*H*)-dione<br>$C_{20}H_{17}ClN_2O_3$<br>  |
| loperamidum<br>loperamide | 4-(*p*-chlorophenyl)-4-hydroxy-*N*,*N*-dimethyl-α α-diphenyl-1-piperidinebutyramide<br>$C_{29}H_{33}ClN_2O_2$<br>  |

| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| mecobalaminum<br>mecobalamin | cobinamide, *Co*-methyl deriv., hydroxide, dihydrogen phosphate (ester), inner salt, 3′-ester with 5,6-dimethyl-1-α-D-ribofuranosylbenzimidazole<br>$C_{63}H_{91}CoN_{13}O_{14}P$<br>  |
| metipiroxum<br>metipirox | 1-hydroxy-4,6-dimethyl-2(1*H*)-pyridone<br>$C_7H_9NO_2$<br>  |
| metocinii iodidum<br>metocinium iodide | (2-hydroxyethyl)trimethylammonium iodide benzilate<br>$C_{19}H_{24}INO_3$<br>  |

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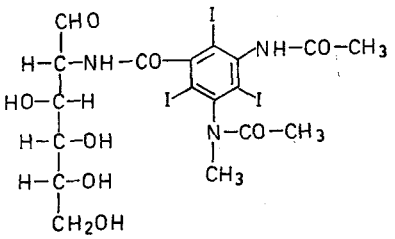
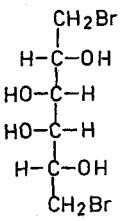
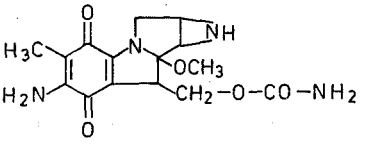
|---|---|
| metrizamidum<br>metrizamide | 2-[3-acetamido-2,4,6-triiodo-5-(*N*-methylacetamido)benzamido]-2-deoxy-D-glucose<br>$C_{18}H_{22}I_3N_3O_8$ |



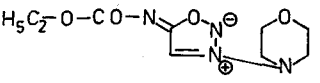
| | |
|---|---|
| mitolactolum<br>mitolactol | 1,6-dibromo-1,6-dideoxy-D-galactitol<br>$C_6H_{12}Br_2O_4$ |



| | |
|---|---|
| mitomycinum<br>mitomycin | mitomycin C; 6-amino-1,1a,2,8,8a,8b-hexahydro-8-(hydroxymethyl)-8a-methoxy-5-methylazirino[2′,3′:3,4]pyrrolo[1,2-*a*]indole-4,7-dione carbamate (ester)<br>$C_{15}H_{18}N_4O_5$ |



| | |
|---|---|
| molsidominum<br>molsidomine | *N*-carboxy-3-morpholinosydnone imine ethyl ester<br>$C_9H_{14}N_4O_4$ |



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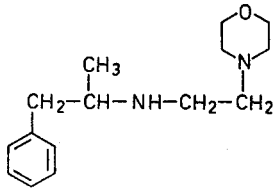
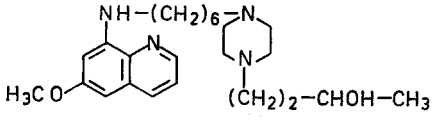
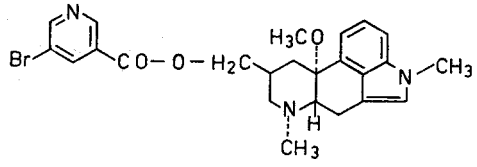
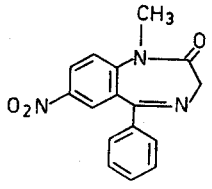
|---|---|
| morforexum<br>morforex | 4-[2-[(α-methylphenethyl)amino]ethyl]morpholine<br>$C_{15}H_{24}N_2O$<br>  |
| moxipraquinum<br>moxipraquine | 4-[6-[(6-methoxy-8-quinolyl)amino]hexyl]-α-methyl-1-piperazinepropanol<br>$C_{24}H_{38}N_4O_2$<br>  |
| nicergolinum<br>nicergoline | 10-methoxy-1,6-dimethylergoline-8β-methanol 5-bromonicotinate (ester)<br>$C_{24}H_{26}BrN_3O_3$<br>  |
| nimetazepamum<br>nimetazepam | 1,3-dihydro-1-methyl-7-nitro-5-phenyl-2*H*-1,4-benzodiazepin-2-one<br>$C_{16}H_{13}N_3O_3$<br>  |

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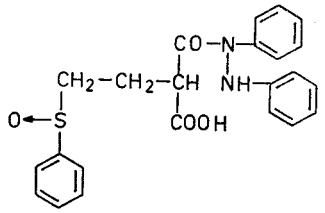
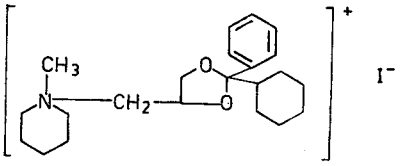
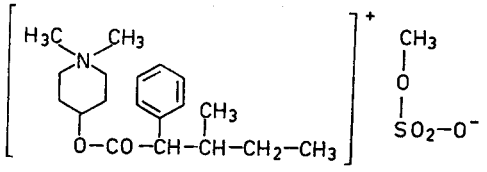
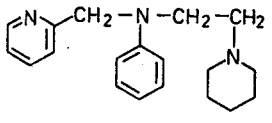
|---|---|
| osmadizonum<br>osmadizone | [2-(phenylsulfinyl)ethyl]malonic acid mono(1,2-diphenylhydrazide)<br>$C_{23}H_{22}N_2O_4S$<br>  |
| oxapii iodidum<br>oxapium iodide | 1-[(2-cyclohexyl-2-phenyl-1,3-dioxolan-4-yl)methyl]-1-methylpiperidinium iodide<br>$C_{22}H_{34}INO_2$<br>  |
| pentapiperii metilsulfas<br>pentapiperium metilsulfate | 4-hydroxy-1,1-dimethylpiperidinium methyl sulfate 3-methyl-2-phenylvalerate ester<br>$C_{20}H_{33}NO_6S$<br>  |
| picoperinum<br>picoperine | 1-[2-[*N*-(2-pyridylmethyl)anilino]ethyl]piperidine<br>$C_{19}H_{25}N_3$<br>  |

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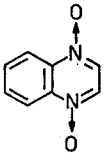
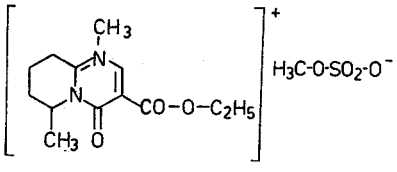
|---|---|
| polidocanolum<br>polidocanol | polyethylene glycol monododecyl ether<br>(average polymer, n=9 : nonaethylene glycol monododecyl ether)<br><br>$C_{12}H_{25}(-O-CH_2-CH_2-)_n\ OH$ |
| poloxamerum 331<br>poloxamer 331 | α-hydro-ω-hydroxypoly(oxyethylene)poly(oxypropylene)(53-59 moles)poly(oxyethylene) block copolymer<br>average molecular weight: 3,800 |
| poloxamerum 407<br>poloxamer 407 | α-hydro-ω-hydroxypoly(oxyethylene)poly(oxypropylene)(63-71 moles)poly(oxyethylene) block copolymer<br>average molecular weight: 12,500 |
| quindoxinum<br>quindoxin | quinoxaline 1,4-dioxide<br>$C_8H_6N_2O_2$<br>  |
| rimazolii metilsulfas<br>rimazolium metilsulfate | 3-(ethoxycarbonyl)-6,7,8,9-tetrahydro-1,6-dimethyl-4-oxo-4*H*-pyrido[1,2-*a*]pyrimidinium methyl sulfate<br>$C_{14}H_{22}N_2O_7S$<br>  |

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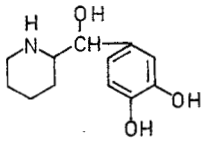
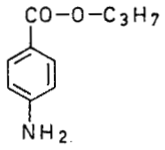
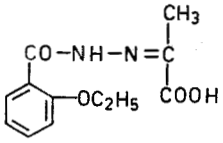
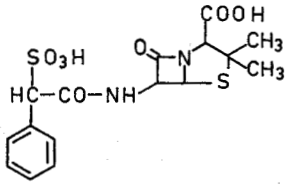
|---|---|
| rimiterolum<br>rimiterol | α-(3,4-dihydroxyphenyl)-2-piperidinemethanol<br>$C_{12}H_{17}NO_3$<br>  |
| risocainum<br>risocaine | propyl *p*-aminobenzoate<br>$C_{10}H_{13}NO_2$<br>  |
| ruvazonum<br>ruvazone | *o*-ethoxybenzoic acid (1-carboxyethylidene)hydrazide<br>$C_{12}H_{14}N_2O_4$<br>  |
| sulbenicillinum<br>sulbenicillin | 3,3-dimethyl-7-oxo-6-(2-phenyl-2-sulfoacetamido)-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid<br>$C_{16}H_{18}N_2O_7S_2$<br>  |

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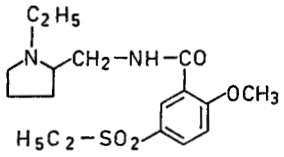
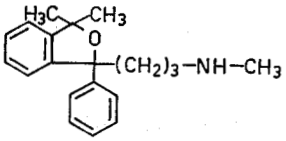
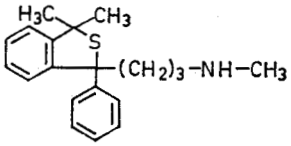
|---|---|
| sultopridum<br>sultopride | *N*-[(1-ethyl-2-pyrrolidinyl)methyl]-5-(ethylsulfonyl)-*o*-anisamide<br>$C_{17}H_{26}N_2O_4S$<br>  |
| talopramum<br>talopram | *N*,3,3-trimethyl-1-phenyl-1-phthalanpropylamine<br>$C_{20}H_{25}NO$<br>  |
| talsupramum<br>talsupram | 1,3-dihydro-*N*,3,3-trimethyl-1-phenylbenzo(*c*)thiophene-1-propylamine<br>$C_{20}H_{25}NS$<br>  |
| thyroglobulinum<br>thyroglobulin | thyroglobulin is a substance obtained by the fractionation of thyroid glands from the hog, *Sus scrofa* Linné var. *domesticus* Gray (Fam. *Suidae*), containing not less than 0.7 per cent. of total iodine (I) |

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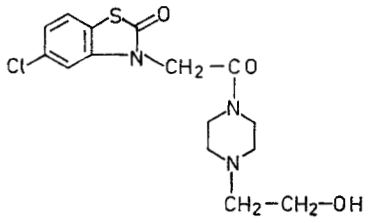
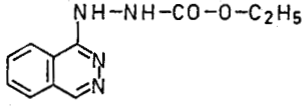
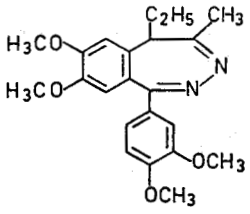
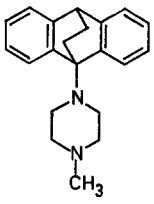
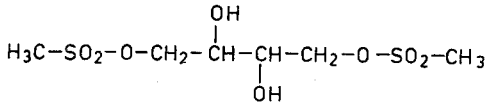
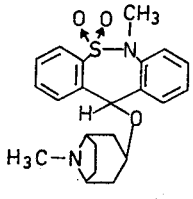
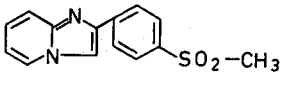
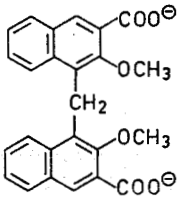
|---|---|
| tiaramidum<br>tiaramide | 4-[(5-chloro-2-oxo-3-benzothiazolinyl)acetyl]-1-piperazine ethanol<br>$C_{15}H_{18}ClN_3O_3S$<br>  |
| tobramycinum<br>tobramycin | an antibiotic obtained from cultures of *Streptomyces tenebrarius* or the same substance obtained by any other means |
| todralazinum<br>todralazine | ethyl 3-(1-phthalazinyl)carbazate<br>$C_{11}H_{12}N_4O_2$<br>  |
| tofisopamum<br>tofisopam | 1-(3,4-dimethoxyphenyl)-5-ethyl-7,8-dimethoxy-4-methyl-5*H*-2,3-benzodiazepine<br>$C_{22}H_{26}N_2O_4$<br>  |

| *Proposed International Nonproprietary Name* (Latin, English) | *Chemical Name or Description, Molecular and Graphic Formulae* |
|---|---|
| trazitilinum<br>trazitiline | 1-(9,10-dihydro-9,10-ethano-9-anthryl)-4-methylpiperazine<br>$C_{21}H_{24}N_2$<br>  |
| treosulfanum<br>treosulfan | L-threitol 1,4-dimethanesulfonate<br>$C_6H_{14}O_8S_2$<br>  |
| zepastinum<br>zepastine | 6,11-dihydro-6-methyl-11-(1 αH,5 αH-tropan-3 α-yloxy)dibenzo-[*c*,*f*][1,2]thiazepine 5,5-dioxide<br>$C_{22}H_{26}N_2O_3S$<br>  |
| zolimidinum<br>zolimidine | 2-[*p*-(methylsulfonyl)phenyl]imidazol[1,2-*a*]pyridine<br>$C_{14}H_{12}N_2O_2S$<br>  |

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.

3-methoxy-2-naphthoate

metembonate



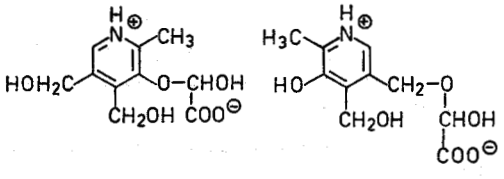
## AMENDMENTS TO PREVIOUS LISTS

### Vol. 21, No. 11

PROPOSED INTERNATIONAL NONPROPRIETARY NAMES (*Prop. I.N.N.*): LIST 18

p. 495 piridoxilatum
piridoxilate

replace chemical name and molecular and graphic formulae by the following:
[[5-hydroxy-4-(hydroxymethyl)-6-methyl-3-pyridyl]methoxy]glycolic acid compound with [[4,5-bis(hydroxymethyl)-2-methyl-3-pyridyl]-oxy]glycolic acid (1 : 1)
$C_{10}H_{13}NO_6 \cdot C_{10}H_{13}NO_6$

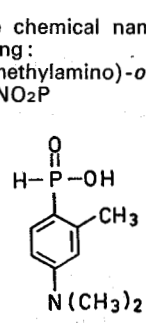


### Vol. 24, No. 3

PROPOSED INTERNATIONAL NONPROPRIETARY NAMES (*Prop. I.N.N.*): LIST 23

p. 137 toldimfosum
toldimfos

replace chemical name and molecular and graphic formulae by the following:
[4-(dimethylamino)-*o*-tolyl]phosphinic acid
$C_9H_{14}NO_2P$



| p. 142 | *delete* | *insert* |
|---|---|---|
| | serazidum | benserazidum |
| | serazide | benserazide |

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**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*[1] and by letter to Member States and to national pharmacopoeia commissions or other bodies designated by Member States.

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

B. Such notice shall:

(i) set forth the name under consideration;

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

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

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

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

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

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

[1] The title of this publication was changed to *WHO Chronicle* in January 1959.

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 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

* Text revised by the Expert Committee on Nonproprietary Names for Pharmaceutical Substances (unpublished reports WHO/Pharm/67.443, WHO/Pharm/68.447, and WHO/Pharm/70.458).

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 ", " e " instead of " ae " or " oe ", and " 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 anywhere in the name. The syllable, or group of syllables, should, if possible, be used only for such substances.

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.

| *Latin* | *English* | *French* | |
|---|---|---|---|
| -actidum | -actide | -actide | synthetic polypeptides with a corticotrophin-like action |
| -andr- | -andr- | -andr- | steroids, androgenic |
| or -stan- | or -stan- | or -stan- | |
| or -ster- | or -ster- | or -ster- | |
| -arolum | -arol | -arol | anticoagulants of the coumarin type |
| -bamatum | -bamate | -bamate | tranquillizers of the propanediol and pentanediol series |
| barb | barb | barb | barbituric acids, hypnotic activity |
| bol | bol | bol | anabolic steroids |
| -cainum | -caine | -caïne | local anaesthetics |
| cef- | cef- | cef- | antibiotics with cefalosporanic acid nucleus |
| -cillinum | -cillin | -cilline | penicillins: derivatives of 6-amino-penicillanic acid |
| cort | cort | cort | steroids, glucocorticoids and mineralocorticoids, other than prednisolone derivatives |
| -crinum | -crine | -crine | acridine derivatives |
| -curium | -curium | -curium | curare-like drugs |
| -cyclinum | -cycline | -cycline | antibiotics, tetracycline derivatives |
| -estr- | -estr- | -estr- | estrogenic drugs |
| -forminum | -formin | -formine | guanidine oral antidiabetics |
| gest | gest | gest | steroids, progestative |
| gli- | gli- | gli- | sulfonamide oral antidiabetics |
| io- | io- | io- | iodine-containing contrast media |
| -mer- | -mer- | -mer- | mercury-containing drugs, antimicrobial or diuretic |
| -moxinum | -moxin | -moxine | monoamine oxidase inhibitors |
| -mycinum | -mycin | -mycine | antimicrobial antibiotics, produced by *Streptomyces* strains |
| nifur- | nifur- | nifur- | 5-nitrofuran derivatives |
| -orexum | -orex | -orex | anorexigenic agents |
| -praminum | -pramine | -pramine | dibenzazepine, compounds of the imipramine type |
| -quinum | -quine | -quine | quinoline derivatives |
| -serpinum | -serpine | -serpine | derivatives of *Rauwolfia* alkaloids |
| sulfa- | sulfa- | sulfa- | sulfonamides, used as antimicrobials |
| -tizidum | -tizide | -tizide | diuretics which are thiazide derivatives |
| -toinum | -toin | -toïne | antiepileptics which are hydantoin derivatives |
| -verinum | -verine | -vérine | spasmolytics with a papaverine-like action |
| -inum | -ine | -ine | alkaloids and organic bases |
| -onum | -one | -one | ketones |
| -ium | -ium | -ium | quaternary ammonium compounds |