The use of common stems in the selection of International Nonproprietary Names (INN) for pharmaceutical substances

2002
The use of common stems in the selection of International Nonproprietary Names (INN) for pharmaceutical substances

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THE ORIGINAL AND SUBSEQUENT EDITION OF THIS DOCUMENT HAD THE REFERENCE NUMBER WHO/PHARM S/NOM 15
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INN – The use of common stems
Preface

WHO’S INN PROGRAMME

WHO has a constitutional responsibility to "develop, establish and promote international standards with respect to biological, pharmaceutical and similar products". This is the basis for many activities within WHO, such as International Nonproprietary Names (INN), WHO Good Manufacturing Practices, the International Pharmacopoeia, the WHO Certification Scheme and many others. The section of the WHO specifically dealing with selection of International Nonproprietary Names for pharmaceutical substances falls under the Department of Essential Drugs and other Medicines.

INN SELECTION PROCEDURE AND CRITERIA

A request for an INN is usually submitted on a form to the World Health Organization. In certain countries, where national nomenclature commissions exist, this is done through the corresponding national nomenclature authority.

Precise information on the chemistry, pharmacological action and use, as well as suggested nonproprietary names, name and address of the manufacturer are to be provided on the form. Each name proposed by the originator of such a request is then examined and a name selected.

All members of the WHO Expert Panel on the International Pharmacopoeia and Pharmaceutical Preparations designated to select nonproprietary names have to agree to the name which is then first published as a proposed INN. During a four-month period, any person can forward comments, or lodge a formal objection to a name, e.g. on grounds of similarity with a trade-name. If no objection is raised the name will be published a second time as recommended INN.

The primary principles for selection are that an INN should be

- distinctive in sound and spelling,
- not too long,
- not liable to confusion with other names in common use.

INNs for substances belonging to a particular group of pharmacologically related substances show their relationship by the use of common stems, which are listed and defined in this document.

In addition to the above rules, certain rules have been established to allow the use of INNs internationally, i.e. in various languages. For example, the letters "h" and "k" should be avoided; "e" should be used instead of "ae" and "oe", "i" instead of "y" and "t", "f" instead of "th" and "ph".

Further information on the selection procedure and general principles in devising INNs may be found in Annex 2 and 3.
**THIS DOCUMENT**

This document lists common stems for which chemical and/or pharmacological categories have been established. These stems and their definitions have been selected by the INN experts and are for use when selecting new international nonproprietary names for pharmaceutical substances that belong to an established series of related compounds.

The list is not exhaustive in that it might not include all stems used by the INN Committee. It is the nature of the nomenclature process that new, potential stems are constantly being created and that definitions of older stems may need to be modified as new information becomes available.

Examples of nonproprietary names have been selected from Lists 1 - 84 of Proposed International Nonproprietary Names. They were compared with:

- Stems listed in article 9 of the "General Principles for Guidance in Devising International Nonproprietary Names for Pharmaceutical Substances", Annex to List 81 of proposed INN and some well-established old or new stems not included in article 9 of the general principles. Details on stems are indicated as follows:
  
  (x) stems that are included in article 9 of the general principles
  
  (d) stems deleted from article 9 of the general principles

The reference to TRS 581* indicates that the stem is listed in Annex 3 of the 20th Report of the WHO Expert Committee on Nonproprietary Names for Pharmaceutical Substances.

References to syllables in the British Approved Names (BAN) dictionary and the USP Dictionary of USAN and International Drug Names have also been made wherever applicable. Whenever the BAN or USAN definitions are not identical to the INN definition they are given in brackets under the INN definition.

For each stem, the names have been classified as:

- (a) names in which the preferred stem has been used in accordance with its definition;
- (b) names in which the preferred stem has been used but not in accordance with its definition;
- (c) names which belong to the same group of pharmaceutical substances and in which no preferred stem has been used. (This part of the list is not always complete).

The codes given on the left-hand side under each stem refer to the WHO pharmacological classification used in the WHO Drug Evaluation and Monitoring Programme.

**Note for trade-mark officers:**

In line with the WHO World Health Assembly resolution (*WHA46.19**) it would be appreciated if trade-marks were not derived from INNs and if INN stems were not used in trade-marks. This practice endangers the principle that INNs are public property; it can frustrate the rational selection of further INNs for related substances, and it will ultimately compromise the safety of patients by promoting confusion in drug nomenclature.

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*Nonproprietary names for pharmaceutical substances, Twentieth Report of the WHO Expert Committee (1975)

** WHA resolution on nonproprietary names for pharmaceutical substances (1993)
Acknowledgements

The INN Secretariat extends its thanks to Dr. R. Boudet-Dalbin, France, for the graphic representations of the chemical formulae in this document.
Reference to the volumes of the *WHO Drug Information* in which the respective proposed lists of INNs have been published:

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Lists 1-85 of proposed INN are included in *Cumulative List* No. 10, WHO, Geneva, 2002 (available in CD-ROM only)
Layout of information

Stem

Pharmacological Classification

Action and Use

National Name(s)

Vitamin D analogues/derivatives

USAN

(a) alfalcaldol (40), calcifiedol (26), calcipotriol (61), calcitriol (39), colecalciferol (13), doxercalciiferol (82), ergocalciiferol (13), falecalcitriol (74), lexacalcitol (71), maxacalcitol (75), paricalcitol (78), secalfacerol (62), seocalcitol (78), tacalcitol (65)

(b) calcitonin (31) (polypeptide)

(c) dihydrotachysterol (1)

Graphic Formula

INN (English)

List of proposed INN

Names in which the preferred stem has been used in accordance with its definition

Names in which the preferred stem has been used but not in accordance with its definition

Names which belong to the same group of pharmaceutical substances and in which no preferred stem has been used (this part of the list is not always complete)
Pharmacological classification with corresponding examples of common stems and their definitions

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<tr>
<td><strong>A420</strong></td>
<td></td>
<td>-arit antiarthritic substances, acting like clobuzarit and lobenzarit (mechanism different from anti-inflammatory type substances, e.g. -fenamates or -profens)</td>
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| S520   | Antimycobacterials                            | -dapsone| antimycobacterials, 
diaminodiphenylsulfone derivatives |
| S520   |                                               | -pirox  | see -ox                                |
| S530   | Antiviral                                     | -arabine| arabinofuranosyl derivatives           |
| S530   |                                               | -motine | antivirals, quinoline derivatives      |
| S530   |                                               | -ribine | ribofuranil-derivatives of the 
*pyrazofurin* type                      |
| S530   |                                               | -uridine| uridine derivatives used as antiviral 
agents and as antineoplastics; -udine |
| S530   |                                               | *vir*   | antivirals (undefined group): 
 -*amivir*: neuraminidase inhibitors, 
-*cavir*: carbocyclic nucleosides, 
-*virsen*: antisense oligonucleotides |
| S550   | Antibacterial/other                           | -citabine| nucleoside antiviral or 
antineoplastic agents, cytarabine or 
azarabine derivatives               |
| S550   |                                               | -oxacin | antibacterials, nalidixic acid 
derivatives                                   |
| S550   |                                               | -prim   | antibacterials, trimethoprim 
derivatives                                      |
| S600   | Antibiotics (except antineoplastic antibiotics) | -cidin  | naturally occurring antibiotics 
(undefined group)                        |
| S600   |                                               | -fungin | antifungal antibiotics; USAN: 
antifungal antibiotics (undefined group)  |
| S600   |                                               | -gillin | antibiotics produced by *Aspergillus* 
strains                               |
<p>| S600   |                                               | -monam  | monobactam antibiotics               |</p>
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</tr>
<tr>
<td>T300</td>
<td>Intravaginal contraceptives</td>
<td></td>
</tr>
<tr>
<td>U000</td>
<td>MISCELLANEOUS DRUGS</td>
<td>-ermin: growth factors; -dermin: epidermal growth factors; -fermin: fibrino-blast growth factors; -nermin: tumour necrosis factor; -sermin: insulin-like growth factors</td>
</tr>
<tr>
<td>U000</td>
<td></td>
<td>gado- diagnostic agents, gadolinium derivatives</td>
</tr>
<tr>
<td>U100</td>
<td>Diagnostic aids</td>
<td>-fenin diagnostic aids; (phenyl-carbamoyl)methyl iminodiacetic acid derivatives</td>
</tr>
<tr>
<td>U110</td>
<td>Radiocontrast media</td>
<td>io- iodine-containing contrast media</td>
</tr>
<tr>
<td>U110</td>
<td></td>
<td>-io or iod- iodine-containing compounds other than contrast media</td>
</tr>
<tr>
<td>U120</td>
<td>Diagnostic aids, other</td>
<td></td>
</tr>
<tr>
<td>U130</td>
<td>Diagnostic radioisotopes</td>
<td></td>
</tr>
<tr>
<td>U200</td>
<td>Chelating agents, detoxicants, etc.</td>
<td></td>
</tr>
<tr>
<td>U210</td>
<td>Alcohol deterrents</td>
<td></td>
</tr>
<tr>
<td>U300</td>
<td>Anti-inflammatory agents</td>
<td></td>
</tr>
<tr>
<td>U310</td>
<td>Non-antipyretic antirheumatics</td>
<td></td>
</tr>
<tr>
<td>U320</td>
<td>Anti-inflammatory agents, other</td>
<td></td>
</tr>
<tr>
<td>U400</td>
<td>Pharmaceutical adjuncts</td>
<td>cell- or cel- cellulose derivatives; (cell-ate and -cellose)</td>
</tr>
<tr>
<td>U400</td>
<td></td>
<td>-dronic acid calcium metabolism regulator, pharmaceutical aid</td>
</tr>
<tr>
<td>V000</td>
<td>UNCLASSIFIED PHARMACOLOGICAL MECHANISMS</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Category</td>
<td>Example</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>V100</td>
<td>Intrauterine contraceptive device</td>
<td></td>
</tr>
<tr>
<td>V200</td>
<td>Medicinal plants</td>
<td></td>
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<tr>
<td>V300</td>
<td>Homoeopathic preparations</td>
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<tr>
<td>W000</td>
<td>ENZYMES AND VARIOUS</td>
<td>-ase enzymes; -dismase, -teplase, -uplase</td>
</tr>
<tr>
<td>W000</td>
<td></td>
<td>-stat enzyme inhibitors</td>
</tr>
<tr>
<td>Y000</td>
<td>VETERINARY DRUGS</td>
<td>-nidazole antiprotozoals, metronidazole derivatives</td>
</tr>
</tbody>
</table>
# ALPHABETICAL LIST OF STEMS TOGETHER WITH CORRESPONDING INNS

<table>
<thead>
<tr>
<th>Stem</th>
<th>Description</th>
<th>USAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>-abine</td>
<td>see -arabine, -citabine</td>
<td></td>
</tr>
<tr>
<td>-ac (x)</td>
<td>anti-inflammatory agents, ibufenac derivatives</td>
<td></td>
</tr>
<tr>
<td>A.4.2.0</td>
<td>(USAN: anti-inflammatory agents (acetic acid derivatives))</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>aceclofenac (52), alclofenac (23), amfenac (38), anirolac (52), bendazac (22), bromfenac (55), cinfenac (41), clidanac (39), clofurac (42), clopirac (30), dexpemedolac (71), diclofenac (28), eltenac (53), etodolac (45), felbinac (54), fenclofenac (30), fenclorac (33), fentiazac (32), furofenac (40), ibufenac (14), isoxepac (37), ketorolac (51), lexofenac (38), nepafenac (78), oxepinac (36), oxindanac (54), pemedolac (58), (quinclorac, ISO name for a herbicide), sulindac (33), tianafac (31), tifurac (57), tiopinac (40), zomepirac (37)</td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td>amtolmetin guacil (65), bufexamac (20) (anti-inflammatory; acetohydroxamic acid group instead of acetic acid group)</td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td>clamidoxic acid (17), fencloxic acid (22), metiazinic acid (20), prodolic acid (29), tolmeter (23)</td>
<td></td>
</tr>
<tr>
<td>TRS 581</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-acetam</td>
<td>see -racetam</td>
<td></td>
</tr>
<tr>
<td>-actide (x)</td>
<td>synthetic polypeptides with a corticotropin-like action</td>
<td></td>
</tr>
<tr>
<td>Q.1.1.1</td>
<td>(USAN: synthetic corticotropins)</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>alsactide (45), codactide (24), giractide (29), norleusactide (18), seractide (31), tetracosactide (18), tosactide (24), tricosactide (44)</td>
<td></td>
</tr>
<tr>
<td>TRS 581</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INN – The use of common stems

BAN, USAN

-adol (x) or -adol-

analgesics (14th Report, 1967)

A.4.1.0

A.4.2/3.0

(USAN: analgesics (undefined group))

(a) A.4.1.0: acetylmethadol (5), alimadol (39), alphacetylmethadol (5), alphamethadol (5), axomadol (87), betacetylmethadol (5), betamethadol (5), levacetylmethadol (27), noracymethadol (12), tapentadol (87)

A.4.2/3.0: apadoline (74), asimadoline (74), bromadoline (49), ciprefadol (41), ciramadol (39), cloracetadol (16), dibusadol (24), dimenoxadol (7), diproxadol (34), enadoline (68), filenadol (47), flumexadol (36), fluradoline (48), gaboxadol (48), levonantradol (43), lorcinadol (57), moxadolen (45), (deleted in List 48: moxifadol (47)), myfadol (17), nafoxadol (50), nantradol (42), nerbacadol (56), oxapadol (40), picenadol (47), pinadoline (50), pipradimadol (42), pipramadol (42), pravadoline (60), vadoline (60), profadol (20), radolmidine (82), ruzadolane (71), spiradoline (53), tazadolene (52), tolpadol (48), tramadol (22), veradoline (47)

(b) alfadolone (27), hexapradol (12) (CNS stimulant), nadolol (34), quinestradol (15) (estrogenic)

(c) A.4.1.0: dimepheptanol (5)

-adom analgesics, tifluadom derivatives

A.4.3.0

(a) lufuradom (50), tifluadom (48)

-afenone antiarrhythmics, propafenone derivatives

H.2.0.0

(a) alprafenone (62), berlafenone (63), diprafenone (48), etafenone (19), propafenone (29)
-aj- antiarrhythmics, ajmaline derivatives

H.2.0.0

(a) detajmium bitartrate (34), lorajmine (34), prajmalium bitartrate (23)

-al (d) aldehydes
(deleted from General Principles in 14th Report)

-aldrate antacids, aluminium salts

N.5.2.0

(a) carbaldrate (53), potassium glualdrate (14), sodium glcupasaldrate (17), magaldrate (49), simaldrate (15)

-alol see -olol

-alox see -ox

andr (d) steroids, androgens

Q.2.3.0 (USAN: -andr- androgens)

(a) i. andr: androstanolone (4), methandriol (1), nandrolone (22), norethandrolone (6), ovandroton albumin (52), silandron (18)

ii. -stan- (d): androstanolone (4), drostanolone (13), epitistanol (31), mestanolone (10), stanozolol (18), epistane (51) (contraceptive)

iii. -ster- (d): calusterone (23), cloxotestosterone (12), fluoxymesterone (6), mesterolone (15), methyltestosterone (4), oxymesterone (12), penmesterol (14), prasterone (23), testosteron (4), testosteron ketolaurate (16), tiomesterone (14)

(b) i. andr: oxandroton (12), propetandrol (13)
iii. ster: aldosterone (6), bolasterone (13), dihydrotachysterol (1), dimethisterone (8), ethisterone (4), norethisterone (6), norvinisterone (6), stercuronium iodide (21) (neuromuscular blocking agent)

(c) metandienone (12), oxymetholone (11), trestolone (25) (antineoplastic androgen)

TRS 581

-anide

-ethane diuretics, piretanide derivatives

N.1.2.0 (USAN: diuretics (piretanide group))

(a) bumetanide (24), piretanide (33)

(c) besunide (30)

-oxanide antiparasitic, salicylanilides and analogues

S.3.0.0

(a) bromoxanide (31), clioxanide (19), rafoxanide (24)

thioanalogues: brotianide (24)

related: diloxanide (8), nitazoxanide (45)

(b) closantel (36), flurantel (25), niclosamide (13), resorantel (23), salantel (29)

(c) oxyclozanide (16)

other-anides: aurothioglycanide (1) (anti-arthritis; gout-remedy), ceforanide (39) (antibiotic), oglufanide (86) (immunomodulator), polihexanide (24) (antibacterial), tiprostanide (48) (antihypertonic)
-anserin  serotonin receptor antagonists (mostly 5-HT<sub>2</sub>)

C.7.0.0  (USAN: serotonin receptor antagonists (undefined group))

(a)  adatanserin (70), altanserin (50), blonanserin (76), butanserin (51), eplivanserin (80),
fananserin (69), fibanserin (75), ketanserin (46), lidanserin (62), pelanserin (57), seganserin (56),
tropanserin (55)

(b)  serotonin receptor antagonists, psychoactive: cinanserin (17), glemanserin (68), mianserin (20),
ritanserin (51)

-antel  anthelminthics (undefined group)

S.3.1.0

(a)  amidantel (40), carbantel (35), closantel (36), epsiprantel (57), febantel (38), flurantel (25),
morantel (22), oxantel (31), pexantel (22), praziquantel (34), pyrantel (17), resorantel (23),
salantel (29), zilantel (33), antelmycin (15)

TRS 581

-apine  see -pine

-(ar)abine  arabinofuranosyl derivatives

L.4.0.0/
S.5.3.0  (USAN: -arabine: antineoplastic arabinofuranosyl derivatives)

(a)  ancitabine (36), capecitabine (73), cytarabine (14), decitabine (61), emtricitabine (80),
enocitabine (46), fazarabine (56), fiacitabine (59), fludarabine (48), flurocitabine (38),
galocitabine (65), gemcitabine (62), ibacitabine (57), nelarabine (80), vidarabine (23),
zalcitabine (66)

(c)  S.5.3.0: ribavirin (31)
-arit  antiarthritic substances, acting like clobuzarit and lobenzarit, (mechanism different from anti-inflammatory type substances, e.g. -fenamates or -profens)

A.4.2.0  (USAN: antirheumatic substances, acting similarly to lobenzarit)

(a)  actarit (62), bindarit (64), clobuzarit (44), lobenzarit (46), romazarit (60)

-arol (d)  anticoagulants, dicoumarol derivatives

I.2.1.0  (USAN: anticoagulants (dicoumarol type))

(a)  acenocoumarol (6), clocoumarol (31), coumetarol (13), dicoumarol (23), tioclomarol (31), xylocoumarol (15)

(b)  cloridarol (29) (coron. vasodil.), fluindarol (16) (anticoag. of indonedione-type)

(c)  diarbarone (15), ethyl biscoumacetate (4), phenprocoumon (11), warfarin (23)

-pone  amiodarone (16) (anti-arrhythmic), benzarone (13), benz bromarone (13) (uricosuric), benzbromarone (11), brinazarone (64) (calcium channel blocker), bucromarone (48) (antiarrhythmic), diarbarone (15), dronedarone (75) (anti-anginal, antiarrhythmic), etabenzarone (17), fantofarone (65) (calcium channel blocker), furidarone (19), inicarone (27), mecinarone (30), pyridarone (16), rilozarone (58)
arte- antimalarial agents, artemisinin related compounds

S.3.3.0

(a) artemether (61), artemisinin (56), artemotil (80), artemimol (81), artesunate (61), arteflene (70)

-ase enzymes

W.0.0.0

(a) agalsidase alfa (84), agalsidase beta (84), alglucerase (68), brinase (22), cocarboxylase (1), dornase alfa (70), efuenserase (84), hyalosidase (50), hyaluronidase (1), idusulfase (87), kallidinogenase (22), ocrase (28), pegaspargase (64), penicillinase (10), promelase (47), rizolipase (22), serrapectase (31), sfericase (40), streptodornase (6), streptokinase (6), tilactase (50), urokinase (48)

(c) batroxobin (29), bromelains (18), chymopapain (26), chymotrypsin (10), defibrotide (44), orgotein (31), sutilains (18), ubidecarenone (48)

Classification of enzymes

I proteinase

(a) with -ase suffix:

<table>
<thead>
<tr>
<th>(INN)</th>
<th>(origin)</th>
<th>(use, action)</th>
</tr>
</thead>
<tbody>
<tr>
<td>brinase (22)</td>
<td><em>Aspergillus oryzae</em></td>
<td>fibrinolytic</td>
</tr>
<tr>
<td>kallidinogenase (22)</td>
<td>pancreas or urine of mammals</td>
<td>splitting kinin, kallidin from kininogen (vasodilator)</td>
</tr>
<tr>
<td>ocrase (28)</td>
<td><em>Aspergillus ochraceus</em></td>
<td>fibrinolytic (topically: cleaning wounds)</td>
</tr>
<tr>
<td>pegaspargase (64)</td>
<td></td>
<td>asparaginase</td>
</tr>
<tr>
<td>promelase (46)</td>
<td><em>Aspergillus melleus</em></td>
<td>proteinase (chronic bronchitis)</td>
</tr>
<tr>
<td><strong>rasburicase</strong> (81)</td>
<td><em>Aspergillus flavus</em></td>
<td>urate oxidase (hyperuricaemia)</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td><strong>serrapeptase</strong> (31)</td>
<td><em>Serratia sp. E15</em></td>
<td>proteinase (chronic paranasal sinusitis etc.)</td>
</tr>
<tr>
<td><strong>sfericase</strong> (40)</td>
<td><em>Bacillus sphaericus</em></td>
<td>proteinase (chronic paranasal sinusitis etc.)</td>
</tr>
<tr>
<td><strong>streptokinase</strong> (6)</td>
<td><em>Streptococcus haemolyticus</em></td>
<td>changing plasminogen into plasmine (activator of fibrinolysis)</td>
</tr>
<tr>
<td><strong>urokinase</strong> (48)</td>
<td>human origin</td>
<td>plasminogen activator</td>
</tr>
<tr>
<td><strong>urokinase alfa</strong> (27)</td>
<td>recombinant material</td>
<td>plasminogen activator</td>
</tr>
</tbody>
</table>

(b) **without -ase suffix:**

<table>
<thead>
<tr>
<th><strong>batroxobin</strong> (29)</th>
<th>the venom of the serpent <em>Bothropsatrox</em></th>
<th>thrombin like enzyme</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>bromelains</strong> (18)</td>
<td><em>Ananas comosus</em> Merr.</td>
<td>fibrin depolymerizing (antiinflammatory)</td>
</tr>
<tr>
<td><strong>chymopapain</strong> (26)</td>
<td>papaya late</td>
<td>proteolytic (chemonucleosis)</td>
</tr>
<tr>
<td><strong>chymotrypsin</strong> (10)</td>
<td>mammalian pancreas</td>
<td>proteolytic (antiinflammatory, antioedema)</td>
</tr>
<tr>
<td><strong>defibrotide</strong> (44)</td>
<td>mammalian pancreas</td>
<td>proteolytic (antiinflammatory, antioedema)</td>
</tr>
<tr>
<td><strong>sutilains</strong> (18)</td>
<td><em>Bacillus subtilis</em></td>
<td>proteolytic</td>
</tr>
</tbody>
</table>

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**II**

- **lipase**

| **rizolipase** (22) | *Rhizopus arrhizus* var. Delemar | lipase |

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**III**

- **co-enzymes**

| **cocarboxylase** (1) | chemically defined | co-enzyme in the metabolism of pyruvic acid |
ubidecarenone (48)  chemically defined naturally occurring co-enzyme, a component in the electron transfer system in mitochondria (congestive heart failure)

<table>
<thead>
<tr>
<th>IV</th>
<th>dismase enzymes with superoxide dismutase activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>(USAN: superoxide dismutase activity (exception: orgotein))</td>
<td></td>
</tr>
<tr>
<td>(a) ledismase (70), sudismase (58)</td>
<td></td>
</tr>
<tr>
<td>(c) isomerase</td>
<td></td>
</tr>
<tr>
<td>orgotein (31) mammalian tissue (liver, red blood cell etc.) superoxide dismutase activity (anti-inflammatory)</td>
<td></td>
</tr>
<tr>
<td>pegorgotein (72)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>V</th>
<th>diplase plasminogen activator combined with another enzyme</th>
</tr>
</thead>
<tbody>
<tr>
<td>amediplase (79)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VI</th>
<th>teplase tissue-type-plasminogen activators</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) alteplase (59), anistreplase (59), desmoteplase (80), duteplase (62), lanoteplase (76), monteplase (71), nateplase (73), pamiteplase (78), reteplase (69), silteplase (65), tenecteplase (79)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VII</th>
<th>uplase urokinase-type-plasminogen activators</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) nasaruplase (68), nasaruplase beta (85), saruplase (58)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VIII</th>
<th>others</th>
</tr>
</thead>
<tbody>
<tr>
<td>agalsidase alfa (84) human origin treatment of deficiency of alpha-galactosidase activity (Fabry’s disease)</td>
<td></td>
</tr>
<tr>
<td>agalsidase beta (84) hamster treatment of deficiency of alpha-galactosidase activity (Fabry’s disease)</td>
<td></td>
</tr>
<tr>
<td>Enzyme Name</td>
<td>Species/Origin</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>alfimeprase (85)</td>
<td><em>Agkistrodon contix contix</em></td>
</tr>
<tr>
<td>dornase alfa (70)</td>
<td>human origin</td>
</tr>
<tr>
<td>epafipase (85)</td>
<td>human origin</td>
</tr>
<tr>
<td>eufauserase (84)</td>
<td><em>Euphausia Superba</em></td>
</tr>
<tr>
<td>hyalosidase (50)</td>
<td></td>
</tr>
<tr>
<td>hyaluronidase (1)</td>
<td>various origins</td>
</tr>
<tr>
<td>idusulfase (87)</td>
<td></td>
</tr>
<tr>
<td>imiglucerase (72)</td>
<td>human origin (placenta isoenzyme)</td>
</tr>
<tr>
<td>laronidase (85)</td>
<td>human origin</td>
</tr>
<tr>
<td>penicillinase (10)</td>
<td><em>Bacillus cereus</em></td>
</tr>
<tr>
<td>ranpirnase (81)</td>
<td><em>Rana pipiens</em></td>
</tr>
<tr>
<td>streptodornase (6)</td>
<td><em>Streptococcus haemolyticus</em></td>
</tr>
<tr>
<td>tilactase (50)</td>
<td>β-D-glactosidase</td>
</tr>
</tbody>
</table>

**-ast (x)** antiasthmatic, antiallergics, not acting primarily as antihistaminics

**K.0.0.0**

(BAN: antiasthmatics, antiallergics when not acting primarily as antihistamines)

(USAN: antiasthmatics or antiallergic substances not acting primarily as antihistamines)

(a) acitazanolast (72), acreozastr (77), andolast (67), asobamast (63), ataquimast (82), bamaquimast, (76), batebulast (66), binizolast (60), bunaprolast (60), cilomilast (82), dametralast (54), dazoquinast (54), doqualast (48), eclazolast (55), eflumast (61), enofelast
-lukast  
leukotriene receptor antagonist  
(a) ablukast (61), cinalukast (70), iralukast (70), montelukast (73), pobukast (70), pranlukast (67), ritolukast (64), sulukast (63), tolelukast (59), verlukast (65), zafirlukast (71)  

-trodast  
thromboxane A2 receptor antagonists, antiasthmatics  
(a) imitrodast (70), seratrodast (70)  
(c) bufrolin (34), oxarbazole (38), pirolate (44)  

-astine (x)  
antihistaminics  
G.2.0.0 (BAN: antihistamines, not otherwise classifiable)  
(USAN: antihistaminics (histamine-H1 receptor antagonists))  
(a) acrivastine (51), alinastine (74), azelastine (36), barmastine (59), bepiastine (19), bepotastine (78), bilastine (82), cabastinen (50), carebastine (52), clemastine (22), dorastine (23), ebastine (52), emedastine (59), epinastine (55), flezelastine (67), levocabastine (50), linetastine (74), mapinastine (72), mizolastine (64), moxastine (15), noberastine (59), octastine (37), perastine (15), piclopastine (22), rocastine (57), setastine (39), talastine (18), temelastine (54), zepastine (26)  
(b) cloperastine (18) (antitussive), vinblastine (12) (vinca-alkaloid)  
(c) astemizole (45), carbinoxamine (4)  

-azam  
see - azepam
-azenil  benzodiazepine receptor antagonists/agonists (benzodiazepine derivatives)

(b) bretazenil (60), flumazenil (55), iomazenil $^{123}I$ (66), sarmazenil (59)

(b) nabazenil (49)

carnil  benzodiazepine receptor antagonists/agonists (carboline derivatives)

(a) abecarnil (60), gedocarnil (61)

-quinil  benzodiazepine receptor partial agonists (quinoline derivatives)

(a) lirequinil (72), terbequinil (63)

-azepam (x)  diazepam derivatives

C.1.0.0  (BAN: substances of the diazepam group)
          (USAN: antianxiety agents (diazepam type))

(a) bromazepam (22), camazepam (30), carcurazepam (39), cinolazepam (46), clonazepam (22),
    cyprazepam (16), delorazepam (40), diazepam (12), doxefazepam (43), elfazepam (36),
    fletazepam (31), fludiazepam (36), flunitrazepam (24), flurazepam (20), flutemazepam (58),
    flutoprazepam (45), fosazepam (27), halazepam (29), iclazepam (37), lorazepam (23),
    lormetazepam (38), meclonazepam (44), medazepam (20), menitrazepam (22), metaclazepam
(46), motrazepam (31), nimetazepam (26), nitrazepam (16), nordazepam (39), nortetrazepam (20), oxazepam (13), pinazepam (32), pivoxazepam (34), prazepam (14), profazepam (31), quazepam (36), reclazepam (53), sulazepam (14), temazepam (22), tetrazepam (17), tolufazepam (51), tuclazepam (40), uldazepam (30)

not true benzodiazepines: bentazepam (33), clotiazepam (30), lopirazepam (36), premazepam (45), ripazepam (33), zolazepam (28)

related: adinazolam (45), alprazolam (30), arfendazam (39), clazolam (29), climazolam (51), clobazam (25), clobenzepam (25), cloxazolam (29), ecopipam (80), estazolam (31), flutazolam (32), haloxazolam (38), ketazolam (26), lofendazam (36), loprazolam (44), mexazolam (40), midazolam (40), nefopam (25), oxazolam (25), razobazam (52), tofisopam (26), trepipam (38), triazolam (30), triflubazam (28), zapizolam (43), zomebazam (49)

(c) brotizolam (40), chlordiazepoxide (11), ciclotizolam (40), demoxepam (23), dipotassium clorazepate (17), ethyl carfluzepate (43), ethyl dirazepate (44), ethyl loflazepate (43), etizolam (40), potassium nitrazepate (17)

TRS 581 not related: anti-anx.: fenobam (36), muscle relax.: xilobam (36)

-azepide cholecystokinin receptor antagonist
J.1.0.0
(a) devazepide (62), pranazepide (75), tarazepide (68)
(c) lorglumide (56)

-azocine narcotic antagonists/agonists related to 6,7-benzomorphan
A.4.1.0 (USAN: narcotic antagonists/agonists related to 6,7-benzo-morphan)

(a) anazocine (30), bremazocine (43), butinazocine (53), carbazocine (16), cogazocine (36), cyclazocine (14), eptazocine (45), gemazocine (29), ibazocine (36), ketazocine (34), metazocine (9), oxazocine (38), pentazocine (14), phenazocine (9), quadazocine (54), tonazocine (46), volazocine (19)

(b) streptozocin (33)
related compounds: dezocine (35)

TRS 581

-azolam  see -azepam

-azoline  antihistaminics or local vasoconstrictors, antazoline derivatives

E.4.0.0  (USAN: antihistaminics or local vasoconstrictors of the antazoline group)

(a)  antazoline (1), cilutazoline (61), cirazoline (38), clonazoline (18), coumazoline (26),
    domazoline (30), fenoxazoline (12), indanazoline (42), metrafazoline (33), naphazoline (1),
    nemazo-line (63), oxymetazoline (13), phenamazoline (6), prednazoline (22), tefazoline (24),
    tinazoline (39), tramazoline (15), xylometazoline (8)

(b)  cefazolin (25) (antibiotic)

(c)  tetryzoline (6), metizoline (22)

TRS 581

-azone  see -buzone

-azosin  antihypertensive substances, prazosin derivatives

H.3.0.0  (USAN: antihypertensives (prazosin type))

(a)  bunazosin (50), doxazosin (47), neldazosin (60), prazosin (22), quinazosin (17), terazosin (44),
    tiodazosin (41), trimazosin (31)

related: alfuzosin (49), tamsulosin (65), tipentosin (55)
**-bactam**  \(\beta\)-lactamase inhibitors

S.6.5.0

(a) brobactam (53), sulbactam (44), tazobactam (60)

(c) clavulanic acid (44)

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**-bamate** tranquilizers, propanediol and pentanediol derivatives

C.1.0.0

(a) cyclarbamate (13), meprobamate (6), nisobamate (21), pentabamate (13), tybamate (14)

(b) difebarbamate (16), febarbamate (12), lorbamate (24), phenprobamate (10)

(c) mebutamate (12), metaglycodol (12) (not a carbamate)

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**barb (d)** hypnotics, barbituric acid derivatives

A.2.1.0

(BAN: -barb, -barb-: for barbiturates)

(USAN: -barb; or -barb-: barbituric acid derivatives)

(a) allobarbital (1), amobarbital (1), aprobarbital (1), barbexa-clone (16), barbital (4), barbital sodium (4), benzobarbital (25), brallobarbital (41), carbubarb (14), cyclobarbital (1), difebarbamate (16), eterobarb (32), febarbamate (12), heptabarb (14), hexobarbital (1), methylphenobarbital (1), nealbarbital (11), pentobarbital (1), phenobarbital (4), phenobarbital sodium (4), probabartal sodium (1), proxibarbital (33), secbutabarbital (12), secobarbital (4), tetrabarbital (4), thialbarbital (4), thiotetabarbital (4), vinbarbital (1)

(c) butalbital (4), buthalital sodium (8), metharbital (1), methitural (6), methohexital (8), phetharbital (10), talbutal (17), thiopental sodium (4), vinylbital (12)
prazitone (19) (barbituric acid derivative used as antidepressive), bucolome (17) (barbituric acid derivative used as anti-inflammatory uricosuric)

TRS 581

-bendan see -dan

-bendazole anthelmintics, tiabendazole derivatives

S.3.1.0 (USAN: anthelmintics (tiabendazole type))

\[
\begin{array}{c}
\text{H} \\
\text{N} \\
\text{N} \\
\text{S}
\end{array}
\]

(a) albendazole (35), albendazole oxide (56), bisbendazole (29), cambendazole (24), ciclobendazole (31), dribendazole (49), etibendazole (49), fenbendazole (29), flubendazole (34), lobendazole (28), luxabendazole (52), mebendazole (24), oxibendazole (30), parbendazole (19), subendazole (31), tiabendazole (13), triclabendazole (45)

(b) bendazol (12) (vasodilator, also benzimidazole derivative)

L.0.0.0: nocodazole (36), procodazole (36) (also benzimidazole derivative)

c) oxfendazole (35), tioxidazole (39)

related: furodazole (37) (S.3.1.0)

TRS 581

bol (x) anabolic steroids

M.4.1.0 (BAN: steroids, anabolic)

(USAN: bol- or -bol- : anabolic steroids)

(a) bolandiol (16), bolasterone (13), bolazine (21), boldenone (20), boleol (19), bolmantolate (16), clostebol (22), enestebol (22), formebolone (31), furazabol (16), mebolazine (21), mesabolone (29), metribolone (17), mibolerone (27), norboletone (15), norclostebol (22), oxabolone cipionate (14), quinbolone (14), roxibolone (40), stenbolone (17), tibolone (22), trenbolone (24)

(c) ethylestrenol (13), hydroxystenozole (10), metandienone (12), metenolone (12), oxandrolone (12), propetandrol (13), tiomesterone (14)
-bradine  bradycardic agents

H.0.0.0

(a)  cilobradine (63), ivabradine (75), zatebradine (62)

-brate  see -fibrate

-buzone (x)  anti-inflammatory analgesics, phenylbutazone derivatives

A.4.2.0

(a)  feclobuzone (27), kebuzone (19), pipebuzone (25), suxibuzone (24), tribuzone (33)

-butazone  (USAN: anti-inflammatory analgesics of the phenylbutazone type)

mofebutazone (15), oxyphenbutazone (8), phenylbutazone (1)

-azone  aminophenazone (13), bisfenazone (33), famprofazone (21), morazone (12), nifenazone (15), nimazone (20), niprofazone (29), phenazone (4), propyphenazone (1), sulfinpyrazone (8)

-zone  clofezone (17), proxifezone (24)

related:  azapropazone (18), benhepazone (15), bumadizone (24), cinnopentazone (17), isamfazone (37), metamfazone (12), osmadizone (26), ruvazone (26)

(c)  benzpiperylone (12), butopyrammonium iodide (8), dibupyrone (17), metamizole sodium (53), metazamide (16), piperylone (11)

TRS 581

-caine (x)  local anaesthetics

D.1.0.0

(a)  ambucaine (6), amoxecaine (1), aptocaine (21), articaine (47) (previously carticaine (27)), benzocaine (42), betoxycaine (13), bucricare (49), bumecaine (25), bupivacaine (17),
butacaine (4), butanilicaine (16), chloroprocaine (6), cinchocaine (1), clibucaine (14),
clodacaine (13), clormecaine (17), cyclomethycaine (6), dexivacaine (20), diamocaine (22),
edronocaine (84), elucaine (29), etidocaine (29), fexicaine (25), fomocaine (18), hexylcaine
(4), hydroxyprocaine (1), hydroxytetracaine (1), ipravacaine (85), ketocaine (15), leucinocaine
(17), levobupivacaine (74), lidocaine (1), lotucaine (27), mepivacaine (11), meprylcaine (4),
mybucaine (15), octacaine (14), oxetacaine (13), oxybuprocaine (8), parethoxycaine (l),
paridocaine (8), phenacaine (4), pinolcaine (32), piperocaine (l), piridocaine (l), pramocaine
(4), prilocaine (32), prilocaine (14), procaine (10), propanocaine (6), propipocaine (16),
propoxycaine (4) proxymetacaine (6), pyrrocaine (13), quatacaine (18), quinisocaine (4),
risocaine (26), rodocaine (27), ropivacaine (50), tetracaine (4), tolycaine (16), trapencaine (56),
trimecaine (11), vadocaine (57)

amolanone (6), benzyl alcohol (l), cryofluorane (6), diperodon (l), dyclonine (6), midamaline
(6)

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**-cain- (x)**  
**Class I antiarrhythmics, procainamide and lidocaine derivatives**

H.2.0.0  
(BAN: antifibrillants with local anaesthetic activity)

(a)  
acecainide (39), asocainol (47), baruainide (52), bucainide (35), carcaimium chloride (36),
carocainide (46), droxicainide (47), encainide (40), epicainide (40), erocainide (50), flecainide
(37), guafecainol (38), indecainide (48) (originally ricainide (47)), itrocaimide (54), ketocainol
(32), lorcaimide (38), milacainide (77), modecainide (63), murocainide (46), nicainoprol (46),
nofecainide (44), piliscainide (62), pincaimide (49), procainamide (1), quinacainol (50),
recainam (54), solpecainol (55), stirocaimide (47), suricainide (55), tocainide (36), transcaimide
(51), (verocainine (42) - replaced by tiapamil in List 43), zocainone (41)

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**calcii**  
**Vitamin D analogues/derivatives**

N.8.0.0
(a) alfacalcidol (40), calcifediol (26), calcipotriol (61), calcitriol (39), colecalciferol (13),
doxercalciferol (82), ecacalcidene (85), ergocalciferol (13), falecalcitriol (74), inecalcitol (87),
lexacalcitol (71), maxacalcitol (75), paricalcitol (78), secalciferol (62), seocalcitol (78),
tacalcitol (65)
(b) calcitonin (31) (polypeptide)
(c) dihydrotachysterol (1)

**USAN**

-carbef antibiotics, carbacepham derivatives
S.6.1.0

(a) loracarbef (60)

-carnil see -azenil

**BAN, USAN**

-cef- (x) antibiotics, cefalosporanic acid derivatives
S.6.1.0 (USAN: cefalosporins)

(a) cefacetrel (25), cefaclor (36), cefadroxil (33), cefalexin (18), cefaloglycin (16), cefalonium
(16), cefaloram (16), cefalogoridine (15), cefalotin (14), cefamandole (30), cefaparole (33),
cefapirin (23), cefatrizine (34), cefazafuril (36), cefazedone (36), cefazolin (25), cefbuperazone
(48), cefcanel (59), cefcanel daloxate (59), cefcapene (68), cefclidine (64), cefdaloxide (64),
cefdinir (61), cefditoren (66), cefedrolor (53), cefemipidone (58), cefepime (57), cefetamet
(49), cefetecol (64), cefetrizole (44), cefivitril (52), cefixime (53), cefizopran (66), cefluprenam
(71), cefmatilen (81), cefmenoxime (44), cefmepidium chloride (57), cefmetazol (39),
cefminox (53), cefodizime (44), cefonicid (42), cefoperazone (42), ceforanide (39), cefoselis
(71), cefotaxime (40), cefotetan (48), cefotiam (40), cefoxazole (34), cefoxitin (29), cefozoprana
(66), cefpimizole (50), cefpirimide (47), cefpirome (50), cefpodoxime (58), cefprozil (60),
cefquinome (59), cefradine (26), cefrotol (34), cefroxadine (42), cefsulodin (38), cefsumide
(38), ceftazidime (44), ceftarim (55), ceftezole (34), cefributen (60), ceftofur (53), ceftiolene
(49), ceftiocid (43), cefaznixome (42), cefnizoxime alaproxil (77), ceftriaxone (44),
cefuracetime (45), cefuroxime (34), cefuzonam (55)
-oxef antibiotics, oxacefalosporanic acid derivatives

S.6.1.0 (USAN: antibiotic oxacefalosporanic acid derivatives)

\[
\begin{align*}
 & \text{N} \quad \text{O} \\
 & \text{CO}_2\text{H} \\
 & R'\text{O} \\
 & \text{HH} \\
 & \text{R}\text{O} \\
 & \text{H} \\
 & \text{N}
\end{align*}
\]

(a) flomoxef (55), latamoxef (46)

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cell- or cel-
cellulose derivatives [cel- in spanish]

U.4.0.0

(a) celucloral (40)

(c) celiprolol (35)

cell-ate cellulose ester derivatives for substances containing acidic residues [cel-ato in spanish]

U.4.0.0

(a) cellaburate (23), cellacefate (18)

-cellose cellulose ether derivatives [-elosa in spanish]

U.4.0.0

(a) -

(c) carmellose (45), croscarmellose (48), ethylcellulose (80), hyetellose (80), hymetellose (80), hyprolose (80), hypromellose (18), methylcellulose (4)

-cic hepatoprotective substances with a carboxylic acid group

J.1.2.0 (USAN: hepatoprotectives (timonacic group))

(a) limazocic (69), tidiacic (33), timonacic (33), (tiofacic (45) replaced by stepronin (46))

(b) bisorcic (34) (psychostimulant)

(c) stepronin (46)
naturally occurring antibiotics (undefined group) (14th Report, 1964)

(a) candididin (17), gramicidin (1), gramicidin S (26), methocidin (6)

(b) guancidine (18) (hypotensive)

antibiotics, 6-aminopenicillanic acid derivatives

(a) adicillin (14), almcellin (14), amantocillin (17), amoxicillin (27), ampicillin (13), apalcillin (39), aspoxicillin (50), azidocillin (19), azlocillin (36), bacampicillin (32), benethamine penicillin (1), benzathine benzylpenicillin (18), benzylpenicillin (53), carbenicillin (20), carfcecillin (30), carindacin (29), ciclacillin (22), clemizole penicillin (8), clometocillin (12), cloxacillin (13), dicloxacillin (16), epicillin (25), fenbenicillin (13), fibracillin (30), flucloxacillin (17), fompicillin (55), fumoxicillin (47), furbucillin (31), fuzlocillin (47), hetacillin (16), isopropicillin (12), lenampicillin (50), levopropicillin (12), metampicillin (20), meticillin (12), mezlocillin (34), nafcillin (13), oxacillin (15), oxetacillin (33), penemecillin (16), pheneticillin (11), phenoxyemethyl penicillin (6), phenyracillin (8), pipercillin (38), pirbenicillin (35), piridicillin (43), piroxicillin (49), pivampicillin (23), prazocillin (27), propicillin (13), quinacillin (14), rotamicillin (35), sarmoxicillin (41), sarpicillin (36), sulbenicillin (26), sultamicillin (48), suncillin (25), talampicillin (31), tameticillin (35), temocillin (46), ticarcillin (29), tifencillin (12), tobicillin (78)

(b) xantocillin (12)

(c) penimepicycline (16), penimocycline (22)

-cillide:

S.6.1.0 libecillide (32)

-cillinam:

S.6.1.0 bacmecillinam (38), mecillinam (32), pivmecillinam (32)
-cisteine  
see -steine

USAN

-citabine  
nucleoside antiviral or antineoplastic agents, cytarabine or azarabine derivatives

L.4.0.0

(a) ancitabine (36), capecitabine (72), decitabine (61), enocitabine (46), fiacitabine (59), flurocitabine (38), galocitabine (65), gemcitabine (62), ibacitabine (57), tezacitabine (84), torcitabine (87), troxacitabine (81), zalcitabine (66)

(b) cytarabine (14), azacitidine (40)

-clone  
hypnotic tranquillizers

A.2.2.0

(a) barbexaclone (16), eszopiclone (87), pagoclone (74), pazinaclone (70), supraclone (46), suriclone (43), supraclone (46), zopiclone (39)

(b) gestaclone (23), pimeclone (20)

-cog  
blood coagulation factors

I.2.0.0

(-)eptacog  
blood coagulation VII: eptacog alfa (activated) (72)

(-)octocog  
blood factor VIII: moroctocog alfa (72), octocog alfa (73)

(-)nonacog  
blood factor IX: nonacog alfa (77)

related: drotrecogin alfa (85), tifacogin (78)
-conazole (x) systemic antifungal agents, miconazole derivatives

S.4.0.0 (BAN: systemic antifungals of the miconazole group) (USAN: systemic antifungals (miconazole type))

(a) albaconazole (87), aliconazole (43), alteconazole (53), azaconazole (45), becliconazole (65), brolaconazole (58), butoconazole (40), cisconazole (59), croconazole (55), (cyproconazole (ISO)), democonazole (42), (diniconazole (ISO C₁₇H₁₇Cl₂N₃O)), doconazole (37), eberconazole (64), econazole (27), enilconazole (44), ((etaconazole (ISO)), fenticonazole (44), fluconazole (54), fosfluconazole (83), ((furconazole (ISO/TC 81 N 872 C₁₅H₁₄Cl₂F₃N₃O₂)), (hexaconazole (ISO C₁₄H₁₇Cl₂N₃O)), isoconazole (30), itraconazole (50), ketoconazole (43), lanoconazole (66), luliconazole (86), miconazole (22), neticonazole (63), omoconazole (45), orconazole (40), oxiconazole (42), parconazole (39), (penconazole, (ISO)), posaconazole (82), (propiconazole (ISO)), ravuconazole (83), saperconazole (59), sertaconazole (56), sulconazole (38), (tebuconazole (ISO C₁₆H₂₂ClIN₃O)), terconazole (45) (originally triaconazole), tioconazole (40), (uniconazole (ISO C₁₅H₁₈ClN₃O)), valconazole (40), voriconazole (73), zinoconazole (50), zoficonazole (43)

(c) bifonazole (44)

cort (x) corticosteroids, except prednisolone derivatives

Q.3.0.0 (USAN: -cort-: cortisone derivatives)

(a) amebucort (54), anecortave (80), butixocort (63), cicortonide (28), corticotropin (68), corticotropin-zinc hydroxide (68), cortisone (1), cortisuzol (30), cortivazol (23), cortodoxone (15), deflazacort (39) (previously azacort (38)), desoxycortone (4), fluazacort (30), fludrocortisone (6), fludroxcytide (12), fluocortin (31), formocort (18), hydrocortamate (6), hydrocortisone (1), locicortolone dicibate (60), naflocort (50), nicocortonide (40), nivacortol (24), resocortol (74), tixocortol (38)
(b) prednisolone derivatives: clocortolone (16), difluocortolone (18), fluocortolone (15), halocortolone (31)

(c) aldosterone (6), algestone (22) (also progest. when used as algestone acetophenide), medrysone (16)

TRS 581

-crinat
diuretics, etacrylic acid derivatives

N.1.2.2 (USAN: diuretics (ethacrylic acid derivatives))

H₃C

O

O

Cl

Cl

(a) brocrinat (51), sulicrinat (52)

(c) etacrylic acid (14), furacrinic acid (29), indacrinone (51), tienilic acid (25)

-crine (d) acridine derivatives

(a) antineoplastics: amsacrine (44), nitracrine (35)

anthelmintics; antimalarials: floxacrine (34), mepacrine (4)

antidepressants: dimetacrine (19), monometacrine (19)

antiparkinsonian: botiacrine (38)

acetylcholinesterase inhibitors: ipidacrine (73), suronacrine (61), tacrine (8), velnacrine (61)

(c) acridorex (21), acriflavinium chloride (1), acrisorcin (13), aminoacridine (1), ethacridine (1), proflavine (1)

-cromil
antiallergics, cromoglicic acid derivatives

K.0.0.0 (USAN: antiallergics (cromoglicic acid type))
(a) ambicromil (48) (replacement of probicromil (46)), isocromil (39), minocromil (50), nedocromil (50), proxicromil (39), terbucromil (38), texacromil (58)

(c) cromitrile (46), cromoglicate lisetil (72), cromoglicic acid (l8)

-curium see -ium

-cycline (d) antibiotics, tetracycline derivatives

S.6.3.0 (BAN: antibiotics of the tetracycline group)
(USAN: antibiotics tetracycline derivatives)

(a) amicycline (14), apicycline (17), cetocycline (39), chlortetracycline (4), clomocycline (16), colimecycline (33), demeclocycline (25), demecycline (14), doxycycline (16), etamocycline (18), guamecycline (22), lymecycline (14), meclocycline (14), meglucycline (22), metacycline (12), minocycline (14), nitrocycline (14), oxytetracycline (1), pecocycline (15), penimepicycline (16), penimocycline (22), pipacycline (12), rolitetracycline (11), sancycline (15), tetracycline (4), tigecycline (86)

related: carubicin (40), daunorubicin (20), detorubicin (41), doxorubicin (25), zorubicin (39)

TR 581

-dan cardiac stimulants, pimobendan derivatives

H.1.0.0

(a) adibendan (57), bemorodan (61), imazodan (55), indolidan (57), levosimendan (68), meribendan (62), pimobendan (46), prinoxodan (64), senazodan (85), simendan (66)

(b) nitrodan (15), tyromedan (15)
INN – The use of common stems

-dapsone  antimycobacterials, diaminodiphenylsulfone derivatives (14th Report, 1964)

S.5.2.0  (USAN: antimycobacterial diaminodiphenylsulfone derivatives)

(a)  acedapsone (22), amidapsone (28), dapsone (23)

-dermin  see –ermin

-dil  vasodilators (18th Report, 1968)

F.2.0.0  (USAN: -dil; dil-; or -dil-: vasodilators (undefined group))

F.2.1.0  (a)  alprostadil (39), aviptadil (78), belfosdil (61), benfurodil hemisuccinate (16), biclodil (52), buflomedil (33), burodiline (26), carprazidil (45), cetiedil (27), cinepaxadil (50), dopropidil (59), eliprodil (66), fenoxedil (27), flosatidil (64), fostedil (51), fronepidil (59), ifenprodil (27), levosemotiadil (72), manozodil (47), mfenidil (48), minoxidil (25), naftopidil (52), naminidil (87), nesapidil (52), perfomedil (60), pinacidil (46), piribedil (23), pitenodil (37), podilfen (22), stevaladil (34), suloctidil (30), tipropidil (44), urapidil (27), viquidil (25)

(c)  dilmefone (33)

F.2.1.0  (a)  coronary vasodilators: bepridil (30), bumepidil (44), ecipramidil (40), fendiline (24), fenetradil (30), floredil (28), hexadiline (13), ipramidil (51), mepramidil (27), metrifudil (23), nicorandil (44), pirozadil (33), pretiadi (27), razi-nodil (38), semotiadil (64), sinitrodil (74), terodiline (16), tixadil (18), trapidil (29)

(c)  dilazep (22), diltiazem (30)

-dilol  carvedilol (50), dioxadilol (53), dramedilol (57), flavodilol (48), mindodilol (52), nipradilol (50) (previously nipradolol), oberadilol (77), parodilol (57), prizidilol (44), tribendilol (54)

(b)  diloxanide (8) (amebicide), methdilazine (10) (antihistaminic), phenobutiodil (6) (contrast medium), prodilidine (12) (analgesic)

-pendyl  cloxypendyl (15), isohipendyl (6), oxypendyl (13), prothipendyl (6)
-dyl  
  bisacodyl (13) (lax.), bunamiodyl (10), iofendylate (12), trihexyphenidyl (l) (antiparksonian)

TRS 58l

-dipine (x)  
  calcium channel blockers, nifedipine derivatives

F.2.1.0  
  (BAN: calcium ion channel antagonists)  
  (USAN: phenylpyridine vasodilators (nifedipine type))

![Chemical Structure]

(a)  
  amlodipine (53), aranidipine (69), azelnidipine (69), barnidipine (64), benidipine (58), 
  cilnidipine (66), clevidipine (75), cronidipine (61), darodipine (51) (replaces dazodipine (49)), 
  efonidipine (66), elgodipine (61), felodipine (44), flordipine (48), furmidonipine (67), 
  iganidipine (70), isradipine (55), lacidipine (57), lemidipine (69), lercanidipine (69) (previously 
  masnidipine), levnikuldipine (67), manidipine (59), mesudipine (40), nicardipine (42), 
  nifedipine (27), nigueldipine (60), niludipine (38), nilvadipine (52), nimodipine (40), 
  nisoldipine (42), nitrendipine (42), olradipine (69), oxodipine (52), palonidipine (64), 
  pranidipine (66), riodipine (51), sagandipine (64), sornidipine (58), teludipine (64) (previously taludipine (61))

(b)  
  budipine (36) (central stimulant, antidepressant and antiparkinsonian), prodipine (29) (central 
  stimulant antiparkinsonian)

-dismase  
  enzymes with superoxide dismutase activity, see -ase item V

-dopa  
  dopamine receptor agonists, dopamine derivatives, used as antiparkinsonism/prolactin inhibitors

E.1.1.0

![Chemical Structure]

(a)  
  carbidopa (37), ciladopa (52), dopamantane (31), droxidopa (57), etilevodopa (80), fluorodopa 
  (18F) (64), levodopa (21), melevodopa (83)

-opamine  
  dopaminergic agents dopamine derivatives used as cardiac stimulant/antihypertensives/diuretics
(a) butopamine (43), cliropamine (59), denopamine (50), dopamine (18), fosopamine (69), ibopamine (43), octopamine (32), oxidopamine (37) (glaucoma), ractopamine (54) (1 of 4 isomers of butopamine)

(b) tiopropamine (36) (gastric and duodenal ulcers), tolpropamine (13) (antihistaminic)

(c) dobutamine (29), docarpamine (59), dopexamine (50), fenoldopam (53), levdobutamine (65), methyldopa (12) (alpha-2 adrenoreceptor agonist, cardiotonic), zelandopam (84)

---

- **dralazine** antihypertensives, hydrazinephthalazine derivatives

  H.3.0.0 (USAN: antihypertensives (hydrazine-phthalazines))

  ![Structure](structure.png)

  (a) budralazine (33), cadralazine (41), dihydralazine (4), endralazine (39), hydralazine (1), mopidralazine (52), oxdralazine (38), picodralazine (18), pildralazine (48), todralazine (26)

---

- **drine** sympathomimetics (l6th Report, l966)

  E.4.0.0

  (a) alifedrine (49), butidrine (16), cafedrine (14), cinnamedrine (19), corbadrine (1), dioxethedrine (6), dioxifedrine (41), etafedrine (14), meluadrine (78), methoxyphedrine (6), midodrine (27), norbudrine (17), oxyfedrine (16), pholedrine (1), pseudoephedrine (11), racephedrine (66), ritodrine (22), theophylline ephedrine (14), tinofedrine (32), trecadrine (53)

  not phenethylamine derivatives: levopropylhexedrine (37), octodrine (19), propylhexedrine (6)

  (b) bufenadrine (13) (antiemetic) related chemically, chlormerodrin (4) (diuretic), chlormerodrin (l97 Hg) (24), dieldrin (10) (insecticide), orphenadrine (8) (spasmolytic)

  TRS 58l

- **frine** sympathomimetic, phenethyl derivatives

  E.4.0.0

  ![Structure](structure.png)
(a) amidefrine mesilate (15), berefrine (68), ciclafrine (33), dimetofrine (27), dipivefrine (39),
epinephrine (16), etilefrine (18), etilefrine pivalate (50), gepfrine (38), norepinephrine (45),
norfenefrine (16), oxilofrine (62), phenylephrine (1), pivenfrine (42), racepinefrine (41)

**-dronic acid**  **calcium metabolism regulator, pharmaceutical aid**

N.8.0.0  
U.4.0.0  (USAN: -dronate: calcium metabolism regulators)

(a) alendronic acid (61), butedronic acid (59), clodronic acid (37), etidronic acid (22), ibandronic
    acid (71), incadronic acid (70), lidadronic acid (84), medronic acid (39), minodronic acid (78),
    neridronic acid (61), olpadronic acid (71), oxidronic acid (42), pamidronic acid (59), piridronic
    acid (58), risedronic acid (62), tiludronic acid (60), zoledronic acid (71)

**-ectin**  **antiparasitics, ivermectin derivatives**

S.3.0.0

(a) abamectin (53), dimadectin (73), doramectin (63), eprinomectin (73), fuladectin (71),
    ivermectin (44), moxidectin (61), nemadectin (60), selamectin (81)

**-entan**  **endothelin receptor antagonists**

F.2.0.0

(a) ambrisentan (85), atrasentan (83), bosentan (70), darusentan (82), edonentan (86), enrasentan
    (80), fandosentan (87), feloprentan (85), sitaxentan (83), tezosentan (81)

**erg**  **ergot alkaloid derivatives**

F.4.0.0  
C.7.0.0  (USAN: -erg-: ergot alkaloid derivatives)
(a) acetergamine (18), amesergide (67), brazergoline (37), bromerguride (51), cabergoline (54),
cianergoline (47), delergotrile (42), dihydroergotamine (16), disulergine (45), dosergoside (54),
ergometrine (4), ergotamine (4), etisulergine (47), lergotrile (32), lysergide (8), mergocriptine
(54), mesulergine (47), metergoline (18), metergotamine (29), methylergometrine (1),
methysergide (11), nicergoline (26), pergolide (41), propisergide (35), proterguride (50),
romergoline (66), sergolexole (60), terguride (50), tiomergine (42), voxergolide (61)

(b) ergocalciferol (13)

**USAN**

-eridine  analgesics, pethidine derivatives (14th Report, 1964)

A.4.1.0  (USAN: analgesics (meperidine group))

\[
\begin{align*}
\text{CH}_3 \\
\text{N} \\
\text{CH}_3 \\
\text{O} \\
\text{O} \\
\text{O}
\end{align*}
\]

(a) anileridine (5), carperidine (11), etoxeridine (6), morpheridine (6), oxpheneridine (5),
pheneridine (5), phenoperidine (11), properidine (5), sameridine (68), trimeperidine (6)

(b) diaveridine (18) (coccidiostat.), eseridine (53), naxeridine (34) (somewhat related)

(c) benzethidine (9), butoxylate (14), diphenoxylate (10), fexotilate (21), furethidine (9),
hydroxypethidine (5), pethidine (4), piminodine (9)

**USAN**

-ermin  growth factors

U.0.0.0  (USAN: growth factors)

-bermin  vascular endothelial growth factors

(a) telbermin (85)

-dermin  epidermal growth factors

(a) murodermin (63)

-fermin  fibrinoblast growth factors

(a) ersofermin (66), palifermin (86), repifermin (82), trafermin (74)

-filermin  leukemia-inhibiting factor
(a) emfilermin (82)

-nermin  
**tumour necrosis factor**

(a) plusonermin (73), sonermin (68), tasonermin (76)

-plermin  
**platelet-derived growth factor**

(a) becaplermin (74)

-sermin  
**insulin-like growth factors**

(a) mecasermin (66)

-termin  
**transforming growth factor**

avotermin (77), cetermin (74), liatermin (81)

---

estr  
estrogens

Q.2.1.0  
(USAN: estr-; or -estr-: estrogens)

(a) almestrone (24), benzestrol (1), broparestrol (8), cloxestradiol (12), dienestrol (1), diethylstilbestrol (4), epiestriol (12), epimestrol (22), (eptamestrol/etamestrol (49) deleted), estradiol (4), estradiol benzoate (4), estradiol undecylate (16), estradiol valerate (35), estramustine (24), estrapronicate (34), estrazinol (16), estriol succinate (14), estrofurate (25), estrone (4), ethinylestradiol (1), fenestrel (18), fosfestrol (15), fulvestrant (78), furostilbestrol (1), hexestrol (1), mestranol (12), methallenestril (6), methestrol (1), moxestrol (24), nilestriol (32), orestrate (17), polyestradiol phosphate (36), promestriene (31), quinestradol (15), quinestrol (14)

(b) alfatradiol (84) (topical), allylestrenol (10) (progest.), ethylestrenol (13) (anabol.), lynestrenol (13) (progest.)

-gestr-: edogestrone (22), levonorgestrel (30), megestrol (13), melengestrol (13), norgestrel (17), norgestrienone (18), pentagestrone (14), quingestrone (13)

(c) chlorotrianisene (6), clomifene (12), enclomifene (33), zuclomifene (33) (antiestrogens)

TRS 581

-etanide  
see -anide
-ethidine  see -eridine

-exine  mucolytic, bromhexine derivatives

K.0.0.0

\[
\text{\begin{array}{c}
\text{CH}_3 \\
\text{NH}_2 \\
\text{Br} \\
\text{Br}
\end{array}}
\]

(a)  adamexine (36), bromhexine (20), brovanexine (31), cistinexine (54), dembrexine (56), neltexine (62), oxabrexine (40)

(b)  enefexine (54) (antidepressant), gamfexine (17) (antidepressant)

(c)  ambroxol (32) (dembrexol (50): replaced by dembrexine (56))

-fenamic acid  anti-inflammatory, anthranilic acid derivatives

-fenamate  "fenamic acid" derivatives

A.4.2.0

\[
\text{\begin{array}{c}
\text{CO}_2\text{H} \\
\text{NH}_2
\end{array}}
\]

(a)  clofenamic acid (13), enfenamic acid (45), flufenamic acid (13), meclofenamic acid (17), mefenamic acid (13), tolfenamic acid (24)

colfenamate (29), etofenamate (29), prefenamate (36), terofenamate (32), ufenamate (50)

(b)  clantifen (24), oxyfenamate (13)

phonetically close: clofenamide (13), diclofenamide (13) (N.1.1.0)

(c)  flutiazin (22)
-fenine

Phenine analgesics, glafenine derivatives (subgroup of fenamic acid group)

A.4.3.0

(a) antrafenine (35), floctafenine (24), florifenine (50), glafenine (15), nicafenine (40)

(b) spasmolytic diphenylacetates: adiphenine (1), drofenine (26)

other: bufenine (8) (vasodil.), cinfenine (27) (antidepressant)

-fenin
diagnostic aids; (phenylcarbamoyl)methyl iminodiacetic acid derivatives

U.1.0.0

(a) arclofenin (52), butilfenin (41), disofenin (43), etifenin (43), galtifenin (59), lidofenin (39), mebrofenin (47)

-fenantil

Narcotic analgesics, fentanyl derivatives

A.4.1.0

(a) alfentanil (43), brifentanil (62), carfentanil (39), fentanyl (14), lofentanil (43), mirfentanil (64), ocfentanil (61), remifentanil (67), sufentanil (36), trefentanil (67)

-fiban

Fibrinogen receptor antagonists (glycoprotein IIb/IIIa receptor antagonists)

I.2.0.0

carafiban (78), elarofiban (83), fradafiban (72), gantofiban (80), lamifiban (72), lefradafiban (75), lotrafiban (78), orbofiban (75), roxifiban (77), sibrafiban (77), tirofiban (73), xemilofiban (74)
-fibrate (x)  clofibrate derivatives

H.4.0.0  (BAN: substances of the clofibrate group)
(USAN: clofibrate type compounds)

(a)  bezafibrate (35), biclofibrate (28), binifibrate (44), ciprofibrate (36), clinofibrate (39),
dulofibrate (43), etofibrate (31), fenifibrate (49), fenofibrate (35), lifibrate (30), nicofibrate
(31), picafibrate (35), ponfibrate (37), ronifibrate (55), salafibrate (41), serfibrate (34),
simfibrate (22), sitofibrate (32), tiafibrate (33), timofibrate (40), tocofibrate (33), urefibrate
(37), xantifibrate (31)
clofibric acid (20), clofibrate (13), aluminium clofibrate (31), calcium clofibrate (34),
cinnarizine clofibrate (38), etofylline clofibrate (38), magnesium clofibrate (31)
clofibrate (28), plafibrate (39)
related: beclobrate (35), eniclobrate (39), gemfibrozil (34), halofenate (20), lifibrol (62),
metibride (53), terbufibril (35), tibric acid (33), (fibrafylline (43) deleted)

(b)  bromebric acid (25) (prophylaxis of migraine), fibracillin (30) (antibiotic)

(c)  nafenopin (24), treloxinate (25)
TR5 8l

-flapon  5-lipoxygenase-activating protein (FLAP) inhibitor

K.0.0.0
J.0.0.0
quiflapon (72)

-flurane  halogenated compounds used as general inhalation anaesthetics

A.1.1.0
(a)  alifurane (36), cryofluorane (6), desflurane (62), enflurane (25), isofofurane (28),
methoxyflurane (11), norflurane (20), roflurane (12), sevoflurane (25), teflurane (12)
(b) apaflurane (73)

(c) halothane (6)

TRS 58I

**perfl(u)-** perfluorinated compounds used as blood substitutes and/or diagnostic agents

(a) perflexane (82), perfluamine (45), perflubrodec (87), perflubron (66), perflunafene (45), perflutren (82)

---

**-formin (d)** antihyperglycaemics, phenformin derivatives

M.5.0.0 (USAN: oral hypoglycemics (phenformin type))

![Chemical Structure](image)

(a) benfosformin (29), buformin (17), etoformin (34), metformin (21), phenformin (10), tiformin (22)

TRS 58I

---

**-fos** (-vos)** insecticides, anthelminthics, pesticides etc., phosphorous derivatives**

S.3.1.0

Y.0.0.0

1. organophosphorous derivatives:

(a) vet. insecticides:

quintiofos (25)

(b) toldimfos (23) (vet. phosphorous source)

(c) vet. insecticides and anthelminthics:
metrifonate (16)

anthelmintic: butonate (30)

2. phosphates:

\[
\text{ROPO}_3\text{R'}
\]

(a) vet. insecticides:

clofenvinfos (23)

vet. anthelminthics:

bromofenos (43), dichlorvos (28), naftalofos (16)

anthelminthics:

vincofos (28)

(b) triclofos (l3) (hypnotic, sedative)

(c) vet. anthelminthics:

fospirate (21), haloxon (16)

3. phosphorothioates:

\[
\text{ROSO}_2\text{R'}
\]

vet. insecticides:

(a) bromofos (25), coumafos (16), fenclofos (23), temefos (31)

(c) dimpylate (16), phoxim (20) (vet. insecticide and anthelmintic), pyrimitate (16)

4. phosphorodithioates:

\[
\text{RS'O}_2\text{R'}
\]

(a) benoxafos (22) (vet. pesticide)
INN – The use of common stems

5. phosphoramidates

\[ R'N \overset{\text{OH}}{\text{PO}} \overset{\text{OR'}}{\text{O}} R'' \]

cruifomate (16), uredofos (37)

anthelminthic:

imcarbofos (44)

-fos- or fos- various pharmacological categories belonging to fos (other than those above):

-fos-
alafosfalin (41), amifostine (44), belfosdil (61), benfosformin (29), butafosfan (38), cifostodine (50), creatinolfosate (20), dextfosferosine (68), ferpifosate sodium (69), fosmenic acid (49), fosopamine (69), fosquidone (64), furifosmin (70), monophosphothiamine (8), sodium picofosfate (37), sparfosic acid (46), technetium (\({\text{99m}}\)Tc), tetrofosmin (66), trifosmin (74)

-fosfamide alkylating agents of the cyclophosphamide group
cyclophosphamide (10), defosfamid (12), glufosfamide (77), ifosfamide (23), mafosfamide (51), perfosfamide (66), sufosfamide (36), trofosfamide (23)

-fosine cytostatic
edelfosine (59), fostriecin (55), ilmofosine (56), miltefosine (61), perifosine (78)

fos-
fosarilat (53), fosazepam (27), foscarnet sodium (42), foscolic acid (12), fosenazide (46), fosfestrrol (15), fosfocreatinine (50), fosfomycin (25), fosfonet sodium (35), fosfosal (37), fosfructose (81), fosmidomycin (46), fostedil (51)

-fradil calcium channel blockers acting as vasodilators

F.2.1.0 mibefradil (72)

-frine see -drine
-fungin  antifungal antibiotics (18th Report, 1968)

S.6.0.0  (USAN: antifungal antibiotics (undefined group))
S.4.3.0

(a)  abafungin (74), anidulafungin (81), basifungin (72), caspofungin (80), cilofungin (60),
fusafungine (15), kalafungin (20), micafungin (84), nifungin (24), oxifungin (40), sinefungin
(39), triafungin (40)

TRS 58l

-fylline  N-methylated xanthine derivatives

B.1.0.0

(a)  acefylline clofibrol (44), acefylline piperazine (14), albifylline (66), aminophylline (4),
apaxifylline (71), arofylline (75), bamifylline (15), cipamfylline (71), denbufylline (55),
dimabefylline (19), diniprofylline (18), diprophylline (1), doxofylline (47), enprofylline (44),
etamiphylline (6), etofylline (14), etofylline clofibrate (38), fibrafylline (43) (deleted),
flufylline (48), fluprofylline (50), furafylline (48), guaifylline (16), isbufylline (62),
laprafylline (60), lisofylline (72), lomifylline (37), mercurophylline (1), metescufylline (15),
mexafylline (48), midaxifylline (79), naxifylline (86), nestifylline (64), pentifylline (29),
pentoxifylline (29), perbufylline (58), pimeffylline (21), propentofylline (46), proxphylline
(10), pyridofylline (14), spirofylline (58), stacofylline (73), tazifylline (52), theophylline
ephedrine (14), torbafylline (56), triclofylline (19), verofylline (43), visnafylline (24), choline
theophyllinate (8), fenetylline (16)

(c)  cafedrine (14), dimenhydrinate (1), dimethazan (8), meralluride (1), mercumatilin sodium (4),
piprinhydrinate (8), promethazine teoclante (10), protheobromine (14), theodrenaline (14),
xantifibrate (31), xantinol nicotinate (16)

radicals and groups: teprosilate (29)

TRS 58l
### gab

**gabamimetic agents**

E.0.0.0

(a) fengabine (53), gabapentin (46), gaboxadol (48) (used as analgesic), pivagabine (66), pregabalin (78), progabide (43) (used as antiepileptic), retigabine (76), tiagabine (63), tolgabide (53), vigabatrin (52) (anticonvulsants)

(b) gabexate (35) (proteolytic)

### gado-

**diagnostic agents, gadolinium derivatives**

U.0.0.0

(a) gadobenic acid (64), gadobutrol (66), gadocoletic acid (85), gadodiamide (63), gadomelitol (85), gadopenamide (60), gadopentetic acid (50), gadoteric acid (59), gadoversetamide (71), gadoxetic acid (71)

### -gatran

**thrombin inhibitor, antithrombotic agent**

I.2.0.0

(a) dabigatran (83), dabigatran etexilate (87), efegatran (71), inogatran (72), melagatran (74), napsagatran (72), ximelagatran (84)

(c) argatroban (57)

### gest (x)

**steroids, progestogens**

Q.2.2.0

(USAN: -gest-: progestins)

(a) altrenogest (46), anagastone (16), cingestol (20), clogestone (21), clomegestone (20), demegestone (24), desogestrel (38), dixonorgestrel (30), dienogest (49), dydrogesterone (12), edogesterone (22), etonogestrel (65), flugestone (16), gestaclone (23), gestadienol (22), gestodene (37), gestonorone caproate (16), gestronine (39), haloprogesterone (11), hydroxyprogesterone (8), levonorgestrel (33) (previously dixonorgestrel), medrogestone (15), medoxprogesterone (10), medoxyprogesterone (10), medrogestone (15), megestrol (13), melengestrol (13), metogest (33), norelgestromin (83), norgesterrone (14), norgestimate (35), norgestomet (32), norgestrel (17), norgestrienone (18), oxogestone (19), pentagestrone (14), progesterone (4), proligestone (28), promegestone (38), quingestanol (15), quingestrone (13), tigestol (20), tosagestin (86), trengestone (22), trimegestone (66)
(b) algestone (22) (glucorticoid)

(c) allylestrenol (10), chlormadinone (12), cismadinone (12), delmadinone (23), dimethisterone (8), ethisterone (4), ethynerone (17), etynodiol (13), hydromadinone (12), lynestrenol (13), metynodiol (27), norethisterone (6), noretynodrel (13), norvinisterone (10)

cloometerone (15) (antiestrogen), dimepregnen (24) (antiestrogen)

<table>
<thead>
<tr>
<th>usan</th>
<th>MAO-inhibitors type B</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.3.1.0</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>clorgiline (23), mofegiline (69), pargiline (13), rasagiline (70), selegiline (39)</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>usan</th>
<th>antibiotics produced by <em>Aspergillus strains</em> (16th Report, 1966)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.6.0.0</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>fumagillin (1), mitogillin (17)</td>
</tr>
<tr>
<td>(c)</td>
<td>mitosper (24), nifungin (24)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>usan</th>
<th>antihyperglycaemics, sulfonamide derivatives (previously gly-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.5.2./3.0</td>
<td>(BAN: sulphonamide hypoglycaemics)</td>
</tr>
<tr>
<td></td>
<td>(USAN: gli-: oral hypoglycemics (glipizide type))</td>
</tr>
<tr>
<td>(a)</td>
<td>gliamilide (33), glibenclamide (18), glibornuride (22), glibutimine (31), glicaramide (28), glicetanile (37), gliclazide (25), (deleted: glidanile (23)), gliconamidam (44), gidazamide (24), gliflumide (33), glimepiride (53), glipalamide (62), (glipentide (27) replaced by glisentide (58)), glipizide (27), glicamidam (45), glicamidam (58) (previously glipentide), glicindamidam (43), glicosalamidam (43), glosoxepidam (24), glybuthiazol (8), glybuzole (15), glyclyramidam (17), gyclyclamidam (12), glyhexamidam (15), gylmidine sodium (15), glyoctamidam (14), glyparamidam (USAN only), glypinamidam (13), glyprothiazol (8), glysobuzole (12)</td>
</tr>
<tr>
<td>(b)</td>
<td>glycerol (4), glycobiarsol (l), glycopyrronium bromide (12)</td>
</tr>
<tr>
<td>(c)</td>
<td>L: acetohexamidam (12), butadiazamidam (10), chlorpropamidam (8), heptolamidam (12), metahexamidam (10), thiohexamidam (12), tolazamidam (12), tolbutamidam (6), tolpentamidam (12), tolpyrramidam (13)</td>
</tr>
</tbody>
</table>
2. other than sulfonamide derivatives: balaglitazone (84), camiglibose (67), ciglitazone (50), darglitazone (69), deriglidole (66), emiglitate (55), englitazone (64), farglitazar (84), ingliforib (85), isaglidole (61), linogliride (48), meglitinide (34), midaglizole (57), miglitol (55), mitiglinide (78), naglivan (65), nateglinide (77), netoglitazone (85), pioglitazone (60), pirogliride (40), ragaglitazar (85), reglitazar (84), repaglinide (65), rivoglitazone (84), rosiglitazone (78), tesaglitazar (85), tibeglisene (64), troglitazone (68), voglibose (65)

3. peptide: seglitate (57)

TRS 581

golide - **dopamine receptor agonists, ergoline derivatives**

E.1.1.0

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

(a) adrogolide (82), naxagolide (60), pergolide (41), quinagolide (62), voxergolide (61)

(c) rotigotine (83)

-grastim - **see -stim**

grel- -grel - **platelet aggregation inhibitors**

I.2.1.0 (USAN: platelet antiaggregants (undefined group))

(a) anagrelide (42), camonagrel (61), cangrelor (82), clopidogrel (57), dazmegrel (51), furegrelate (53), isbogrel (59), itazigrel (56), midazogrel (53), nafagrel (64), nicogrelate (48), oxagrelate (47), ozagrel (55), pamicogrel (70), pirmagrel (53), ridogrel (59), rolafagrel (65), samixogrel (72), sarpogrelate (63), satigrel (67), sunagrel (52), terbogrel (75), trifenagrel (53)

-guan- -guan - **antihypertensives, guanidine derivatives**

H.3.0.0 (USAN: anti-hypertensive substances (guanidine type))

\[
\text{H}_2\text{N} \quad \text{NH}_2 \\
\text{NH}
\]
(a) guanabenz (26), guanaccline (16), guanadrel (20), guanzodine (27), guancidine (18), guanclofine (36), guanethidine (11), guanfacine (35), guanisoquine (15), guanoclor (15), guanocline (16), guanoxan (15), guanoxabenz (31), guanoxyfen (16), guabenxan (32)

(c) guabenxan (32)

-ibine see -ribine

-icam anti-inflammatory, isoxicam derivatives

USAN

A.4.2.0 (USAN: anti-inflammatory agents (isoxicam group))

(a) ampiroxicam (56), droxicam (52), enolicam (45), isoxicam (30), lornoxicam (59), meloxicam (52), piroxicam (32), sudoxicam (27), tenoxicam (44), tesicam (25)

-ifene antiestrogens, clomifene and tamoxifen derivatives

USAN

(Q.2.1.0 L.6.0.0)

(a) acolbifene (86), arzoxifene (80), bazadoxifene (86), clomifene (12), droloxifene (53), enclomifene (33), idoxifene (68), lasofoxifene (81), levormeloxifene (73), miproxifene (74), nitromifene (33), ormeloxifene (69), ospemifene (85), panomifene (58), pipendoxifene (84), raloxifene (54), tamoxifen (28), tesmilifene (81), toremifene (53), trioxifene (41), zindoxifene (54), zuclomifene (33), clomifenoxide (54)

(b) dextropropoxyphene (7), levopropoxyphene (7), suloxifen (30) (bronchodilator)

(c) nafoxidine (16)

-igetide see -tide
-ilde          class III antiarrhythmics, sematilide derivatives

H.2.0.0

(a)  ambasilide (59), artilide (67), azimilide (72), dofetilide (65), ersentilide (72), ibutilide (63), ipazilide (62), risotilide (62), sematilide (58), trecetilide (79)
(b)  bromacrylide (13), ftaxilide (32), gliamilide (33)

imex (d)    immunostimulants

S.7.0.0

(a)  azimexon (40), forfenimex (55), imexon (37), roquinimex (53), ubenimex (56)

-imod   immunomodulators, both stimulant/suppressive and stimulant

S.7.0.0

(a)  atiprimod (75), cridanimod (83), defoslimod (79), esonarimod (79), glaspimod (74), iguratimod (86), imiquimod (66), ivarimod (60), laquinimod (85), pidotimod (63), resiquimod (82), susalimod (73), tiprotimod (57)

-imus   immunosuppressants (other than antineoplastics)

S.7.0.0

(a)  abetimus (81), anisperimus (82), everolimus (82), gusperimus (68), iguratimod (86), laflunimus (70), laquinimod (85), napirimus (60), pimecrolimus (81), sirolimus (69), tacrolimus (66), tresperimus (75)

-ine (d)    alkaloids and organic bases

(a)  1120 (24.04%) INNs ending in -ine in Lists 1-48 of Proposed INNs

TRS 581
io- (x)  **iodine-containing contrast media**

**U.1.1.0**

(a) iobenzamic acid (14), iobitridol (68), iobutoic acid (20), iocarmic acid (22), iocetamic acid (18), iocanlidic acid (77), iodamide (15), iodecimol (51), iodetryl (1), iodoxamic acid (26), iodoxamic acid (18), iocarmic acid (22), iocetamic acid (18), iocanlidic acid (77), iodamide (15), iodetric acid (37), iopanol acid (24), iopenol acid (24), iophenoic acid (4), ioprecemic acid (39), iopromide (44), iopronic acid (28), iopydol (14), iopydone (14), iosarcol (54), iosefamic acid (14), ioseric acid (33), iosimide (50), iotysamide (39), iotymetic acid (33), iotylamic acid (13), iotasul (43), iotrycic acid (37), iotyric acid (28), iotroxide (60), iotrozoic acid (22), iotrolan (51), iotroxide (32), ioversol (56), ioxabrolic acid (53), ioxaglic acid (37), ioxilane (59), ioxitalamic acid (22), ioxotrzioic acid (33), iozonic acid (24)

(b) adipiodone (4), bunamiodyl (10), dimethiodal sodium (1), diodone (1), ethyl cartrizoate (12), methiodal sodium (1), metrizamide (26), pheniodol sodium (1), phenobutiodil (6), propyl doctrizoate (10), propyiiodone (1), sodium acetrizoate (4), sodium amidotrizoate (4), sodium diprotrizoate (6), sodium metrizoate (13), sodium tyropanoate (12)

---

iod-) 
-
io-

**iodine-containing compounds other than contrast media**

**io(d)/-io-**  **iodine-containing radiopharmaceuticals**

(a) ethiodized oil (131I) (24), iobenguane (131I) (57), iodinated (125I) human serum albumin (24), iodinated (131I) human serum albumin (24), iodocetic acid (125I) (47), iodocholesterol (131I) (39), iofetamine (123I) (51), iolopride (123I) (73), iomazenil (122I) (66), iometin (125I), iometin (131I) (24), sodium iodide (125I) (24), sodium iodide (131I) (24), sodium iodohippurate (131I) (24), sodium iotalamate (125I (24), sodium iotalamate (131I) (24)

(c) fibrinogen (125I), macrosalb (131I) (33), rose bengal (131I) sodium (24), tolpidivone (131I) (24)

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**irudin**  **hirudin derivatives**

**I.2.1.0**

bivalirudin (72), desirudin (70), lepirudin (73), pegmusirudin (77)
INN – The use of common stems

-isomide  antiarrhythmics, disopyramide derivatives

H.2.0.0

(a)  actisomide (60), bidisomide (63), pentisomide (59)

(c)  disopyramide (12)

-ium (x)  quaternary ammonium compounds

(USAN: -ium or onium)

E.3.0.0  neuromuscular blocking agents with a flexible structure

(a)  azamethonium bromide (1), decamethonium bromide (1), dicolinium iodide (25), dimecolinium iodide (14), fubrogonium iodide (18), hexamethonium bromide (1), mebezonium iodide (16), oxapropanium iodide (1), oxydipentonium chloride (1), pentamethonium bromide (1), pentolonium tartrate (4), prodeconium bromide (6), stilonium iodide (32), suxamethonium chloride (1), suxethonium chloride (1), tetrylammonium bromide (1), tiametonium iodide (15), trepirium iodide (25)

(c)  gallamine triethiodide (1)

E.3.0.0  neuromuscular blocking agents with rigid structure

(USAN: -curium, also curonium; neuromuscular blocking agents; quaternary ammonium derivatives)

(a)  alcuronium chloride (17), atracurium besilate (42), candocuronium iodide (70), cisatracurium besilate (73), dacuronium bromide (21), dimethyltubocurarinium chloride (1), doxacurium chloride (58), fazadinium bromide (32), hexafluronium bromide (12), laudexametilsulfate (4), mivacurium chloride (58), pancuronium bromide (19), pentacyonium chloride (6), phenactopinum chloride (8), pipecuronium bromide (69), piprocurarium iodide (11), rapacuronium bromide (78), rocuronium bromide (66), stercuronium iodide (21), thiazinamium metilsulfate (37), trimethidinium methosulfate (8), trxicurium iodide (22), truxipicurium iodide (22), vecuronium bromide (46)

(c)  tubocurarine chloride (1)

E.1.0.0  cholinergic agents
(a) aclatopioniump bromide (13), benzopyrroym bromide (12), beperidium (57), bevonium metilsulfate (19), butropium bromide (30), ciconium bromide (19), cizlotropium bromide (50), cimetropium bromide (51), clidinium bromide (6), cyclopymronium bromide (12), dimetipirium bromide (37), dipionium bromide (15), dotefonium bromide (24), droclidinium bromide (33), epeproinium bromide (18), etipirium iodide (22), fenclexonium metilsulfate (20), fenpiverinium bromide (26), fentonium bromide (29), flutropium bromide (50), glycopymronium bromide (12), heteronium iodide (14), hexacosium iodide (15), hexocyclium metilsulfate (6), hexopyrroym bromide (13), ipratropium bromide (31), melathelinium bromide (1), methylbenactyzium bromide (34), melocinum iodide (26), nolinium bromide (37), oltionium bromide (38), oxapium iodide (26), oxetofonium bromide (18), oxitropium bromide (36), oxyphenonium bromide (1), oxypyrroym bromide (13), oxysuonium iodide (15), pentapiperium metilsulfate (26), cefanonium bromide (20), ritropirronium bromide (33), sintropium bromide (47), sultronium (18), tetrompium metilsulfate (64), tiemonium iodide (13), timepidium bromide (29), tiothrypium bromide (67), tiquizium bromide (47), tranpolinium bromide (24), trospium chloride (25), xenytropium bromide (15)

(c) atropine methonitrate (4), bazeptide metiodide (14), chlorisondamine chloride (6), diphamenil metilsulfate (4), homopamine methylbromide (1), isopropamide iodide (8), mepenzolate bromide (10), octaprine methylbromide (10), parapenzolate bromide (14), pipenzolate bromide (6), poldine metilsulfate (11), propanetheline bromide (1), propyromazine bromide (12), tridihexethyl iodide (6), tropenziline bromide (11), thihecinol methylbromide (1), tricyclamol chloride (4)

S.2.3.0 surfactants used as antibacterials and antiseptics

(a) acriflavinium chloride (1), amantanium bromide (39), benzalko-nium chloride (1), benzethonium chloride (1), benzododecinium chloride (1), benzoxyonium chloride (36), cefalonium (16), cefemepidium chloride (57), cefalkonium chloride (15), cethexonium chloride (36), cetrimonium bromide (1), cetylpyridinium chloride (1), chlorphenocuhtum amsonate (8), deditonium bromide (15), denatonin bromide (15), dequinium chloride (8), disiquonium chloride (55), dodeclonium bromide (16), dofacium chloride (21), fludazonium chloride (33), furazoliium chloride (15), halopenium chloride (10), hedaquinium chloride (8), lapirium chloride (27), lauralkonium chloride (62), laurcetium bromide (70), laurolinium acetate (12), mecetronium etilsulfate (51), metalkonium chloride (60), methylbenzethonium chloride (1), methylrosanilinium chloride (1), methylthioninium chloride (1), miripirium chloride (63),
mirstalkonium chloride (41), octafoonium chloride (16), opratonium iodide (76), penoctonium bromide (20), pirralkonium bromide (19), polidronium chloride (67), polixetonium chloride (70), prolonium iodide (14), sanguinarium chloride (68), sepanzonium chloride (34), tetradonium bromide (18), tibezonium iodide (32), tiodonium chloride (36), tolonium metilsulfate (17), tonzonium bromide (14), triclobisonium chloride (10)

(c) domiphen bromide (23)

other agents

amezinium metilsulfate (36), amprolium chloride (16), azaspirium chloride (25), bephenium hydroxynaphthoate (11), bibenzonium bromide (12), bidimazium iodide (27), bretylium tosilate (10), butopyrammonium iodide (8), carcainium chloride (36), clofilium phosphate (42), detajmium bitartrate (34), dibrospidium chloride (51), ditercalinium chloride (49), edrophonium chloride (4), elliptinium acetate (43), emilium tosilate (37), famiraprinium chloride (58), feniodium chloride (23), gallium ($^{67}$Ga) citrate (33), homidium bromide (36), isometamidium chloride (18), mefenidramium metilsulfate (52), meldonium (86), mequitamium iodide (61), nolpitantium besilate (75), pinaverium bromide (32), pirdonium bromide (28), prajmalium bitartrate (23), pranolium chloride (32), pretamazium iodide (29), propagermanium (65), prospidium chloride (22), pyritidium bromide (16), pyrvinium chloride (6), quinidonium bromide (14), quinuclium bromide (40), repagermanium (63), rimazolium metilsulfate (26), roxolinium metilsulfate (33), samarium ($^{153}$Sm) lexicronam (74), sevitropium mesilate (56), spirogermanium (43), stilbazium iodide (13), thenium closilate (12), tipetropium bromide (42), tolonium chloride (4), trazium esilate (54), trethinium tosilate (14), troxonium tosilate (13), troxypyrrolium tosilate (13)

(c) alazanine triclofenate (13) (anthelminthic), colfosceril palmitate (64) (pulmonary surfactant), dithiazanine iodide (8) (anthel-minthic), hexadimethrine bromide (8) (heparin antagonist)

-curium (d) curare-like substances

-izine (-yzone)
diphenylmethyl piperazine derivatives

(a) antihistaminics: G.2.0.0: buclizine (4), cetirizine (51), chlorycyclizine (1), clocinizine (15), cyclizine (1), efletirizine (71), elbanizine (60), flotrenizine (48), levcetirizine (78), pibaxizine (62), trenizine (48)

homochlorycyclizine (10) (serotonin antagonist)
tranquillizers: etodroxizine (18), hydroxyzine (6)

various: benderizine (40) (antiarrhythmic), decloxizine (19) (respiratory insufficiency), ropizine (36) (anticonvulsant)

-azine antihistaminics/cerebral (or peripheral) vasodilators

belarizine (36), buterizine (42), cinnarizine (11), dotarizine (50), flunarizine (22), lifarizine (66), tagorizine (72), tamolarizine (66), trelnarizine (62)

chemically related: pipoxizine (32) (respiratory insufficiency)

(b) phenothiazine derivatives: chloracyzine (12) (vasodilator), fluacizine (25) (sedative), moracizine (25) (antiarrhythmic), tiracizine (62) (antiarrhythmic)

benzilate esters: benacetyzine (6) (tranquillizer), benaprizine (26) (anti-parkinsonian)

phenylpiperazine: dimetholizine (10) (antiallergic), dropropizine (18)/levodropropizine (64) (antitussive)

antibiotic "cef": cefatrizine (34)

pyrazine derivatives: ampyzine (15) (central nervous stimulant), triampyzine (15) (anticholinergic)

indoloquinolines (anticholinergic): metoquizine (17), toquizine (17)

(c) medibazine (16)

-kacin antibiotics, kanamycin and bekamycin derivatives (obtained from *Streptomyces kanamycticus*)

S.6.3.0 (USAN: antibiotics obtained from *Streptomyces kanamycticus* (related to kanamycin))

(a) amikacin (30), arbekacin (56), butikacin (4l), dibekacin (31), propikacin (43)
(c) bekanamycin (24), kanamycin (10)

other aminoglycoside antibiotics:

*Strept. griseus*: dihydrostreptomycin (1) (semisynthetic), streptomycin (1), streptoniazid (13) (semisynthetic)

*Strept. tenebrarius*: apramycin (31), nebramycin (19) (mixture of several antibiotics, including apramycin and tobramycin), tobramycin (28)

*Bacillus circularis*: butirosin (25)

---

**-kalant**  
**potassium channel blockers**

H.2.0.0

(a) adekalant (83), almokalant (64), clamikalant (81), nifekalant (75), terikalant (66), pinokalant (82)

---

**-kalim**  
**potassium channel activators, antihypertensive**

H.3.0.0

(a) aprikalim (64), bimakalim (64), cromakalim (58)/levcromakalim (66), emakalim (66), mazokalim (75), rilmakalim (65), sarakalim (81)

---

**-kef-**  
**enkephalin agonists**

casokefamide (65), frakefamide (81), metkefamide (44)

---

**-kin**  
**interleukin type substances**

S.7.0.0

IL-1:  
- *nakin* interleukin-1 analogues and derivatives:
  - *onakin* interleukin-1 analogues and derivatives: pifonakin (77)
  - *benakin* interleukin-1 analogues and derivatives: mobenakin (72)

IL-2:  
- *leukin* interleukin-2 analogues and derivatives: aldesleukin (63), celmoleukin (65),
denileukin diftitox (78), teceleukin (54)

pegaldesleukin (67)

<table>
<thead>
<tr>
<th>IL-3 :</th>
<th>-plestim</th>
<th>interleukin-3 analogues and derivatives: muplestim (72)</th>
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<tbody>
<tr>
<td>IL-4 :</td>
<td>-trakin</td>
<td>interleukin-4 analogues and derivatives: binetrankin (82)</td>
</tr>
<tr>
<td>IL-6 :</td>
<td>-exakin</td>
<td>interleukin-6 analogues and derivatives: atexakin alfa (72)</td>
</tr>
<tr>
<td>IL-8 :</td>
<td>-octakin</td>
<td>interleukin-8 analogues and derivatives: emoctakin (74)</td>
</tr>
<tr>
<td>IL-10 :</td>
<td>-decahin</td>
<td>interleukin-10 analogues and derivatives: ilodecahin (81)</td>
</tr>
<tr>
<td>IL-11 :</td>
<td>-elvekin</td>
<td>interleukin-11 analogues and derivatives: oprelvekin (76)</td>
</tr>
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<td>IL-13 :</td>
<td>-nakinra</td>
<td>interleukin-1 receptor antagonists: anakinra (72)</td>
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<tr>
<th>USAN</th>
<th>-kiren</th>
<th>renin inhibitors</th>
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<tr>
<td>H.3.0.0</td>
<td>aliskiren (83), ciprokiren (69), ditekiren (62), enalkiren (61), remikiren (66), terlakiren (66), zankiren (70)</td>
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<th>USAN</th>
<th>-lubant</th>
<th>leukotriene B4 receptor antagonist</th>
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<tr>
<td>(a)</td>
<td>amelubant (85), moxilubant (78), ticolubant (76)</td>
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<th>leukotriene receptor antagonists, see -ast</th>
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<tr>
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<th>-mab</th>
<th>monoclonal antibodies (see also Annex)</th>
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<tbody>
<tr>
<td>S.7.0.0</td>
<td>-amab</td>
<td>rat origin</td>
</tr>
</tbody>
</table>
-emab  hamster origin

-imab  primate origin

-omab  mouse origin:

-omab

ba(c)  bacterial: edobacomab (69)

col)  colon: edrecolomab (74), nacolomab tafenatox (71)

go(v)  ovary (tumours): igovomab (74), oregovomab (86)

li(m)  lymphocyte: afelimomab (72), dorlimomab aritox (66), enlimomab (70),

        enlimomab pegol (77), faralimomab (76), gavilimomab (84), inolimomab (71),

        maslimomab (66), nerelimomab (76), odulimomab (73), telimomab aritox (66),

        vepalimomab (80), zolimomab aritox (69)

ci(r)  cardiovascular: bicromab (66), imciromab (66)

le(s)  infectious lesions: lemalesomab (84), sulesomab (75), technetium (99mTc)

        fanolesomab (86)

pr(o)  tumour (prostate): capromab (70)

tu(m)  tumour (miscellaneous): anatumomab mafenatox (79), arcitumomab (74),

        altumomab (68), bectumomab (75), detumomab (70), epitumomab (82),

        ibritumomab tiuxetan (81), minretumomab (80), mitumomab (82), satumomab

        (67), taplitumomab paptox (84), technetium (99mTc) nofetumomab merpentan (76),

        technetium (99mTc) pintumomab (75), tositumomab (80)

-ximab  human origin:

-ximab

ba(c)  bacterial: nebacumab (66)

li(m)  immunomodulator: adalimumab (82), atorolimumab (80), lerdelimumab (83),

        metelimumab (86), morolimumab (79), ziralimumab (84)

tu(m)  tumour: votumumab (70)

vi(r)  viral: regavirumab (71), sevirumab (66), tuvirumab (66)

-ximab  chimeric origin

-ximab

ci(r)  cardiovascular: abciximab (70)
**INN – The use of common stems**

li(m)  **immunomodulator:** basiliximab (76), clenoliximab (77), infliximab (77), keliximab (76), priliximab (72), teneliximab (87), vapaliximab (87)

me(l)  **melanoma:** ecromeximab (87)

tu(m)  **tumor:** cetuximab (82), rituximab (77)

(c)  **muromonab CD3** (59)

**-zumab**  Humanized origin

ci(r)  **cardiovascular:** bevacizumab (83)

li(m)  **lymphocyte:** apolizumab (87), daclizumab (78) (previously: dacliximab), eculizumab (87), efalizumab (85), erlizumab (84), fontolizumab (87), mepolizumab (81), natalizumab (79), omalizumab (84), palivizumab (79), pascolizumab (87), pexelizumab (85), reslizumab (85), rovelizumab (81), ruplizumab (83), siplizumab (87), toralizumab (87), visilizumab (84)

tu(m)  tumor: (miscellaneous): alemtuzumab (83), bivatuzumab (83), cedelizumab (77), epratuzumab (82), gemtuzumab (83), labetuzumab (85), lintuzumab (76), sibrotuzumab (81), trastuzumab (78)

vi(r)  **viral:** felvizumab (77)

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**USAN**

**-mantadine**  adamantane derivatives

**-mantine**

**-mantone**

(a)  **antiviral:** S.5.3.0: amantadine (15), rimantadine (17), somantadine (51), tromantadine (28)

(b)  **antiparkinsonian:** E.2.0.0: carmantadine (31), dopamantine (31), memantine (35)

(c)  **immunostimulant:** S.7.0.0: idramantone (71)

(b)  **anthelminthic:** S.3.1.0: dimantine (14)

(c)  **adamexine** (36) (mucolytic), **amantocillin** (17) (antibiotic), **bolmantalate** (16) (anabolic)
-meline  cholinergic agents (muscarine receptor agonists/partial antagonists used in the treatment of Alzheimer's disease)

E.1.0.0

\[
\begin{align*}
\text{CH}_3 \\
\text{N} \\
\text{O} \\
\text{CH}_3
\end{align*}
\]

alvameline (79), cevimeline (76), itameline (71), milameline (74), sabcomeline (76), tazomeline (77), xanomeline (70)

mer- or -mer-  (d)  1mercury-containing drugs, antimicrobial or diuretic (deleted from General Principles in List 28 prop. INN)

(a)  S.2.2.0 antimicrobial: meralein sodium (13), merbromin (1), mercurobutol (1), otimerate sodium (51), phenylmercuric borate (4), sodium timerfonate (13), thiomersal (1)

1mer- and -mer- can be used for any type of substances and are no longer restricted to use in INNs for mercury-containing drugs (18th Consultation on INNs 1988)

N.1.3.0 diuretic: chlormerodrin (4), chlormerodrin (I97 Hg) (24), meralluride (1), mercaptomerin (1), mercuderamide (1), mercumatilin sodium (4), mercurophylline (1), merisoprol (I97 Hg) (24) (diagnostic), mersaly (4)

(b)  difemerine (17) (spasmolyt.), dimercaprol (1) (antidote, -SH group), lomerizine (68), (cerebral vasodilator), mercaptopurine (6) (cytostatic, -SH group), nifurmerone (16), pemerid (25)

(antituss.), suxemerid (25) (antituss.)

(c)  hydrargaphen (10)

-mer  polymers:

(a)  amilomer (33), cadexomer (60), carbetimer (50), carboomer (21), crilanoomer (53), dextranomer (33), eldexomer (51), leuciglumer (68), maletamer (14), poloxamer (34), porfimer sodium (64), sevelamer (77), surfomer (44), zinostatin stimalamer (74)

(b)  succimer (42)
-mesine sigma receptor ligands

igmesine (68), panamesine (73), siramesine (81)

-mestane aromatase inhibitors

L.0.0.0/Q.2.1.0

exemestane (65), formestane (66), minamestane (64)

met(h)asone see pred

-metacin (x) anti-inflammatory, indometacin derivatives

A.4.2.0 (BAN: anti-inflammatory substances of the indomethacin group)
(USAN: -methacin: anti-inflammatory substances (indomethacin type))

\[
\begin{align*}
&\text{H}_2\text{CO} \\
&\text{CO}_2\text{H} \\
&\text{Cl} \\
&\text{CH}_3 \\
&\text{Cl}
\end{align*}
\]

(a) acemetacin (32), cinmetacin (24), clometacin (27), delmetacin (48) (originally demetacin (42)), duometacin (27), glucametacin (32), indometacin (13), niometacin (33), oxametacin (37), pimetacin (47), proglumetacin (35), sermetacin (36), talmetacin (46), zidometacin (39)

other anti-inflammatory, indole derivatives: etoprindole (22), indopine (12), indoxole (17), nictindole (28)

-micin antibiotics obtained from various Micromonospora

(S.6.5.0) (USAN: antibiotics (Micromonospora strains))

astromicin (44), betamicin (38), etisomicin (47), evernimicin (82), gentamicin (22), isepamicin (54), maduramicin (52), megalomicin (37), micronomicin (45), mirosmicin (58), netilmicin (36), ozogamicin (83), pentisomicin (41), repromicin (37), rosamicin (41) (prev. rosamicin), semduramicin (60), sisomicin (25)

TRS 581
-mifene  see -ifene

mito- (d)  antineoplastics, nucleotoxic agents (deleted from General Principles in List 24 prop. INN)
L.0.0.0
(a)  mitobronitol (20), mitocarcin (25), mitoclomine (18), mitoflaxone (60), mitogillin (17), mitoguazone (20), mitolactol (26), mitomalcin (19), mitomycin (26), mitonafide (40), mitopodozide (17), mitoquidone (54), mitosper (24), mitotane (21), mitotenamine (17), mitoxantrone (44), mitozolomide (51)
mitindomide (48)

USAN
-monam  monobactam antibiotics
S.6.0.0

(a)  carumonam (51), gloximonam (54), oximonam (54), pirazmonam (58), tigemonam (57)
(c)  aztreonam (48)

USAN
-mostim  see -stim

USAN
-motine  antivirals, quinoline derivatives (l9th Report l970)
S.5.3.0  (USAN: antiviral quinoline derivatives)

famotine (23), memotine (22)

USAN
-moxin (d)  monoamine oxidase inhibitors, hydrazine derivatives*
C.3.1.0
(a)  benmoxin (20), cinemoxin (17), domoxin (14), octamoxin (15)
*not part of definition

(c) carbenzide (11), etryptamine (12), fenoxypropazine (12), iproclazol (13), iproniazid (1), isocarboxazid (11), mebanazine (15), nialamide (10), pargyline (13), phenelzine (10), pheniprazine (11), tranylcypromine (11)

TRS 58l

-mustine antineoplastic, alkylating agents, (β-chloroethyl)amine derivatives

L.2.0.0 (USAN: antineoplastic agents ([β-chloroethyl]amine derivatives))

(a) alestramustine (68), ambamustine (60), atrimustine (61), bendamustine (48), bofumustine (44), carmustine (24), ditiomustine (49), ecomustine (61), elmustine (49), estramustine (24), fotemustine (57), galamustine (61), lomustine (27), mannomustine (8), neptamustine (48) (originally pentamustine (45)), nimustine (37), prednimustine (31), ranimustine (55), semustine (27), spiromustine (47), tallimustine (68), tauromustine (50), uramustine (13)

(c) chlorambucil (6), chlormethine (1), chlornaphazine (1), cyclophosphamide (10), defosfamide (12), ifosfamide (23), mafosfamide (51), melphalan (8), mitoclomine (18), mitotenamine (17), perfosfamide (66), sarcolysin (17), sufosfamide (36), trichlormethine (11), trofosfamide (23)

TRS 58l

-mycin (x) antibiotics, produced by Streptomyces strains (see also -kacin)

S.6.0.0 (USAN: antibiotics, Streptomyces strains)

(a) amfomycin (12), antelmycin (15), apramycin (31), avilamycin (46), azalomycin (26), azithromycin (58), bambermycin (21), bekanamycin (24), berythromycin (26), bicozamycin (38), biniramycin (23), bluensomycin (14), capreomycin (12), carboxymycin (1), cethromycin (87), clarithromycin (59), clindamycin (21), coumaromycin (15), daptomycin (58), dihydrostreptomycin (1), diproleandomycin (33), dirithromycin (53), efrotomycin (53), endomycin (6), enramycin (23), enviromycin (31), erythromycin (4), estomycin (14 - deleted in List 28), flurithromycin (51), fosfomycin (25), fosmidomycin (46), ganefrromycin (68), hachimycin (23), heliomyacin (25), hydroxymycin (8 - deleted in List 28), josamycin (23), kanamycin (10), kitasamycin (13), laidlo-mycin (61), lexithromycin (65), lincomycin (13), lividomycin (32), maridomycin (32), midecamycin (30), mikamycin (17), mirincamycin (31), mocimycin (28), natamycin (15), nebramycin (19), neomycin (1), neutramycin (15),
oleandomycin (6), paldimycin (55), paromomycin (10), paulomycin (47), pirlimycin (47), primycin (38), pristinamycin (12), ranimycin (20), relomycin (15), ribostamycin (27), rifamycin (13), rokitamycin (53), roxithromycin (54), salinomycin (37), sedecamycin (55), spectinomycin (13), spiramycin (6), staggimycin (30), steffimycin (20), streptomycin (1), telithromycin (80), terdecamycin (65), tobramycin (28), troleandomycin (24), trospectomycin (53), tulathromycin (87) (vet.), vancomycin (6), viomycin (4), virginiamycin (18)

**antibiotics, antineoplastics:**
ambomycin (13), antramycin (17), azotomycin (13), bleomycin (23), cactinomycin (15), daclinomycin (18), duazomycin (13), lucimycin (13), mitomycin (26), nogalamycin (16), olivomycin (18), peliomyacin (15), peplomycin (44), plicamycin (50) (previously mithramycin (16)), porfiromycin (15), puromycin (15), rufocromomycin (12), sparsomycin (13), talisomycin (41)

**antibiotics, antineoplastics, antibacterial:**
cirolemycin (21)

**antibiotic, antifungal:**
hamycin (17), lidimycin (20), rutamycin (14)

(c) **antibiotic, antibacterial:**
aspartocin (11), azidamfenicol (14), cetofenicol (14), chloramphenicol (1), cloramphenicol pantotenate comp. (14), cycloserine (6), novobiocin (6), ostreogrycin (6), rifamide (15), rifampicin (17), streptoniazid (13), streptovarycin (6), thiamphenicol (10), tylosin (16)

**antibiotic, antifungal:**
amphotericin B (10), candicidin (17), filipin (20), kalafungin (20), nystatin (6), viridofulvin (16)

**antibiotic, antineoplastic:**
daunorubicin (20), mitomalcin (19), streptonigrin (14) (deleted in List 33)

see also -rubcin

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**nab**

**cannabinol derivatives**

(USAN: -nab; or -nab-: cannabinol derivatives)
(a) cannabinol (23), dronabinol (51), menabitan (49), nabazenil (49), nabilone (49), nabitan (42), naboctate (45), nonabine (47), pirnabin (41), rimonabant (83), tinabinol (49)

(b) fenabutene (26), guanabenz (26), muromonab-CD3 (59), nabumetone (44)

**USAN**

**nal-**

**narcotic antagonists/agonists related to normorphine**

A.4.1.0

B.2.0.0 (USAN: narcotic agonists or antagonists related to normorphine)

![Chemical structure]

a) nalbuphine (21), nalfurafine (87), nalmefene (49) (originally nalmetrene (47)), nalmexone (19), nalorphine (1), naloxone (13), naltrexone (29)

(b) nalidixic acid (13)

**TRS 58l**

-naritide  see -tide

-nermin  see -ermin

-nercept  *tumour necrosis factor antagonist*

etanercept (81), lenercept (72), onercept (82)

**nico- or nic- or ni-**

**nicotinic acid or nicotinoyl alcohol derivatives**

![Chemical structure]

nico-: nicoboxil (43), nicoclonate (29), nicocodine (12), nicocortonide (40), nicodicodine (15), nicofibrate (31), nicofuranose (14), nicofurate (28), nicomol (23), nicomorphine (7),
nicopholine (1), nicorandil (44), nicothiazone (10), nicotinamide (4), nicotinic acid (4),
nicotredole (72), nicoxamat (44), nikethamide (4)

inositol nicotinate (16), xantinol nicotinate (16)

**nic-**: nicafenine (40), nicainoprol (46), nicametate (15), nicardipine (42), nicanartine (72),
nicergoline (26), niceritrol (23), niceverine (15), nictindole (28), nizofenone (44)

**ni-**: nialamide (10), niaprazine (24), nifenazone (15), niometacin (33), niprofazone (29),
nixylic acid (17)

**-nicate**: antihypercholesterolaemic and/or vasodilating nicotinic acid esters

H.4.0.0  
F.2.2.0

(a) ciclonicate (33), derpanicate (58), estrapronicate (34), glunicate (51), hepronicate (22),
micinicate (44), pante
cinate (56), sorbinicate (33)

(b) nitrile derivative: nimazone (21)  
other: nifungin (24), nimidane (34), nisbuterol (38)

(c) NO₂ - derivatives: acenocoumarol (6) (anticoag.), azathioprine (12) and tiamiprine (15)
(antimetabolites), bronopol (14) (antiseptic), chloramphenicol (1) (antibiotic), clonazepam (22)
(sed.), flurantel (25) (anthelmintic), flutamide (33) (nonsteroid anti-androgen)

**nitro-** or **nitr-** or **nit-** or **-ni-**

**nifur-**: all INNs of this series (see under nifur-)

**nitro-**: nitroclofene (41), nitrocycline (14), nitrodan (15), nitrofural (1), nitrofurantoin (11),
nitromifene (33), nitroscanate (33), nitrosulfathiazole (1), nitroxinil (19), nitroxoline (15)

**nitr-**: nitracrine (35), nitrafudam (40), nitramisole (33), nitraquazone (53), nitrazepam (16),
nitrefazole (46), nitricholine perchlorate (6)

**nit- and -nit-**: nitarsone (17), ranitidine (41)

**ni-**: nibroxane (35), niclofolan (20), niclosamide (13), nidroxyzone (6), nifenalol (22),
nihydrazone (10), nimesulide (44), nimorazole (22), niridazole (17)

**ni-dipine**: nicardipine (42), nifedipine (27), niludipine (38), nisoldipine (42), nitrendipine (42),
vatamidipine (77)

**-nidazole**: for INNs of this series see under -nidazole
-nidazole (x) antiprotozoals, metronidazole derivatives

S.3.3.0 (USAN: antiprotozoal substances (metronidazole type))

(a) abunidazole (52), azanidazole (38), bamnidazole (37), benznidazole (31), carnidazole (32),
etanidazole (57), fexinidazole (37), flunidazole (21), ipronidazole (21), metronidazole (11),
misonidazole (38), moxnidazole (33), ornidazole (28), panidazole (24), pimonidazole (57),
pirnidazole (32), propenidazole (45), ronidazole (18), satranidazole (48), secnidazole (30),
sulnidazole (33), ternidazole (34), tinidazole (21), tivanidazole (48)

(c) dimetridazole (17), nimorazole (22), stirimazole (25)

TRS 581

-nidine see -onidine

nifur- (d) 5-nitrofuran derivatives

S.2.1.0

(a) nifuradene (16), nifuraldezone (17), nifuralide (34), nifuratel (17), nifuratrone (24), nifurdazil
(16), nifurethazone (10), nifurfoline (20), nifurimide (18), nifurizone (22), nifurmazole (22),
nifurmerone (16), nifuroquine (36), nifuroxazide (14), nifuroxime (11), nifurpipone (20),
nifurpirinol (22), nifurprazine (16), nifurquinazol (18), nifursemizone (16), nifursol (20),
nifurthiazole (14), nifurtimox (21), nifurtinol (36), nifurvidine (17), nifurzide (37)

(c) furalazine (13), furaltdone (17), furazolidone (13), furazolium chloride (15), furmethoxadone
(8), levofuraltdone (17), nidoxyzone (6), nihydrazone (10), nitrofural (1), nitrofurantoin (11),
thiofuradene (11)

TRS 581

-nil see -azenil, also for -carnil, -quinil
-nixin  anti-inflammatory, anilinonicotinic acid derivatives

A.4.2.0

N
\[ \text{CO}_2\text{H} \]

(a) butanixin (32), clonixin (22), diclonixin (31), flunixin (31), isonixin (34), metanixin (31)

(c) clonixeril (22), niflumic acid (17), nixylic acid (17)

TRS 58l

-ol (d) for alcohols and phenols (deleted from General Principles in l4th Report)

β-adrenoreceptor antagonists

E.5.2.0 (BAN: beta-adrenoreceptor antagonists)

\[ \text{Ar}-\text{O}-\text{CH}_2-\text{CHOH-CH}_2-\text{NH-R} \]

aromat. ring -O-CH₂-CHOH-CH₂-NH-R

(BAN: beta adrenoreceptor blocking agents of the propranolol group)

(USAN: beta-blockers)

(a) acebutolol (28), adaprolol (63), adimolol (50), afurolol (40), alpenolol (19), ancarolol (47), aranolol (56), arotinolol (48), atenolol (33), befunolol (39), betaxolol (40), bevantolol (36), bisoprolol (48), bometolol (42), bopindolol (42), bornaprolol (46), bucindolol (43), bucumolol (35), bufetolol (30), bunitrolol (28), bunolol (22), bupranolol (27), butocrolol (38), butofilolol (40), carazolol (36), carpindolol (42), cartelowol (35), celiprolol (35), cetamolol (47), cicloprolol (48), cinamolol (44), cloranolol (41), crinolol (41) (replaced by pocrinolol (44)), dexpropranolol (21), diacetolol (41), draquinolol (54), ecastolol (56), epanolol (52), ericolol (50), esatenolol (76), esmolol (50), exaprolol (32), falintolol (53), flestolol (53), flusoxolol (50), idropranolol (31), imidolol (49) (replaced by adimolol (50)), indenolol (37), indopanolol (48), iprocrrolol (39), isoxaprolol (45), landiolol (75), levobetaxolol (61), levobunolol (42), levomopropranolol (58), mepinindolol (36), metipranolol (38), metoprolol (30), meprolol (36), nadolol (34), nadoxolol (28), nafetolol (39), nebivolol (56), nipradilol (50) (previously nipradolol (49)), oxprenolol (20), pocrinolol (44), pafenolol (46), pamarol (36), pargolol (36), penbutolol (25), penirolo (36), pindolol (23), pirepohol (48), prachtolol (23), primidolol (42), procinolol (25), proranolol (15), ridazolol (51), ronactolol (57), soquinolol (43), spirendolol (46), talinolol (28), tazolol (31), teoprolol (43), tertatolol (48), tienoxolol (56), tilsilol (57), timolol (29), tiprenolol (23), tolamolol (29), toliprolol (28), trigevolol (56), xibenolol (48), xipranolol (22)
(b) Q.2.3.0: stanozolol (18) (anabolic steroid)

TRS 581

-alol aromatic ring -CH-CH\textsubscript{2}-NH-R related to -olols

\begin{center}
\begin{tikzpicture}
\node at (0,0) {OH};
\draw (0,0) -- (0.5,0);
\draw (0.5,0) -- (0.5,-0.5);
\draw (0.5,-0.5) -- (1,-0.5);
\draw (1,-0.5) -- (1,0);
\draw (1,0) -- (1.5,0);
\draw (1.5,0) -- (1.5,-0.5);
\draw (1.5,-0.5) -- (2,-0.5);
\node at (2,-0.5) {N-R};
\node at (1.25,-0.25) {Ar};
\end{tikzpicture}
\end{center}

(USAN: combined alpha and beta blockers)

amosulalol (50), bendacalol (59), brefonalol (56), bufuralol (31), dexsotalol (74), dilevalol (50), labetalol (35), medroxalol (43), nifenalol (22), pronetalol (14), sotalol (18), sulfinalol (41), butidrine (16)

(c) butidrine (16)

---

\textbf{-olone} see pred

---

\textbf{-one (d) ketones}

(a) 448 (9.62\%) INNs ending in \textit{-one} in Lists 1-48 of Proposed INNs

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\textbf{-onide steroids for topical use, acetal derivatives}

Q.3.0.0

(a) acrocinonide (27), amcinonide (33), budesonide (37), ciclesonide (62), cicortonide (28), ciprocinonide (38), desonide (24), dexbudesonide (80), drocinonide (29), flucinolone acetonide (22), fluocinolone acetonide (11), flumoxonide (38), fluocinonide (25), halcinonide (29), itrocinonide (62), nicocortonide (40), procinonide (38), rofleponide (72), tralonic (27), triamcinolone benetonide (36), triamcinolone furereonide (36), triamcinolone hexacetonide (15), triclonide (30)

(c) amcinafal (25), amcinafide (25)

TRS 581
-onidine  antihypertensives, clonidine derivatives

H.3.0.0

(a) apraclonidine (59) (control of intraocular pressure), benclonidine (42), brimonidine (66), clonidine (40), flutonidine (31), moxonidine (48), piclonidine (44), tolonidine (28)

related: alinidine (40) (analgesic)

-nidine

H.3.0.0

(a) related antihypertensives: betanidine (13), indanidine (50), rilmenidine (57), tiamenidine (28)

(b) muscle relaxant: tizanidine (43)
topical antiinfective: octenidine (43), pirtienidine (57)
antibacterial: sulfaguanidine (4)
vet. coccidiostat: robenidine (25)

(c) dexlofexidine (48), levlofexidine (48), lofexidine (33)

-onium  see -ium

-opamine  see -dopa

-orex  anorexics

M.1.0.0 (BAN: anorexic agents, phenethylamine derivatives)
(USAN: anorexants)

(a) acridorex (21), amfepentorex (16), aminorex (14), benfluorex (25), clobenzorex (18), cloforex (16), clominorex (14), difemetorex (41), etolorex (20), fenisorex (29), fenproporex (17), flucetorex (30), fluorex (19), fluminorex (14), formetorex (14), furfenoress (16), indanorex (30), mfenorex (19), morforex (26), oxifentorex (20), pentorex (16), picilorex (40), tiflorex (34)
(c) amfebutamone (31), amfecloral (12), amfepramone (13), amfetamine (55), amfetaminil (40), benzftamine (55), brolamfetamine (55), chlorphentermine (11), clortermine (22), dexamfetamine (55), dimetamfetamine (38), etilamfetamine (40), fenbutrazate (12),

fenfluramine (14), hexapradol (12), levamfetamine (12), mephentermine (6), ortetamine (13), phendimetrazine (11), phenmetrazine (6), phentermine (11)

TRS 581

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**orphan**  
*narcotic antagonists/agonists, morphinan derivates*

A.4.1.0  
B.2.0.0  
(USAN: -orphan: morphinan derivatives that are narcotic antagonists or agonists)

(a)  
A.4.1.0: butorphanol (31), dextromethorphan (1), dextrorphan (1), dimemorfan (30), ketorfanol (49), levomethorphan (1), levophenacylmorphan (9), levorphanol (4), norlevorphanol (9), oxilorphan (31), phenomorphan (5), proxorphan (43), racemethorphan (1), racemorphan (1), xorphanol (48)

TRS 581  
B.2.0.0: levallorphan (2)

-orph-  
*orphine*: acetorphine (17), alletorphine (25), buprenorphine (29), cyprenorphine (17), desomorphine (5), diprenorphine (21), etorphine (17), homprenorphine (25), methyldesorphine (5), methyldihydro-morphine (5), *nalorphine* (1), nicomorphine (7), normorphine (7)

-orphinol*: hydromorphinol (11)

-orphone*: conormone (46), hydromorphone (1), oxymorphone (5), pentamorphone (60), semormone (67)

(b)  
emorfazone (44), morforex (26), mörperidine (6), orphenadrine (8)
-ox
-alox

antacids, aluminium derivatives: glucalox (13), sucralox (13)

-dox

antibacterials, quinazoline dioxide derivatives:

\[
\text{R} \quad \text{N} \quad \text{O} \\
\text{N} \quad \text{O}
\]

carbadox (19), ciadox (44), cinoquidox (40), drazidox (24), mequidox (19), olaquindox (31), temodox (27)

-pirox

antimycotic pyridone derivatives:

\[
\text{H} \quad \text{N} \quad \text{O}
\]
ciclopirox (26), metipirox (26), rilopirox (56)

-xanox

anti-allergics, tixanox group:

\[
\text{H}_2\text{C} \quad \text{O} \quad \text{C} \quad \text{O} \quad \text{CO}_2\text{H}
\]

(a) amlexanox (55), mepixanox (49), sudexanox (44), tixanox (37), traxanox (44)

(c) xanoxic acid (33)

others: bifeprunox (87) (antipsychotic), cefminox (53) (antibiotic), deferasirox (86) (chelating agent), nifurtimox (21) (antiprotozoal), sulbenox (37) (animal growth regulator), acipimox (33) (antilipemic), etofenprox (57) (insecticide)
-oxacin (x)  antibacterials, nalidixic acid derivatives

S.5.5.0  (BAN: antibacterial agents of the cinoxacin group)
(USAN: antibacterial agents (nalidixic acid type))

(a)  alatrofloxacin (75), amifloxacin (51), balofloxacin (71), binfloxacin (60), cadrofloxacin (81),
cetefloxacin (68), cinoxacin (32), ciprofloxacin (50), clinafloxacin (67), danofloxacin (61),
difloxacin (55), droxacin (36), ecdnofloxacin (78), enoxacin (49), enrofloxacin (56),
esiafloxac (60), fandofloxacin (78), finafloxacin (85), fleroxacin (56), garenoxacin (87),
gatifloxacin (74), gemifloxacin (81), gremafloxacin (68), ibafloxacin (60), irloxacin (53),
levofloxacin (64), lomefloxacin (58), marbofloxacin (65), meroxacin (69), moxifloxacin (78),
nadinofloxacin (64), norfloxac (46), ofloxacin (49), olamufloxacin (79),
orbifloxacin (68), pazufloxacin (71), pefloxac (45), pradofloxacin (84), premafloxacin (72),
prulifloxacin (72), rosoxacin (36), rufloxacin (57), sarafloxacin (62), sitafloxacin (75),
sparflloxacin (63), temafloxacin (58), tioxacin (34), tosufloxacin (60), trovafloxacin (73),
vebufloxacin (69)

(c)  flumequine (34), nalidixic acid (13), oxolinic acid (15), pipemidic acid (32), piromidic acid
(27)
metioxate (34)

-oxan(e)  benzodioxane derivatives

E.5.1.0  (USAN: -adrenoreceptor antagonists; benzodioxane derivatives)

(a)  -adrenoreceptor antagonists
azaloxan (52) (antidepressant), fluparoxan (58) (antidepressant), idazoxan (49) (α2), imiloxan
(52) (α2) (antidepressant), piperoxan (1) (sympatholytic), proroxan (39)
antihypertensives:
flesinoxan (55), guabenxan (32), guanoxan (15)
tranquillizers:
butamoxane (12), ethomoxane (12), pentamoxane (12)
related: efaroxan (59) ($\alpha_2$)

(b) ambenoxan (21), amoproxan (22), nibroxane (35), razoxane (40)/dexrazoxane (62), sobuzoxane (62), tolboxane (12)

<table>
<thead>
<tr>
<th>-oxanide</th>
<th>see -anide</th>
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<tbody>
<tr>
<td>-oxef</td>
<td>see cef-</td>
</tr>
<tr>
<td>-oxepine</td>
<td>see -pine</td>
</tr>
<tr>
<td>-oxetin</td>
<td>antidepressants, fluoxetine derivatives</td>
</tr>
<tr>
<td>C.3.0.0</td>
<td></td>
</tr>
</tbody>
</table>

(a) ansoxetine (58), dapoxetine (65), duloxetine (68), femoxetine (36), fluoxetine (34), ifoxetine (54), litoxetine (64), nisoxetine (34), omiloxetine (76), paroxetine (38), reboxetine (54), seproxetine (66), tomoxetine (49)

<table>
<thead>
<tr>
<th>-oxifene</th>
<th>see -ifene</th>
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<tbody>
<tr>
<td>-oxicam</td>
<td>see -icam</td>
</tr>
<tr>
<td>-pafant</td>
<td>platelet-activating factor antagonists</td>
</tr>
<tr>
<td>I.2.1.0</td>
<td></td>
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</tbody>
</table>

(a) apafant (60), bepafant (60), dacopafant (63), foropafant (75), israpafant (76), lexipafant (70), minopafant (80), modipafant (65), nupafant (70), rocepfant (71), setipafant (72), tulopafant (64)
-pamide  diuretics, sulfamoylbenzoic acid derivatives
(could be sulfamoylbenzamide) (19th Report, 1970)

N.1.2.0  (USAN: diuretics (sulfamoylbenzoic acid derivatives))

\[
\begin{array}{c}
\text{CO}_2\text{H} \\
\text{SO}_2\text{NH}_2
\end{array}
\]

(a)  alipamide (18), besulpamide (52), clopamide (13), indapamide (29), tripamide (44), xipamide (22), zidapamide (50) (previously isodapamide (47))

(b)  chlorpropamide (8) (hypoglycemic), isopropamide iodide (8) (anticholinergic)

(c)  bumetanide (24), chlortalidone (12), clore xolone (15), furosemide (14), sulclamide (15), tiamizide (16)

-pamil  coronary vasodilators, verapamil derivatives

F.2.1.0  (USAN: coronary vasodilators (verapamil type))

\[
\begin{array}{c}
\text{HN} \text{CNH}_3\text{CO} \text{H}_3\text{CO} \text{H}_3\text{CO} \text{H}_3\text{CO} \text{C}_3\text{H}_3 \\
\text{OCH}_3 \\
\text{OCH}_3
\end{array}
\]

(a)  anipamil (49), dagapamil (52), devapamil (53), dexverapamil (65), emopamil (52), falipamil (48), gallo pamil (38), levemopamil (62), nexopamil (67), ronipamil (51), tiapamil (43), verapamil (16)

related: bertosamil (64), bisaramil (60)

-parcin  for glycopeptide antibiotics

S.6.0.0  

(a)  avoparcin (29), orientiparcin (72)
**-parin**  
**heparin derivatives including low molecular mass heparins**

I.2.0.0

(a) ardeparin sodium (68), bemiparin sodium (75), certoparin sodium (70), dalteparin sodium (64), enoxaparin sodium (52), heparin sodium (54), livaraparin calcium (85), minolteparin sodium (73), nadroparin calcium (65), parnaparin sodium (65), reviparin sodium (65), tinzaparin sodium (65)

**-parinux**  
**synthetic heparinoids**

fondaparinux sodium (83) (replaces fondaparin sodium (79))

**-penem**  
**analogues of penicillanic acid antibiotics modified in the five-membered ring**

S.6.0.0  
(USAN: analogues of penicillanic acid antibiotics modified in the five-membered ring)

(a) biapenem (69), doripenem (83), ertapenem (84), faropenem (69), imipenem (50), lenapenem (73), meropenem (60), panipenem (64), ritipenem (67), sulopenem (68), tacapenem (87), tebipenem (82)

**-perone**  
**tranquillizers, neuroleptics, 4'-fluoro-4-piperidinobutyrophenone derivatives**

C.1.0.0  
C.2.0.0  
(USAN: 4'-fluoro-4-piperidinobutyrophenone derivatives; antianxiety agents; neuroleptics)

(a) aceperone (14), amiperone (14), biriperone (51), carperone (24), cicarperone (28), cinuperone (53), cloroperone (38), declenperone (42), duoperone (54), fenaperone (28), flusperipone (34), lenperone (27), lodiperone (44), melperone (34), metraperone (56), milenperone (37), mindoperone (38), moperone (14), nonaperone (44), pipamperone (17), pirenperone (46), prideperone (54), primaperone (17), propypperone (16), roxoperone (17), setoperone (51), spiperone (17), timiperone (40)
closely related: azabuperone (34), azaperone (18), lodiperone (44), zoloperone (39)

-peridol antipsychotics, haloperidol derivatives

benperidol (14), bromperidol (33), [clofluperol (18)], droperidol (14), [fluanisone (13)], haloperidol (10), trifluperidol (16)

-peridone antipsychotics, risperidone derivatives

abaperidone (80), belaperidone (78), cloperidone (17), iloperidone (69), lusaperidone (82), ocaperidone (64), paliperidone (83), risperidone (57), tioperidone (37)

(c) domperidone (36), etoperidone (36) (antiemetic)

-pidem hypnotics/sedatives, zolpidem derivatives

C.1.0.0

alpidem (53), necopidem (66), saripidem (67), zolpidem (53)

-pin(e) see also Pharm S/Nom 970 (tricyclic compounds)

-dip see -dipine

(a) -zepine antidepressant/neuroleptic: C.3.2.0: dibenzepin (14), elanzepine (35), enprazepine (30), mezepine (22), nuvenzepine (59), prazepine (15), propizepine (19), tilozepine (40)

tricyclic antiulcer: J.0.0.0: darenzepine (52), pirenzepine (30), siltenzepine (63), telenzepine (50), zolenzepine (48)

tricyclic anticonvulsant: A.3.1.0: carbamazepine (15), etazepine (51), licarbazepine (81), oxcarbazepine (41)

hyperthermia: amezepine (42)

-apine psychoactive: C.0.0.0: amoxapine (25), asenapine (87), batelapine (64), clotiapine (16), clozapine (22), flumezapine (47), fluperlapine (46), loxapine (22), metiapine (22), mirtazapine (61), olanzapine (67), pentiapine (56), perlapine (23), quetiapine (74), rilapine (52), serazapine (63), tenilapine (52)

-cilpine antiepileptic: A.3.1.0: dizocilpine (60)
-oxepin  beloxepin (75), cidoxepin (17), doxepin (15), maroxepin (54), metoxepin (33), pinoxepin (18), savoxepin (56), spiroxepin (32)

-oxapine  traboxopine (58)

-sopine  adosopine (63)

-tepine  citatepine (54), clorotepine (29), damotepine (27), metitepine (27), tropatepine (28)

(doseulepin (15)

(b)  atromepine (15), noscapine (7), prozapine (14)

(c)  clobenzepam (25), homopipramol (20), opipramol (15)

-piprazole  see -prazole

-pirox  see -ox

-pirone  see -spirone

-plact  platelet factor 4 analogues and derivatives

 iroplact (74)

-planin  antibacterials (Actinoplanes strains)

 S.5.0.0  actaplanin (34), mideplanin (66), ramoplanin (57), teicoplanin (48)

-plase  see -teplase, -uplase under -ase

-platin  antineoplastic agents, platinum derivatives

 L.0.0.0  (USAN: antineoplastics (platinum derivatives))

(a)  carboplatin (48), cisplatin (39), dexamaplatin (64), enloplatin (64), eptaplatin (83), iproplatin (51), lobaplatin (65), miboplatin (66), miriplatin (85), nedaplatin (67), ormaplatin (63),
oxaliplatin (56), picoplatin (87), satraplatin (80), sebriplatin (68), sproplatin (48), triplatin
tetranitrate (87), zeniplatin (63)

-**plon**  
pyrazolo[4,5-d]pyrimidine derivatives, used as anxiolytics, sedatives, hypnotics

A.2.2.0  
C.1.0.0  
ocinaplon (72), indiplon (86), zaleplon (72)

-**poetin**  
erthropoietin type blood factors

I.0.0.0  

(a)  
darbepoetin alfa (85), epoetin alfa (62), epoetin beta (62), epoetin delta (85), epoetin gamma
(67), epoetin epsilon (72), epoetin omega (73)

-**porfin**  
benzoporphyrin derivatives

(a)  
rostaporfin (83), stannsoporfin (79), talaporfin (83), temoporfin (70), verteporfin (71)

-**poride**  
Na⁺/H⁺ antiport inhibitor

amiloride (18), cariporide (74), eniporide (79), sabiporide (84), zoniporide (85)

-**pramine**  
substances of the imipramine group

C.3.2.0  
(USAN: imipramine type compounds)

(a)  
saturated dibenzazepine:
azipramine (36), caripramine (16), cianopramine (47), ciclopramine (29), clocapramine (28),
clopotramine (17), depramine (31), desipramine (13), imipramine (8), ketimipramine (17),
lofepramine (24), lopramine (24) (replaced by lofepramine (34)), metapramine (34),
mosapramine (64), pumaprazole (76), quinupramine (32), tampramine (54), tienopramine (38),
trimipramine (13), imipraminoxide (36)
(c) **unsaturated dibenzazepine:**
carbamazepine (15), homopipramol (20), opipramol (15)

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- **prazole**  
  **antiulcer, benzimidazole derivatives**
  
  **J.0.0.0**  
  (USAN: antiulcerative benzimidazole derivatives)

  ![Benzimidazole Derivatives](image)

  (a) cinprazole (34), disuprazole (56), esaprazole (45), esomeprazole (79), fuprazole (39), ilaprazole (86), lansoprazole (60), leminoprazole (68), nepaprazole (74), nilprazole (37), omeprazole (46), pantoprazole (62), picoprazole (46), pumaprazole (76), rabeprazole (69), saviprazole (62), tenatoprazole (80), timoprazole (35), ufiprazole (58)

- **piprazole**  
  **psychotropics, phenylpiperazine derivatives**
  
  **C.0.0.0**

  ![Phenylpiperazine Derivatives](image)

  (a) aripiprazole (75), dapiprazole (45), elopiprazole (70), enpiprazole (24), lorpiprazole (60), mepiprazole (24), sonepiprazole (80), tolpiprazole (25)

  (b) dapiprazole (see above)

- **pred**  
  **prednisone and prednisolone derivatives**
  
  **Q.3.3.0**  
  (USAN: pred-, -pred- or -pred)

  ![Prednisone and Prednisolone Derivatives](image)

  (a) chloroprednisone (12), cloprednol (31), difluprednate (21), domoprednate (47), fluprednidene (19), fluprednisolone (13), halopredone (36), isoflupredone (36), isoprednidene (24), loteprednol (64), mazipredone (32), meprednisone (15), methylprednisolone (8), methylprednisolone aceponate (52), methylprednisolone sulpantanate (56), oxisopred (29),
prednazate (16), prednazoline (22), prednicarbate (44), prednimustine (31), prednisolamate (13), prednisolone (6), prednisolone steaglate (16), prednisone (6), prednylidene (13), tipredane (54)

(c) **methasone or metasone**: aclometasone (41), amelometasone (74), beclometasone (17), betamethasone (11), betamethasone acibutate (26), cormetasone (29), desoximetasone (20), dexamethasone (8), dexamethasone aceturate (57), flumatason (13), halometasone (41), icometasone enbutate (70), mometasone (56), paramethasone (12)

**betasol**: clobetasol (26), doxibetasol (26), ulobetasol (54)

(USAN: steroids (not prednisolone derivatives))

Q.3.0.0 **-olone**: clocortolone (16), descinolone (17), diflucortolone (18), flucololone acetonide (22), fluocinolone acetonide (11), flucortolone (15), fluorometholone (8), fluperolone (13), ganaxolone (76), halocortolone (31), rimexolone (38), triamcinolone (8), triamcinolone benetoneide (36), triamcinolone furetonide (36), triamcinolone hexacetonide (15)

clolobetasone (26), cloticasone (52), deprodone (20), dichlorisone (10), diflorasone (30), flunisolide (11), fluticasone (52), meclorisone (40), timobesone (51)

**-olone** steroids other than prednisolone derivatives

A.1.2.0 **general anesthetics, pregnanes**: alfadolone (27), alfazalone (27), minaxolone (39), renanolone (8)

H.2.0.0 **anti-arrhythmic**: amafolone (40), edifolone (56)

L.6.0.0 **cytostatics - sex hormones**: drostanolone (13), trestolone (25)

Q.2.3.0 **androgens**: androstanolone (4), drostanolone (13), mesabolone (29), mestanolone (10), mesterolone (15), metenolone (12), metribolone (17), nandrolonoe (22), norethandrolone (6), oxabolone cipionate (14), oxandrolone (12), oxymetholone (11), quinbolone (14), rosterolone (59), stenbolone (17), tibolone (22), trenbolone (24)

J.0.0.0 **glycyrrhetic acid derivatives**: carbenoxolone (15), cicloxolone (33), cinoxolone (33), deloxolone (51), enoxolone (15), roxolonium metilsulfate (33)

Q.2.3.1 oxendolone (42)

**various non-steroidal compounds**

citiolone (23) (hepato-bil.troubles), clorexolone (15) (diuretic), fenozolone (14) (psychotonic), tioxolone (16) (keratolytic), vistatolon (25) (antiviral)

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-prenaline see -terol

-pressin vasoconstrictors, vasopressin derivatives

Q.1.2.0

H-Cys-Tyr-Phe-Gln-Asn-Cys-Pro-Arg-Gly-NH₂

(a) argipressin (13), desmopressin (33), felypressin (13), lypressin (13), ornipressin (22), terlipressin (46), vasopressin injection (16)

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-sulpiride derivatives

C.0.0.0
J.1.0.0

(a) C.0.0.0: alizapride (43), alpiropride (49), amisulpride (44), batanopride (61), broclepride (43), cisapride (49), dazopride (50), denipride (58), etacepride (52), eticlopride (52), flubepride (35), nemonapride (63) (previously emonapride (61)), peralopride (43), prosulpride (43), prucalopride (78), sulmepride (43), sultopride (26), sulverapride (44), veralipride (43)

J.1.0.0: alepride (40), bromopride (27), cinitapr ide (41), cipropride (41), clebopride (32), dobutapride (57), irolapride (55), isosulpride (36), itopride (66), lintopride (65), lirexapride (74), lorapride (44), mezacopride (56), mosapride (66), pancopride (62), raclopride (52), remoxipride (49), renzapride (60), tiapride (28), ticalopride (83), tinisulpride (44), trazolopride (51), tropapride (48), zacopride (55)

K.0.0.0: cloxacepride (42)

U.1.1.0/C.0.0.0: iolopride (123I) (73)

(b) glimepride (66)

(c) C.0.0.0: levosulpiride (63), sulpiride (18)

J.1.0.0: metoclopramide (17)
-pril (x)  angiotensin-converting enzyme inhibitors

H.3.0.0  (BAN: inhibitors of angiotensin-converting enzyme)
(USAN: antihypertensive agents (captopril type))

(a)  alacepril (50), benazepril (58), captopril (39), ceronapril (64), cilazapril (53), delapril (54), enalapril (46), fosinopril (56), idrapril (66), imidapril (60), indapril (50), libenzapril (58), lisinopril (50), moexipril (60), moveltipril (58), orbutopril (57), pentopril (53), perindopril (53), pivopril (52), quinapril (54), ramipril (52), rentiapril (55), spirapril (56), temocapril (64), trandolapril (53), utibapril (63), zabicipril (58), zofenopril (51)

-prilat (x)

(a)  benazeprilat (58), cilazaprilat (54), enalaprilot (50), fosinoprilat (62), imidaprilat (71), moexiprilat (67), perindoprilat (56), quinaprilat (60), ramiprilat (53), spiraprilat (60), temocaprilat (78), trandolaprilat (60), utibaprilat (65), zabiciprilat (64), zofenoprilat (63)

-prim  antibacterials, trimethoprim derivatives

S.5.5.0

(a)  aditoprim (49), baquiloprim (56), brodimoprim (44), epiroprim (44), metioprim (42), ormetoprim (21), tetroxoprim (33), trimethoprim (11), vaneprim (48)

(c)  diaveridine (18)

-profen (x)  anti-inflammatory agents, ibuprofen derivatives

A.4.2.0  (USAN: anti-inflammatory or analgesic substances (ibuprofen type))

(a)  alminoprofen (40), araprofen (65), atliprofen (74), bakeprofen (61), benoxaprofen (34), bermoprofen (57), bifeprofen (57), carprofen (35), cicloprofen (32), cliprofen (32), dexibuprofen (61), dexindoprofen (49), dextketooprofen (70), esflurbiprofen (56), fenoprofen (26), flunoxaprofen (44), fluprofen (18), flurbiprofen (28), frabuprofen (51), furaprofen (42), furciprofen (44), hexaproxen (30), ibuprofen (16), indoprofen (32), isoprofen (40), ketoprofen
(28), lobuprofen (53), lonaprofen (44), losmiprofen (61), loxoprofen (50), mabuprofen (64), mexoprofen (33), miroprofen (44), odalprofen (66), pelubiprofen (76), piketoprofen (40), pirprofen (32), pranoprofen (38), suprofen (31), tazeprofen (50), tetriprofen (29), tilnoprofen arbamel (74), tioxaprofen (39), vedaprofen (72), ximoprofen (37), zaltoprofen (64), zoliprofen (55)

(b) aprofene (12) (antispasm. coron. vasodil.), diprofene (12) (antispasm. blood vessels)

(c) brofezil (31), protizinic acid (27), tiaprofenic acid (30)

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prost (x) prostaglandins

Q.0.0.0 (USAN: -prost- or -prost: prostaglandin derivatives)

(a) alfaprostol (45), alprostadil (39), ataprost (62), beraprost (59), bimatoprost (85), butaprost (55), carboprost (36), cicaprost (54), ciprostene (51), clinprost (68), cloprostenol (33), delprostenate (42), dimoxaprostone (52), dinoprost (26), dinoprost (26), doxaprost (34), ecraprost (83), eganoprost (84), enisoprost (50), epoprostenol (44), epotaloprost (56), etaprostenol (46), fenprostalene (42), flunoprost (53), fluoprostenol (33), froxiprost (55), gemeprost (42), iloprost (48) (originally ciloprost (46)), lanproston (72), latanoprost (67), limaprost (56), lubiprostone (87), lubrostiol (44), meteneprost (45), misoprostol (47), naxaprostene (58), nileprost (45), nocloprost (51), oxoproston (44), penprostene (37), pimilprost (71), piriprost (51), prostalene (34), remiprostil (65), rosaprostol (48), sulprostone (37), taprostene (58), tiaprost (41), tilsuprost (51), tiprostanide (48), travoprost (80), treprostinil (87), unoprostone (66), vapiprost (58), vaprostil (53)

-prostil prostaglandins, anti-ulcer

(a) arbaprostil (35), deprostil (32), enprostil (50), mexiprostil (52), ornoprostil (56), rioprostil (49), spiriprostil (63), trimoprostil (49)

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-quine (d) quinoline derivatives (deleted from General Principles in List 28 prop. INN)
(a) **antimalarial**: amodiaquine (1), amopyroquine (8), bulaquine (82), chloroquine (4), hydroxychloroquine (8), mefloquine (33), moxipraquine (26), pamaquine (4), pentaquine (4), primaquine (1), quinocide (34), tafenoquine (80), tebuquine (49)

**amebicidal**: clamoxyquine (16), mebique (29) (gastroinestinal antiseptic), benzoxiquine (18) (antiseptic), cletequique (20) (anti-inflammatory), cloquique (30) (antiseptic), debrisoquine (15) (hypotensive agent), esproquine (31) (cardiovascular agent), flumequine (34) (antibacterial), guanisoquine (15) (hypotensive agent), nifuroquine (36), oxamniquine (28) (schistosomacide)

(c) **antirheumat., antirheumatism (antimalarial)**: acequinoline (22), cinchophen (1), neocinchophen (1), oxycinchophen (6)

**antibacterial**: actinoquin (1), aminoquinuride (45), broquinaldol (17), broxaldine (12), chlorminaldol (1), cloquinol (16), dequalinium chloride (8), diiodohydroxyquinoline (1), lauroquinol acetate (12), nitroxoline (15), quindecamine (15), tilbroquinol (45), tiliquinol (45)

**antifungal**: hedaquin chloride (8)

**anthelmintic**: pyrvinium chloride (6)

**treatment of leishmaniasis etc**: aminoquin (22), sitamaquine (80)

**amebicidal**: cloquinate (11), dehydroemetine (15), quinfamide (40)

**antiproteus**: oxolinic acid (15)

**coccidiostat**: amquinate (21), buquinolate (16), ciproquinate (22), decoquinate (20), nequinate (22), proquinolate (17), quindoxin (26) (growth promoter for pigs and poultry)

**growth promoter, bactericidal**: cinoquidox (40), olaquindox (31) (quinoxaline derivative)

**antiviral**: famotine (23), memotine (22)

**antihypertensive**: amiquinsin (17), leniquinsin (18), peraquinsin (29) (quinazolinone derivative), trethinium tosilate (14), quinuclium bromide (40)

**heart failure**: buquineran (40)

**diuretic**: quincarbate (31)

**vasodilator, treatment of cerebrovascular insuff.**: viquidil (25)

**curarizing agent**: dimethyltubocurarine chloride (1), laudexium metilsulfate (4), tubocurarine chloride (1)

**anti-cholinergic**: toquizine (17), tiquizium bromide (47)
antispasm, muscle relaxant: dimoxyline (1), drotaverine (17), ethaverine (4), flucarbril (14), niceverine (15), octaverine (18), quinetalate (16)

bronchodilator: quinprenalin (17), tretoquinol (21), (bronchial asthma)

oxytocic: quipazine (17)

analgesic: glafenine (15), metofoline (12)

local anaesthetic: cinchocaine (1), euprocin (22), quinisocaine (4)

antituss.: iquindamine (34), noscapine (7)

diagnostic aid: quinaldine blue (17)

antihist.: pirquinazo (43), tritoqualine (14)

antihyperlipidemic: climiqua-line (33) (isoquin. der.)

anti-ulcer: isotiquimide (49), tiquinamid (35)

-racetam amide type nootropic agents, piracetam derivatives

B.1.0.0 (BAN: substances of the piracetam group)
(USAN: nootropic substances (piracetam type))

\[ \text{N} \text{H}_2 \text{O} \]

(al) aloracetam (62), aniracetam (44), cebaracetam (66), coluracetam (86), dimiracetam (68), doliracetam (53), dupracetam (38), etiracetam (40), fasoracetam (78), imuracetam (42), levetiracetam (62), molracetam (55), nebracetam (59), nefiracetam (64), nicoracetam (63), oxiracetam (43), piracetam (22), pramiracetam (46), rolziracetam (54)

related: tenilsetam (51)
-relin (x)  prehormones or hormone-release stimulating peptides

Q.0.0.0  (BAN: hypophyseal hormone release-stimulating peptides)

(a)  **LHRH-release-stimulating peptides**: avorelin (74), buserelin (36), deslorelin (61), gonadorelin (32), goserelin (55), histrelin (53), leuprorelin (47), lutrelin (51), nafarelin (50), triptorelin (56)

-morelin  growth hormone release-stimulating peptides: capromorelin (83), dumorelin (59), examorelin (72), ipamorelin (78), pralmorelin (77), rismorelin (74), sermorelin (56), somatoren (57), tabimorelin (80)

-tirelin  thyrotrpin releasing hormone analogues:

(a)  azetirelin (60), fertirelin (42), montirelin (58), orotirelin (58), posatirelin (60), protirelin (31), taltirelin (75)

(a)  other: corticorelin (64)

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-relix  hormone-release inhibiting peptides

(a)  abarelix (78), cetrorelix (64), degarelix (86), detirelix (56), ganirelix (65), iturelix (79), prazarelix (81), ramorelix (68), teverelix (71)

-renone  aldosterone antagonists, spironolactone derivates

N.1.8.0  (USAN: aldosterone antagonists (spironolactone type))

(a)  canrenoic acid (20) and potassium canrenoate (20), canrenone (20), dicirenone (50), drospirenone (63), eplerenone (77), mespirenone (51), spironone (45)

(b)  bromchlorenone (12) (antifungal), menatetrenone (28) (antihemorrhagic), teprenone (50), ubidecarenone (48) (in congestive heart failure)

(c)  oXPrenoate potassium (53), prorenoate potassium (32), spironolactone (11), spiroxasone (14)
**INN – The use of common stems**

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**retin**

**retinol derivatives**

P.1.0.0 (USAN: -retin-)

(a) acitretin (56) (previously etretin (51)), alitretinoin (80), doretin (60), etretinate (41), fenretinide (51), isotretinoin (41), motretinide (38), pelretin (60), retinol (18), tretinoin (25), tretinoin tocoferil (66)

(b) noretynodrel (13), secretin (1), trethinium tosilate (14)

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**-ribine**

**ribofuranyl-derivatives of the "pyrazofurin" type**

L.0.0.0./

S.5.3.0

(a) azaribine (19), cladribine (68), isatoribine (83), loxoribine (64), mizoribine (46), triciribine (46)

(c) pirazofurin (31), ribavirin (31), riboprine (20), tiazofurine (48)

related: benaxibine (50)

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**rifa-**

**antibiotics, rifamycin derivatives**

S.6.4.0
(a) rifabutin (52), rifalazil (78), rifametane (61), rifamexil (67), rifamide (15), rifampicin (17), rifamycin (13), rifapentine (43), rifaximin (49) (previously rifaxidine (48))

USAN -rinone cardiac stimulants, amrinone derivatives
H.1.0.0 (USAN: cardiotonic agents (amrinone type))

(a) amrinone (38), bemarinone (57), medorinone (54), milrinone (50), nanterinone (60), olprinone (70), pelrinone (53), saterinone (56), toborinone (72), vesnarinone (57)
(b) gestrinone (39), indacrinone (51), taziprinone (48)

-USAN -rizine see -izine

-USAN -rozole aromatase inhibitors, imidazole-triazole derivatives
L.0.0.0

anastrozole (72), fadrozole (64), finrozole (81), letrozole (70), liarozole (64), vorozole (64)

-USAN -rubycin antineoplastic antibiotics, daunorubicin derivatives
L.5.0.0 (USAN: antineoplastic antibiotics (daunorubicin type))

(a) aclarubicin (44), amrubcin (65), carubicin (40), daunorubicin (20), detorubicin (41), doxorubicin (25), epirubicin (48) (originally pidorubicin (47)), esorubicin (47), galarubicin
(80), idarubicin (47), ladirubicin (83), leurubicin (64), medorubicin (47), nemorubicin (71),
pirarubicin (55), rodo rubicin (54), valrubicin (79), zorubicin (39)

salicylic acid derivatives

(USAN: -sal-; -sal; or sal-)

\[\text{CO}_2\text{H} \quad \text{OH}\]

(a) sal-  

**analgesic anti-inflammatory A.4.2.0**

choline salicylate (15), imidazole salicylate (51), salacetamide (1), salcolex (23), saletamide (20), salflumerine (29), salicylamide (1), salnacedin (73), salprotoside (31), salsalate (28), salverine (15)

various

salantel (29) (anthelmintic), salinazid (8) (antituberc.)

-sal  

**analgesic anti-inflammatory A.4.2.0**

detanosal (23), diflunisal (33), fendosal (35), flufenisal (22), fosfosal (37), guacetisal (40),
guaimesal (50), parcetasal (65), pranosal (24), sulprosal (36), tenosal (63)

antithrombotic

flufosal (42)

various: antituberc.

fenamisal (15), thiomersal (1) (disinfect.), triflusal (37) (antithrombotic)

-sal-  

**analgesic anti-inflammatory A.4.2.0**

acetaminosalol (1), acetylsalicylic acid (IP), carbasalate calcium (27), carsalam (13), etersalate (50), etosalamide (14), parsalmide (32), talosalate (43)

various

amotosalen (85), calcium benzamidosalicylate (10), homosalate (28) (sunscreen agent),
lasalocid (30) (antibiotic. vet.), mersaly1 (4) (mercurial diuretic), octisalate (83) (sunscreen),
osalmid (15) (choleretic), xenysalate (12) (antiseborrheic)

salazo-  

**phenylazosalicylic acid derivatives antibact. S.5.1.0**

salazodine (22), salazosulfadimidine (11), salazosulfamide (1), salazosulfathiazole (1)

-salazine/-salazide

dersalazine (86), mesalazine (52), olsalazine (52), sulfasalazine (55), balsalazide (48),
ipsalazide (48)
-saran  

**brominated salicylamide derivatives** disinfect. S.2.1.0

bensalan (18), dibromsalan (14), flusalan (16), fursalan (18), metabromsalan (16), tiosalan (18), tribromsalan (14)

(b)  

**non-salicylic acid derivatives**

macrosalb (99mTc) (33), trioxyxalen (16) (pigmenting agent)

**bronchodil.**

devosalbutamol (78), salbutamol (20), salmefamol (23)

(c)  

**analgesic, anti-inflammatory A.4.2.0**

aloxiprin (13), anilamate (13), benorilate (21), brosotamide (29), cresotamide (28), dibusadol (24), dipyrocetyl (6), ethenzamide (10), fenamifuril (16), hydroxytoluic acid (17), sodium gentisate (1), sodium glucaspaldrate (17)

**various**

4-aminosalicylates of the -caine series D.1.0.0: ambucaine (6), hydroxyprocaine (1), hydroxytetracaine (1), propoxycaine (4)

**antihypertensives H.3.0.0**

labetalol (35)

**antitussives K.1.0.0**

devoclamide (l6), flualamide (20)

**saluretics N.1.2.0**

xipamide (22) (sulfamoyl deriv.),

**mercurial diuretics N.1.3.0**

mercuderamide (1)

**anthelmintics S.3.1.0**

bromoxanide (31), clioxanide (19), niclosamide (13), rafoxanide (24)

closantel (36), fluranse (25), resoranente (23)

**antifungals S.4.0.0**

buclosamide (16), exalamide (37), pentalamide (13)

See also Pharm S/Nom 557

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-sartan  

**angiotensin II receptor antagonists, antihypertensive (non-peptidic)**

H.3.0.0

abitesartan (73), candesartan (71), elisartan (72), embusartan (78), eprosartan (71), forasartan (74), irbesartan (71), losartan (66), milfesartan (76), olmesartan (80), pomisartan (73),
pratosartan (85), ripisartan (73), saprisartan (72), tasosartan (72), telmisartan (70), valsartan (68), zolasartan (70)

USAN

-**semide**

**diuretics, furosemide derivatives**

N.1.1.0

![Chemical structure of furosemide]

(a) azosemide (35), furosemide (14), galosemide (33), torasemide (35)

USAN

-**serpine (d)**

**derivatives of *Rauwolfia* alkaloids**

E.5.4.0

(a) bietaserpine (14), mefeserpine (15), reserpine (4)

(c) chloroserpidine (11), deserpidine (6), methoserpidine (11), metserpate (20), rescimetol (44), rescinnamine (6), syrosingopine (10)

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USAN

-**setron**

**serotonin receptor antagonists (5-HT₃) not fitting into other established groups of serotonin receptor antagonists**

(BAN: serotonin receptor antagonists (5HT₃) used as antihyper-tensives)

(a) alosetron (66), azasetron (68), bemesetron (64), cilansetron (68), dolasetron (65), fabesetron (74), galdansetron (72), granisetron (59), indisetron (76), itasetron (68), lerisetron (69), lurosetron (69), mirisetron (72), ondansetron (59), palonosetron (74), ramosetron (70), riacsetron (70), tropisetron (62), zatosetron (64)

USAN

*som-*

**growth hormone derivatives**

Q.0.0.0

(a) somagrebove (63), somalapor (62), somatosalm (69), somatrem (54), somatropin (56), somavubove (63), somenopor (62), somfasepor (66), sometribove (54), sometripor (55), somidobove (58)
(b) somatotelin (57), somantadine (51), somatostatin (46)

-**spirone**  anxiolytics, buspirone derivatives

C.1.0.0

-**alnespirone** (70), **binospirone** (65), **buspirone** (30), **enilospirone** (52), **perospirone** (71), **revospirone** (61), **tandospirone** (60), **tiospirone** (57), **umespirone** (60), ** zalospirone** (64)

(c) eptapirone (82), gepirone (54), ipsapirone (54)

-**stat-** or -**stat**

-**-stat** enzyme inhibitors

(BAN: -stat: enzyme inhibitors)

-**-castat** dopamine -hydroxylase inhibitors

nepicastat (78)

-**-elestat** elastase inhibitors

sivelestat (78)

-**-listat** pancreatic lipase inhibitors

(a) orlistat (66)

-**-mastat** matrix metalloproteinase inhibitors

(a) batimastat (70), cipemastat (81), ilomastat (73), marimastat (75), prinomastat (82), solimastat (80), tanomastat (82)

**-restat** or **-restat-** aldose reductase inhibitors

M.5.0.0

(a) alrestatin (37), epalrestat (55), fidarestat (78), imirestat (59), lidorestat (87), minalrestat (76), ponalrestat (58), risarestat (82), tanomastat (82), tolrestat (51), zenarestat (64), zopalrestat (64)
**-vastatin**  
antihyperlipidaemic substances, HMG CoA reductase inhibitors

H.4.0.0

(a)  
atorvastatin (71), bervastatin (72), cerivastatin (74), crilvasta-tin (63), dalvastatin (64), fluvastatin (62), glenvastatin (70), lovastatin (57), mevastatin (44), pitavastatin (83) (replaces itavastatin (80)), pravastatin (57), rosuvastatin (83), simvastatin (58), tenivastatin (85)

proteolytic enzyme inhibitors: aloxistatin (57), ulinastatin (56); camostat (46), nafamostat (53), patamostat (69), sepimostat (68)

**Various:**

- azalanstat (73): lanosterol 14α-demethylase inhibitor
- febuxostat (85): xanthine oxidase and xanthine dehydrogenase inhibitor
- benurestat (31): urease inhibitor
- cilastatin (50): renal dehydropeptidase inhibitor
- miglustat (85): glucosyltransferase inhibitor
- nystatin (6): antifungal antibiotic
- pentostatin (38): vidarabine activity potentiator; inhibitor of enzymatic deaminative metabolism
- pepstatin (28): pepsin inhibitor
- somatostatin (43): growth hormone release inhibiting factor
- tendamistat (44): amylase inhibitor
- vistatolon (25): antiviral antibiotic
- zinostatin (40): antineoplastic
- zinostatin stimalamer (74)

**-steine**  
mucolytics, other than bromhexine derivatives

K.0.0.0  
(BAN: substances of the acetylcysteine group)

(a)  
acetylcysteine (13), bencisteine (30), carbocisteine (34), cartasteine (72), dacisteine (49), danosteine (53), erdosteine (56), fudosteine (77), guaisteine (57), isalsteine (63), letosteine (38), mecysteine (13), midesteine (63), moguisteine (61), nesosteine (52), omonasteine (40), prenisteine (42), salmisteine (58), taurosteine (63), telmesteine (63)

**-ster-**  
androgens/anabolic steroids

Q.2.3.1

(a)  
**-testosterone:** cloxotestosterone (12), methyltestosterone (4), testosterone (4), testosterone ketolaurate (16)

**-sterone:** bolasterone (13), fluoxymesterone (6), oxymesterone (12), prasterone (23), tiomesterone (14)
-ster-: mesterolone (15), penmesterol (14), rosterolone (59)

(b) progestational steroids

-gesterone: dydrogesterone (12), haloprogesterone (11), hydroxyprogesterone (8), medroxyprogesterone (10), norgesterone (14), progesterone (4)

-sterone: dimethisterone (8), ethisterone (4), norethisterone (6), norvinisterone (10)

various:

-sterone: aldosterone (6) (corticosteroid), calusterone (23) (antineoplastic)

-sterol: azacosterol (16) (hypocholesterolemic), dihydrotachysterol (1) (antihypoparathyroid), iodocholesterol ($^{131}$I) (39)

ster: nisterime (38) (contragestational agent), stercuronium iodide (21) (neuromuscular blocking agent)

-(a)steride (USAN: testosterone reductase inhibitors) - antineoplastic

bexlosteride (81), dutasteride (78), epristeride (69), finasteride (62), izonsteride (81), lapisteride (85), turosteride (67)

-stigmine (d) acetylcholinesterase inhibitors

E.1.2.0

(a) distigmine bromide (16), eptastigmine (62), ganstigmine (81), neostigmine bromide (4), pyridostigmine bromide (6), quilostigmine (76), rivastigmine (77), terestigmine (77)

(c) eseridine (53)

-stim colony stimulating factors

1.5.0.0

ancestim (79) (cell growth factor), garnocestim (85) (immunomodulator), pegacaristim (80) (megakaryocyte growth factor)

-distim combination of two different types of colony stimulating factors

(a) milodistim (74), leridistim (80)

-grastim granulocyte colony stimulating factor (G-CSF) type substances

(a) filgrastim (64), lenograstim (64), nartograstim (66), pegfilgrastim (85), pegnartograstim (80)
-gramostim  granulocyte macrophage colony stimulating factor (GM-CSF) types substances

(a)  ecogramostim (62), molgramostim (64), regramostim (64), sargramostim (66)

-mostim  macrophage stimulating factors (M-CSF) type substances

(a)  cilmostim (71), mirimostim (65)

-plestim  interleukin-3 analogues and derivatives

daniplestim (76), muplestim (72)

sulfa-  anti-infectives, sulfonamides

S.5.1.0  (BAN: sulpha-)
(USAN: antimicrobial sulfonamides)

(a)  sulfabenz (17), sulfabenzamide (27), sulfacarbamide (12), sulfacecol (30), sulfacetamide (1), sulfachlorpyridazine (10), sulfachrysoidine (1), sulfacrine (23), sulfacrimide (17), sulfaclogran (15), sulfaclogran (25), sulfadiazine sodium (1), sulfadiazine (4), sulfadiazinium (4), sulfadimidine (4), sulfadimidine (10), sulfadimidine (1), sulfadime (20), sulfadimidine (8), sulfadimidine (1), sulfadimidine (4), sulfadimidine (23), sulfadimidine (12), sulfadimidine (15), sulfadiazine (40), sulfadiazine (4), sulfadiazine sodium (4), sulfadiazine (1), sulfadiazine (14), sulfadiazine pyridazine (8), sulfadiazine (12), sulfadiazine (17), sulfadiazine (31), sulfadiazine (11), sulfadiazine (12), sulfadiazine (4), sulfadiazine (15), sulfadiazine (14), sulfadiazine (10), sulfadiazine (10), sulfadiazine (18), sulfadiazine (1), sulfadiazine (46), sulfadiazine (55), sulfadiazine (10), sulfadiazine (41), sulfadiazine (12), sulfadiazine (4), sulfadiazine (1), sulfadiazine (10), sulfadiazine (29), sulfadiazine (24)

(b)  sulfarsphenamine (4)

(c)  benzylsulfamide (1), glucosulfamide (1), maleylsulfathiazole (1), mesulfamide (41), nitrosulfathiazole (1), phthalylsulfathiazole (6), phthalylsulfathiazole (1), salazozidine (22), salazozolidine (11), salazozolidine (1), salazozolidine (1), salazozolidine (1), stearyl sulfamide (1), succinylsulfathiazole (4), sulfisomidine (1), vamidylsulfamide (1), mafenide (1) (sulfonamide, but not sulfanilamide)

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-sulfan antineoplastic, alkylating agents, methanesulfonates

L.2.0.0

(a) busulfan (6), improsulfan (35), mannosulfan (24), piposulfan (15), ritrosulfan (33), treosulfan (26)

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-tant neurokinin (tachykinin) receptor antagonists

-pitant neurokinin NK1 (substance P) receptor antagonist

(a) aprepitant (84), dapitant (74), ezlopitant (82), figopitant (82), vofopitant (82), lanepitant (77), nolpitantium besilate (75)

-dutant neurokinin NK2 receptor antagonist

nepadutant (78), saredutant (75)

-ner tant neurotensin antagonist

reminertant (85)

-netant neurokinin NK3 receptor antagonist

(a) osanetant (74), talnetant (81)

-tecan antineoplastics, topoisomerase I inhibitors

L.0.0.0 (USAN: anti-neoplastics (camptothecine derivatives))

afeletecan (85), diflomotecan (84), exatecan (81), gimatecan (86), irinotecan (64), lurtotecan (74), mureletecan (85), rubitecan (82), topotecan (65)
**-tepa**  
**antineoplastics, thiotepa derivatives**

L.2.0.0  
(USAN: antineoplastic thiotepa derivatives)

(a) azatepa (12), pumitepa (48), thiotepa (10)

**-tepine**  
**see** -pine

**-teplase**  
**tissue type plasminogen activators, see -ase item VI**

**-terol (x)**  
**bronchodilators, phenethyamine derivatives**

(USAN: bronchodilators (phenethyamine derivatives))

(a) amiterol (26), bambuterol (49), bitolterol (34), broxaterol (51), carbuterol (29), cimaterol (54), clenbuterol (28), colterol (36), difeterol (36), divabuterol (51), etanterol (53),

E.4.0.0 fenoterol (26), formoterol (44), imoxiterol (52), mabuterol (46), naminterol (53), nardeterol (62), picumeterol (64), pirbuterol (30), procaterol (37), reprotoerol (30), rimeterol (26), salmeterol (55), sulfonterol (3l), tobuterol (45), tulobuterol (40), zilpaterol (60), zinterol (38)

**cardiac stimulants:**
metaterol (43), prenalterol (38), xamoterol (48); clorprenaline (17), hexoprenaline (21), isoprenaline (1), levisoprenaline (10), metiprenaline (24), orciprenaline (14), quiniprenaline (17)
deterenol (25), soterenol (20)

(b) azacosterol (16), dihydrotachysterol (1), penmesterol (14)
(c) dioxethedrine (6), isoetarine (13), methoxyphenamine (1), pseudoephedrine (11), salbutamol (20), salmefamol (23), terbutaline (22)

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-terone antiandrogens

(Q.2.3.1)

(a) abiraterone (74), benortherone (15), cyproterone (16), delanterone (42), inocoterone (54), osaterone (68), zanoterone (67)

(b) oxendolone (42)

(c) clometerone (15) (anti-estrogen)

-tiazem calcium channel blockers, diltiazem derivatives

F.2.1.0

\[
\begin{align*}
\text{USAN} \\
\text{clentiazem (61), diltiazem (30), iprotiazem (56), nictiazem (54), siratiazem (68)}
\end{align*}
\]

-tide peptides and glycopeptides (for special groups of peptides see -actide, -pressin, -relin, -tocin)

\[
\begin{align*}
\text{USAN} \\
\text{analgesic: leconotide (86), ziconotide (78)} \\
\text{angiogenesis inhibitor: cilengitide (81)} \\
\text{antibiotic: nosiheptide (35)} \\
\text{antidepressant: nemifitide (87)} \\
\text{antidiabetic: amlintide (76), liraglutide (87), seglitide (57), pramlintide (74)} \\
\text{antidiarrhoal: lagatide (75)}
\end{align*}
\]
antithrombotic: eptifibatide (78)

angiotensin convers. inhibitor: teprotide (36)

atrial natriuretic factor type substance: anaritide (57), neseritide (80), ularitide (69)

cardiac stimulant: carperitide (65)

diagnostic: betiatide (58), bibapcitide (78), ceruletide (34), depreotide (80), mertiatide (60), pendetide (70), technetium (99mTc) apcitide (78), teriparatide (50)

gastro-intestinal bleeding/antineoplastic: edotreotide (84), ilatreotide (66), lanreotide (64), octreotide (52), pentetreotide (66), vapreotide (62)

gut motility increasing: ociltide (52)

immunomodulator: almurtide (74), goralatide (72), murabutide (49), pentigetide (60), pimelautide (53), prezatide copper acetate (67), romurtide (61), tabilautide (60), temurtide (60), tiplimotide (82)

neuromodulator: ebiratide (56)

peptic ulcer: sulglicotide (29), triletide (50)

pulmonary surfactant: lusupultide (80), sinapultide (78)

sedative: emideltide (70)

treatment of Parkinson's disease: doreptide (58), pareptide (38)

(b) defibrotide (44) (nucleotide), diamfetetide (28) (fasciolicide), diclometide (19) (behaviour modificator), fludroxycortide (12), glisentide (58)

-tidine (x) histamine-H2-receptor antagonists, cimetidine derivatives

G.2.0.0 (BAN: H2-receptor antagonists of the cimetidine group)
(USAN: H2-receptor antagonists (cimetidine type))

(a) bisfentidine (57), cimetidine (33), dalcotidine (76), donetidine (56), ebrotidine (57), etintidine (44), famotidine (48), lafutidine (70), lamtidine (48), lavoltidine (61) (previously loxtidine
(48)), lupitidine (53), mifentidine (50), niperotidine (54), nizatidine (48), osutidine (76),
oxmetidine (44), pibutidine (78), quisultidine (47) (replaced by quisultazine (51)), ramixotidine
(55), ranitidine (41), roxatidine (54), sufotidine (54), tiotidine (44), tuvatidine (54), venritidine
(67), zaltidine (54)

(b) benzethidine (9), furethidine (9), guanethidine (11), hexetidine (6), hydroxypethidine (5),
pethidine (4), propinetidine (12)

azacitidine (40) (antineoplastic)

(c) metiamide (30)

- - tirelin  see -relin

- - tiline  see -triptyline

-tizide  diuretics, chlorothiazide derivatives

N.1.2.1  (USAN: thiazide: diuretics (thiazide derivatives))

(a) altizide (13), bemetizide (27), butizide (13), carmetizide (30), epitizide (13), hydrobentizide
(14), mebutizide (15), paraflutizide (16), penflutizide (29), sumetizide (20)

(c) bendroflumethiazide (11), benzthiazide (10), chlorothiazide (8), cyclopenthiazide (12),
cyclothiazide (12), disulfamide (11), ethazide (14), flumethiazide (10), hydrochlorothiazide
(10), hydroflumethiazide (10), methyclothiazide (11), polythiazide (12), teclothiazide (12),
trichlormethiazide (11)

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-tocin  oxytocin derivatives

Q.1.2.0

(a) argiprestocin (13), aspartocin (11), carbetocin (45), cargutocin (35), demoxytocin (22),
nacartocin (49), oxytocin (13)
-toin (d)  antiepileptics, hydantoin derivatives

A.3.1.1

(a)  albutoin (13), doxenitoin (31), ethotoin (6), fosphenytoin (62), mephenytoin (1), metetoin (12), phenytoin (4)

ropitoin (40) (H.2.0.0.)

(b)  clodantoin (13) (antifungal), nitrofurantoin (11) (antibact.)

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-trexate (x)  folic acid analogues

L.4.0.0  (USAN: folic acid analogues used as antimetabolites)

(a)  edatrexate (61), ketotrexate (50), methotrexate (10), trimetrexate (46)

-tricin  antibiotics, polyene derivatives

S.6.2.0

(a)  mepartricin (34), partricin (27)

(b)  tyrothricin (1)

(c)  amphotericin B (10), candididin (17), filipin (20), hachimycin (23), hamycin (17), levorin (15), mocimycin (28), natamycin (15), nystatin (6), pecilocin (16)
-triptan  serotonin (5HT\textsubscript{1}) receptor agonists, sumatriptan derivatives  
(a)  almotriptan (76), avitriptan (76), donitriptan (82), eletriptan (74), frovatriptan (78), naratriptan (69), oxitriptan (39), rizatriptan (75), sumatriptan (59), zolmitriptan (74)  
(c)  alniditan (72)  

-triptyline  antidepressants, dibenzo[a,d]cycloheptane or cycloheptene derivatives  
C.3.2.0  (USAN: antidepressants (dibenzo[a,d]cycloheptane derivatives))  

- 

(a)  amitriptyline (11), butriptyline (16), cotriptyline (26), intriptyline (26), nortriptyline (12), octriptyline (33), protiptyline (14), amitriptylinoxide (36), demexiptiline (43), levoprotiline (56), noxiptiline (20), oxaprotiline (45), setiptiline (56)  
(b)  oxitriptyline (21) (anticonvuls.)  
(c)  hepzidine (15)  

TRS 58l  see also Pharm S/Nom 970  

-troban  thromboxane A\textsubscript{2}-receptor antagonists; antithrombotic agents  
I.2.1.0  
argatroban (57), daltroban (57), domitroban (73), ifetroban (71), linotroban (69), mipitroban (73), ramatroban (73), sulotroban (55)  

-trop  atropine derivatives  
E.2.0.0  (USAN: trop- ; or –trop-)  

(a)  parasympatholytic/anticholinergic: E.2.2.0:
tertiary amines:
atropine oxyde (12), benztropine (4), decitropine (18), etybenztropine (12), eucatropine (1)
tropepine (28), tropicamide (11), tropigline (8), tropodifene (18)
closely related:
esbatropate (65)
quaternary ammonium salts:
atropine methonitrate (4), butropium bromide (30), ciclotropium bromide (50), cimetropium bromide (51), flutropium bromide (50), homatropine methylbromide (1), ipratropium bromide (28), octapotrope methylbromide (10), oxtropium bromide (36), phenacetropinium chloride (8), ritropirronium bromide (33), sevitropium mesilate (56), sintropium bromide (47), sultroponium (18), tematropium metilsulfate (64), tiotropium bromide (67), tipetropium bromide (42), tropenziline bromide (11), xenytropium bromide (15)
various:
clobenztoprine (13) (antihistaminic), cyheptopine (15) (antiarhythmic), deptropine (12) (antiasthmatic), revatropate (74) (bronchodilator), tropazate (41) (tranquillizer), tropanserin (55), tropapride (48) (antipsychotic), troprine (20) (respiratory disorders), tropsetron (62)
(b) dextropropoxyphene (7), somatropin (56)
(c) parasympatholytic/anticholinergic, tertiary amines:
poskine (8), prampine (11), tigloidin (14)
various:
zepastine (26) (antihistaminic)

-uplase urokinase type plasminogen activator, see -ase item VII

-ur see –uridine

-uracil uracil derivatives used as thyroid antagonists and as antineoplastics

thyroid antagonists: iodothiouracil (1), methylthiouracil (1), propylthiouracil (1)
L-4.0.0: eniluracil (77), fluorouracil (13)
uridine derivatives used as antiviral agents and as antineoplastics

S.5.3.0
L.4.0.0

L.4.0.0: broxuridine (30), doxifuridine (44)
related: carmofur (45), clanfenur (58), tegafur (41)
S.5.3.0: fialuridine (68), floxuridine (16), idoxuridine (17), navuridine (84), trifluridine (37)

- vudine
(USAN: vudine: antineoplastics; antivirals (zidovudine type))
related: alovudine (68), brivudine (59), clevudine (78), edoxudine (52), epervudine (61),
fozivudine tidoxil (73), lamivudine (66), netivudine (72), sorivudine (64), stavudine (65),
zigovudine (56)

-vastatin
see -stat-

-verine (x)
spasmolytics with a papaverine-like action

F.1.0.0 (USAN: spasmolytics having a papaverine-like action)

(a) alverine (16), amifloverine (28), bietamiverine (6), butaverine (13), camiverine (29),
caroverine (28), clofeverine (31), demelverine (17), denaverine (25), dextsecoverine (53),
dicycloverine (6), dixxyverine (4), dipipoverine (10), diproteverine (51), drotaverine (17),
elziverine (57), ethaverine (4), febuverine (27), fenoverine (28), floverine (28), heptaverine
(16), ibuverine (21), idaverine (55), mebeverine (14), milverine (52), mofloverine (28),
moxaverine (36), nafiverine (16), niceverine (15), octaverine (18), pargeverine (38),
pentoxyverine (6), pramiverine (21), prenoverine (41), propiverine (45), rociverine (33),
salfluverine (29), salverine (15), secoverine (38), temiverine (76), zardaverine (59)
fenpiverinium bromide (26), pinaverium bromide (32)

(b) cinnamaverine (10) (anticholinergic, tert. amine), diaveridine (18)

(c) spasmolytics chemically related to some of the above INN ending in -verine
butetamate (17), butinoline (14), camylofin (12), cinnamedrine (19), cyclandelate (8),
difemerine (17), diisopromin (11), dimoxylin (1), fenpiprane (17), feniramidol (12),
metindizate (16), oxybutynin (13), papaveroline (29), pentapiperide (10), prozapine (14),
triclavate (10), tropenziline bromide (11)

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**vin- and vinca alkaloids**

(USAN: vin-; or -vin-)

(a) B.1.0.0 stim. of cerebrovasc. circul.
apovincamine (48), brovincamine (42), vinburnine (45), vincamine (22), vincanol (37),
vincantril (51), vincinate (47), vindeburnol (49), vinmegallate (59), vinpocetin (36), vinpoline (35),
vintoperol (61)

L.5.0.0 cytostatic
vinblastine (12), vincristine (13), vindesine (35), vinepidoine (50), vinflumine (76), vinformide (38),
vinfoxil (64), vinglycinate (16), vinleucinol (64), vinleur (13), vinorelbine (57),
vinsidin (13), vintriptol (51), vinzolidine (46)

(b) barbiturates
vinbarbital (l), vinylbital (12)
others: vincofos (28) (phosphate, anthelmintic), vinyltiamol (16) (vit. B. deriv., antineuralgic)

**vir antivirals (undefined group)**

S.5.3.0 (USAN: -vir; -vir; or vir-)

(a) aciclovir (42), adeovir (72), alvircept sudotox (69), amdoxovir (85), amitivir (67), atevirdine (69),
buciclovir (52), capravirine (83), cidofovir (72), dapiivirine (86), delavirdine (71),
denotivir (70), desciclovir (55), detivicilovir (86), efavirenz (78), emivirine (82), enfuvirtide (85),
eviradene (49), enviroxime (44), famciclovir (61), ganciclovir (56), lopiviride (70),
loviride (70), mariravir (80), nivirirdine (66), omaclovir (84), opanavirine (83), penciclovir (61),
piclovir (61), ribavirin (31), rociclovir (62), talvirina (75), tenofivir (82), tiviclovir (86),
tiPadine (74), tomeglovir (84), trovirine (73), valaciclovir (69), valganciclovir (78),
valmaclovir (84), viroxime (49), zinviroxime (44)

-amivir neuraminidase inhibitors: oseltamivir (80), peramivir (86), zanamivir (72)

-cavir carbocyclic nucleosides: abacavir (76), entecavir (82), lobucavir (72)

-fovir phosphonos acid derivatives: adeovir (72), cidofovir (72), tenofivir (82)
-gosivir  glucoside inhibitors: cegosivir (77)

-navir  HIV protease inhibitors: amprenavir (79), dorigavir (74), fosamprenavir (83), indinavir (74), lasinavir (76), lopinavir (80), mozenavir (84), nelfinavir (76), palinavir (74), ritonavir (74), saquinavir (69), telinavir (73), tipranavir (80)

-virsen  antisense oligonucleotides
(a)  afovirsen (70), fomivirsen (75), trecovirsen (77)
(b)  virginiamycin (18), viridofulvin (16)
(c)  avridine (50)

-vudine  see -uridine

-xanox  see -ox

K.0.0.0

-zafone  alozafone derivatives
C.1.0.0

(a)  alozafone (40), avizafone (64), ciprazafone (50), dinazafone (46), dulozafone (56), lorzafone (48), oxazafone (45), rilmazafone (55)

-zepine  see -pine

-zone  see -buzone
INDEX PAGE
ALPHABETICAL LIST OF COMMON STEMS

A
-abine (see -arabine/-citabine)
-ac
-acetam (see -racetam)
-actide
-adol/-adol-
-adom
-afenone
-aj-
-al
-aldrate
-alol (see –olol)
-alox (see –ox)
-amivir (see vir)
-and
-anide
-anserin
-antel
-apine (see –pine)
-(ar)abine
-arit
-arol
-arone
-arte-
-ase
-ast
-(a)steride (see –ster-)
-astine
-azam (see -azepam)
-azenil
-azepam
-azepide
-azocine
-azolam (see -azepam)
-azoline
-azone (see -buzone)
-azosin

B
-bactam
-bamate
-barb
-benakin (see –kin)

C
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-bendazole
-betasol (see pred)
-bol
-bradine
-brate (see –fibrate)
-butazone (see –buzone)
-buzone
-castat (see -stat)
-cavir (see vir)
-cef-
-cell-/cel-
-cell-ate
-cellose
-cic
-cildide (see -cillin)
-cillin
-cillinam (see -cillin)
-cilpine (see -pine)
-cisteine (see –steine)
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-clone
-cog
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-crine
-cromil
-curium (see –ium)
-cycline

D
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-dapsone
-decakin (see –kin)

E
-ectin
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-elvekin (see –kin)
-entan
(-)eptacog (see –cog)
-erg
-eridine
-ermin
-estr
-ethidine (see –eridine)
-exakin (see –kin)

F
-fenamate (see - fenamic acid)
-fenamic acid
-fenin
-fenine
-fentanil
-fermin (see –ermin)
-fiban
-fibrate
-filermin (see –ermin)
-flapon
-flurane
-formin

INN – The use of common stems
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fos
- fovir (see vir)
- fradil
- frine (see -drine)
- fungin
- fylline

G
- gab
- gado-
- -gatran
- gest
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- -gilene
- -gillin
- -gli
- -golide
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- -grastim (see –stim)
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- -icam
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- -igetide (see –tide)
- -ilide
- imex
- -imod
- -imus
- -ine
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- iod/-io-
- -irudin
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- -kin
- -kinra (see –kin)
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- -lubant
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- -mantadine
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- mer
- -mer
- -mesine
- -mestane
- -metacin
- -met(h)asone (see pred)
- -micin
- -mifene (see –ifene)
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- -monam
- -morelin (see –relin)
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- -moxin
- -mustine
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N
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- -nakinra (see –kin)
- -nal-
- -naritide (see –tide)
- -navir (see vir)
- -nermin (see –ermin)
- -nercept
- -netant (see -tant)
- -nicate (see nico-)
- nico/-nic/-ni-
- -nidazole
- -nidone (see –onidine)
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- octakin (see –kin)
- (-)octocog (see –cog)
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- -olol
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- -onakin (see –kin)
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- -onidine
- -onium (see –ium)
- -opamine (see –dopa)
- -orex
- -orph- (see -orphan)
- orphan
- -ox/-alox
- -oxacin
- -oxan(e)
- -oxamide (see –amide)
- -oexf (see cef-)
- -oxepine (see –pine)
- -oxetine
- -oxicam (see –icam)
- -oxifene (see –ifene)
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P
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- -pamide
- -paml
- -parcin
- -parin
- -pendyl (see –dil)
- -penem
- -perfl(u) (see –flurane)
- -peridol (see -perone)
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- -perone
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- -pirone (see -spirone)
- -pirox (see –ox/-alox)
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- -plact
- -planin
- -plase (see –ase)
- -platin
- -plermin (see –ermin)
-plestim (see –stim or –kin)  
-plon  
-poetin  
-porfin  
-poride  
-pramine  
-prazol  
pred  
-prenaline (see –terol)  
-pressin  
-pride  
-pril/-prilat  
-prim  
-profen  
-prost  
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R  
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-relin  
-relix  
-renone  
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-retin  
-ribine  
-rifa-  
-rinone  
-rizine (see –izine)  
-rozole  
-rubicin  

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-sartan  
-semide  
-sermin (see –ermin)  
-serpine  
-setron  
-som-  
-sopine (see –pine)  
-sprone  
-stane  
-stat/-stat-  
-steine  
-ster-  

T  
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-tecan  
-tepa  
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-teplase (see –ase)  
-termin (see –ermin)  
-terol  
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-tialazem  
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-tiilde  
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-tirelin (see –relin)  
-tizide  
-tocin  
-toin  
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-trop  

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-ur (see –uridine)  
-uracin  
-uridine  

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-verine  
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-zepine (see –pine)  
-zone (see –buzone)
ANNEX 1

INNs for monoclonal antibodies

The following stem system was adopted by the members of the Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations designated to deal with the selection of nonproprietary names for naming monoclonal antibodies.

I. General stem: -mab

II. Sub-stems for source of product:

<table>
<thead>
<tr>
<th>u</th>
<th>human</th>
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<tbody>
<tr>
<td>o</td>
<td>mouse</td>
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<tr>
<td>a</td>
<td>rat</td>
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<td>e</td>
<td>hamster</td>
</tr>
<tr>
<td>i</td>
<td>primate</td>
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<tr>
<td>xi</td>
<td>chimeric</td>
</tr>
<tr>
<td>zu</td>
<td>humanized</td>
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</tbody>
</table>

The distinction between chimeric and humanized antibodies is as follows:

A **chimeric** antibody is one that contains contiguous foreign-derived amino acids comprising the entire variable region of both heavy and light chains linked to heavy and light constant regions of human origin.

A **humanized** antibody has segments of foreign-derived amino acids interspersed among variable region segments of human-derived amino acid residues and the humanized heavy-variable and light-variable regions are linked to heavy and light constant regions of human origin.
III. Sub-stems for disease or target class:

<table>
<thead>
<tr>
<th>Sub-stem</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ba(c)-</td>
<td>bacterial</td>
</tr>
<tr>
<td>-ci(r)-</td>
<td>cardiovascular</td>
</tr>
<tr>
<td>-le(s)-</td>
<td>infectious lesions</td>
</tr>
<tr>
<td>-li(m)-</td>
<td>immunomodulator</td>
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<tr>
<td>-vi(r)-</td>
<td>viral</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sub-stem</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>-co(l)-</td>
<td>colon</td>
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<td>-go(t)-</td>
<td>testis</td>
</tr>
<tr>
<td>-go(v)-</td>
<td>ovary</td>
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<td>-ma(r)-</td>
<td>mammary</td>
</tr>
<tr>
<td>-me(l)-</td>
<td>melanoma</td>
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<td>-pr(o)-</td>
<td>prostate</td>
</tr>
<tr>
<td>-tu(m)-</td>
<td>miscellaneous</td>
</tr>
</tbody>
</table>

Whenever there is a problem in pronunciation, the final letter of the sub-stems for diseases or targets may be deleted, e.g. -vi(r)-, -ba(c)-, -li(m)-, -co(l)-, etc.

IV. Prefix:

Should be random e.g. the only requirement is to contribute to a euphonious and distinctive name.

V. Second word:

If the product is radiolabelled or conjugated to another chemical, such as toxin, identification of this conjugate is accomplished by use of a separate, second word or acceptable chemical designation. For monoclonals conjugated to a toxin, the -tox stem must be included as part of the name selected for the toxin.

If the monoclonal antibody is used as a carrier for a radioisotope, the latter will be listed first in the INN, e.g. technetium ($^{99m}$Tc) pintumomab.
ANNEX 2

PROCEDURE FOR THE SELECTION OF RECOMMENDED INTERNATIONAL NONPROPRIETARY NAMES FOR PHARMACEUTICAL SUBSTANCES*

The following procedure shall be followed by the World Health Organization in the selection of recommended International Nonproprietary Names for pharmaceutical substances, in accordance with the World Health Assembly resolution WHA3.11:

1. Proposals for recommended international nonproprietary names shall be submitted to the World Health Organization on the form provided therefor.

2. Such proposals shall be submitted by the Director-General of the World Health Organization to the members of the Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations designated for this purpose, for consideration in accordance with the “General principles for guidance in devising International Nonproprietary Names”, appended to this procedure. The name used by the person discovering or first developing and marketing a pharmaceutical substance shall be accepted, unless there are compelling reasons to the contrary.

3. Subsequent to the examination provided for in article 2, the Director-General of the World Health Organization shall give notice that a proposed international nonproprietary name is being considered.

   A. Such notice shall be given by publication in the Chronicle of the World Health Organization and by letter to Member States and to national pharmacopoeia commissions or other bodies designated by Member States.

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

   B. Such notice shall:

      (i) set forth the name under consideration;

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

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

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

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

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

4. Comments on the proposed name may be forwarded by any person to the World Health Organization within four months of the date of publication, under article 3, of the name in the Chronicle of the World Health Organization.
5. A formal objection to a proposed name may be filed by any interested person within four months of the date of publication, under article 3, of the name in the *Chronicle of the World Health Organization*. 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.

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

1. The title of this publication was changed to *WHO Chronicle* in January 1959. From 1987 onwards lists of INNs are published in *WHO Drug Information*.
ANNEX 3

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

1. International Nonproprietary Names (INN) should be distinctive in sound and spelling. They should not be inconveniently long and should not be liable to confusion with names in common use.

2. The INN for a substance belonging to a group of pharmacologically related substances should, where appropriate, show this relationship. Names that are likely to convey to a patient an anatomical, physiological, pathological or therapeutic suggestion should be avoided.

These primary principles are to be implemented by using the following secondary principles:

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

4. In devising INN for acids, one-word names are preferred; their salts should be named without modifying the acid name, e.g. "oxacillin" and "oxacillin sodium", "ibufenac" and "ibufenac sodium".

5. INN for substances which are used as salts should in general apply to the active base or the active acid. Names for different salts or esters of the same active substance should differ only in respect of the name of the inactive acid or the inactive base.

For quaternary ammonium substances, the cation and anion should be named appropriately as separate components of a quaternary substance and not in the amine-salt style.

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

7. To facilitate the translation and pronunciation of INN, “f” should be used instead of “ph”, “t” instead of “th”, “e” instead of “ae” or “oe”, and “i” instead of “y”; the use of the letters “h” and “k” should be avoided.

8. Provided that the names suggested are in accordance with these principles, names proposed by the person discovering or first developing and marketing a pharmaceutical preparation, or names already officially in use in any country, should receive preferential consideration.

9. Group relationship in INN (see Guiding Principle 2) should if possible be shown by using a common stem. The following list contains examples of stems for groups of substances, particularly for new groups. There are many other stems in active use.1 Where a stem is shown without any hyphens it may be used anywhere in the name.
<table>
<thead>
<tr>
<th>Latin</th>
<th>English</th>
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<tr>
<td>-acum</td>
<td>-ac</td>
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<tr>
<td>-actidum</td>
<td>-actide</td>
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<td>-adolum</td>
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* In its twentieth report (WHO Technical Report Series, No. 581, 1975), the WHO Expert Committee on Nonproprietary Names for Pharmaceutical Substances reviewed the general principles for devising, and the procedures for selecting, international nonproprietary names (INN) in the light of developments in pharmaceutical compounds in recent years. The most significant change has been the extension to the naming of synthetic chemical substances of the practice previously used for substances originating in or derived from natural products. This practice involves employing a characteristic “stem” indicative of a common property of the members of a group. The reasons for, and the implications of, the change are fully discussed.
WHY INNs?

Since the number of drug substances being registered during the last decades is constantly increasing, there is a strong need to ensure the identification of each pharmaceutical compound by a unique, universally available and accepted name. The existence of an international nomenclature system for pharmaceutical products is crucial for the clear identification, safe prescription and dispensing of medicines to patients, and for communication and exchange of information among health professionals and scientists worldwide.

An International Nonproprietary Name (INN) identifies a pharmaceutical substance by a unique name that is globally recognized and is public property. A nonproprietary name is also known as a generic name. Generic names are intended to be used in pharmacopoeias, labeling, advertising, drug regulation and scientific literature.

WHO has a constitutional mandate to offer recommendations to its Member States on any matter that falls within its competence. This includes setting norms and standards for pharmaceutical products moving in international commerce.

The INN system as it exists today was initiated in 1950 by the World Health Assembly resolution WHA3.11 and began operating in 1953, when the first list of International Nonproprietary Names for pharmaceutical substances was published.

So far, some 8000 names have been designated as INNs, and this number is growing every year by some 120 – 150 new INNs.

INNs are selected in close collaboration with national nomenclature commissions (e.g. BAN British Approved name, JAN Japanese Accepted Name, USAN United States Adopted Name etc.). Today, the INN Committee assumes the leading role in assigning generic names to drug substances. Instances where a national generic name for a new pharmaceutical substance is different from the INN are rare exceptions.

As unique names, INNs have to be distinctive in sound and spelling, and should not be liable to confusion with other names in common use (e.g. trade marks). To make INNs universally available they are formally placed by WHO in the public domain, hence their designation as “nonproprietary”. They can be used without any restriction whatsoever to identify pharmaceutical substances. The clear depiction of INNs on labels assures that prescribers and users alike can easily identify the nature of the pharmacologically active substance in a brand product. The use of INNs is already common in research and clinical documentation, while the importance of the programme is growing further due to the expanding use of generic names for pharmaceutical products.