International Non-Proprietary Names for Pharmaceutical Preparations

In accordance with article 3 of the Procedure for the Selection of Recommended International Non-Proprietary Names for Pharmaceutical Preparations, notice is hereby given that the following names are under consideration by the World Health Organization as Proposed International Non-Proprietary 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 non-proprietary names does not imply any recommendation for the use of the substance in medicine or pharmacy.

PROPOSED INTERNATIONAL NON-PROPRIETARY NAMES (Prop. I.N.N.): LIST 21 2

Proposed International Non-Proprietary Name (Latin, English)

acidum ellagicum ellagic acid Chemical Name or Description, Molecular and Graphic Formulae

2,3,7,8-tetrahydroxy[1]benzopyrano[5,4,3-*cde*][1]benzopyran-5,10-dlone C₁₄H₈O₈

acidum yohimbicum yohimbic acid 17α-hydroxyyohimban-16α-carboxylic acid C₂₀H₂₄N₂O₃

¹ See Annex, p. 17.

Other lists of proposed international non-proprietary names can be found in Chron Wld Hith 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.

Lists of recommended international non-proprietary names were published in Chron. Wld Hith 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.

Chemical Name or Description, Molecular and Graphic Formulae

acridorexum acridorex 9- $\{2-[(a-methylphenethy)amino]ethyl]acridine C₂₄H₂₄N₂$

alexidinum alexidine 1,1'-hexamethylenebis[5-(2-ethylhexyl)biguanide] $C_{26}H_{16}N_{10}$

ambenoxanum ambenoxan N-[2-(2-methoxyethoxy)ethyl]-1,4-benzodioxan-2-methylamine

amquinatum amquinate methyl 7-(diethylamino)-4-hydroxy-6-propyl-3-quinolinecarboxylate C14H24N2O3

$$H_3C-CH_2-CH_2$$
 $CO-O-CH_3$

aptocainum aptocaine 2-methyl-1-pyrrolidineaceto-o-toluidide $C_{14}H_{20}N_2O$

5,5a,13,13a-tetrahydro-5,13-dihydroxy-8H,16H-7a,15a-epidithio-7H,15H-bisoxepino[3',4':4,5]pyrrolo[1,2-a:1',2'-d]pyrazine-7,15-dione 5-acetate

azaquinzolum azaquinzole 1,3,4,6,7,11b-hexahydro-2H-pyrazino[2,1-a]isoquinoline $C_{12}H_{14}N_2$

azaserinum azaserine L-serine diazoacetate (ester) C₅H₇N₃O₄

bambermycinum bambermycin an antibiotic obtained from cultures of Streptomyces bambergiensis or the same substance obtained by any other means

benorilatum benorilate 4-acetamidophenyl salicylate acetate C₁₇H₁₈NO₈

bisobrinum bisobrin 1,1'-tetramethylenebis[1,2,3,4-tetrahydro-6,7-dimethoxy-isoquinoline]
C26H36N2Q4

Chemical Name or Description, Molecular and Graphic Formulae

bolazinum bolazine 17β-hydroxy-2a-methyl-5a-androstan-3-one azine Ca0HыN₂O₂

butalaminum butalamine 5-([2-(dibutylamino)ethyl]amino)-3-phenyl-1,2,4-oxadiazole $C_{1a}H_{2a}N_aO$

calcii dobeslias calcium dobesilate calcium 2,5-dihydroxybenzenesulfonate C12H10CaO10S2

carbomerum carbomer a polymer of acrylic acid cross-linked with allyl sucrose

cirolemycinum cirolemycin an antibiotic obtained from cultures of *Streptomyces bellus* var. *cirolerosis* var. *nova*, or the same substance obtained by any other means

citenamidum citenamide 5H-dibenzo[a,d]cycloheptene-5-carboxamide C₁₄H₁₅NO

clindamycinum clindamycin methyl 7-chloro-6,7,8-trideoxy-6-trans-(1-methyl-4-propyl-L-2pyrrolldinecarboxamido)-1-thio-L-threo-α-D-galacto-octopyranoside C₁₂H₃₂CIN₂O₅S

clodazonum clodazon 5-chloro-1-[3-(dimethylamino)propyl]-3-phenyl-2-benzimldazolinone C₁₄H₂₀ClN₃O

clogestonum clogestone 6-chloro-3β,17-dihydroxypregna-4,6-dien-20-one C₂₁H₂₂CIO₃

clonidinum clonidine 2-(2,6-dichloroanilino)-2-imidazoline C•H•Cl₂N₃

Chemical Name or Description, Molecular and Graphic Formulae

dacuronii bromidum dacuronium bromide

(3a,17β-dihydroxy-5a-androstan-2β,16β-ylene)bis(1-methylpiperidinium)dibromide 3-acetate
C33H34B72N2O3

dexpropranoiolum dexpropranoiol

(+)-1-(isopropylamino)-3-(1-naphthyloxy)-2-propanol $C_{10}H_{21}NQ_2$

diflumidonum diflumidone

3′-benzoyl-1,1-difluoromethanesulfonanilide C₁4H₁₁F₂NO₃S

difluprednatum difluprednate

6a,9-difluoro-11 β ,17,21-trihydroxypregna-1,4-diene-3,20-dione 21-acetate 17-butyrate $C_{27}H_{34}F_2O_7$

21-cyclopropyl-6,7,8,14-tetrahydro- 7α -(1-hydroxy-1-methylethyl)-6,14-endo-ethanooripavine $C_{24}H_{35}NO_4$

ditazolum ditazole 2,2'-[(4,5-diphenyl-2-oxazolyl)imino]dlethanol $C_{10}H_{20}N_2O_3$

dofamii chloridum dofamium chloride dimethyl[2-(N-methyldodecanamido)ethyl][(phenylcarbamoyl)-methyl]ammonium chloride $C_{29}H_{44}C|N_{9}O_{2}$

$$\begin{bmatrix} CH_{3} & CH_{2} &$$

etisazolum etisazole 3-(ethylamino)-1,2-benzisothiazole C₂H₁₀N₂S

Chemical Name or Description, Molecular and Graphic Formulae

famprofazonum famprofazone 4-Isopropyl-2-methyl-3-[[methyl(a-methyl)phenethyl)amino]-methyl]-1-phenyl-3-pyrazolin-5-one
C24H31N3O

fedrilatum fedrilate 1-methyl-3-morpholinopropyl tetrahydro-4-phenyl-2*H*-pyran-4-carboxylate C₂₀H₂₀NO₄

fenspiridum fenspiride 8-phenethyl-1-oxa-3,8-diazaspiro[4.5]decan-2-one C1sH2oN2O2

$$-cH_2-cH_2-N$$

fetoxilatum fetoxilate 2-phenoxyethyl 1-(3-cyano-3,3-diphenylpropyl)-4-phenylisonipecotate C3sH3sN2O3

fezationum fezatione 3-[(p-methylbenzylidene)amino]-4-phenyl-4-thiazoline-2-thione CızHı4N2Sz

flunidazolum flunidazole 2-(p-fluorophenyl)-5-nitroimidazole-1-ethanol C₁₁H₁₀FN₃O₃

fospiratum fospirate dimethyl 3,5,6-trichloro-2-pyridyl phosphate $C_7H_7Cl_3NO_4P$

hexoprenalinum hexoprenaline a,a'-[hexamethylenebis(iminomethylene)]bis(3,4-dihydroxybenzyl alcohol) C22H32N2O4

hoquizilum hoquizil 2-hydroxy-2-methylpropyl 4-(6,7-dimethoxy-4-quinazolinyl)-1-piperazinecarboxylate CieHzeN4Os

Chemical Name or Description, Molecular and Graphic Formulae

lbuverinum ibuverine

isobutyl α -phenylcyclohexaneglycolate $C_{18}H_{26}O_{3}$

ipronidazolum ipronidazole

2-isopropyl-1-methyl-5-nitroimidazole $C_7H_{11}N_3O_2$

levamisolum levamisole

(--)-2,3,5,6-tetrahydro-6-phenylimidazo[2,1-b]thiazole $C_{11}H_{12}N_2S$

levodopum levodopa

(--)-3-(3,4-dihydroxyphenyl)-L-alanine C₃H₁₁NO₄

$$H_3C$$
 CH_3 CH_3

mesuprinum mesuprine

)

2'-hydroxy-5'-{1-hydroxy-2-[(p-methoxyphenethyl)amino]propyl}-methanesulfonanilide
C10H2sN2OsS

$$\begin{array}{c} \text{NH} - \text{SO}_2 - \text{CH}_3 \\ \text{CHOH} - \text{CH} - \text{NH} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\ \text{CH}_2 \end{array}$$

metforminum metformin 1,1-dimethylbiguanide C₄H₁₁N₅

metolazonum metolazone 7-chloro-1,2,3,4-tetrahydro-2-methyl-4-oxo-3-o-tolyl-6-quinazolinesulfonamide C₁₀H₁₅CIN₀O₃S

Chemical Name or Description, Molecular and Graphic Formulae

midaflurum midaflur

4-amino-2,2,5,5-tetrakis(trifluoromethyl)-3-imidazoline $C_7H_3F_{12}N_3$

$$F_3C$$
 F_3C
 F_3C

mitotanum mitotane

1,1-dichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)ethane $C_{14}H_{10}CI_4$

nalbuphinum nalbuphine

17-(cyclobutylmethyl)-4,5 α -e'poxymorphinan-3,6 α ,14-triol C₂₁H₂₇NO₄

naranolum naranol

8,9,10,11,11a,12-hexahydro-8,10-dimethyl-7aH-naphtho[1',2':5,6]-pyrano[3,2-c]pyridin-7a-ol $C_{18}H_{21}NO_2$

nifurtimoxum nifurtimox

4-[(5-nitrofurfurylidene)amino]-3-methylthiomorpholine 1,1-dioxide C₁₀H₁₃N₃O₅S

$$\begin{array}{c}
0 \\
S \\
CH_{3} \\
I \\
CH_{2}
\end{array}$$

Chemical Name or Description, Molecular and Graphic Formulae

nisobamatum nisobamate isopropylcarbamic acid ester with 2-(hydroxymethyl)-2,3-dimethylpentyl carbamate C₁₃H_{2*}N₂O₄

ormetoprimum ormetoprim

2,4-diamino-5-(6-methylveratryl)pyrimidine C14H1sN4O2

oxitriptylinum oxitriptyline 2-[(10,11-dihydro-5*H*-dibenzo[*a,d*]cyclohepten-5-yl)oxy]-*N,N*-dimethylacetamide Cı₈H₂₁NO₂

plmefyllinum pimefylline 7-{2-[(3-pyrldylmethyl)amino]ethyl}theophylline $C_{13}H_{18}N_{\bullet}O_{2}$

Chemical Name or Description, Molecular and Graphic Formulae

piquizilum piquizil isobutyl 4-(6,7-dimethoxy-4-quinazolinyl)-1-piperazinecarboxylate C₁₈H₂₄N₄O₄

polacrilinum polacrilin

a synthetic ion exchange resin which is prepared through the polymerization of methacrylic acid and divinylbenzene. It is supplied in the hydrogen or free acid form.

pramiverinum pramiverine

4,4-diphenyl-/V-isopropylcyclohexylamine $C_{21}H_{27}N$

promolatum promolate

2-morpholinoethyl 2-methyl-2-phenoxypropionate $C_{10}H_{23}NO_4$

spirgetinum spirgetine

[2-(6-azaspiro[2.5]oct-6-yl)ethyl]guanidine

stercuronii iodidum stercuronium iodide

(cona-4,6-dienin-3β-yl)dimethylethylammonium iodide C2εH49lN2

tiapirinolum tiapirinol

)

tetrahydro-2-[3-hydroxy-5-(hydroxymethyl)-2-methyl-4-pyridyl]-2*H*-1,3-thiazine-4-carboxylic acid C₁₂H₁₀N₂O₄S

tinidazolum tinidazole

1-[2-(ethylsulfonyl)ethyl]-2-methyl-5-nitroimidazole C•H₁₃N₃O₄S

tolquinzolum tolquinzole

2-ethyl-1,3,4,6,7,11b-hexahydro-10-methyl-2*H*-benzo[a]quinolizin-2-ol C₁₀H₂₃NO

tretoquinolum tretoquinol

1,2,3,4-tetrahydro-1-(3,4,5-trimethoxybenzyl)-6,7-isoquinolinediol $C_{19}H_{23}NO_3$

triflumidatum triflumidate ethyl m-benzoyl-N-[(trifluoromethyl)sulfonyl]-carbanilate $C_{17}H_{14}F_3NO_3S$

xylazinum xylazine 5,6-dihydro-2-(2,6-xylidino)-4H-1,3-thiazine $C_{12}H_{10}N_2S$

CORRIGENDUM

Vol. 22, No. 9

PROPOSED INTERNATIONAL NON-PROPRIETARY NAMES (*Prop. I.N.N.*): List 20 p. 420. The graphic formula given for nimazone should be replaced by the following:

Annex

PROCEDURE FOR THE SELECTION OF RECOMMENDED INTERNATIONAL NON-PROPRIETARY NAMES FOR PHARMACEUTICAL PREPARATIONS.

The following procedure shall be followed by the World Health Organization in the selection of recommended international non-proprietary names for pharmaceutical preparations, in accordance with the World Health Assembly resolution WHA3.11:

- 1. Proposals for recommended international non-proprietary 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 Non-proprietary Names", appended to this procedure. The name used by the person discovering or first developing and marketing a pharmaceutical preparation 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 non-proprietary 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;
 - (li) 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 non-proprietary name while there exists a formal objection thereto filed under article 5 which has not been withdrawn.

^{*} Text adopted by the Executive Board of WHO in resolution EB15.R7 (Off. Rec. Wid Hith Org., 1955, 60, 3).

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

- 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 non-proprietary name.
- 8. In forwarding a recommended international non-proprietary name to Member States under article 7, the Director-General of the World Health Organization shall:
 - A. request that it be recognized as the non-proprietary 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 NON-PROPRIETARY NAMES FOR PHARMACEUTICAL PREPARATIONS *

- 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 of 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.

- 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. Syllables such as "methylhydro", "methoxy" and "chlor" should preferably be abbreviated (to "medro", "meto", "clo", etc.).
- 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", "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.

^{*} Text revised by the Expert Committee on Non-Proprietary Names for Pharmaceutical Preparations (unpublished reports WHO/Pharm/67.443 and WHO/Pharm/68.447).

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	* ***
-andr-	-andr-	-andr-	
or -stan-	or -stan-	or -stan-	steroids, androgenic
or -ster-	or -ster-	or -ster-]
-apol-	-apol-	-apol-	polysulfonic anticoagulants
-arolum	-arol	-arol	anticoagulants
-bamatum	-bamate	-bamate	tranquillizers of the propanedial and pentanedial series
barb	barb	barb	barbituric acids, hypnotic activity
bol	bol	boi	anabolic steroids
-cainum	-caine	-caine	local anaesthetics
cef-	cef-	cef-	antibiotics with cefalosporanic acid nucleus
-cillinum	-cillin	-cilline	penicillins: derivatives of carboxy-6-amino-penicillanic acid
-cort-	-cort-	-cort-	steroids, glucocorticolds and mineralocorticoids, other than prednisolone derivatives
-crinum	-crine	-crine	acridine derivatives
-curonium	-curonium	-curonium	curare-like drugs
-cyclinum	-cycline	-cycline	antiblotics, tetracycline derivatives
-dionum	-dione	-dione	antlepileptics derived from oxazolidinedione
-estr-	-estr-	-estr-	estrogenic drugs
-gest-	-gest-	-gest-	steroids, progestative
gli-	gli-	glì-	sulfonamide oral antidiabetics
io-	10-	i o-	iodine-containing contrast media
-mer-	-mer-	-mer-	mercury-containing drugs, antimicrobial or diuretic
mito-	mito-	mito-	nucleotoxic, antineoplastic agents
-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 <i>Rauwolfia</i> alkaloids
-stigminum		-stigmine	anticholinesterases
sulfa-	sulfa-	sulfa-	sulfonamides, used as antimicrobials
-tizldum	-tizide	-tizide	dluretics which are thiazide derivatives
-toinum	-toin	-toine	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 amines