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

2004

Programme on International Nonproprietary Names (INN)
Quality Assurance and Safety: Medicines
Essential Drugs and Medicines Policy
World Health Organization
Geneva
The use of stems in the selection of International Nonproprietary Names (INN) for pharmaceutical substances

© World Health Organization [2004]

All rights reserved. Publications of the World Health Organization can be obtained from Marketing and Dissemination, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel: +41 22 791 2476; fax: +41 22 791 4857; email: bookorders@who.int). Requests for permission to reproduce or translate WHO publications – whether for sale or for noncommercial distribution – should be addressed to Publications, at the above address (fax: +41 22 791 4806; email: permissions@who.int).

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers’ products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

The World Health Organization does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>iii</td>
</tr>
<tr>
<td>Alphabetical list of stems (INDEX)</td>
<td>v</td>
</tr>
<tr>
<td>Alphabetical list of stems and their definition (INDEX)</td>
<td>ix</td>
</tr>
<tr>
<td>Layout of information</td>
<td>xxiii</td>
</tr>
<tr>
<td>Pharmacological classification with corresponding stems and their definition</td>
<td>1-24</td>
</tr>
<tr>
<td>Alphabetical list of stems together with corresponding INNs</td>
<td>25-126</td>
</tr>
<tr>
<td>ANNEX 1: INN stems for monoclonal antibodies</td>
<td>127-128</td>
</tr>
<tr>
<td>ANNEX 2: INN Selection procedure</td>
<td>129-130</td>
</tr>
<tr>
<td>ANNEX 3: General principles for guidance in devising INN</td>
<td>131-132</td>
</tr>
<tr>
<td>Reference to the volumes of the <em>WHO Drug Information</em> in which the respective proposed lists of INNs have been published</td>
<td>133</td>
</tr>
<tr>
<td>Why INNs ?</td>
<td>134</td>
</tr>
</tbody>
</table>
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.

*Nonproprietary names for pharmaceutical substances, Twentieth Report of the WHO Expert Committee (1975)
** WHA resolution on nonproprietary names for pharmaceutical substances (1993)
INDEX PAGE
ALPHABETICAL LIST OF COMMON STEMS

A
-abine (see -arabine and -citabine)
-ac
-acetam (see -racetam)
-actide
-adol/-adol-
-adom
-afenone
-afil
-aj-
al
-aldrate
-alol (see -olol)
-alox (see -ox)
-amivir (see vir)
ampanel
andr
-anib
-anide
-anserin
-antel
-apine (see -pine)
-(ar)abine
-arit
-arol
-arone
-arotene
-arte-
-ase
-ast
-(a)steride (see -ster-)
-astine
-azam (see -azepam)
-azenil
-azepam
-azepide
-azocine
-azolam (see -azepam)
azoline
-azone (see -buzone)
azosin
-bactam
-bamate
-barb
-begron
-benakin (see -kin)
bendan (see -dan)
bendazole
-bermin (see -ermin)
betsat
-betansol (see pred)
bol
-bradine
-brate (see -fibrate)
-bufen
-butazine (see -buzone)
buzone
-caine
-cain-
calci
-carbef
-carnil (see -azenil)
castat (see -stat)
cavir (see vir)
cef-
cell-/cel-
cell-ate (see cell-/cel-)
celllose (see cell-/cel-)
cic
-cidin
cillide (see -cillin)
cillin
-cillinam (see -cillin)
cilpine (see -pine)
cisteine (see -steine)
citabine
-clone
cog
-conazole
cort
coxib
crinat
crine
-curium (see -ium)
cycline
dan
dapsone
decakin (see -kin)
dermin (see -ermin)
dil
dilol (see -dil)
dipine
dismase (see -ase)
distim (see -stim)
dodekin (see -kin)
dopa
dox (see -ox/-alox)
dralazine
drine
dronic acid
dutant (see -tant)
dyl (see -dil)
-ectin
elestat (see -stat)
elvekin (see -kin)
emcinal
-entan
(-)eptacog (see -cog)
-erg
-eridine
-ermin
estr
-etanide (see -anide)
-ethidine (see -eridine)
-exakin (see -kin)
exine
-fenamate (see -fenamic acid)
-fenamic acid
-fenin
-fenie
-fentanil
-fentrine
-fermin (see -ermin)
-fiban
-fibrate
-filermin (see -ermin)
-flapon
-flurane
-formin
-fos
-fovir (see vir)
-fradil
-frine (see -drine)
-fugin
-fylline

G
-gab
-gado-
-gatran
gest
-gestr- (see estr)
-giline
-gillin
-gli
-glitzazar (see gli)
-glitzazole (see gli)
-glumide
-golide
-gosivir (see vir)
-gramostim (see -stim)
-grastim (see -stim)
-grel/-grel
-guan-

I
-ibine (see -rible)
-icam
-ifene
-igetide (see -tide)
-ilide
-imex
-imibe
-imod
-imus
-in
-io-
-iod/-io-
-irudin

-ismide
-ium
-izine (-yzine)

K
-kacin
-kalant
-kalim
-kef-
-kin
-kinra (see -kin)
-kiren

L
-leukin (see -kin)
-listat (see -stat)
-lubant
-lukast (see -ast)

M
-mab
-mantadine
-mantine (see -mantadine)
-mantone (see -mantadine)
-mastat (see -stat)
-meline
-mer/-mer
-mer
-mesine
-mestane
-metacine
-met(h)asone (see pred)
-micin
-mifene (see -ifene)
-mito-
-monam
-morelin (see -relin)
-mostim (see -stim)
-motine
-moxin
-mustine
-mycin

N
-nab
-nakin (see -kin)
-nakinra (see -kin)
-nal-

-naritide (see -tide)
-navir (see vir)
-nermin (see -ermin)
-nercept
-nerrant (see -tant)
-netant (see -tant)
-nicate (see nico-)
-nicline
-nico-/nic-/ni-
-nidazole
-nidine (see -onidine)
-nifur-
-nil (see -azenil)
nitro-/nitr-/nit/-ni/-ni-
-nixin
(-)nonacog (see -cog)

O
-octakin (see -kin)
(-)octocog (see -cog)
-ol
-olol
-olone (see pred)
-onakin (see -kin)
-one
-onide
-onidine
-onium (see -ium)
-opamine (see -dopa)
-orex
-orph- (see orphan)
orphan
-ox/-alox
-oxacin
-oxane
-oxanide (see -anide)
-oxef (see cef-)
-oxepin (see -pine)
-oxetine
-oxicam (see -icam)
-oxifen (see -ifene)
-oxopine (see -pine)

P
-pafant
-pamide
-pamil
-parcin
-parin
-parinux (see -parin)
-pendyl (see -dil)
-penem
-perfl(u)-
-peridol (see -perone)
-peridone (see -perone)
-perone
-pidem
-pin(e)
-piprazole (see -prazole)
-pirone (see -spirone)
-pirox (see -ox/-alox)
-pitant (see -tant)
-plact
-planin
-plase (see -ase)
-platin
-plermin (see -ermin)
-plestim (see -stim and -kin)
-plon
-poetin
-porfin
-poride
-pramine
-prazole
-pred
-prenaline (see -terol)
-pressin
-pride
-pril
-prilat (see -pril)
-prim
-pristin
-profen
-prost
-prostil (see prost)

Q
-quin(e)
-quinil (see -azenil)

R
-racetam
-racil
-relin
-relix
-renone

S
-sal
-saritn
-seminate
-sermin (see -ermin)
-serod
-serpine
-setron
-som-
sopine (see -pine)
-spireone
-stat/-stat-
-steine
-ster-
stgmine
-stim
-sulfa-
sulfan

T
-tadine
-tant
-tecan
-tepa
-tepine (see -pine)
teplase (see -ase)
termin (see -ermin)
terol
-terone
-thiouracil (see -racil)
tiazem
-tide
-tidine
-tilide (see -ilide)
tiline (see -triptylene)
tinib
-tirelin (see -relin)
tizide
-tocin

toin
-trakin (see -kin)
trexate
-tricin
-triptan
-triptylene
-troban
-trocast (see -ast)
trop

U
-uplase (see -ase)
-ur (see -uridine)
-uridine

V
-vaptan
-vastatin (see -stat)
-verine
-vin/-vin-
vir
-virsen
-vos (see fos)
-vudine (see -uridine)

X
-xaban
-xanox (see -ox/-alox)

Y
-yzine (see -izine)

Z
-zafone
-zepine (see -pine)
-zone (see -buzone)
## INDEX PAGE
### ALPHABETICAL LIST OF COMMON STEMS AND THEIR DEFINITION

**A**

- *-abine (see -arabine and -citabine)*  
  arabinofuranosyl derivatives; nucleoside antiviral or antineoplastic agents, cytarabine or azarabine derivatives
- *-ac*  
  anti-inflammatory agents, ibufenac derivatives
- *-acetam (see -racetam)*  
  amide type nootrope agents, piracetam derivatives
- *-actide*  
  synthetic polypeptide with a corticotropin-like action
- *-adol/-adol-*  
  analgesics
- *-adom*  
  analgesics, tifluadom derivatives
- *-afenone*  
  antiarrhythmics, propafenone derivatives
- *-afil*  
  inhibitors of phosphodiesterase PDE5 with vasodilator action
- *-aj-*  
  antiarrhythmics, ajmaline derivatives
- *-al*  
  aldehydes
- *-aldrate*  
  antacids, aluminium salts
- *-alol (see -olol)*  
  aromatic ring related to -olols
- *-alox (see -ox)*  
  antacids, aluminium derivatives
- *-amivir (see vir)*  
  neuraminidase inhibitors
- *-ampanel*  
  amino-hydroxymethyl-isoxazole-propionic acid (AMPA) receptor antagonists
- *-andr*  
  steroids, androgens
- *-anib*  
  angiogenesis inhibitors
- *-amivir (see vir)*  
  neuraminidase inhibitors
- *-anide*  
  saluretics
- *-anserin*  
  serotonin receptor antagonists (mostly 5-HT$_2$)
- *-antel*  
  anthelminthics (undefined group)
- *-apine (see -pine)*  
  tricyclic compounds
- *-(ar)abine*  
  arabinofuranosyl derivatives
- *-arit*  
  antiarthritic substances, acting like clobuzarit and lobenzarit, (mechanism different from anti-inflammatory type substances, e.g. -fenamates or -profens)
- *-arol*  
  anticoagulants, dicoumarol derivatives
- *-arone*  
  -
- *-arotene*  
  arotinoid derivatives
- *arte-*  
  antimalarial agents, artemisinin related compounds
-ase  enzymes
-ast  antiasthmatic, antiallergics, not acting primarily as antihistaminics
-(a)steride (see -ster-) androgens/anabolic steroids
-astine antihistaminics
-azam (see -azepam) diazepam derivatives
-azenil benzodiazepine receptor antagonists/agonists (benzodiazepine derivatives)
-azepam diazepam derivatives
-azepide cholecystokinin receptor antagonists
-azocine narcotic antagonists/agonists related to 6,7-benzomorphan
-azolam (see -azepam) diazepam derivatives
-azoline antihistaminics or local vasoconstrictors, antazoline derivatives
-azone (see -buzone) anti-inflammatory analgesics, phenylbutazone derivatives
-azosin antihypertensive substances, prazosin derivatives

B
-bactam  β-lactamase inhibitors
-bamate  tranquillizers, propanediol and pentanediol derivatives
barb hypnotics, barbituric acid derivatives
-begron  β3-adrenoreceptor agonists
-benakin (see -kin) interleukin-1 analogues and derivatives
-bendan (see -dan) cardiac stimulants, pimobendan derivatives
-bendazole anthelmintics, tiabendazole derivatives
-bermin (see -ermin) vascular endothelial growth factors
-bersat anticonvulsants, benzoylamino-benzpyran derivatives
-betasol (see pred) prednisone and prednisolone derivatives
bol  anabolic steroids
-bradine  bradycardic agents
-brate (see -fibrate) clofibrate derivatives
-bufen  non-steroidal anti-inflammatory agents, arylbutanoic acid derivatives
-butazone (see -buzone) anti-inflammatory analgesics, phenylbutazone derivatives
-buzone  anti-inflammatory analgesics, phenylbutazone derivatives
C
-caine local anaesthetics
-cain-class I antiarrhythmics, procainamide and lidocaine derivatives
calci vitamin D analogues/derivatives
-carbef antibiotics, carbacepham derivatives
-carnil (see -azenil) benzodiazepine receptor antagonists/agonists (carboline derivatives)
-castat (see -stat) dopamine-hydroxylase inhibitors
-cavir (see vir) carbocyclic nucleosides
cef- antibiotics, cefalosporanic acid derivatives
cell-/cel- cellulose derivatives
cell-ate (see cell-/cel-) cellulose ester derivatives for substances containing acidic residues
-celloose (see cell-/cel-) cellulose ether derivatives
-cic hepatoprotective substances with a carboxylic acid group
-cidin naturally occurring antibiotics (undefined group)
-cillide (see -cillin) antibiotics, 6-aminopenicillanic acid derivatives
-cillin antibiotics, 6-aminopenicillanic acid derivatives
-cillinam (see -cillin) antibiotics, 6-aminopenicillanic acid derivatives
-cilpine (see -pine) tricyclic compounds
cisteine (see -steine) mucolytics, other than bromhexine derivatives
-citabine nucleoside antiviral or antineoplastic agents, cytarabine or azarabine derivatives
-clone hypnotic tranquillizers
-cog blood coagulation factors
-conazol-systemic antifungal agents, miconazole derivatives
cort corticosteroids, except prednisolone derivatives
-coxib selective cyclo-oxygenase inhibitors
-crinat diuretics, etaerynic acid derivatives
-crine acridine derivatives
-cromil antiallergics, cromoglicic acid derivatives
-curium (see -ium) curare-like substances
-cycline antibiotics, tetracycline derivatives
D
-dan cardiac stimulants, pimobendan derivatives
-dapsone antimycobacterials, diaminodiphenylsulfone derivatives
-decakin (see -kin) interleukin-10 analogues and derivatives
-dermin (see -ermin) epidermal growth factors
-dil vasodilators
-dilol (see -dil) vasodilators
-dipine calcium channel blockers, nifedipine derivatives
-dismase (see -ase) enzymes with superoxide dismutase activity, see -ase item V
-distim (see -stim) combination of two different types of colony stimulating factors
-dodekin (see -kin) interleukin-12 analogues and derivatives
-dopa dopamine receptor agonists, dopamine derivatives, used as antiparkinsonism/prolactin inhibitors
-dox (see -ox/-alox) antibacterials, quinazoline dioxide derivatives
-dralazine antihypertensives, hydrazinephthalazine derivatives
-drine sympathomimetics
-dronic acid calcium metabolism regulator, pharmaceutical aid
-dutan (see -tant) neurokinin NK₂ receptor antagonist
-dyl (see -dil) vasodilators

E
-ectin antiparasitics, ivermectin derivatives
-elestat (see -stat) elastase inhibitors
-elvekin (see -kin) interleukin-11 analogues and derivatives
-emcinal erythromycin derivatives lacking antibiotic activity, motilin agonists
-entan endothelin receptor antagonists
(-)eptacog (see -cog) blood coagulation VII
-erg ergot alkaloid derivatives
-eridine analgesics, pethidine derivatives
-ermin growth factors
-estr estrogens
-etanide (see -anide) diuretics, piretanide derivatives
-ethidine (see -eridine) analgesics, pethidine derivatives
-exakin (see -kin) interleukin-6 analogues and derivatives
-exine mucolytic, bromhexine derivatives

F
-fenamate (see -fenamic acid) "fenamic acid" derivatives
-fenamic acid anti-inflammatory, anthranilic acid derivatives
-fenin diagnostic aids; (phenylcarbamoyl)methyl iminodiacetic acid derivatives
-fenine analgesics, glafenine derivatives (subgroup of fenamic acid group)
-fentanil narcotic analgesics, fentanyl derivatives
-fentrine inhibitors of phosphodiesterases
-fermin (see -ermin) fibrinoblast growth factors
-fiban fibrinogen receptor antagonists (glycoprotein IIb/IIIa receptor antagonists)
-fibrate clofibrate derivatives
-filermin (see -ermin) leukemia-inhibiting factor
-flapon 5-lipoxygenase-activating protein (FLAP) inhibitor
-flurane halogenated compounds used as general inhalation anaesthetics
-formin antihyperglycaemics, phenformin derivatives
fos insecticides, anthelminthics, pesticides etc., phosphorous derivatives
-fovir (see vir) phosphonic acid derivatives
-fradil calcium channel blockers acting as vasodilators
-frine (see -drine) sympathomimetic, phenethyl derivatives
-fungin antifungal antibiotics
-fylline N-methylated xanthine derivatives

G
gab gabamimetic agents
gado- diagnostic agents, gadolinium derivatives
-gatran thrombin inhibitor, antithrombotic agent
gest steroids, progestogens
-gestr- (see estr) estrogens
-giline MAO-inhibitors type B
-gillin antibiotics produced by Aspergillus strain
gli antihyperglycaemics
-glitazar (see gli) peroxisome proliferator activating receptor (PPAR) agonists
-glitazone (see gli) peroxisome proliferator activating receptor (PPAR) agonists, thiazolidinedione derivatives
-glumide CCK antagonists, antiulcer, anxiolytic agent
-golide dopamine receptor agonists, ergoline derivatives
-gosivir (see vir) glucoside inhibitors
-gramostim (see -stim) granulocyte macrophage colony stimulating factor (GM-CSF) types substances
-grastim (see -stim) granulocyte colony stimulating factor (G-CSF) type substances
-grel/-grel platelet aggregation inhibitors
-gosivir (see vir) glucoside inhibitors

I
-ibine (see -ribine) ribofuranyl-derivatives of the “pyrazofurin” type
-icam anti-inflammatory, isoxicam derivatives
-ifene antiestrogens, clomifene and tamoxifen derivatives
-igetide (see -tide) peptides and glycopeptides
-ilide class III antiarrhythmics, sematilide derivatives
-imex immunostimulants
-imibe antihyperlipidaemics, acyl CoA: cholesterol acyltransferase (ACAT) inhibitors
-imod immunomodulators, both stimulant/suppressive and stimulant
-imus immunosuppressants (other than antineoplastics)
-ine alkaloids and organic bases
-inostat (see stat) histone deacetylase inhibitors
-io- iodine-containing contrast media
-iod/-io- iodine-containing compounds other than contrast media
-irudin hirudin derivatives
-isomide antiarrhythmics, disopyramide derivatives
-ium quaternary ammonium compounds
-izine (-yzine) diphenylmethyl piperazine derivatives
K
-kacin antibiotics, kanamycin and bekamycin derivatives (obtained from *Streptomyces kanamyceticus*)
-kalant potassium channel blockers
-kalim potassium channel activators, antihypertensive
-kef- enkephalin agonists
-kin interleukin type substances
-kinra (see -kin) interleukin receptor antagonists
-kiren renin inhibitors

L
-leukin (see -kin) interleukin-2 analogues and derivatives
-listat (see -stat) pancreatic lipase inhibitors
-lubant leukotriene B\(_4\) receptor antagonist
-lukast (see -ast) leukotriene receptor antagonists

M
-mab monoclonal antibodies
-mantadine adamantane derivatives
-mantine (see -mantadine) adamantane derivatives
-mantone (see -mantadine) adamantane derivatives
-mastat (see -stat) matrix metalloproteinase inhibitors
-meline cholinergic agents (muscarine receptor agonists/partial antagonists used in the treatment of Alzheimer's disease)
-mer/-mer mercury-containing drugs, antimicrobial or diuretic (deleted from General Principles in List 28 prop. INN)
-mer polymers
-mesine sigma receptor ligands
-mestane aromatase inhibitors
-metacin anti-inflammatory, indomethacin derivatives
-met(h)asone (see pred) prednisone and prednisolone derivatives
-micina antibiotics obtained from *various Micromonospor*
-mifene (see -ifene) antiestrogens, clomifene and tamoxifen derivatives
-mito- antineoplastics, nucleotoxic agents (deleted from General Principles in List 24 prop. INN)
-monam  monobactam antibiotics
-morelin (see -relin)  growth hormone release-stimulating peptides
-mostim (see -stim)  macrophage stimulating factors (M-CSF) type substances
-motine  antivirals, quinoline derivatives
-moxin  monoamine oxidase inhibitors, hydrazine derivatives
-mustine  antineoplastic, alkylating agents, (β-chloroethyl)amine derivatives
-mycin  antibiotics, produced by *Streptomyces* strains (see also -kacin)

N
nab  cannabinol derivatives
-nakin (see -kin)  interleukin-1 analogues and derivatives
-nakinra (see -kin)  interleukin-1 receptor antagonists
-nal-  narcotic antagonists/agonists related to normorphine
-naritide (see -tide)  peptides and glycopeptides
-navir (see vir)  HIV protease inhibitors
-nermin (see -ermin)  tumour necrosis factor
-nercept  tumour necrosis factor antagonist
-nertant (see -tant)  neurotensin antagonist
-netant (see -tant)  neurokinin NK₃ receptor antagonist
-nicate (see nico-)  antihypercholesterolaemic and/or vasodilating nicotinic acid esters
-nicline  nicotinic acetylcholine receptor agonists
-nico-/nic-/ni-  nicotinic acid or nicotinoyl alcohol derivatives
-nidazole  antiprotozoals and radiosensitizers, metronidazole derivatives
-nidine (see -onidine)  antihypertensives, clonidine derivatives
-nifur-  5-nitrofuran derivatives
-nil (see -azenil)  benzodiazepine receptor antagonists/agonists (benzodiazepine derivatives)
nitro-/nitr-/ni-/ni-/ni-  NO₂ - derivatives
-nixin  anti-inflammatory, anilinonicotinic acid derivatives
(-)nonacog (see -cog)  blood factor IX

O
octakin (see -kin)  interleukin-8 analogues and derivatives
(-)octocog (see -cog)  blood factor VIII
-ol for alcohols and phenols (deleted from General Principles in 14th Report)
-olol β-adrenoreceptor antagonists
-olone (see pred) steroids other than prednisolone derivatives
-onakin (see -kin) interleukin-1 analogues and derivatives
-one ketones
-onide steroids for topical use, acetal derivatives
-onidine antihypertensives, clonidine derivatives
-onium (see -ium) quaternary ammonium compounds
-opamine (see -dopa) dopaminergic agents dopamine derivatives used as cardiac stimulant/antihypertensives/diuretics
-orax anorexics
-orph- (see orphan) narcotic antagonists/agonists, morphinan derivates
-orphan narcotic antagonists/agonists, morphinan derivates
-ox/-alox antacids, aluminium derivatives
-oxacin antibacterials, nalidixic acid derivatives
-oxan(e) benzodioxane derivatives
-oxanide (see -anide) antiparasitics, salicylanilides and analogues
-oxef (see cef-) antibiotics, oxacefalosporanic acid derivatives
-oxepin (see -pine) tricyclic compounds
-oxetine antidepressants, fluoxetine derivatives
-oxicam (see -icam) anti-inflammatory, isoxicam derivatives
-oxifene (see -ifene) antiestrogens, clomifene and tamoxifen derivatives
-oxopine (see -pine) tricyclic compounds

P
-pafant platelet-activating factor antagonists
-pamide diuretics, sulfamoylbenzoic acid derivatives (could be sulfamoylbenzamide)
-pamil coronary vasodilators, verapamil derivatives
-parcin for glycopeptide antibiotics
-parin heparin derivatives including low molecular mass heparins
-parinux (see -parin) synthetic heparinoids
-pendyl (see -dil) vasodilators
-penem analogues of penicillanic acid antibiotics modified in the five-membered ring
perfl(u)-  perfluorinated compounds used as blood substitutes and/or diagnostic agents
-peridol (see -perone)  antipsychotics, haloperidol derivatives
-peridone (see -perone)  antipsychotics, risperidone derivatives
-perone  tranquillizers, neuroleptics, 4'-fluoro-4-piperidinobutyrophene derivatives
-pidem  hypnotics/sedatives, zolpidem derivatives
-pin(e)  tricyclic compounds
-piprazole (see -prazole)  psychotropics, phenylpiperazine derivatives
-pirone (see -pirone)  anxiolytics, buspirone derivatives
-pirox (see -ox/-alox)  antimycotic pyridone derivatives
-pitant (see -tant)  neurokinin NK1 (substance P) receptor antagonist
-plact  platelet factor 4 analogues and derivatives
-planin  antibacterials (Actinoplanes strains)
-plase (see -ase)  enzymes
-platin  antineoplastic agents, platinum derivatives
-plermin (see -ermin)  platelet-derived growth factor
-plstim (see -stim and -kin)  interleukin-3 analogues and derivatives
-plon  pyrazolo[3,4]pyrimidine derivatives, used as anxiolytics, sedatives, hypnotics
-poetin  erythropoietin type blood factors
-porfin  benzoporphyrin derivatives
-poride  Na⁺/H⁺ antiport inhibitor
-pramine  substances of the imipramine group
-prazole  antiulcer, benzimidazole derivatives
-pred  prednisone and prednisolone derivatives
-prenaline (see -terol)  bronchodilators, phenylethylamine derivatives
-pressin  vasoconstrictors, vasopressin derivatives
-pride  sulpiride derivatives
-pril  angiotensin-converting enzyme inhibitors
-prilat (see -pril)  angiotensin-converting enzyme inhibitors
-prim  antibacterials, trimethoprim derivatives
-pristin  antibacterials, pristinamycin derivatives
-profen  anti-inflammatory agents, ibuprofen derivatives
-prost  prostaglandins
-prostil (see prost) prostaglandins, anti-ulcer

Q
-quin(e) quinoline derivatives (deleted from General Principles in List 28 prop. INN)
-quinil (see -azenil) benzodiazepine receptor agonists, also partial or inverse (quinoline derivatives)

R
-racetam amide type nootrope agents, piracetam derivatives
-racil uracil type antineoplastics
-relin prehormones or hormone-release stimulating peptides
-relix hormone-release inhibiting peptides
-renone aldosterone antagonists, spironolactone derivatives
-restat (see -stat) aldose reductase inhibitors
retin retinol derivatives
-ribine ribofuranyl-derivatives of the "pyrazofurin" type
rifa- antibiotics, rifamycin derivatives
-rinone cardiac stimulants, amrinone derivatives
-rizine (see -izine) antihistaminics/cerebral (or peripheral) vasodilators
-rozole aromatase inhibitors, imidazole-triazole derivatives
-rubicin antineoplastic antibiotics, daunorubicin derivatives

S
sal salicylic acid derivatives
-sartan angiotensin II receptor antagonists, antihypertensive (non-peptidic)
-semide diuretics, furosemide derivatives
-sermin (see -ermin) insulin-like growth factors
-serod serotonin receptor antagonists
-serpine derivatives of Rauwolfia alkaloids
-setron serotonin receptor antagonists (5-HT3) not fitting into other established groups of serotonin receptor antagonists
som- growth hormone derivatives
-sopine (see -pine) tricyclic compounds
-spirone anxiolytics, buspirone derivatives
### INN – The use of stems

- **-stat/-stat-** enzyme inhibitors  
- **-steine** mucolytics, other than bromhexine derivatives  
- **-ster-** androgens/anabolic steroids  
- **-stigmine** acetylcholinesterase inhibitors  
- **-stim** colony stimulating factors  
- **sulfa-** anti-infectives, sulfonamides  
- **-sulfan** antineoplastic, alkylating agents, methanesulfonates

### **T**

- **-tadine** tricyclic histamine-\(H_1\) receptor antagonists, tricyclic compounds  
- **-tant** neurokinin (tachykinin) receptor antagonists  
- **-tecan** antineoplastics, topoisomerase I inhibitors  
- **-teta** antineoplastics, thiotepa derivatives  
- **-tepine (see -pine)** tricyclic compounds  
- **-teplase (see -ase)** tissue type plasminogen activators, see -ase item VI  
- **-termin (see -ermin)** transforming growth factor  
- **-terol** bronchodilators, phenethylamine derivatives  
- **-terone** antiandrogens  
- **-thiouracil (see -racil)** uracil derivatives used as thyroid antagonists  
- **-tiazem** calcium channel blockers, diltiazem derivatives  
- **-tide** peptides and glycopeptides (for special groups of peptides see -actide, -pressin, -relin, -tocin)  
- **-tidine** histamine-\(H_2\)-receptor antagonists, cimetidine derivatives  
- **-tilide (see -ilide)** class III antiarrhythmics, sematilide derivatives  
- **-tiline (see -triptyline)** antidepressants, dibenzo[a,d]cycloheptane or cycloheptene derivatives  
- **-tinib** tyrosine kinase inhibitors  
- **-tirelin (see -relin)** thyrotropin releasing hormone analogues  
- **-tizide** diuretics, chlorothiazide derivatives  
- **-tocin** oxytocin derivatives  
- **-toin** antiepileptics, hydantoing derivatives  
- **-trakin (see -kin)** interleukin-4 analogues and derivatives  
- **-trexate** folic acid analogues  
- **-tricin** antibiotics, polyene derivatives  
- **-triptan** serotonin (\(5HT_1\)) receptor agonists, sumatriptan derivatives
-triptyline antidepressants, dibenzo[a,d]cycloheptane or cycloheptene derivatives
-troban thromboxane A2-receptor antagonists; antithrombotic agents
-trodast (see -ast) thromboxane A2-receptor antagonists, antiasthmatics
trop atropine derivatives

U
-uplase (see -ase) urokinase type plasminogen activator, see -ase item VII
-ur (see -uridine) uridine derivatives used as antiviral agents and as antineoplastics
-uridine uridine derivatives used as antiviral agents and as antineoplastics

V
-vaptan vasopressin receptor antagonists
-vastatin (see -stat) antihyperlipidaemic substances, HMG CoA reductase inhibitors
-verine spasmolytics with a papaverine-like action
vin-/vin- vinca alkaloids
vir antivirals (undefined group)
-virsen antisense oligonucleotides
-vos (see fos) insecticides, anthelminthics, pesticides etc., phosphorus derivatives
-vudine (see -uridine) uridine derivatives used as antiviral agents and as antineoplastics

X
-xaban blood coagulation factor Xa inhibitors, antithrombotics
-xanox (see -ox/-alox) anti-allergics, tixanox group

Y
-yzine (see -izine) diphenylmethyl piperazine derivatives

Z
-zafone alopafon derivatives
-zepine (see -pine) tricyclic compounds
-zone (see -buzone) anti-inflammatory analgesics, phenylbutazone derivatives
Acknowledgements

The INN Secretariat extends its thanks to Dr R. Boudet-Dalbin, France, for the graphic representations of the chemical formulae in this document.
Layout of information

Stem classification
Stem definition
National Name(s)

calcii
N.8.0.0

Vitamin D analogues/derivatives

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)

(x) stems that are included in article 9 of the general principles
(d) stems deleted from article 9 of the general principles

(a) alfacalcidol (40), calcifediol (26), calcipotriol (61), calcitriol (39), coleccalciferol (13), doxercalciferol (82), ergocalciferol (13), falecalcitriol (74), lexacalcitol (71), maxacalcitol (75), paricalcitol (78), secalciferol (62), seocalcitol (78), taalcitol (65)

(b) calcitonin (31) (polypeptide)

(c) dihydrotachysterol (1)
Pharmacological classification with corresponding examples of stems and their definitions

<table>
<thead>
<tr>
<th>A000</th>
<th>CNS DEPRESSANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A100</td>
<td>General anaesthetics</td>
</tr>
</tbody>
</table>
| A110 | General anaesthetics, volatile  
- **flurane**  
general inhalation anaesthetics, halogenated alkane derivatives |
| A120 | General anaesthetics, other |
| A200 | Hypnotics - sedatives |
| A210 | Barbiturates  
- **barb**  
hypnotics, barbituric acid derivatives |
| A220 | Hypnotic sedatives, other  
- **clone**  
hypnotic tranquillizers |
| A220 | - **plon**  
pyrazolo[.]pyrimidine derivatives, used as anxiolytics, sedatives, hypnotics |
| A230 | Monoureids, hypnotic sedatives |
| A240 | Chloral derivatives, hypnotic sedatives |
| A300 | Centrally acting voluntary muscle tone modifying drugs |
| A310 | Anticonvulsants  
- **bersat**  
anticonvulsants, benzoylamino-benzpyran derivatives |
| A311 | Hydantoins, anticonvulsants  
- **toin**  
antiepileptics, hydantoin derivatives |
<p>| A312 | Acetylureas, anticonvulsants |
| A313 | Oxazolidinediones, anticonvulsants |
| A314 | Succinimides, anticonvulsants |
| A315 | Barbiturates, anticonvulsants |
| A316 | Anticonvulsants, other |
| A320 | Central anticholinergics |
| A330 | Centrally acting voluntary-muscle relaxants |</p>
<table>
<thead>
<tr>
<th>A400</th>
<th>Analgesics</th>
</tr>
</thead>
<tbody>
<tr>
<td>A410</td>
<td>Narcotic analgesics</td>
</tr>
<tr>
<td></td>
<td>-adol or -adol- analgesics</td>
</tr>
<tr>
<td>A410</td>
<td>-azocine narcotic antagonists/agonists related to 6,7-benzomorphan</td>
</tr>
<tr>
<td>A410</td>
<td>-eridine analgesics, pethidine derivatives</td>
</tr>
<tr>
<td>A410</td>
<td>-ethidine see -eridine</td>
</tr>
<tr>
<td>A410</td>
<td>-fentanil narcotic analgesics, fentanyl derivatives</td>
</tr>
<tr>
<td>A410</td>
<td>nal- narcotic antagonists/agonists related to normorphine</td>
</tr>
<tr>
<td>A410</td>
<td>orphan narcotic antagonists/agonists, morphinan derivates; -orphine, -orphinol, -orphone</td>
</tr>
<tr>
<td>A420</td>
<td>Analgesics - Antipyretics</td>
</tr>
<tr>
<td>A420</td>
<td>-ac anti-inflammatory agents, ibufenac derivatives</td>
</tr>
<tr>
<td>A420</td>
<td>-adol or -adol- analgesics</td>
</tr>
<tr>
<td>A420</td>
<td>-arit antiarthritic substances, acting like clobuzarit and lobenzarit (mechanism different from anti-inflammatory type substances, e.g. -fenamates or -profens)</td>
</tr>
<tr>
<td>A420</td>
<td>-bufen non-steroidal anti-inflammatory agents, arylbutanoic acid derivatives</td>
</tr>
<tr>
<td>A420</td>
<td>-butazone -buzone: anti-inflammatory analgesics, phenylbutazone derivatives</td>
</tr>
<tr>
<td>A420</td>
<td>-buzone anti-inflammatory analgesics, phenylbutazone derivatives</td>
</tr>
<tr>
<td>A420</td>
<td>-coxib selective cyclo-oxygenase inhibitors</td>
</tr>
<tr>
<td>A420</td>
<td>-fenamate &quot;-fenamic acid&quot; derivatives</td>
</tr>
<tr>
<td>A420</td>
<td>-fenamic acid anti-inflammatory, anthranilic acid derivatives</td>
</tr>
<tr>
<td>A420</td>
<td>-icam anti-inflammatory, isoxicam derivatives</td>
</tr>
<tr>
<td>Code</td>
<td>Group</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>A420</td>
<td>Analgesics, other</td>
</tr>
<tr>
<td>A420</td>
<td>Analgesics, other</td>
</tr>
<tr>
<td>A420</td>
<td>Analgesics, other</td>
</tr>
<tr>
<td>A430</td>
<td>Analgesics, other</td>
</tr>
<tr>
<td>A430</td>
<td>Analgesics, other</td>
</tr>
<tr>
<td>A440</td>
<td>Central antiemetics</td>
</tr>
<tr>
<td>A500</td>
<td>Antivertigo drugs</td>
</tr>
<tr>
<td>B000</td>
<td>CNS STIMULANTS</td>
</tr>
<tr>
<td>B100</td>
<td>Analpeptics</td>
</tr>
<tr>
<td>B100</td>
<td>Analpeptics</td>
</tr>
<tr>
<td>B100</td>
<td>Analpeptics</td>
</tr>
<tr>
<td>B200</td>
<td>Opioid receptor antagonists</td>
</tr>
<tr>
<td>B200</td>
<td>Opioid receptor antagonists</td>
</tr>
<tr>
<td>B300</td>
<td>Benzodiazepine receptor</td>
</tr>
<tr>
<td>C000</td>
<td>PSYCHOPHARMACOLOGICS</td>
</tr>
<tr>
<td>C000</td>
<td>PSYCHOPHARMACOLOGICS</td>
</tr>
<tr>
<td>C100</td>
<td>Anxiolytic sedatives</td>
</tr>
<tr>
<td>C100</td>
<td>Anxiolytic sedatives</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>C100</td>
<td>-bamate</td>
</tr>
<tr>
<td>C100</td>
<td>-carnil</td>
</tr>
<tr>
<td>C100</td>
<td>-peridone</td>
</tr>
<tr>
<td>C100</td>
<td>-perone</td>
</tr>
<tr>
<td>C100</td>
<td>-pidem</td>
</tr>
<tr>
<td>C100</td>
<td>-plon</td>
</tr>
<tr>
<td>C100</td>
<td>-pride</td>
</tr>
<tr>
<td>C100</td>
<td>-quinil</td>
</tr>
<tr>
<td>C100</td>
<td>-spirone</td>
</tr>
<tr>
<td>C100</td>
<td>-zafone</td>
</tr>
<tr>
<td>C200</td>
<td>Antipsychotics (neuroleptics)</td>
</tr>
<tr>
<td>C210</td>
<td>Brain amine depleters</td>
</tr>
<tr>
<td>C220</td>
<td>Central adrenoreceptor antagonists</td>
</tr>
<tr>
<td>C300</td>
<td>Antidepressants</td>
</tr>
<tr>
<td>C310</td>
<td>MAO inhibitors</td>
</tr>
<tr>
<td>Code</td>
<td>Category</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
</tr>
<tr>
<td>C310</td>
<td>-moxin</td>
</tr>
<tr>
<td>C320</td>
<td>Tricyclic antidepressants</td>
</tr>
<tr>
<td>C320</td>
<td>-pramine</td>
</tr>
<tr>
<td>C320</td>
<td>-triptyline</td>
</tr>
<tr>
<td>C330</td>
<td>Tetracyclic antidepressants</td>
</tr>
<tr>
<td>C340</td>
<td>Bicyclic antidepressants</td>
</tr>
<tr>
<td>C400</td>
<td>Indirect releasers of catecholamines</td>
</tr>
<tr>
<td>C500</td>
<td>Psychodysleptics (hallucinogens)</td>
</tr>
<tr>
<td>C600</td>
<td>CNS metabolites</td>
</tr>
<tr>
<td>C700</td>
<td>Serotonin receptor antagonists</td>
</tr>
<tr>
<td>C700</td>
<td>erg</td>
</tr>
<tr>
<td>C700</td>
<td>-setron</td>
</tr>
<tr>
<td>D000</td>
<td>PERIPHERAL NERVOUS SYSTEM DRUGS</td>
</tr>
<tr>
<td>D100</td>
<td>Local anaesthetics</td>
</tr>
<tr>
<td>E000</td>
<td>DRUGS ACTING AT SYNAPTIC AND NEUROEFFECTOR JUNCTIONAL SITES</td>
</tr>
<tr>
<td>E100</td>
<td>Cholinergic agents</td>
</tr>
<tr>
<td>E110</td>
<td>Cholinergic receptor agonists</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>E110</td>
<td>-golide</td>
</tr>
<tr>
<td>E111</td>
<td>Muscarinic receptor agonists</td>
</tr>
<tr>
<td>E112</td>
<td>Nicotinic receptor agonists</td>
</tr>
<tr>
<td>E120</td>
<td>Anticholinesterase agents</td>
</tr>
<tr>
<td>E200</td>
<td>Cholinergic antagonists</td>
</tr>
<tr>
<td>E210</td>
<td>Peripheral cholinergic antagonists</td>
</tr>
<tr>
<td>E220</td>
<td>Ganglionic antagonists</td>
</tr>
<tr>
<td>E300</td>
<td>Neuromuscular blocking agents</td>
</tr>
<tr>
<td>E300</td>
<td>-ium</td>
</tr>
<tr>
<td>E400</td>
<td>Adrenergic agents</td>
</tr>
<tr>
<td>E400</td>
<td>-drine</td>
</tr>
<tr>
<td>E400</td>
<td>-frine</td>
</tr>
<tr>
<td>E400</td>
<td>-terol</td>
</tr>
<tr>
<td>E410</td>
<td>Beta adrenoreceptor agonists</td>
</tr>
<tr>
<td>E420</td>
<td>Alpha adrenoreceptor agonists</td>
</tr>
<tr>
<td>E500</td>
<td>Adrenoreceptor antagonists</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>E510</td>
<td>Alpha adrenoreceptor antagonists</td>
</tr>
<tr>
<td>E520</td>
<td>Beta adrenoreceptor antagonists</td>
</tr>
<tr>
<td>E520</td>
<td></td>
</tr>
<tr>
<td>E530</td>
<td>Catecholamines false transmitters</td>
</tr>
<tr>
<td>E540</td>
<td>Adrenergic neurone blocking agents</td>
</tr>
<tr>
<td>E600</td>
<td>Stimulant cathartics</td>
</tr>
<tr>
<td>F000</td>
<td>AGENTS ACTING ON SMOOTH MUSCLES</td>
</tr>
<tr>
<td>F100</td>
<td>Spasmolytics, general</td>
</tr>
<tr>
<td>F200</td>
<td>Vasodilators</td>
</tr>
<tr>
<td>F200</td>
<td></td>
</tr>
<tr>
<td>F200</td>
<td></td>
</tr>
<tr>
<td>F210</td>
<td>Coronary vasodilators, also calcium channel blockers</td>
</tr>
<tr>
<td>F210</td>
<td></td>
</tr>
<tr>
<td>F210</td>
<td></td>
</tr>
<tr>
<td>F210</td>
<td></td>
</tr>
<tr>
<td>F220</td>
<td>Peripheral vasodilators</td>
</tr>
<tr>
<td>F300</td>
<td>Smooth muscle stimulants</td>
</tr>
<tr>
<td>F310</td>
<td>Vasoconstrictor agents</td>
</tr>
<tr>
<td>F400</td>
<td>Agents acting on the uterus</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>G000</td>
<td>HISTAMINE AND ANTIHISTAMINICS</td>
</tr>
<tr>
<td>G100</td>
<td>Histamine and histamine-like drugs</td>
</tr>
<tr>
<td>G200</td>
<td>Antihistaminics</td>
</tr>
<tr>
<td>G200</td>
<td>-tidine</td>
</tr>
<tr>
<td>G210</td>
<td>Histamine H₁-receptor antagonists</td>
</tr>
<tr>
<td>G220</td>
<td>Histamine H₂-receptor antagonists</td>
</tr>
<tr>
<td>G230</td>
<td>Histamine H₃-receptor antagonists</td>
</tr>
<tr>
<td>G300</td>
<td>Histamine metabolism agents</td>
</tr>
<tr>
<td>H000</td>
<td>CARDIOVASCULAR AGENTS</td>
</tr>
<tr>
<td>H000</td>
<td>-vaptan</td>
</tr>
<tr>
<td>H100</td>
<td>Cardiac glycosides and drugs with similar action</td>
</tr>
<tr>
<td>H100</td>
<td>-rinone</td>
</tr>
<tr>
<td>H200</td>
<td>Agents influencing heart muscle excitability and conductivity</td>
</tr>
<tr>
<td>H200</td>
<td>-aj-</td>
</tr>
<tr>
<td>H200</td>
<td>-cain-</td>
</tr>
<tr>
<td>H200</td>
<td>-ilide</td>
</tr>
<tr>
<td>H200</td>
<td>-isomide</td>
</tr>
<tr>
<td>H200</td>
<td>-kalant</td>
</tr>
<tr>
<td>Code</td>
<td>Category</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>H300</td>
<td>Antihypertensives</td>
</tr>
<tr>
<td>H300</td>
<td></td>
</tr>
<tr>
<td>H300</td>
<td></td>
</tr>
<tr>
<td>H300</td>
<td></td>
</tr>
<tr>
<td>H300</td>
<td></td>
</tr>
<tr>
<td>H300</td>
<td></td>
</tr>
<tr>
<td>H300</td>
<td></td>
</tr>
<tr>
<td>H300</td>
<td></td>
</tr>
<tr>
<td>H400</td>
<td>Antihyperlipidaemic drugs</td>
</tr>
<tr>
<td>H400</td>
<td></td>
</tr>
<tr>
<td>H400</td>
<td></td>
</tr>
<tr>
<td>H500</td>
<td>Antivarirose drugs</td>
</tr>
<tr>
<td>H510</td>
<td>Sclerosing drugs</td>
</tr>
<tr>
<td>H600</td>
<td>Capillary-active drugs, haemostyptics</td>
</tr>
<tr>
<td>H700</td>
<td>Calcium channel blockers</td>
</tr>
<tr>
<td>H800</td>
<td>Agents influencing the renin-angiotensin system</td>
</tr>
<tr>
<td>H810</td>
<td>Angiotensin converting enzyme inhibitors</td>
</tr>
<tr>
<td>H820</td>
<td>Angiotensin receptor antagonists</td>
</tr>
<tr>
<td>1000</td>
<td>BLOOD AND AGENTS ACTING ON THE HAEMOPOIETIC SYSTEM (EXCL. CYTOSTATICS)</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1100</td>
<td>Antianaemic agents</td>
</tr>
<tr>
<td>1110</td>
<td>Iron preparations</td>
</tr>
<tr>
<td>1120</td>
<td>Haematinics, other (Vit. B-12, folic acid, etc.)</td>
</tr>
<tr>
<td>1130</td>
<td>Miscellaneous antianaemic agents</td>
</tr>
<tr>
<td>1200</td>
<td>Agents influencing blood coagulation</td>
</tr>
<tr>
<td></td>
<td>-cog (-&gt;ptacog blood coagulation VII, -&gt;octocog blood factor VIII, -&gt;nonacog blood factor IX)</td>
</tr>
<tr>
<td></td>
<td>-fiban fibrinogen receptor antagonents (glycoprotein IIb/IIIa receptor antagonists)</td>
</tr>
<tr>
<td></td>
<td>-gatran thrombin inhibitor, antithrombotic agents</td>
</tr>
<tr>
<td></td>
<td>-parin heparin derivatives including low molecular mass heparins</td>
</tr>
<tr>
<td>1210</td>
<td>Anticoagulants</td>
</tr>
<tr>
<td></td>
<td>-arol anticoagulants, dicoumarol derivatives</td>
</tr>
<tr>
<td></td>
<td>-grel- or -grel platelet aggregation inhibitors</td>
</tr>
<tr>
<td></td>
<td>-irudin hirudin derivatives</td>
</tr>
<tr>
<td></td>
<td>-pafant platelet-activating factor antagonants</td>
</tr>
<tr>
<td></td>
<td>-troban thromboxane A2-receptor antagonists; antithrombotic agents</td>
</tr>
<tr>
<td>1220</td>
<td>Prothrombin inhibitors</td>
</tr>
<tr>
<td>1230</td>
<td>Prothrombin synthesis inhibitors</td>
</tr>
<tr>
<td>1240</td>
<td>Anticoagulant inhibitors</td>
</tr>
<tr>
<td>1250</td>
<td>Agents affecting fibrinolysis</td>
</tr>
<tr>
<td>1260</td>
<td>Coagulation promoting agents</td>
</tr>
<tr>
<td>I261</td>
<td>Blood clotting factors</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------</td>
</tr>
<tr>
<td>I300</td>
<td>Blood proteins and their fractions</td>
</tr>
<tr>
<td>I310</td>
<td>Blood substitutes (macromolecular)</td>
</tr>
<tr>
<td>I400</td>
<td>Platelet-function regulators</td>
</tr>
<tr>
<td>I500</td>
<td>Colony stimulating factors</td>
</tr>
<tr>
<td>I510</td>
<td>Granulocyte stimulating factors</td>
</tr>
<tr>
<td>I520</td>
<td>Macrophage stimulating factor</td>
</tr>
<tr>
<td>J000</td>
<td>AGENTS INFLUENCING THE GASTROINTESTINAL TRACT</td>
</tr>
<tr>
<td>J000</td>
<td></td>
</tr>
<tr>
<td>J000</td>
<td></td>
</tr>
<tr>
<td>J000</td>
<td></td>
</tr>
<tr>
<td>J100</td>
<td>Digestives</td>
</tr>
<tr>
<td>J110</td>
<td>Stomachics</td>
</tr>
<tr>
<td>J120</td>
<td>Choleretics (and hepatoprotective agents)</td>
</tr>
<tr>
<td>J130</td>
<td>Digestive enzymes</td>
</tr>
<tr>
<td>J200</td>
<td>Emetics</td>
</tr>
<tr>
<td>J300</td>
<td>Hepato-protective agents</td>
</tr>
<tr>
<td>J400</td>
<td>Gastro-intestinal anti-infectives (see S000)</td>
</tr>
<tr>
<td>J500</td>
<td>Antidiarrhoeals</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
</tr>
<tr>
<td>K000</td>
<td>AGENTS INFLUENCING THE RESPIRATORY TRACT</td>
</tr>
<tr>
<td></td>
<td>-ast</td>
</tr>
<tr>
<td>K000</td>
<td>-cromil</td>
</tr>
<tr>
<td>K000</td>
<td>-exine</td>
</tr>
<tr>
<td>K000</td>
<td>-fentrine</td>
</tr>
<tr>
<td>K000</td>
<td>-lukast</td>
</tr>
<tr>
<td>K000</td>
<td>-steine</td>
</tr>
<tr>
<td>K000</td>
<td>-trodast</td>
</tr>
<tr>
<td>K000</td>
<td>-xanox</td>
</tr>
<tr>
<td>K100</td>
<td>Antitussives</td>
</tr>
<tr>
<td>K110</td>
<td>Antitussives - central</td>
</tr>
<tr>
<td>K120</td>
<td>Antitussives - peripheral</td>
</tr>
<tr>
<td>K200</td>
<td>Expectorants</td>
</tr>
<tr>
<td>L000</td>
<td>ANTINEOPLASTICS</td>
</tr>
<tr>
<td></td>
<td>-anib</td>
</tr>
<tr>
<td>L000</td>
<td>-(ar)abine</td>
</tr>
<tr>
<td>L000</td>
<td>-mestane</td>
</tr>
<tr>
<td>L000</td>
<td>mito-</td>
</tr>
<tr>
<td>L000</td>
<td>-platin</td>
</tr>
<tr>
<td>L000</td>
<td>-racil</td>
</tr>
</tbody>
</table>
INN – The use of stems

<table>
<thead>
<tr>
<th>L000</th>
<th>-ribine</th>
<th>ribofuranil-derivatives of the &quot;pyrazofurin&quot; type</th>
</tr>
</thead>
<tbody>
<tr>
<td>L000</td>
<td>-rozole</td>
<td>aromatase inhibitors, imidazole-triazole derivatives</td>
</tr>
<tr>
<td>L000</td>
<td>-tecan</td>
<td>antineoplastics, topoisomerase I inhibitors</td>
</tr>
<tr>
<td>L000</td>
<td>-tinib</td>
<td>tyrosine kinase inhibitors</td>
</tr>
<tr>
<td>L000</td>
<td>-thiouracil</td>
<td>uracil derivatives used as thyroid antagonists</td>
</tr>
<tr>
<td>L100</td>
<td>Immunosuppressants</td>
<td></td>
</tr>
<tr>
<td>L200</td>
<td>Alkylating agents</td>
<td>-mustine antineoplastic, alkylating agents, (beta-chloroethyl)amine derivatives</td>
</tr>
<tr>
<td>L200</td>
<td>-sulfan</td>
<td>antineoplastic, alkylating agents, methanesulfonates</td>
</tr>
<tr>
<td>L200</td>
<td>-tepa</td>
<td>antineoplastics, thiotepa derivatives</td>
</tr>
<tr>
<td>L300</td>
<td>Radioisotopes (except diagnostics)</td>
<td></td>
</tr>
<tr>
<td>L310</td>
<td>Radioisotopes - systemic</td>
<td></td>
</tr>
<tr>
<td>L320</td>
<td>Radioisotopes - locally applied</td>
<td></td>
</tr>
<tr>
<td>L400</td>
<td>Antineoplastics - antimetabolites</td>
<td>-abine see -arabine, -citabine</td>
</tr>
<tr>
<td>L400</td>
<td>-citabine</td>
<td>nucleoside antiviral or antineoplastic agents, cytarabine or azarabine derivatives</td>
</tr>
<tr>
<td>L400</td>
<td>-fur</td>
<td></td>
</tr>
<tr>
<td>L400</td>
<td>-trexate</td>
<td>folic acid analogues</td>
</tr>
<tr>
<td>L400</td>
<td>-uridine</td>
<td>uridine derivatives used as antiviral agents and as antineoplastics; also -udine</td>
</tr>
<tr>
<td>L410</td>
<td>Ornithine decarboxylase inhibitors</td>
<td></td>
</tr>
<tr>
<td>L500</td>
<td>Antineoplastics - natural products (incl. antibiotics)</td>
<td>-rubicin antineoplastic antibiotics, daunorubicin derivatives</td>
</tr>
<tr>
<td>L500</td>
<td>vin- or -vin-</td>
<td>vinea alkaloids</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>L600</td>
<td>Antineoplastics - sex hormone analogues and inhibitors</td>
<td></td>
</tr>
<tr>
<td>L610</td>
<td>Aromatase inhibitors</td>
<td></td>
</tr>
<tr>
<td>L620</td>
<td>Luteinizing hormone-releasing hormone agonists</td>
<td></td>
</tr>
<tr>
<td>M000</td>
<td>METABOLISM AND NUTRITION (EXCL. WATER AND MINERAL METABOLISM)</td>
<td></td>
</tr>
<tr>
<td>M100</td>
<td>Anoretics</td>
<td></td>
</tr>
<tr>
<td>M200</td>
<td>Dietetics and antiadipositas drugs</td>
<td></td>
</tr>
<tr>
<td>M210</td>
<td>Bulk forming drugs</td>
<td></td>
</tr>
<tr>
<td>M300</td>
<td>Agents influencing lipid and fat metabolism</td>
<td></td>
</tr>
<tr>
<td>M310</td>
<td>Antiatherosclerosis agents</td>
<td></td>
</tr>
<tr>
<td>M320</td>
<td>Lipotropic agents</td>
<td></td>
</tr>
<tr>
<td>M321</td>
<td>Lipogenesis inducing agents</td>
<td></td>
</tr>
<tr>
<td>M400</td>
<td>Agents influencing protein metabolism</td>
<td></td>
</tr>
<tr>
<td>M410</td>
<td>Anabolic steroids</td>
<td></td>
</tr>
<tr>
<td>M420</td>
<td>Catabolic agents</td>
<td></td>
</tr>
<tr>
<td>M430</td>
<td>Amino acids</td>
<td></td>
</tr>
<tr>
<td>M500</td>
<td>Agents influencing carbohydrate metabolism</td>
<td></td>
</tr>
</tbody>
</table>

- Stat (or -stat-): enzyme inhibitors; -lipastat: pancreatic lipase inhibitors; -restat or -restat+: aldose-reducing inhibitors; -vastatin: antilipidemic substances, HMG CoA reductase inhibitors
- Orex: anoretics
- Imibe: antihyperlipidaemics, acyl CoA:cholesterol acyltransferase (ACAT) inhibitors
- Lipastat: see -stat
- Vastatin: see -stat; antilipidemic substances, HMGCoA reductase inhibitors
- Begron: β3-adrenoreceptor agonists
- Bol: steroids
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Example</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>M510</td>
<td>Insulins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M520</td>
<td>Oral antidiabetics - islet mediated</td>
<td>-formin</td>
<td>antihyperglycaemics, phenformin derivatives</td>
</tr>
<tr>
<td>M520</td>
<td></td>
<td>gli-, -gli-</td>
<td>previously gly-; antihyperglycaemics</td>
</tr>
<tr>
<td>M520</td>
<td></td>
<td>-glitazar</td>
<td>peroxisome proliferator activating receptor (PPAR) agonists</td>
</tr>
<tr>
<td>M520</td>
<td></td>
<td>-glitazone</td>
<td>peroxisome proliferator activating receptor (PPAR) agonists, thiazolidinedione derivatives</td>
</tr>
<tr>
<td>M530</td>
<td>Oral antidiabetics - extra pancreatic</td>
<td>gli</td>
<td>antihyperglycaemics</td>
</tr>
<tr>
<td>M540</td>
<td>Gluconeogenesis influencing agents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M600</td>
<td>Agents influencing uric acid metabolism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M610</td>
<td>Uricosurics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M620</td>
<td>Uric acid synthesis inhibitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M630</td>
<td>Agents influencing oxalic acid metabolism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M700</td>
<td>Thyroid and antithyroids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M710</td>
<td>Thyroid and thyroid hormones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M720</td>
<td>Thyroid stimulators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M730</td>
<td>Antithyroids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M740</td>
<td>Radioactive iodine agents (for therapy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M800</td>
<td>Enzymes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M810</td>
<td>Enzyme inhibitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M820</td>
<td>Enzyme stimulators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Category</td>
<td>Subcategory</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>N000</td>
<td>AGENTS INFLUENCING WATER AND MINERAL METABOLISM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N100</td>
<td>Diuretics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N110</td>
<td>Carbonic anhydrase inhibitors</td>
<td>-semide</td>
<td>diuretics, furosemide derivatives</td>
</tr>
<tr>
<td>N120</td>
<td>Saluretics</td>
<td>-anide</td>
<td>N.1.2.0 -etanide: diuretics, piretanide derivatives; S.3.0.0 -oxanide: antiparasitic, salicylanilides and analogues</td>
</tr>
<tr>
<td>N120</td>
<td></td>
<td>-etanide</td>
<td>diuretics, piretanide derivatives; see -anide</td>
</tr>
<tr>
<td>N120</td>
<td></td>
<td>-pamide</td>
<td>diuretics, sulfamoylbenzoic acid derivatives (could be sulfamoylbenzamide)</td>
</tr>
<tr>
<td>N121</td>
<td>Thiazide derivatives</td>
<td>-tizide</td>
<td>diuretics, chlorothiazide derivatives</td>
</tr>
<tr>
<td>N122</td>
<td>Ethacrynic acid derivatives</td>
<td>-crinat</td>
<td>diuretics, etacrynic acid derivatives</td>
</tr>
<tr>
<td>N123</td>
<td>Chlortalidone derivatives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N129</td>
<td>Saluretics, other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N130</td>
<td>Mercurial diuretics</td>
<td>-mer- (or -mer-)</td>
<td>mercury-containing drugs, antimicrobial or diuretic (deleted from General Principles in List 28 prop. INN) [mer- and -mer- can be used for any type of substances and are no longer restricted to use in INNs for mercury-containing drugs; -mer: polymers</td>
</tr>
<tr>
<td>N170</td>
<td>Purines and other diuretics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N180</td>
<td>Aldosterone inhibitors</td>
<td>-renone</td>
<td>aldosterone antagonists, spironolactone derivatives</td>
</tr>
<tr>
<td>N200</td>
<td>Acidifiers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N400</td>
<td>Saline cathartics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N500</td>
<td>Alkalizers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N510</td>
<td>Parenteral alkalizer solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Category</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td>-------------</td>
<td>-------</td>
</tr>
<tr>
<td>N520</td>
<td>Oral antacids</td>
<td>-aldrate</td>
<td>antacids, aluminium salts</td>
</tr>
<tr>
<td>N520</td>
<td>Oral antacids</td>
<td>-alox</td>
<td>see -ox</td>
</tr>
<tr>
<td>N600</td>
<td>Fluid and electrolyte replacement therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N610</td>
<td>Electrolyte and carbohydrate solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N700</td>
<td>Mineral salts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N710</td>
<td>Ion exchange resins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N800</td>
<td>Vitamin D group and calcium metabolism drugs</td>
<td>calci</td>
<td>Vitamin D analogues/derivatives</td>
</tr>
<tr>
<td>N800</td>
<td>Vitamin D group and calcium metabolism drugs</td>
<td>-dronic acid</td>
<td>calcium metabolism regulator, pharmaceutical aid</td>
</tr>
<tr>
<td>P000</td>
<td>VITAMINS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P100</td>
<td>Vitamin A</td>
<td>-arotene</td>
<td>arotinoid derivatives</td>
</tr>
<tr>
<td>P100</td>
<td>Vitamin A</td>
<td>retin</td>
<td>retinol derivatives</td>
</tr>
<tr>
<td>P200</td>
<td>Vitamin B1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P300</td>
<td>Vitamin B2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P400</td>
<td>Vitamin B6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P500</td>
<td>Vitamin C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P600</td>
<td>Vitamin E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P700</td>
<td>Nicotinic acid derivatives</td>
<td>-nic</td>
<td>nicotinic acid or nicotinoyl alcohol derivatives</td>
</tr>
<tr>
<td>P800</td>
<td>Vitamins, other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q000</td>
<td>HORMONES OR HORMONE RELEASE-STIMULATING PEPTIDES</td>
<td>-morelin</td>
<td>see -relin: pituitary hormone release-stimulating peptides</td>
</tr>
<tr>
<td>Q000</td>
<td></td>
<td>prost</td>
<td>prostaglandins; -prostil: prostaglandins, anti-ulcer</td>
</tr>
<tr>
<td>Q000</td>
<td>-relin</td>
<td>prehormones or hormone-release stimulating peptides: -morelin: growth hormone release-stimulating peptides; -tirelin: thyrotropin releasing hormone analogues</td>
<td></td>
</tr>
<tr>
<td>Q000</td>
<td>som-</td>
<td>growth hormone derivatives</td>
<td></td>
</tr>
<tr>
<td>Q000</td>
<td>-tirelin</td>
<td>see -relin; thyrotropin releasing hormone analogues</td>
<td></td>
</tr>
<tr>
<td>Q100</td>
<td>Hypophysis hormones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q110</td>
<td>Hypophysis anterior lobe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q111</td>
<td>Hypophysis anterior lobe hormones</td>
<td>-actide</td>
<td>synthetic polypeptides with a corticotropin-like action</td>
</tr>
<tr>
<td>Q112</td>
<td>Hypophysis anterior lobe inhibitors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q120</td>
<td>Hypophysis posterior lobe (incl. other oxytocies)</td>
<td>-pressin</td>
<td>vasoconstrictors, vasopressin derivatives</td>
</tr>
<tr>
<td>Q120</td>
<td>-tocin</td>
<td>oxytocin derivatives</td>
<td></td>
</tr>
<tr>
<td>Q200</td>
<td>Sex hormones and analogues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q210</td>
<td>Estrogens, also interceptive contraceptive agents e.g. epostane (51)</td>
<td>estr</td>
<td>estrogens</td>
</tr>
<tr>
<td>Q210</td>
<td>-ifene</td>
<td>antiestrogens, clomifene and tamoxifen derivatives</td>
<td></td>
</tr>
<tr>
<td>Q220</td>
<td>Progestogens</td>
<td>gest</td>
<td>steroids, progestogens</td>
</tr>
<tr>
<td>Q230</td>
<td>Androgens</td>
<td>andr or –stan- or –ster-</td>
<td>steroids, androgens</td>
</tr>
<tr>
<td>Q230</td>
<td>-ster-</td>
<td>androgens/anabolic steroids: -testosterone, -sterone, -ster-, -gesterone, -sterone, sterol, ster, -(a)steride</td>
<td></td>
</tr>
<tr>
<td>Q231</td>
<td>Androgens</td>
<td>-terone</td>
<td>antiandrogens</td>
</tr>
<tr>
<td>Q240</td>
<td>Gonadotrophins and gonadotrophin secretion stimulating drugs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Name</td>
<td>Subtype</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Q241</td>
<td>Antigonadotrophins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q300</td>
<td>Adrenocortical hormones and analogues</td>
<td>cort</td>
<td>corticosteroids, except prednisolone derivatives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-okane</td>
<td>steroids other than prednisolone derivatives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-onide</td>
<td>steroids for topical use, acetal derivatives</td>
</tr>
<tr>
<td>Q310</td>
<td>Mineralosteroids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q320</td>
<td>Mineralosteroid antagonists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q330</td>
<td>Glucosteroids</td>
<td>pred</td>
<td>prednisone and prednisolone derivatives; -methasone or -metsone, -betasol, -okane</td>
</tr>
<tr>
<td>Q340</td>
<td>Glucosteroids antagonists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R000</td>
<td>IMMUNOLOGICALS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R100</td>
<td>Sera and immunoglobulins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R200</td>
<td>Vaccines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R210</td>
<td>Vaccines, live</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R220</td>
<td>Vaccines, activated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R300</td>
<td>Immunostimulants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R310</td>
<td>Biological response modifier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S000</td>
<td>ANTI-INFECTIVES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S100</td>
<td>Ectoparasiticides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S200</td>
<td>Antiseptics and disinfectants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S210</td>
<td>Antiseptics (excl. heavy metal antiseptics)</td>
<td>-nifur-</td>
<td>5-nitrofuran derivatives</td>
</tr>
<tr>
<td>Code</td>
<td>Category</td>
<td>Stem</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>S220</td>
<td>Heavy metal antiseptics</td>
<td>-mer-</td>
<td>mercury-containing drugs, antimicrobial or diuretic (deleted from General Principles in List 28 prop. INN) [mer- and -mer- can be used for any type of substances and are no longer restricted to use in INNs for mercury-containing drugs]</td>
</tr>
<tr>
<td>S230</td>
<td>Detergent antiseptics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S300</td>
<td>Chemotherapeutics of parasitic diseases</td>
<td>-ectin</td>
<td>antiparasitics, ivermectin derivatives</td>
</tr>
<tr>
<td>S300</td>
<td></td>
<td>-oxanide</td>
<td>antiparasitics, salicylanides and analogues; see -anide</td>
</tr>
<tr>
<td>S310</td>
<td>Anthelminthics (excl. antinematode agents)</td>
<td>-antel</td>
<td>anthelminthics (undefined group)</td>
</tr>
<tr>
<td>S310</td>
<td></td>
<td>-bendazole</td>
<td>anthelminthics, tiabendazole derivatives</td>
</tr>
<tr>
<td>S310</td>
<td></td>
<td>-fos (-vos)</td>
<td>insecticides, anthelmintics, pesticides etc., phosphorous derivatives</td>
</tr>
<tr>
<td>S310</td>
<td></td>
<td>-fos- or fos-</td>
<td>various pharmacological categories belonging to -fos (other than above)</td>
</tr>
<tr>
<td>S320</td>
<td>Antinematode agents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S330</td>
<td>Antiprotozoal agents (incl. all arsphenamines)</td>
<td>arte-</td>
<td>antimalarial agents, artemisinin related compounds</td>
</tr>
<tr>
<td>S330</td>
<td></td>
<td>-nidazole</td>
<td>antiprotozoals and radiosensitizers, metronidazole derivatives</td>
</tr>
<tr>
<td>S400</td>
<td>Chemotherapeutics of fungal diseases</td>
<td>-conazole</td>
<td>systemic antifungal agents, miconazole derivatives</td>
</tr>
<tr>
<td>S410</td>
<td>Antifungal agents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S420</td>
<td>Fungicides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S430</td>
<td>Antifungal antibiotics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S500</td>
<td>Antibiotics, antibacterial and antiviral agents</td>
<td>-planin</td>
<td>antibacterials (<em>Actinoplanes</em> strains)</td>
</tr>
<tr>
<td>S510</td>
<td>Sulfonamides</td>
<td>sulfa-</td>
<td>anti-infectives, sulfonamides</td>
</tr>
<tr>
<td>Code</td>
<td>Category</td>
<td>Suffix</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>S520</td>
<td>Antimycobacterials</td>
<td>-dapsone</td>
<td>antmycobacterials, diaminodiphenylsulfone derivatives</td>
</tr>
<tr>
<td>S520</td>
<td>Antimycobacterials</td>
<td>-pirox</td>
<td>see -ox</td>
</tr>
<tr>
<td>S530</td>
<td>Antiviral</td>
<td>-arabine</td>
<td>arabinofuranosyl derivatives</td>
</tr>
<tr>
<td>S530</td>
<td>Antiviral</td>
<td>-motine</td>
<td>antivirals, quinoline derivatives</td>
</tr>
<tr>
<td>S530</td>
<td>Antiviral</td>
<td>-ribine</td>
<td>ribofuranil-derivatives of the <em>pyrazofurin</em> type</td>
</tr>
<tr>
<td>S530</td>
<td>Antiviral</td>
<td>-uridine</td>
<td>uridine derivatives used as antiviral agents and as antineoplastics; -udine</td>
</tr>
<tr>
<td>S530</td>
<td>Antiviral</td>
<td>vir</td>
<td>antivirals (undefined group): -amivir: neuraminidase inhibitors, -cavir: carbocyclic nucleosides, -virsen: antisense oligonucleotides</td>
</tr>
<tr>
<td>S550</td>
<td>Antibacterial/other</td>
<td>-citabine</td>
<td>nucleoside antiviral or antineoplastic agents, cytarabine or azarabine derivatives</td>
</tr>
<tr>
<td>S550</td>
<td>Antibacterial/other</td>
<td>-oxacin</td>
<td>antibacterials, nalidixic acid derivatives</td>
</tr>
<tr>
<td>S550</td>
<td>Antibacterial/other</td>
<td>-prim</td>
<td>antibacterials, trimethoprim derivatives</td>
</tr>
<tr>
<td>S600</td>
<td>Antibiotics (except antineoplastic antibiotics)</td>
<td>-cidin</td>
<td>naturally occurring antibiotics (undefined group)</td>
</tr>
<tr>
<td>S600</td>
<td>Antibiotics (except antineoplastic antibiotics)</td>
<td>-fungin</td>
<td>antifungal antibiotics; USAN: antifungal antibiotics (undefined group)</td>
</tr>
<tr>
<td>S600</td>
<td>Antibiotics (except antineoplastic antibiotics)</td>
<td>-gillin</td>
<td>antibiotics produced by Aspergillus strains</td>
</tr>
<tr>
<td>S600</td>
<td>Antibiotics (except antineoplastic antibiotics)</td>
<td>-monam</td>
<td>monobactam antibiotics</td>
</tr>
<tr>
<td>S600</td>
<td>Antibiotics (except antineoplastic antibiotics)</td>
<td>-mycin</td>
<td>antibiotics, produced by <em>Streptomyces strains</em> (see also -kacin)</td>
</tr>
<tr>
<td>S600</td>
<td>Antibiotics (except antineoplastic antibiotics)</td>
<td>-parcin</td>
<td>for glycopeptide antibiotics</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Example</td>
<td>Notes</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------</td>
<td>--------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>S600</td>
<td>-penem</td>
<td>analogues of penicillanic acid</td>
<td>antibiotics modified in the five-membered ring</td>
</tr>
<tr>
<td>S600</td>
<td>-pristin</td>
<td>antibacterials, pristinamycin</td>
<td>derivatives</td>
</tr>
<tr>
<td>S610</td>
<td>Antibiotics acting on the bacterial cell wall</td>
<td>-carbef</td>
<td>antibiotics, carbacepham derivatives</td>
</tr>
<tr>
<td>S610</td>
<td>cef-</td>
<td>antibiotics, cefalosporanic acid derivatives</td>
<td></td>
</tr>
<tr>
<td>S610</td>
<td>-cillin</td>
<td>antibiotics, 6-aminopenicillanic acid derivatives</td>
<td></td>
</tr>
<tr>
<td>S610</td>
<td>-oxef</td>
<td>see cef-; antibiotics, oxacefalosporanic acid derivatives</td>
<td></td>
</tr>
<tr>
<td>S620</td>
<td>Antibiotics affecting cell membrane and with detergent effect</td>
<td>-tricin</td>
<td>antibiotics, polyene derivatives</td>
</tr>
<tr>
<td>S630</td>
<td>Antibiotics affecting protein synthesis</td>
<td>-cycline</td>
<td>antibiotics, tetracycline derivatives</td>
</tr>
<tr>
<td>S630</td>
<td>-kacin</td>
<td>antibiotics, kanamycin and bekanamycin derivatives (obtained from <em>Streptomyces kanamyceticus</em>); S.6.5.0: -micin: antibiotics obtained from various <em>Micromonospora</em></td>
<td></td>
</tr>
<tr>
<td>S640</td>
<td>Antibiotics affecting nucleic acid metabolism</td>
<td>rifa-</td>
<td>antibiotics, rifamycin derivatives</td>
</tr>
<tr>
<td>S650</td>
<td>Antibiotics-action unclassified (including beta-lactamase inhibitors)</td>
<td>-bactam</td>
<td>beta-lactamase inhibitors</td>
</tr>
<tr>
<td>S650</td>
<td>-micin</td>
<td>see -kacin; antibiotics obtained from various <em>Micromonospora</em></td>
<td></td>
</tr>
<tr>
<td>S700</td>
<td>Immunomodulators and immunostimulants (incl. gamma globulins)</td>
<td>-imex</td>
<td>immunostimulants</td>
</tr>
<tr>
<td>S700</td>
<td>-imod</td>
<td>immunomodulators, both stimulant/suppressive and stimulant</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Details</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>S700</td>
<td>-imus</td>
<td>immunosuppressants (other than antineoplastics)</td>
<td></td>
</tr>
<tr>
<td>S700</td>
<td>-kin</td>
<td>interleukin type substances: -nakin, -leukin, -plestim, -exakin, -kinra, -nakinra</td>
<td></td>
</tr>
<tr>
<td>S700</td>
<td>-leukin</td>
<td>interleukin type substances</td>
<td></td>
</tr>
<tr>
<td>S700</td>
<td>-mab</td>
<td>monoclonal antibodies (see also Annex)</td>
<td></td>
</tr>
<tr>
<td>S700</td>
<td>-stim</td>
<td>colony stimulating factors</td>
<td></td>
</tr>
<tr>
<td>S710</td>
<td>Interferons and immunomodulators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T000</td>
<td>LOCALLY ACTING AGENTS (INCL. DERMATOLOGIC AND INTERNALLY USED DRUGS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T100</td>
<td>Locally acting externally-applied agents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T110</td>
<td>Vasodilators (external) - rubefaciens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T200</td>
<td>Locally acting internally-applied agents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T210</td>
<td>Adsorbents, astringents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T220</td>
<td>Lubricant cathartics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T230</td>
<td>Irritant cathartics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T240</td>
<td>Gastro-intestinal anti-infectives, non-resorbed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T250</td>
<td>Saponins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T260</td>
<td>Detergents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T300</td>
<td>Intravaginal contraceptives</td>
<td></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>
<td></td>
</tr>
<tr>
<td>U000</td>
<td></td>
<td>gado-</td>
<td>diagnostic agents, gadolinium derivatives</td>
</tr>
<tr>
<td>------</td>
<td>----</td>
<td>-------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>U100</td>
<td>Diagnostic aids</td>
<td>-fenin</td>
<td>diagnostic aids; (phenyl-carbamoyl)methyl iminodiacetic acid derivatives</td>
</tr>
<tr>
<td>U110</td>
<td>Radiocontrast media</td>
<td>io-</td>
<td>iodine-containing contrast media</td>
</tr>
<tr>
<td>U110</td>
<td></td>
<td>-io or iod-</td>
<td>iodine-containing compounds other than contrast media</td>
</tr>
<tr>
<td>U120</td>
<td>Diagnostic aids, other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U130</td>
<td>Diagnostic radioisotopes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U200</td>
<td>Chelating agents, detoxicants, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U210</td>
<td>Alcohol deterents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U300</td>
<td>Anti-inflammatory agents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U310</td>
<td>Non-antipyretic antirheumatics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U320</td>
<td>Anti-inflammatory agents, other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U400</td>
<td>Pharmaceutical adjuncts</td>
<td>cell- or cel-</td>
<td>cellulose derivatives; (cell-ate and -cellose)</td>
</tr>
<tr>
<td>U400</td>
<td></td>
<td>-dronic acid</td>
<td>calcium metabolism regulator, pharmaceutical aid</td>
</tr>
<tr>
<td>V000</td>
<td>UNCLASSIFIED PHARMACOLOGICAL MECHANISMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V100</td>
<td>Intrauterine contraceptive device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V200</td>
<td>Medicinal plants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V300</td>
<td>Homoeopathic preparations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W000</td>
<td>ENZYMES AND VARIOUS</td>
<td>-ase</td>
<td>enzymes; -dismase, -teplase, -uplase</td>
</tr>
<tr>
<td>W000</td>
<td></td>
<td>-stat</td>
<td>enzyme inhibitors</td>
</tr>
<tr>
<td>Y000</td>
<td>VETERINARY DRUGS</td>
<td>-nidazole</td>
<td>antiprotozoals and radiosensitizers, metronidazole derivatives</td>
</tr>
</tbody>
</table>
ALPHABETICAL LIST OF STEMS TOGETHER WITH CORRESPONDING INNS

-abine see -arabine, -citabine

-ac (x) anti-inflammatory agents, ibufenac derivatives
A.4.2.0 (USAN: anti-inflammatory agents (acetic acid derivatives))

(a) aceclofenac (52), aclclofenac (23), amfenac (38), anirolac (52), bendazac (22), bromfenac (55), cinfenoxic acid (41), clidanac (39), clofuran (42), clopirac (30), dexpemedolac (71), diclofenac (28), eltenac (53), etodolac (45), felbinac (54), fenclorac (30), fenclorac (33), fentiazac (32), furofenac (40), ibufenac (14), isoxepac (37), ketorolac (51), lexofenas (38), nepafenac (78), oxepinac (36), oxindanac (54), pemedolac (58), (quinclorac, ISO name for a herbicide), sulindac (33), tianafac (31), tifurac (57), tiopina (40), zomepirac (37)

-zolac: befozolac (39), isofezolac (39), lonazolac (34), mofozellac (64), pirazolac (43), trifezolac (34)

(b) amtolmetin guacil (65), bufexamac (20) (anti-inflammatory; acetohydroxamic acid group instead of acetic acid group)

(c) clamidoxic acid (17), fencloxic acid (22), metiazinic acid (20), prodolic acid (29), tolmetin (23)

-acetam see -acetam

-actide (x) synthetic polypeptides with a corticotropin-like action
Q.1.1.1 (USAN: synthetic corticotropins)

(a) alsactide (45), codactide (24), giractide (29), norleusactide (18), seractide (31), tetracosactide (18), tosactide (24), tricosactide (44)
**INN – The use of stems**

- **adol** (x) 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), gadoxadoline (48), levonantradol (43), lorcinadol (57), moxadolen (45), (deleted in List 48: moxifadol (47)), myfadal (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), ruzadoline (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)
**-afil**  
 inhibitors of phosphodiesterase PDE5 with vasodilator action

F.2.0.0

(a) beminafil (90), sildenafil (75), tadalafil (85), vardenafil (82)

**-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 glucaldrate (14), sodium glucaspaldrate (17), magaldrate (49), simaldrate (15)

**-alol**  
see -olol

**-alox**  
see -ox

**-amivir**  
see -vir

**-ampanel**  
amino-hydroxymethyl-isoxazole-propionic acid (AMPA) receptor antagonists

B.0.0.0

(a) becampanel (90), fanapanel (80), irampanel (82), talampanel (80), zonampanel (85)
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>andr (d)</strong></td>
<td><strong>steroids, androgens</strong></td>
<td>USAN</td>
</tr>
<tr>
<td>Q.2.3.0</td>
<td>(USAN: -andr- androgens)</td>
<td></td>
</tr>
<tr>
<td>(a) i. <strong>andr</strong>: androstanolone (4), methandriol (1), nandrolone (22), norethandrolone (6), ovandrotone albumin (52), silandrone (18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii. <strong>-stan- (d)</strong>: androstanolone (4), drostanolone (13), epitiostanol (31), mestanolone (10), stanozolol (18), epostane (51) (contraceptive)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii. <strong>-ster- (d)</strong>: calusterone (23), cloxotestosterone (12), fluoxymesterone (6), mesterolone (15), methyltestosterone (4), oxymesterone (12), penmesterol (14), prasterone (23), testosterone (4), testosterone ketolaurate (16), tiomesterone (14)</td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td>i. <strong>andr</strong>: oxandrolone (12), propetandrol (13)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii. <strong>ster</strong>: aldosterone (6), bolasterone (13), dihydrotachysterol (1), dimethisterone (8), ethisterone (4), norethisterone (6), norvinisterone (6), stercuronium iodide (21) (neuromuscular blocking agent)</td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td>metandienone (12), oxymetholone (11), trestolone (25) (antineoplastic androgen)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>-anib</strong></td>
<td><strong>angiogenesis inhibitors</strong></td>
<td></td>
</tr>
<tr>
<td>L.0.0.0</td>
<td>(a) pegaptanib (88), semaxanib (85), vatalanib (84)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>-anide</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>-etanide</strong></td>
<td><strong>diuretics, piretanide derivatives</strong></td>
<td></td>
</tr>
<tr>
<td>N.1.2.0</td>
<td>(USAN: diuretics (piretanide group))</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>bumetanide (24), piretanide (33)</td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td>besunide (30)</td>
<td></td>
</tr>
</tbody>
</table>
-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-arthritic; gout-remedy), ceforanide (39) (antibiotic), oglufanide (86) (immunomodulator), polihexanide (24) (antibacterial), tiprostanide (48) (antihypertonic)

BAN, USAN

-anserin serotonin receptor antagonists (mostly 5-HT₂)

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), iferanserin (89), ketanserin (46), lidanserin (62), pelanserin (57), pruvanserin (90), seganserin (56), tropanserin (55)

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

USAN

-antel anthelmintics (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)

-apine see -pine
INN – The use of stems

-(ar)abine  arabinofuranosyl derivatives

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

\[
\text{\begin{center}
\begin{array}{c}
\text{HO} \\
\text{O} \\
\text{HO} \\
\text{CH} \\
\text{R}
\end{array}
\end{center}
\]

(a)  ancitabine (36), capecitabine (73), clofarabine (90), 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)

\[
\text{\begin{center}
\begin{array}{c}
\text{Cl} \\
\text{CH} \\
\text{3} \\
\text{Cl}
\end{array}
\end{center}
\]

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

-arol (d)  anticoagulants, dicoumarol derivatives

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

\[
\text{\begin{center}
\begin{array}{c}
\text{OH} \\
\text{O}
\end{array}
\end{center}
\]

(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)
arone

-arnone amiodarone (16) (anti-arrhythmic), benzarone (13), benzbromarone (13) (uricosuric), benzdarone (11), brinazaron (64) (calcium channel blocker), buccarone (48) (antiarrrhythmic), diarbarone (15), dronedaron (75) (anti-anginal, antiarrhythmic), etabenzarone (17), fantofarone (65) (calcium channel blocker), furidarone (19), incaron (27), mecinarone (30), pyidarone (16), rilozarone (58)

-arotene arotoninoid derivatives

P.1.0.0

(a) betacarotene (38), bexarotene (80), etarotene (64), linarotene (65), mofarotene (70), sumarotene (64), tamibarotene (73), tazarotene (72), temarotene (54)

arte- antimalarial agents, artemisinin related compounds

S.3.3.0

(a) artemether (61), artemisinin (56), artemotil (80), artemomol (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), eufauserase (84), hyalaisidase (50), hyaluronidase (1), idusulfase (87), kallidinogenase (22), ocrase (28), pegaspargase (64), penicillinase (10), promelase (47), rizolipase (22), serrapeptase (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>rasburicase (81)</td>
<td><em>Aspergillus flavus</em></td>
<td>urate oxidase (hyperuricaemia)</td>
</tr>
<tr>
<td>serrapeptase (31)</td>
<td><em>Serratia sp. E15</em></td>
<td>proteinase (chronic paranasal sinusitis etc.)</td>
</tr>
<tr>
<td>sfericase (40)</td>
<td><em>Bacillus sphaericus</em></td>
<td>proteinase (chronic paranasal sinusitis etc.)</td>
</tr>
<tr>
<td>streptokinase (6)</td>
<td><em>Streptococcus haemolyticus</em></td>
<td>changing plasminogen into plasmine (activator of fibrinolysis)</td>
</tr>
<tr>
<td>urokinase (48)</td>
<td>human origin</td>
<td>plasminogen activator</td>
</tr>
<tr>
<td>urokinase alfa (27)</td>
<td>recombinant material</td>
<td>plasminogen activator</td>
</tr>
</tbody>
</table>

(b) without -ase suffix:

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

II

-**lipase**

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

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) |

IV

-**dismase** enzymes with superoxide dismutase activity

(USAN: superoxide dismutase activity (exception: orgotein))

(a) ledismase (70), sudismase (58) |

(c) isomerase

- orgotein (31) | mammalian tissue (liver, red blood cell etc.) | superoxide dismutase activity (anti-inflammatory) |
- pegorgotein (72) |

V

-**diplase** plasminogen activator combined with another enzyme

amediplase (79) |

VI

-**teplase** tissue-type-plasminogen activators

(a) alteplase (59), anistreplase (59), desmotep lase (80), duteplase (62), lanoteplase (76), monteplase (71), nateplase (73), pamiteplase (78), reteplase (69), silteplase (65), tenecteplase (79)
<table>
<thead>
<tr>
<th>VII</th>
<th>-uplese</th>
<th>urokinase-type-plasminogen activators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(a)</td>
<td>nasaruplase (68), nasaruplase beta (85), saruplase (58)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VIII</th>
<th>others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>agalsidase alfa (84) human origin</td>
</tr>
<tr>
<td></td>
<td>agalsidase beta (84) <em>hamster</em></td>
</tr>
<tr>
<td></td>
<td>alfimeprase (85) <em>Agkistrodon contrix contrix</em></td>
</tr>
<tr>
<td></td>
<td>dornase alfa (70) human origin</td>
</tr>
<tr>
<td></td>
<td>epafipase (85) human origin</td>
</tr>
<tr>
<td></td>
<td>eufauserase (84) <em>Euphausia Superba</em></td>
</tr>
<tr>
<td></td>
<td>hyalosidase (50)</td>
</tr>
<tr>
<td></td>
<td>hyaluronidase (1) various origins</td>
</tr>
<tr>
<td></td>
<td>idusulfase (87)</td>
</tr>
<tr>
<td></td>
<td>imiglucerase (72) human origin (placenta isoenzyme)</td>
</tr>
<tr>
<td></td>
<td>laronidase (85) human origin</td>
</tr>
<tr>
<td></td>
<td>penicillinase (10) <em>Bacillus cereus</em></td>
</tr>
<tr>
<td></td>
<td>ranpirmase (81) <em>Rana pipiens</em></td>
</tr>
</tbody>
</table>
INN – The use of stems

<table>
<thead>
<tr>
<th>Enzyme</th>
<th>Source</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>streptodornase (6)</td>
<td><em>Streptococcus haemolyticus</em></td>
<td>hydrolysing desoxyribonucleoprotein</td>
</tr>
<tr>
<td>tilactase (50)</td>
<td>β-D-glactosidase</td>
<td></td>
</tr>
</tbody>
</table>

**-ast (x)**

-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), acreozast (77), andolast (67), asobamast (63), ataquimast (82), bamaquimast, (76), batebulast (66), binizolast (60), bunaprolast (60), cilomilast (82), dametralast (54), dazoozinast (54), doqualast (48), eclazolast (55), efumast (61), enofelast (67), enoxamast (52), fenprinast (48), filaminast (75), ibudilast (58), idenast (58), lirimilast (85), loxanast (46), melquinast (62), ontazolast (72), oxalinalast (49), pemirolast (61), picamilast (73), picumast (47), pirodomast (64), quazolast (55), raxofelast (68), repirinast (55), revenast (51), roflumilast (77), scopinast (76), suplatast tosilate (64), tazanolast (59), tetrazolast (67), tiacrilast (52), tibenelast (58), tioxamast (53), tiprinast (50), tofimilast (85), tranilast (46), zafirukast (46)

-lukast **leukotriene receptor antagonist**

(a) ablukast (61), cinalukast (70), ernalukast (70), montelukast (73), nolukast (70), pranlukast (67), ritolukast (64), sulukast (63), temelukast (59), verlukast (65), zafirlukast (71)

-trodst **thromboxane A2 receptor antagonists, antiasthmatics**

(a) imitrodast (70), seratrodast (70)

(c) bufrolin (34), oxarbozole (38), pirolate (44)

-(a)steride **see -ster-**

-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), cabastimen (50), carebastine (52), clemastine (22), dorastine (23), ebastine (52), emedastine (59), epinastine (55), flezelaustine (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)

BAN, USAN
(c) astemizole (45), carbinoxamine (4)

-azam see -azepam

-azenil benzodiazepine receptor antagonists/agonists (benzodiazepine derivatives)

(a) 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 agonists, also partial or inverse (quinoline derivatives)

(a) lirequinil (72), resequinil (90), 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), carburazepam (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), proflazepam (31), quazepam (36), reclazepam (53), sulazepam (14), temazepam (22), tetrazepam (17), toluazepam (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), clinzolam (51), clobazam (25), clobenazepam (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), trepazam (38), triazolam (30), triflubazam (28), zopizolam (43), zomebazam (49)

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

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

-azepide cholecystokinin receptor antagonists
J.1.0.0

(a) devazepide (62), pranazepide (75), tarazepide (68)

(c) lorglumide (56)

-azocene narcotic antagonists/agonists related to 6,7-benzomorph
A.4.1.0 (USAN: narcotic antagonists/agonists related to 6,7-benzo-morph)

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

(b) streptozocin (33)

related compounds: dezocine (35)
-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)

-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  β-lactamase inhibitors
S.6.5.0

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

(c) clavulanic acid (44)
INN – The use of stems

-bamate  
tranquillizers, 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)

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), probabralbarbital (1), proxibarbal (33), secbutabarbital (12), secobarbital (4), tetrabarbital (4), thialbarbital (4), thiotetbarbital (4), vinbarbital (1)
(c) butalbital (4), butalalital sodium (8), metharbarbital (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)

-begron  
β3-adrenoreceptor agonists

M.3.2.1

(a) mantabegron (88), rafabegron (88), solabegron (90), talibegron (86)

-benakin  
see -kin

-bendan  
see -dan
-bendazole  anthelmintics, tiabendazole derivatives
S.3.1.0  (USAN: anthelmintics (tiabendazole type))

(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)

-bermin  see -ermin

-betasol  see pred

-bersat  anticonvulsants, benzoylamino-benzpyran derivatives
A.3.1.0
(a) carabersat (85), tidembersat (84), tonabersat (85)

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), bolenol (19), bolmantalate
(16), clostebol (22), enestebol (22), formebolone (31), furazabol (16), mebolazine (21),
mesabolone (29), metribolone (17), mibolerone (27), norboletoone (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 -fbrate

-bufen  non-steroidal anti-inflammatory agents, arylbutanoic acid derivatives
A.4.2.0
(a)  butibufen (32), fenbufen (30), furobufen (30), indobufen (39), metbufen (43)

-butazone  see -buzone

-buzone (x)  anti-inflammatory analgesics, phenylbutazone derivatives
A.4.2.0

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

-zone  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), metazamide (16), piperylone (11)
-caine (x) local anaesthetics BAN, USAN

D.1.0.0

(a) ambucaaine (6), amoxecaine (1), aptocaine (21), articaaine (47) (previously carticaaine (27)), benzocaine (42), betoxycaaine (13), buriculae (49), bumecaine (25), bupivacaine (17), butacaine (4), butanilicaine (16), chloroprocaine (6), cinchocaine (1), clibucaaine (14), clodacaine (13), clormecaaine (6), cyclomethycaaine (6), dexitacaine (20), diamocaine (22), edronocaine (84), elucaine (29), etidocaine (29), fexicaaine (25), fomocaine (18), hexylecaine (4), hydroxyprocaaine (1), hydroxytetracaine (1), ipracaaine (85), ketocaaine (15), leucinoceaine (17), levobupivacaaine (74), lidocaaine (1), lotucaaine (27), mepivacaaine (11), mepyclaaine (4), myrtecaaine (15), octacaaine (14), oxetacaine (13), oxybuprocaine (8), parethoxycaaine (1), paridocaaine (8), phenacaaine (4), pinolcaaine (32), piperocaaine (1), piridocaaine (1), pramocaaine (4), pribecaaine (32), prilocane (14), procaaine (10), propanocaaine (6), propipocaaine (16), propoxycaine (4) proxymetacaine (6), pyrrocaaine (13), quatacaaine (18), quinisocaine (4), risocaaine (26), rodocaine (27), ropivacaaine (50), tetracaine (4), tolcaaine (16), trapencaine (56), trigmeceaine (11), vadocaaine (57)

(c) amolanone (6), benzyl alcohol (1), cryofluorane (6), diperodon (1), dyclonine (6), midamalme (6)

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

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

(a) acecaaine (39), asocainol (47), barucainide (52), bucaaine (35), carcaainium chloride (36), carocainide (46), dloxicainide (47), encaaine (40), epicainide (40), erocainide (50), flecaaine (37), guafecainol (38), indecaaine (48) (originally ricainide (47)), itrocaaine (54), ketocainol (32), lorcaaine (38), milacainide (77), modecaaine (63), murocaaine (46), nicainoprol (46), nofecaaine (44), pilsciaiene (62), pincaaine (49), procainamid (1), quinaacainol (50), recainam (54), solpecainol (55), stirocaaine (47), suricaaine (55), tocainide (36), transcaaine (51), (verocainine (42) - replaced by tiapamil in List 43), zocainone (41)
calci Vitamin D analogues/derivatives

N.8.0.0

(a) alfacalcidol (40), atocalcitol (88), calcifediol (26), calcipotriol (61), calcitriol (39), colecalciferol (13), doxercalciferol (82), ecacide (85), ergocalciferol (13), falecalcitriol (74), inealcitol (87), lexalcitol (71), maxacalcitol (75), paricalcitol (78), secalciferol (62), seocalcitol (78), tacalcitol (65)

(b) calcitonin (31) (polypeptide)

(c) dihydrotachysterol (1)

-carbef antibiotics, carbacepham derivatives

S.6.1.0

(a) loracarbef (60)

-carnil see -azenil

-castat see -stat

-cavir see vir

cef- (x) antibiotics, cefalosporanic acid derivatives

S.6.1.0 (USAN: cephalosporins)

(a) cefacetile (25), cefaclor (36), cefadroxil (33), cefalexin (18), cefaloglycin (16), cefalonium (16), cefaloram (16), cefaloride (15), cefalotin (14), cefamandole (30), cefaparole (33),
cefaripin (23), cefatrizine (34), cefazaflur (36), cefazedone (36), cefazolin (25), cefbuperazone (48), cefcanel (59), cefcanel daloxate (59), cefcapene (68), cefclidine (64), cefdaloxime (64), cefdinir (61), cefditoren (66), cefedrolor (53), cefempidone (58), cefepime (57), cefetamet (49), cefetecol (64), cefetrizole (44), cefivitril (52), cefixime (53), cefizopran (66), cefluprenam (71), cefmatilen (81), cefmenoxime (44), cefmepidium chloride (57), cefmetazole (39), cefminox (53), cefodizime (44), cefonicid (42), cefoperazone (42), ceforanide (39), cefoselis (71), cefotaxime (40), cefotetan (48), cefotiam (40), cefoxazol (34), cefoxitin (29), cefozopran (66), cefpimizole (50), cepiramide (47), cefpirome (50), cefpodoxime (58), cefprozil (60), cefquinome (59), cefradine (26), cefrotil (34), cefroxadine (42), cefsulodin (38), cefsumide (38), ceftazidime (44), ceftetam (55), ceftezol (34), ceftibuten (60), ceftiofur (53), ceftiolene (49), ceftioxide (43), ceftizoxime (42), ceftizoxime alaproxil (77), ceftriaxone (44), cefuracetamine (45), cefuroxime (34), cefuzonam (55)

-oxef antibiotics, oxacefalosporanic acid derivatives

S.6.1.0 (USAN: antibiotic oxacefalosporanic acid derivatives)

\[
\text{R} - O - \text{N} - \text{H} - \text{H} - \text{H} - \text{O} - \text{CO}_2\text{H} - \text{R'}
\]

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

**cell- or cel-** cellulose derivatives

U.4.0.0 [cel- in spanish]

(a) celucloral (40)

(c) celiprolol (35)

**cell-ate** cellulose ester derivatives for substances containing acidic residues

U.4.0.0 [cel-ato in spanish]

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

**-cellose** cellulose ether derivatives

U.4.0.0 [-closa in spanish]

(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), tidiac (33), timonacic (33), (tiofacic (45) replaced by stepronin (46))

(b)  | bisorcic (34) (psychostimulant)

(c)  | stepronin (46)

-cidin  | naturally occurring antibiotics (undefined group) (14th Report, 1964)

S.6.0.0  | (USAN: natural antibiotics (undefined group))

(a)  | candicidin (17), gramicidin (1), gramicidin S (26), methocidin (6)

(b)  | guancidine (18) (hypotensive)

-cillide  | see -cillin

-cillin (x)  | antibiotics, 6-aminopenicillanic acid derivatives

S.6.1.0  | (USAN: penicillins)

(a)  | adicillin (14), almecillin (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), carfocillin (30), carindacillin (29), cicacillin (22), clemizole penicillin (8), clometocillin (12), cloxacillin (13), dicloxacillin (16), epicillin (25), fenbicillin (13), fibracillin (30), flucloxacillin (17), fomidacillin (55), fumoxicillin (47), furbucillin (31), fuzlocillin (47), hetacillin (16), isopropicillin (12), lenampicillin (50), levopricillin (12), metampicillin (20), meticillin (12), mezlocillin (34), nafcillin (13), oxacillin (15), oxetacillin (33), penamicillin (16), pheneticillin (11), phenoxymethyl penicillin (6), phenyracillin (8), piperacillin (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), talamicillin (31), tameticillin (35), temocillin (46), ticarcillin (29), tifencillin (12), tobicillin (78)

(b)  | xantocillin (12)
(c) penimeicycline (16), penimocycline (22)

-cillide

S.6.1.0 libecillide (32)

-cillinam

S.6.1.0 bacmecillinam (38), mecillinam (32), pivmecillinam (32)

cillinam see -cillin

cilpine see -pine

cisteine see -steine

citabine nucleoside antiviral or antineoplastic agents, cytarabine or azarabine derivatives

USAN

L.4.0.0

(a) ancitabine (36), capecitabine (72), decitabine (61), elvucitabine (89), enocitabine (46), fiacitabine (59), flurocitabine (38), galocitabine (65), gemcitabine (62), ibacitabine (57), tezacitabine (84), torcitabine (87), troxacitabine (81), valtorcitabine (90), zalcitabine (66)

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

-clone hypnotic tranquillizers

A.2.2.0

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

(b) gestaclone (23), pimeclone (20)
blood coagulation factors

1.2.0.0

(-)eptacog blood coagulation VII:  eptacog alfa (activated) (72)
(-)octocog blood factor VIII:  morococog alfa (72), octocog alfa (73)
(-)nacog blood factor IX:  nonacog alfa (77)

related: drotrecog alfa (88), tifacogin (78), taneptacogin (90)

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), eniconazole (44), ((etaconazole (ISO)), fenticonazole (44), flunonazole (54), fosfluconazole (83), ((furconazole (ISO/TC 81 N 872 C₁₅H₁₄Cl₂F₃N₃O₂)), (hexaconazole (ISO C₁₄H₁₇Cl₂N₃O)), isoconazole (30), itaconazole (50), ketoconazole (43), lanoconazole (66), miconazole (22), neticonazole (63), omoconazole (45), orconazole (40), oxiconazole (42), parconazole (39), (penconazole, (ISO)), posaconazole (82), (propiconazole (ISO)), rauconazole (83), saperconazole (59), sertaconazole (56), suliconazole (38), (tebuconazole (ISO C₁₈H₁₂ClIN₃O)), terconazole (45) (originally triaconazole), tioconazole (40), (uniconazole (ISO C₁₅H₁₈ClN₃O)), valconazole (40), voriconazole (73), zicoconazole (50), zoficonazole (43)

(c)  bifonazole (44)
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), fluoroxyctide (12), flucortin (31), formocort (18), hydrocortamate (6), hydrocortisone (1), locicortolone dicibate (60), naflcort (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)

selective cyclo-oxygenase inhibitors

A.4.2.0

(a)  celecoxib (80), cimicobxib (89), deracoxib (80), etoricoxib (84), firocoxib (89), lumiracoxib (87), parecoxib (80), rofecoxib (80), tilmacoxib (84), valdecoxib (80)

diuretics, etacrynic acid derivatives

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

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

(c)  etacrynic acid (14), furacrinic acid (29), indacrinone (51), tienilic acid (25)
acrine (d)  acridine derivatives

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

(a) antineoplastics: amsacrine (44), nitracrine (35)
anthelmintics: floxacrine (34), mepacrine (4)
antiarheumatics: dimetacrine (19), monometacrine (19)
antiparkinsonian: botiacrine (38)
acetylcholinesterase inhibitors: ipidacrine (73), suronacrine (61), tacrine (8), velnacrine (61)

(c) acridorex (2l), acriflavinium chloride (l), acrisorcin (l3), aminoacridine (l), ethacridine (l), proflavine (l)

-cromil  antiallergics, cromoglicic acid derivatives

K.0.0.0 (USAN: antiallergics (cromoglicic acid type))

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

(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)

\[
\begin{array}{c}
\text{O} \\
\text{OH}_2\text{C} \\
\text{O} \\
\text{O} \\
\text{OH} \\
\text{O} \\
\text{NH}_2 \\
\text{OHH N(CH}_3\text{)_2HO CH}_3 \\
\end{array}
\]

(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)

**-dan cardiac stimulants, pimobendan derivatives**

H.1.0.0

![Chemical structure of adibendan](image)

(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)

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

S.5.2.0 (USAN: antimycobacterial diaminodiphenylsulfone derivatives)

![Chemical structure of acedapsone](image)

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

**-decakin see -kin**

**-dermin see –ermin**

**-dil vasodilators (18th Report, 1968)**

F.2.0.0

F.2.1/2.0 (USAN: -dil; dil-; or -dil-: vasodilators (undefined group))

F.2.0.0

(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), mefenidil (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)

dilmefone (33)

F.2.1.0

(a) coronary vasodilators: bepridil (30), bumepridil (44), cecipramidil (40), fendiline (24), fenetradil (30), floredil (28), hexadiline (13), ipramidil (51), mepramidil (27), metrifudil (23), nicorandil (44), pirozadil (33), pretiadil (27), razi-nodil (38), semotiadi (64), sinitrodil (74), terodiline (16), tixadil (18), trapidil (29)

dilazep (22), diltiazem (30)

dilol

carvedilol (50), dioxadilol (53), dramedilol (57), flavodilol (48), mindodilol (52), npradilol (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), isothipendyl (6), oxypendyl (13), prothipendyl (6)

-dyl

bisacodyl (13) (lax.), bunamiodyl (10), iofendylate (12), trihexyphenidyl (1) (antiparksonian)

-dilol see -dil

-dipine (x) calcium channel blockers, nifedipine derivatives

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

amlodipine (53), arandipine (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), furnidipine (67), iganidipine (70), isradipine (55), lacidipine (57), lemilidipine (69), lercanidipine (69) (previously masnidipine), levniuglidipine (67), manidipine (59), mesudipine (40), nicardipine (42), nifedipine (27), niguldipine (60), niludipine (38), nilvadipine (52), nimodipine (40), nisoldipine (42), nitrendipine (42), oltradipe (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

-distim see -stim

-dodekin see -kin

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

E.1.1.0

(a) carbidopa (37), ciladopa (52), dopamantine (31), droxidopa (57), etilevodopa (80),
fluorodopa ([18]F) (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)

-dox see -ox/-alox
H.3.0.0 (USAN: antihypertensives (hydrazine-phthalazines))

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

E.4.0.0

(a) alifedrine (49), butidrine (16), cafedrine (14), cinnamedrine (19), corbadrine (1), dioxethedrin (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)

E.4.0.0

(a) amidefrine mesilate (15), berefrine (68), ciclafrine (33), dimetofrine (27), dipivefrine (39), epinephrine (16), etilefrine (18), etilefrine pivalate (50), gepefrine (38), norepinephrine (45), norfenefrine (16), oxilofrine (62), phenylephrine (1), pivenfrine (42), recepinefrine (41)

USAN

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)

-dutant see -tant

-dyl see -dil

-ectin antiparasitics, ivermectin derivatives

S.3.0.0

(a) abamectin (53), dimadectin (73), doramectin (63), eprinomectin (73), fuladectin (71), ivermectin (44), latidectin (88), moxidectin (61), nemadectin (60), selamectin (81)

-elestat see -stat

-elvekin see -kin

-emcinal erythromycin derivatives lacking antibiotic activity, motilin agonists

J.0.0.0

(a) alemcinal (84), idremcinal (81), mitemcinal (86)

-entan endothelin receptor antagonists

F.2.0.0

(a) ambrisentan (85), atrasentan (83), bosentan (70), clazosentan (90), darusentan (82), edonentan (86), embosentan (80), fandosentan (87), feloprentan (85), nebentan (90), sitaxentan (83), tezosentan (81)

(-)eptacog see -cog
ergot alkaloid derivatives

F.4.0.0 (USAN: -erg-: ergot alkaloid derivatives)

C.7.0.0 acetergamine (18), amesergide (67), brazergoline (37), bromerguride (51), cabergoline (54), cianergoline (47), delergotrine (42), dihydroergotamine (16), disulergine (45), dosergoside (54), ergometrine (4), ergotamine (4), etisulergine (47), lergotrine (32), lysergide (8), mergocriptine (54), mesulergine (47), metergoline (18), metergotamine (29), methylergometrine (l), methysergide (11), nicergoline (26), pergolide (41), propisergide (35), proterguride (50), romergoline (66), sergolexol (60), terguride (50), tiomergine (42), voxergolide (61)

(b) ergocalciferol (13)

analgesics, pethidine derivatives (4th Report, 1964)

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

-eridine

(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), nexeridine (34) (somewhat related)

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

-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) ardenermin (88), plusonermin (73), sonermin (68), tasonermin (76)

-plerman platelet-derived growth factor
(a) becaplermin (74)

-sermin insulin-like growth factors
(a) mecasermin (66)

-termin transforming growth factor
avotermin (77), cetermin (74), dibotermin alfa (89), eptotermin alfa (89), liatermin (81)

estr estrogens

<table>
<thead>
<tr>
<th>Q.2.1.0</th>
<th>(USAN: estr-; or -estr-: estrogens)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>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), fosfostrol (15), fulvestrant (78), furostilbestrol (1), hexestrol (1), mestranol (12), methallenestril (6), methestrol (1), moxestrol (24), nilestriol (32), ocrestrate (17), polyestradiol phosphate (36), promestriene (31), quinestradiol (15), quinestrol (14)</td>
</tr>
<tr>
<td>(b)</td>
<td>alfatradiol (84) (topical), allylestrenol (10) (progest.), ethylestrenol (13) (anabol.), lynestrenol (13) (progest.)</td>
</tr>
<tr>
<td>-gestr-</td>
<td>edogestrate (22), levonorgestrel (30), megestrol (13), melengestol (13), norgestrel (17), norgestrienone (18), pentagestrone (14), quingestrate (13)</td>
</tr>
<tr>
<td>(c)</td>
<td>chlorotrianisene (6), clomifene (12), enclomifene (33), zucloclomifene (33) (antiestrogens)</td>
</tr>
</tbody>
</table>

-etanide - see -anide
-ethidine  see -eridine

-exakin  see -kin

-exine  mucolytic, bromhexine derivatives

K.0.0.0

\[
\begin{align*}
\text{adamexine (36), bromhexine (20), brovanexine (31), cistinexine (54), dembrexine (56),} \\
\text{neltenexine (62), oxabrexine (40)}
\end{align*}
\]

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

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

-fenamate  see -fenamic acid

-fenamic acid  anti-inflammatory, anthranilic acid derivatives

-fenamate  "fenamic acid" derivatives

USAN

A.4.2.0

\[
\begin{align*}
\text{clofenamic acid (13), enfenamic acid (45), flufenamic acid (13), meclofenamic acid (17),} \\
\text{mefenamic acid (13), tolfenamic acid (24)}
\end{align*}
\]

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

U.1.0.0

![Chemical Structure](image)

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

-fenine analgesics, glafenine derivatives (subgroup of fenamic acid group)

A.4.3.0

![Chemical Structure](image)

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

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

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

-fenantil narcotic analgesics, fentanyl derivatives

A.4.1.0

![Chemical Structure](image)

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

-fermin see -ermin

-fentrine inhibitors of phosphodiesterases

K.0.0.0

(a) benafentrine (44), pumafentrine (86), tolafentrine (70)
-fiban fibrinogen receptor antagonists (glycoprotein IIb/IIIa receptor antagonists)

1.2.0.0
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), fenofibrate (49), fenofibrate (35), lifibrate (30), nicofibrate (31), picaflibrate (35), ponfibrate (37), ronifibrate (55), salafibrate (41), serfibrate (34), simfibrate (22), sitofibrate (32), tiafibrate (33), timofibrate (40), tocifibrate (33), urefibrate (37), xantifibrate (31)

clofibrinic acid (20), clofibrate (13), aluminium clofibrate (31), calcium clofibrate (34), cinnarizine clofibrate (38), etofylline clofibrate (38), magnesium clofibrate (31)
clofibrider (28), plafibrider (39)

related: beclobrate (35), eniclobrate (39), gemfibrozil (34), halofenate (20), lifibrol (62), metibrider (53), terbufibrrol (35), tibrac acid (33), (fibrafylline (43) deleted)

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

(c) nafenopin (24), treloxinate (25)

-filermin see -ermin

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

K.0.0.0
J.0.0.0
quiaplon (72)
-flurane halogenated compounds used as general inhalation anaesthetics
A.1.1.0
(a) aliflurane (36), cryofluorane (6), desflurane (62), enflurane (25), isoflurane (28), methoxyflurane (11), norflurane (20), roflurane (12), sevoflurane (25), teflurane (12)
(b) apaflurane (73)
(c) halothane (6)

-formin (d) antihyperglycaemics, phenformin derivatives
M.5.0.0 (USAN: oral hypoglycemics (phenformin type))

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

-fos insecticides, anthelmintics, pesticides etc., phosphorous derivatives
(-vos)
S.3.1.0
Y.0.0.0
1. organophosphorous derivatives:

\[
\text{R'P-O-R''} \quad \text{X = O or S}
\]

(a) vet. insecticides:
quintiofos (25)
(b) toldimfos (23) (vet. phosphorous source)
(c) vet. insecticides and anthelmintics:
metrifonate (16)
anthelmintic: butonate (30)
2. phosphates:

(\text{a}) \text{ vet. insecticides:}

clofenvinfos \((23)\)

(\text{b}) \text{ anthelmintics:}

triclofos \((13)\) (hypnotic, sedative)

(\text{c}) \text{ anthelmintics:}

trifonofos \((21)\), haloxon \((16)\)

3. phosphorothioates:

(\text{a}) \text{ phosphorothioates:}

(b) \text{ vet. insecticides:}

(b) bromofos \((25)\), coumafos \((16)\), fenclofos \((23)\), temefos \((31)\)

(c) \text{ dimpylate} \((16)\), phoxim \((20)\) (vet. insecticide and anthelmintic), pyrimitate \((16)\)

4. phosphorodithioates:

(\text{a}) \text{ phosphorodithioates:}

(b) benoxafos \((22)\) (vet. pesticide)

(c) carbofenotion \((23)\) (vet. insecticide), dioxation \((16)\) (vet. insecticide), (malathion \((46)\) (deleted!))

5. phosphoramidates
INN – The use of stems

crufoamate (16), uredofos (37)

anthelmintic:

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), creatinolfosfate (20), dextrafosferine (68), ferpifosate sodium (69), fosmenic acid (49), fosopamine (69), fosquidone (64), furifosmin (70), monophosphothiamine (8), sodium picofosfate (37), sparfosic acid (46), technetium (99m-Tc), tetrofosmin (66), trifosmin (74)

-fosfamide alkylating agents of the cyclophosphamide group

cyclophosphamide (10), defosfamide (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-

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

-fovir

see vir

-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)
-fylline  

N-methylated xanthine derivatives

\[
\begin{array}{c}
\text{(a)} \\
\text{acefylline clofibrin (44), acefylline piperazine (14), albifylline (66), aminophylline (4),} \\
apaxifylline (71), arofylline (75), bamifylline (15), cipamfylline (71), denbufylline (55),} \\
dimabefylline (19), diniprofylline (18), dipropoxyline (1), doxofylline (47), enprofylline (44),} \\
etamipryline (6), etofylline (14), etofylline clofibrate (38), fibrafylline (43) (deleted),} \\
flufylline (48), fluprofylline (50), furafylline (48), guaifylline (16), isbufylline (62),} \\
istradefylline (89), laprafylline (60), lisofylline (72), lomifylline (37), mercurophylline (1),} \\
metescufylline (15), mexafylline (48), midaxifylline (79), napofylline (86), nestifylline (64),} \\
pentifylline (29), pentoxifylline (29), perbufylline (58), pimefylline (21), propentofylline (46),} \\
proxypylline (10), pyridofylline (14), spirofylline (58), stacofylline (73), tazifylline (52),} \\
theophylline ephedrine (14), torbafylline (56), triclofylline (19), verofylline (43),} \\
visafylline (24), choline theophyllinate (8), fenetylline (16)
\end{array}
\]

(c) cafedrine (14), dimenhydrinate (1), dimethazan (8), meralluride (1), mercumatiolin sodium (4), piprinhydri (8), promethazine teoclale (10), protheobromine (14), theodrenaline (16),

radicals and groups: teprosilate (29)

gab  

gabaminetic agents

E.0.0.0

(a) fengabine (53), gabapentin (46), gaboxadol (48) (used as analgesic), pivagabine (66),
pregabalin (78), pro gabide (43) (used as antiepileptic), retigabine (76), ti agabine (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),
gadopenamid (60), gadopenetic acid (50), gadoteric acid (59), gadoversetamide (71), gadoxetic acid (71)
INN – The use of stems

-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)

-gestr-  
see estr

-giline  
MAO-inhibitors type B

C.3.1.0

(a)  
clorgiline (23), mofegiline (69), pargiline (13), rasagiline (70), selegiline (39)
-gillin antibiotics produced by *Aspergillus strains* (16th Report, 1966)

S.6.0.0

(a) fumagillin (1), mitogillin (17)

(c) mitosper (24), nifungin (24)

---

**gli (x) antihyperglycaemics**

( previously gly-)

M.5.2./3.0 (BAN: sulphonamide hypoglycaemics)

(USAN: gli-: oral hypoglycemics (glipizide type))

(a) gliamilide (33), glibenclamide (18), glibornuride (22), glibutimine (31), glicaramide (28), glicetanil (37), gliclazide (25), (deleted: glidanile (23)), glicondamid (44), glidazamid (24), glifumide (33), gliempiride (53), glipalamide (62), (glipentide (27) replaced by glisentide (58)), glipizide (27), glicidonide (28), glisamuride (45), glisentide (58) (previously glipentide), glisindamid (43), glisolamid (43), glisoxepide (24), glybuthiazol (8), glybuolide (15), glyclopyramid (17), glyclamid (12), glyhexamid (15), glymidine sodium (15), glyoctamid (14), glyparamid (USAN only), glypinamide (13), glyprothiazol (8), glysofuolide (12)

(b) glycerol (4), glycobiarsol (1), glycopyrinn bromide (12)

(c) 1. acetohexamide (12), butadiazamide (10), chlorpropamide (8), heptolamide (12), metahexamid (10), thiohexamid (12), tolazamid (12), tolbutamid (6), tolpentamid (12), tolypramid (13)

2. other than sulfonamide derivatives: camiglibose (67), deriglidolide (66), emiglate (55), ingliforib (85), isaglolid (61), linoqridride (48), meglitinide (34), midaglizole (57), miglitol (55), mitiglinide (78), naglivan (65), nateglinide (77), pirogliride (40), repaglinide (65), tibeglisene (64), vildagliptin (90), voglibose (65)

3. peptide: seglitide (57)

---

-glizar peroxisome proliferator activating receptor (PPAR) agonists

M.5.2.0

(a) farglitazar (84), muroglitazar (90), oxeglitazar (88), ragaglitazar (85), reglitazar (87), tesaglitazar (85)
-glitazone  peroxisome proliferator activating receptor (PPAR) agonists, thiazolidinedione derivatives
M.5.2.0

(a)  ciglitazone (50), balaglitazone (84), darglitazone (69), englitazone (64), netoglitazone (85), pioglitazone (60), rivoglitazone (87), rosiglitazone (78), troglitazone (69)

<table>
<thead>
<tr>
<th>-glitazar</th>
<th>see gli</th>
</tr>
</thead>
<tbody>
<tr>
<td>-glitazone</td>
<td>see gli</td>
</tr>
</tbody>
</table>

-glumide  cholecystokinin antagonists, antiulcer, anxiolytic agent

(a)  proglumide (16), lorglumide (56), tomoglutamide (56), loxiglumide (57), dexloxiglumide (65), spiroglumide (70), amiglumide (85), itriglumide (82)

<table>
<thead>
<tr>
<th>-golide</th>
<th>dopamine receptor agonists, ergoline derivatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.1.1.0</td>
<td><img src="image" alt="E.1.1.0" /></td>
</tr>
</tbody>
</table>

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

(c)  rotigotine (83)

<table>
<thead>
<tr>
<th>-gosivir</th>
<th>see vir</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>-gramostim</th>
<th>see -stim</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>-grastim</th>
<th>see -stim</th>
</tr>
</thead>
</table>
-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-  antihypertensives, guanidine derivatives

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

H₂N  NH₂
NH

(a)  guanabenz (26), guanacline (16), guanadrel (20), guanazodine (27),
   guancidine (18), guancloline (36), guanethidine (11), guanfacine (35),
   guanisoquine (15), guanoclor (15),
   guanoctine (16), guanoxan (15), guanoxabenz (31),
   guanoxyfen (16), guabenzan (32)
   (c)  guabenzan (32)

-ibine  see -ribine

-icam  anti-inflammatory, isoxicam derivatives

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), tescam (25)
-ifene  antiestrogens, clomifene and tamoxifen derivatives

(Q.2.1.0  
L.6.0.0)

(a) acolbifene (86), arzoxifene (80), bazedoxifene (86), clomifene (12), droloxifene (53), enclomifene (33), fispemifene (89), 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)

-idgetide  see -tide

-ilide  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) bromacrylside (13), ftaxilide (32), gliamilide (33)

imex  immunostimulants

S.7.0.0

(a) azimexon (40), forfenimex (55), imexon (37), roquinimex (53), ubenimex (56)
-imibe | antihyperlipidaemics, acyl CoA:cholesterol acyltransferase (ACAT) inhibitors  
M.3.0.0  
(a) avasimibe (80), efclucimibe (84), eldacimibe (76), ezetimibe (83), lecimibide (70), octimibate (52), pactamibe (89)

-imos | immunomodulators, both stimulant/suppressive and stimulant  
S.7.0.0  
(a) atiprimod (75), cridanimod (83), defoslimod (79), doramapimod (88), esonarimod (79), glaspimod (74), iguratimod (86), imiquimod (66), ivarimod (60), laquinimod (85), pidotimod (63), resiquimod (82), semapimod (89), 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

-inostat | see stat  

io- (x) | iodine-containing contrast media  
U.1.1.0  
(a) iobenzamic acid (14), iobenzilid (68), iobutoic acid (20), iocarmic acid (22), iocetamic acid (18), iocanlicid acid (77), iodamide (15), iodacemol (51), iodextril (1), iodixanol (53), iodophthalein sodium (1), iodoxamic acid (26), iofendylate (12), iofratol (67), ioglicic acid (33), ioglucoline (41), ioglunide (40), ioglycamic acid (15), iohexol (43), iolixonic acid (26), iolixonic acid (26), iomeglamicic acid (26), iomeprol (54), iomorinaic acid (37), iopamidol (40), iopanoic acid (1), iopentol (52), iophenoic acid (4), ioprocemic acid (39), iopromide (44), iopronic acid (28), iopydol (14), iopydone (14), iosaarcol (54), iosefamic acid (14), iseric acid (33), isischenol (88), isomide (50), isoulamide (39), isumetic acid (33), istotalamic acid (13), iotan (43), iotetic acid (37), iotroxic acid (28), iotriside (60), iotrizoic acid (22), iotrolan (51), iotroxic acid (32), ioversol (56), ioxabrolic
acid (53), ioxaglic acid (37), ioxilan (59), ioxitalamic acid (22), ioxotrizoic acid (33), iozomic acid (24)

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

iodine-containing compounds other than contrast media

iodine-containing radiopharmaceuticals

(a) ethiodized oil (I\(^{131}\)I) (24), iobenguane (I\(^{131}\)I) (57), iodinated (I\(^{125}\)I) human serum albumin (24), iodinated (I\(^{125}\)I) human serum albumin (24), iodocetylic acid (I\(^{123}\)I) (47), iodocholesterol (I\(^{131}\)I) (39), iofetamine (I\(^{123}\)I) (51), iopride (I\(^{123}\)I) (73), iodamab (I\(^{125}\)I) (66), iometin (I\(^{125}\)I), iometin (I\(^{131}\)I) (24), sodium iodide (I\(^{125}\)I) (24), sodium iodide (I\(^{131}\)I) (24), sodium iodohippurate (I\(^{131}\)I) (24), sodium iotalamate (I\(^{125}\)I) (24), sodium iotalamate (I\(^{131}\)I) (24)

(c) fibrinogen (I\(^{125}\)I), macrosalb (I\(^{131}\)I) (33), rose bengal (I\(^{131}\)I) sodium (24), tolpovidone (I\(^{131}\)I) (24)

hirudin derivatives

I.2.1.0

bivalirudin (72), desirudin (70), lepirudin (73), pegmusirudin (77)

antiarrhythmics, disopyramide derivatives

H.2.0.0

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

(c) disopyramide (12)
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), pantemethonium 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), dacouronium bromide (21), dimethyltubocurarinium chloride (1), doxacurium chloride (58), fazadinium bromide (32), hexafluoronium bromide (12), laudexium metilsulfate (4), mivacurium chloride (58), pancuronium bromide (19), pentacynium chloride (6), phenactropinium chloride (8), pipercuronium bromide (69), piprocurarium iodide (11), rapacuronium bromide (78), rocuronium bromide (66), stercuronium iodide (21), thiazinamium metilsulfate (37), trimethidinium methosulfate (8), truxicurium iodide (22), truxipicurium iodide (22), vecuronium bromide (46)

(c) tubocurarine chloride (1)

E.1.0.0  **cholinergic agents**

(a) aclatonium napadisilate (44), ambenonium chloride (6), benzpyrinium bromide (1), carpronium chloride (23), demecarium bromide (10), furthreonium iodide (1)

(c) acetylcholine chloride (4), charbacol (4), choline alfoscerate (29), choline chloride (4), choline gluconate (1), choline salicylate (15) (analgesic), choline theophyllinate (8) (smooth muscle relaxant), methacholine chloride (1), nitricholine perchlorate (6) (antihypertensive), distigmine bromide (16), ecotiohiate iodide (6), neostigmine bromide (4), obidoxime chloride (16), pralidoxime iodide (10), pyridostigmine bromide (6)

E.2.0.0  **anticholinergic agents**

(a) benzonium bromide (13), benzopyruronium bromide (12), beperidium (57), bevonium metilsulfate (19), butropium bromide (30), ciclonium bromide (19), ciclotropium bromide (50), cimetropium bromide (51), clidinium bromide (6), cyclypyruronium bromide (12), dimetipirium bromide (37), diponium bromide (15), dotofenium bromide (24), droclidinium bromide (33), eemepronium bromide (18), etipirium iodide (22), fenclexonium
methylsulfate (20), fenpiverinium bromide (26), flutropium bromide (50), glycopyrronium bromide (12), heteronium bromide (14), hexasmonium chloride (15), hexocyclium methylsulfate (6), hexopyrrotrium bromide (13), ipratropium bromide (31), methanthelinium bromide (1), methylbenactyzium bromide (34), metocinium iodide (26), nolinium bromide (37), otilonium bromide (38), oxapinium iodide (26), oxitefonium bromide (18), oxitropium bromide (36), oxyphenonium bromide (1), oxyphytropium bromide (13), oxysonium iodide (15), pentapiperium methylsulfate (26), prifinium bromide (20), ritropirronium bromide (33), sintropium bromide (47), sultronium (18), tematropium methylsulfate (64), tiemonium iodide (13), tiotropium bromide (67), tiquizium bromide (47), trantelinium bromide (24), trospium chloride (25), xenytopium bromide (15)

(c) atropine methonitrate (4), buzepide metiodide (14), chlorisondamine chloride (6), diphemani methylsulfate (4), homatropine methylbromide (1), isopropramide iodide (8), mepenzolate bromide (10), octatropine methylbromide (10), parapenzolate bromide (14), pipenzolate bromide (6), polpine methylsulfate (11), propantheline bromide (1), propyromazine bromide (12), tridihexethyl iodide (6), tropenziline bromide (11), thihezinol methylbromide (1), tricyclamol chloride (4)

S.2.3.0 surfactants used as antibacterials and antiseptics

(a) acriflavinium chloride (1), amantarium bromide (39), benzalkonium chloride (1), benzethonium chloride (1), benzododecinium chloride (1), benzoxonium chloride (36), cefalonium (16), cefmepidium chloride (57), cetalkonium chloride (15), cethexonium chloride (36), cetrimonium bromide (1), cetylpyridinium chloride (1), chlorphenoctium amsonate (8), detitonium bromide (15), denatonium benzoate (15), dequalinium chloride (8), disiquonium chloride (55), dodeclonium bromide (16), dofamium chloride (21), fludazonium chloride (33), furazolium chloride (15), halopenium chloride (10), hedaquinium chloride (8), lapirium chloride (27), lauralkonium chloride (62), laurcetium bromide (70), laurofum chloride (12), mecetronium etilsulfate (51), metalkonium chloride (60), methylbenzethonium chloride (1), methylrosanilinium chloride (1), methylthioninium chloride (1), miripirium chloride (63), miristalkonium chloride (41), octafonium chloride (16), opratonium iodide (76), penoctonium bromide (20), pirralkonium bromide (19), polidronium chloride (67), polixetonium chloride (70), prolodium iodide (14), sanguinarium chloride (68), sepanzium chloride (34), tetradonium bromide (18), tizezonium iodide (32), toidonium chloride (36), tolodium chloride (36), toloconium methylsulfate (17), tonzonium bromide (14), triclobisonium chloride (10)

(c) domiphen bromide (23)

other agents

amezinium methylsulfate (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), datelliptium chloride (57), detajmium bitartrate (34), dibroppidium chloride (51), ditercalinium chloride (49), edrophonium chloride (4), eliptinium acetate (43), emilium tosilate (37), famiraprinium chloride (58), fenidiolum chloride (23), gallium (67Ga) citrate (33), homidium bromide (36), isometamidium chloride (18), mefenidramium
metilsulfate (52), meldonium (86), mequitamium iodide (61), nolpantatum besilate (75), pinaverium bromide (32), pirdonium bromide (28), prajmalium bitartrate (23), pranolium chloride (32), pretamazium iodide (29), propagermanium (65), propidium chloride (22), pyritidium bromide (16), pyrvinium chloride (6), quindonium bromide (14), quinuclium bromide (40), repagermanium (63), rimazolium metilsulfate (26), roxolinium metilsulfate (33), samarium (Sm) lexidronam (74), sevitropium mesilate (56), spirogermanium (43), stilbazium iodide (13), theminium closilate (12), tipetropium bromide (42), tolonium chloride (4), trazium esilate (54), trethini tosilate (14), troxonium tosilate (13), troxypyrrolium tosilate (13)

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

- curium (d) curare-like substances

-izine diphenylmethyl piperazine derivatives

-ine
(-yzine)

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

homochlorcyclizine (10) (serotonin antagonist)

tranquillizers: etodroxizine (18), hydroxyzine (6)

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

-rizine antihistaminics/cerebral (or peripheral) vasodilators

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

chemically related: pipoxizine (32) (respiratory insufficiency)

(b) phenothiazine derivatives: cloracylzine (12) (vasodilator), flucacizine (25) (sedative), moracizine (25) (antiarrhythmic), tiracizine (62) (antiarrhythmic)

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

phenylpiperazine: dimetholizine (10) (antiallergic), dropropizine (18)/levodropropizine (64) (antitussive)
antibiotic "cef": cefatrizine (34)

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

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

medibazine (16)

antibiotics, kanamycin and bekanamycin derivatives (obtained from *Streptomyces kanamyceticus*)

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

- kacin

(a) amikacin (30), arbekacin (56), butikacin (41), 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)
<table>
<thead>
<tr>
<th>Stems</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>-kalim</td>
<td>potassium channel activators, antihypertensive</td>
</tr>
<tr>
<td>H.3.0.0</td>
<td>aprikalim (64), bimakalim (64), cromakalim (58)/levcromakalim (66), emakalim (66), mazokalim (75), rilmakalim (65), sarakalim (81)</td>
</tr>
<tr>
<td>-kef-</td>
<td>enkephalin agonists</td>
</tr>
<tr>
<td>USAN</td>
<td>casokefamide (65), frakefamide (81), metkefamide (44)</td>
</tr>
<tr>
<td>-kin</td>
<td>interleukin type substances</td>
</tr>
<tr>
<td>S.7.0.0</td>
<td></td>
</tr>
<tr>
<td>IL-1: -nakin</td>
<td>interleukin-1 analogues and derivatives:</td>
</tr>
<tr>
<td>IL-1: -onakin</td>
<td>interleukin-1 analogues and derivatives: pifonakin (77)</td>
</tr>
<tr>
<td>IL-1: -benakin</td>
<td>interleukin-1 analogues and derivatives: mobenakin (72)</td>
</tr>
<tr>
<td>IL-2: -leukin</td>
<td>interleukin-2 analogues and derivatives: adargileukin alfa (89), aldesleukin (63), celmoleukin (65), denileukin diftitox (78), teceleukin (54)</td>
</tr>
<tr>
<td>IL-2: -plestim</td>
<td>interleukin-3 analogues and derivatives: muplestim (72)</td>
</tr>
<tr>
<td>IL-4: -trakin</td>
<td>interleukin-4 analogues and derivatives: binetrauki (82)</td>
</tr>
<tr>
<td>IL-6: -exakin</td>
<td>interleukin-6 analogues and derivatives: atexakin alfa (72)</td>
</tr>
<tr>
<td>IL-8: -octakin</td>
<td>interleukin-8 analogues and derivatives: emoctakin (74)</td>
</tr>
<tr>
<td>IL-10: -decakin</td>
<td>interleukin-10 analogues and derivatives: ilodecakin (81)</td>
</tr>
<tr>
<td>IL-11: -elvekin</td>
<td>interleukin-11 analogues and derivatives: oprelvekin (76)</td>
</tr>
<tr>
<td>IL-11: -kinra</td>
<td>interleukin receptor antagonists: pitrakinra (84)</td>
</tr>
<tr>
<td>IL-12: -dodekin</td>
<td>interleukin-12 analogues and derivatives: edodekin alfa (79)</td>
</tr>
<tr>
<td>IL-13: -nakinra</td>
<td>interleukin-1 receptor antagonists: anakinra (72)</td>
</tr>
<tr>
<td>-kinra</td>
<td>see -kin</td>
</tr>
</tbody>
</table>
-kiren  renin inhibitors
H.3.0.0
(a)  aliskiren (83), ciprokiren (69), ditekiren (62), enalkiren (61), remikiren (66), terlakiren (66), zankiren (70)

-leukin  see -kin

-listat  see -stat

-lubant  leukotriene B₄ receptor antagonist
(a)  amelubant (85), moxilubant (78), ticolubant (76)

-lukast  leukotriene receptor antagonists, see -ast

-mab  monoclonal antibodies (see also Annex)
S.7.0.0

-amab  rat origin
-emab  hamster origin
-imab  primate origin
-omab  mouse origin:
  ba(c)  bacterial: edobacomab (69)
  co(l)  colon: edrecolomab (74), nacolomab tafenatox (71)
  go(v)  ovary (tumours): igovomab (74), oregovomab (86)
  li(m)  lymphocyte: afelimomab (72), dorlimomab aritox (66), elsilimomab (89), 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: biciromab (66), imciromab (66)
The use of stem(s) inflammatory lesions: lemalesomab (84), sulesomab (75), technetium $^{(99m)}$Tc 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), epitumomab cituxetan (89), ibritumomab tiuxetan (81), minretumomab (80), mitumomab (82), satumomab (67), taplitumomab paptox (84), technetium $^{(99m)}$Tc nofetumomab merpentan (76), technetium $^{(99m)}$Tc pintumomab (75), tositumomab (80)

-human origin:

ba(c) bacterial: nebacumab (66)

li(m) immunomodulator: adalimumab (82), adecatumumab (90), atorolimumab (80), belimub (89), bertilimumab (88), lerdelimumab (83), metelimumab (86), morolimumab (79), pritumumab (89), zanolimumab (90), ziralimumab (84)

tu(m) tumour: votumumab (70)

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

-chimeric origin

ci(r) cardiovascular: abciximab (70)

li(m) immunomodulator: basiliximab (76), clenoliximab (77), galiximab (89), infliximab (77), keliximab (76), lumiliximab (90), priliximab (72), teneliximab (87), vapaliximab (87)

me(l) melanoma: ecromeximab (87)

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

humanized origin

anib angiogenesis inhibitor: ranibizumab (90)

ci(r) cardiovascular: bevacizumab (83)

li(m) lymphocyte: apolizumab (87), aselizumab (88), certolizumab pegol (90), daclizumab (78) (previously: dacliximab), eculizumab (87), efalizumab (85), erlizumab (84), fontolizumab (87), mepolizuma (81), natalizumab (79), omalizumab (84), palivizumab (79), pascolizumab (87), pexelizumab (85), muromonab CD3 (59)
reslizumab (85), rovelizumab (81), ruplizumab (83), sipilizumab (87),
talizumab (89), tocilizumab (90), toralizumab (87), visilizumab (84)

toxa toxin as target: urtoxazumab (90)

tu(m) tumor: (miscellaneous): alemtuzumab (83), bivatuzumab (83), cantuzumab
mertansine (89), cedelizumab (77), cpratuzumab (82), gemtuzumab (83),
labetuzumab (85), lintuzumab (76), matuzumab (88), pertuzumeb (89),
sibrotuzumab (81), trastuzumab (78)

vi(r) viral: felvizumab (77)

- mantadine adamanate derivatives
- mantine
- mantone

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

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

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)

-mastat see -stat

-meline cholinergic agents (muscarine receptor agonists/partial antagonists used in the
treatment of Alzheimer’s disease)

E.1.0.0

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

1 mercury-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)

1 mer- 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 (197 Hg) (24), meralluride (1), mercaptoperm (1), mercudermide (1), mercumatin sodium (4), mercurophylbine (1), merisoprol (197 Hg) (24) (diagnostic), mersalyl (4)

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

(antituss.), suxemered (25) (antituss.)

(c)  
hydrargaphen (10)

-mer  
polymers

(a)  
amilomer (33), cadexomer (60), carbetimer (50), carbomer (21), crilanomer (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)
-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))

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

(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)

-met(h)asone see pred

-mycin 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), micrionicin (45), mirosmicin (58), netilmicin (36), ozogamicin (83), pentsomicin (41), repromicin (37), rosaramicin (41) (prev. rosamicin), semduramicin (60), sisomicin (25)

-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)
-monam  monobactam antibiotics

S.6.0.0

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

(c)  aztreonam (48)

-morelin  see -relin

-mostim  see -stim

-motine  antivirals, quinoline derivatives (9th Report 1970)

S.5.3.0  (USAN: antiviral quinoline derivatives)

NN

famotine (23), memotine (22)

-moxin (d)  monoamine oxidase inhibitors, hydrazine derivatives*

C.3.1.0

(a)  benmoxin (20), cimemoxin (17), domoxin (14), octamoxin (15)
*not part of definition

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

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

L.2.0.0  (USAN: antineoplastic agents ([β-chlorethyl]amine derivatives))
INN – The use of stems

(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), melfalan (8), mitolomine (18), mitotenamine (17), perfosfamide (66), sarcolysin (17), sufosfamide (36), trichlormethine (11), trofosfamide (23)

BAN, USAN

- 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), bekamycin (24), berylthromycin (26), bicozamycin (38), biniramycin (23), blensaomycin (14), capromycin (12), carbomycin (1), cethromycin (87), clarithromycin (59), clindamycin (21), coumamycin (15), daptomycin (58), dihydrostreptomycin (1), diproleandomycin (33), dirithromycin (53), efrotomyacin (53), endomycin (6), enramycina (23), enviromycin (31), erythromycin (4), estomycin (14 - deleted in List 28), flurithromycin (51), fosfomycin (25), fosmidomycin (46), ganefronycin (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), neuromycin (15), oleandomycin (6), paldimycin (55), paromomycin (10), paulomycin (47), pirlidomycin (47), primycin (38), pristinamycin (12), ranimycin (20), reolomycin (15), ribostamycin (27), rifamycin (13), rokitamycin (53), roxithromycin (54), salinomycin (37), sedecamycin (55), spectinomycin (13), spiramycin (6), stallimycin (30), steffimycin (20), streptomycin (1), telithromycin (80), terdecamycin (65), tobramycin (28), troleadomycin (24), trospectomycin (53), tulathromycin (87) (vet.), vancomycin (6), viomycin (4), virginamycin (18)

antibiotics, antineoplastics:
ambomycin (13), antramyacin (17), azotomycin (13), bleomycin (23), cactinomycin (15), dactinomycin (18), duazomycin (13), lucimycin (13), mitomycin (26), nogalamycin (16), olivomycin (18), pelliomycin (15), peplomycin (44), plicamycin (50) (previously mithramycin (16)), porfiromycin (15), puromycin (15), rufocromomycin (12), sparsomycin (13), taliomycin (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), cloramfenicol 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), candidicidin (17), filipin (20), kalafungin (20), nystatin (6), viridofulvin (16)

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

see also -rubcin

nab cannabinol derivatives

(USAN: -nab; or -nab-: cannabinol derivatives)

(a) cannabinol (23), dronabinol (51), menabitan (49), nabazenil (49), nabilone (49), nabitan (42), nabocotate (45), nonabine (47), pirnabin (41), rimonabant (83), tinabinol (49)

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

-nakin see -kin

-nakinra see -kin

nal- narcotic antagonists/agonists related to normorphine

A.4.1.0 B.2.0.0

(USAN: arcotic agonists or antagonists related to normorphine)

\[
\begin{align*}
&\text{nalbuphine (21), nalfurafine (87), nalmefene (49) (originally nalm etrene (47)),} \\
&\text{nalmexone (19), nalorephine (1), naloxone (13), naltrexone (29)}
\end{align*}
\]
(b) nalidixic acid (13)

-naritide  see -tide

-navir  see vir

-nermin  see -ermin

-nercept  tumour necrosis factor antagonist

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

-nertant  see -tant

-netant  see -tant

-nicate  see nico-

-nicline  nicotinic acetylcholine receptor agonists

E.1.1.2

(a) altinicline (82), tebanicline (86), varenicline (89)

nic- or nic-
or ni-
nicotinic acid or nicotinoyl alcohol derivatives

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

inositol nicotinate (16), xantinol nicotinate (16)

\[
\text{nico} : \text{nicafenine (40), nicainoprol (46), nicametate (15), nicardipine (42), nicanartine (72), nicergoline (26), niceritrol (23), niceverine (15), nictindole (28), nizofenone (44)
\]
ni-: nalamide (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), pantenicate (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)

-nidazole (x) antiprotozoals and radiosensitizers, metronidazole derivatives
S.3.3.0 (USAN: antiprotozoal substances (metronidazole type))
Y.0.0.0

(a) abunidazole (52), azanidazole (38), bamnidazole (37), benznidazole (31), carnidazole (32), doranidazole (90), etanidazole (57), fexinidazole (37), flunidazole (21), ipronidazole (21), metronidazole (11), misonidazole (38), moxnidazole (33), ornidazole (28), panidazole (24), pimonidazole (57), pirinidazole (32), propenidazole (45), ronidazole (18), satranidazole (48), secnidazole (30), sulnidazole (33), ternidazole (34), tinidazole (21), tivanidazole (48)

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

-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), nifurtoinol (36), nifurvidine (17), nifurzide (37)

(c) furalazine (13), furaltadone (17), furazolidone (13), furazolium chloride (15), furmethoxadone (8), levofuraltadone (17), nidroxyzone (6), nihydrazone (10), nitrofural (1), nitrofurantoin (11), thiofuradene (11)

-nil see -azenil, also for -carnil, -quinil

NO₂ - derivatives

-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), nitrozinil (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), nimorafozole (22), niridazole (17)

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

-USAN

-a-derivatives

-nixin anti-inflammatory, anilinonicotinic acid derivatives

A.4.2.0

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

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

(-)nonacog see -cog

-octakin see -akin
INN – The use of stems

(-)octocog see -cog

-ol (d) for alcohols and phenols (deleted from General Principles in 14th Report)

-olol (x) \(\beta\)-adrenoreceptor antagonists

E.5.2.0 (BAN: beta-adrenoreceptor antagonists)

\[
\text{aromat. ring } -\text{O-CH}_2\text{-CHOH-CH}_2\text{-NH-R}
\]

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

(USAN: beta-blockers)

(a) acebutolol (28), adaprolol (63), adimolol (50), afurolol (40), alprenolol (19), ancarolol (47), aranolol (56), artoinolol (48), atenolol (33), befunolol (39), betaolol (40), bevantolol (36), bisoprolol (48), bometolol (42), bobindolol (42), bornaprolol (46), bucindolol (43), bucumolol (35), bufetolol (30), bunitrolol (28), bunolol (22), bupranolol (27), butocrolol (38), butofilolol (40), carazolol (36), carindolol (42), carteolol (35), celiprolol (35), celemolol (47), cicloprolol (48), cinamolol (44), cloramolol (41), crinolol (41) (replaced by pacrinolol (44)), dexpropranolol (21), diacetolol (41), drazinolol (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 (56), nipradolol (49)), oxprenolol (20), pacrinolol (44), pafenolol (46), pamatolol (36), pajrolol (36), penebutolol (25), penirolol (36), pindolol (23), pirepolol (48), practolol (23), primidolol (42), prucinolol (25), propranolol (15), ridazolol (51), ronactolol (57), soquinolol (43), spirendolol (46), talinolol (28), tazolol (31), teoprolol (43), tertatolol (48), tienoxolol (56), timolol (29), tiprenolol (23), tolamolol (29), toliprolol (28), trigevelol (56), xibenolol (48), xipranolol (22)

(b) Q.2.3.0: stanozolol (18) (anabolic steroid)
-alol aromatic ring -CH-CH$_2$-NH-R related to -olols

\[
\begin{array}{c}
\text{OH} \\
\text{Ar} \\
N-R
\end{array}
\]

(USAN: combined alpha and beta blockers)

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

(c) butidrine (16)

-olone see pred

-onakin see -kin

-one (d) ketones

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

-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), dextubesonide (80), drocinonide (29), fluclorolone acetonide (22), fluocinolone acetonide (11), flumoxonide (38), fluocinonide (25), halcinonide (29), itrocinonide (62), nicocortonide (40), procinonide (38), rofleponide (72), tralonia (27), triamcinolone benetonide (36), triamcinolone furetonide (36), triamcinolone hexacetonide (15), triclonide (30)

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

-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), piritenidine (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), 
cloflorex (16), clominorex (14), difemetorex (41), etolorex (20), fenisorex (29), fenproporex 
(17), flucetorex (30), fludorex (19), fluminorex (14), formetorex (14), furfenorex (16), 
indanorex (30), mfenorex (19), morforex (26), oxifentorex (20), pentorex (16), picilorex 
(40), tiflorex (40)

(c) amfebutamone (31), amfecloral (12), amfepramone (13), amfetamine (55), amfetaminil 
(40), benzfetamine (55), brolamfetamine (55), chlorphentermine (11), clortermine (22), 
dexamfetamine (55), dimetamfetamine (38), etilamfetamine (40), fenbutrazate (12), 
fenfluramine (14), hexapradol (12), levamfetamine (12), mephenetermine (6), ortetamine 
(13), phendimetrazine (11), phenmetrazine (6), phentermine (11)
orphan narcotics/agonists, morphinan derivates

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

\[
\begin{align*}
\text{A.4.1.0: } & \text{butorphanol (31), dextromethorphan (1), dextrorphan (1), dimemorfan (30),} \\
& \text{ketorfanol (49), levomethorphan (1), levophenacylmorphan (9), levorphanol (4),} \\
& \text{norlevorphanol (9), oxilorphan (31), phenomorphan (5), proxorphan (43), racemethorphan} \\
& \text{(1), racemorphan (1), xorphanol (48)}
\end{align*}
\]

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), methylidihydro-morphine (5), nalorphine (1), nicomorphine (7),
normorphine (7)

-orphinol: hydromorphinol (11)

-orphone: conorfone (46), hydromorphine (1), oxymorphone (5), pentamorphone (60),

semorphine (67)

(b) emorfazone (44), morforex (26), morpheridine (6), orphenadrine (8)

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

-alox -dox antibacterials, quinazoline dioxide derivatives:

\[
\begin{align*}
\text{carbadox (19), ciadox (44), cinoquidox (40), drazidox (24), mequidox (19), olaquindox} \\
\text{(31), temodox (27)}
\end{align*}
\]
INN – The use of stems

-pirox antimycotic pyridone derivatives:

![Chemical structure of a pirox derivative]

ciclopirox (26), metipirox (26), rilopirox (56)

-xanox anti-allergics, tixanox group:

![Chemical structure of a xanox derivative]

(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))

![Chemical structure of an oxacin derivative]

(a) alatrofloxacin (75), amifloxacin (51), balofloxacin (71), binfloxacinc (60), cadrofloxacin (81), cetefloxacinc (68), cinoxacin (32), ciprofloxacinc (50), clinafloxacin (67), danofloxacin (61), difloxacin (55), droxacin (36), ecenofloxacin (78), enoxacin (49), enrofloxacinc (56), esafloxacin (60), fandofloxacin (78), finafloxacinc (85), fleroxacin (56), garenofloxacin (87), gatiflotaxcin (74), gemifloracin (81), grepafloxacinc (68), ibafloxacinc (60), irloxacin (53), levofloxacin (64), lomefloxacin (58), marbofloxacinc (65), merafloxacinc (69), miloxacin (40), moxifloxacinc (78), nadifloxacinc (64), norfloxacinc (46), oflloxacin (49), olamufloxacinc (79), orbifloxacinc (68), pazufloxacinc (71), pefloxacin (45), pradofloxacinc (84), premafloxacin (72), prulifloxacinc (72), rosoxacin (36), rufloxacinc (57), sarafloxacinc (62), sitafloxacinc (75), sparfloxacinc (63), temafloxacinc (58), tioxacin (34), tosufloxacinc (60), trovafloxacinc (73), vebufloxacinc (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) (\(\alpha_2\)), imiloxan (52) (\(\alpha_2\)) (antidepressant), piperoxan (1) (sympatholytic), proroxan (39)

anti hypertensives:
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)

-oxanide see -anide

-oxef see cef-

-oxepin see -pine

-oxetine antidepressants, fluoxetine derivatives

C.3.0.0

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

-oxifene  see -ifene

-oxopine  see -pine

-pafant  platelet-activating factor antagonists  
I.2.1.0

(a)  apafant (60), bepafant (60), dacopafant (63), foropafant (75), israpafant (76), lexipafant (70), minopafant (80), modipafant (65), nupafant (70), rocepafant (71), setipafant (72), tulopafant (64)

-pamide  diuretics, sulfamoylbenzoic acid derivatives  
(could be sulfamoylbenzamide) (l9th Report, l970)  
N.1.2.0  

(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), clorexlone (15), furosemide (14), sulclamide (15), tiamizide (16)

-pamil  coronary vasodilators, verapamil derivatives  
F.2.1.0  

(a)  (USAN: coronary vasodilators (verapamil type))
(a) anipamil (49), dagapamil (52), devapamil (53), dexverapamil (65), emopamil (52), falipamil (48), gallopamil (38), lemovapamil (62), nexoapamil (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), bemipar in sodium (75), certoparin sodium (70), dalteparin sodium (64), deligoparin sodium (89), enoxaparin sodium (52), heparin sodium (54), livaraparin calcium (85), minolteparin sodium (73), nadroparin calcium (65), parnaparin sodium (65), reviparin sodium (65), tinzaparin sodium (65)

-parinu synthetic heparinoids

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

-pendyl see -dil

-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)

perfl(u)- perfluorinated compounds used as blood substitutes and/or diagnostic agents
(a) perflexane (82), perflumine (45), perfluobroc (87), perflubron (66), perflunafene (45), perfluoren (82)
-peridol  see -perone

-peridone  see -perone

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

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

C.2.0.0  

- perone

C.1.0.0  

C.2.0.0  

USAN

(tranquillizers, neuroleptics, 4'-fluoro-4-piperidinobutyrophenone derivatives)

(a)  aceperone (14), amiperone (14), biriperone (51), carperone (24), cicarperone (28), cinuperone (53), cloroperone (38), declenperone (42), duoperone (54), fenaperone (28), fluspiperone (34), lenperone (27), melperone (34), metirenperone (56), milenperone (37), mindoperone (38), moperone (14), nonaperone (44), pipamperone (17), pirenperone (46), prideperone (54), primaperone (17), propyperone (16), roxoperone (17), setoperone (51), spiperone (17), timiperone (40)

closely related: azabuperone (34), azaperone (18), lodiperone (44), zoloperone (39)

-peridol  antipsychotics, haloperidol derivatives

USAN

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

-seridone  antipsychotics, risperidone derivatives

USAN

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

USAN

C.1.0.0  

alpidem (53), necopidem (66), saripidem (67), zolpidem (53)
-pin(e)  see also Pharm S/Nom 970 (tricyclic compounds)
-dipine  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), pentaapine (56), perlapipe (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)

-oxopine  traboxopine (58)

-sopine  adosopine (63)

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

dosulepin (15)

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

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

-piprazole  see -prazole

-pirone  see -spirone

-pirox  see -ox/-alox
-pitant see -tant

-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), dexamplatin (64), enloplatin (64), eptaplatin (83),
      iroplatin (51), lobaplatin (65), miboplatin (66), miriaplatin (85), nedaplatin (67), ormaplatin
      (63), oxaliplatin (56), picoplatin (87), satraplatin (80), sebriplatin (68), spiroplatin (48),
      triplatin tetranitrate (87), zeniplatin (63)

-plermin see -ermin

-plestim see -stim and -kin

-plon pyrazolo[.]pyrimidine derivatives, used as anxiolytics, sedatives, hypnotics
  A.2.2.0
  C.1.0.0
  ocinaplon (72), indiplon (86), zaleplon (72)

-poetin erythropoietin 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)
INN – The use of stems

- **porfin** benzoporphyrin derivatives
  (a) rostaporfín (83), stannsoporfín (79), talaporfín (83), temoporfín (70), verteporfín (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)

  ![Chemical structure](image)

  (a) saturated dibenzazepine:
  azipramine (36), carpipramine (16), cianopramine (47), ciclopramine (29), clocapramine (28), clomipramine (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)

- **prazole** antiulcer, benzimidazole derivatives

  J.0.0.0 (USAN: antiulcerative benzimidazole derivatives)

  ![Chemical structure](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

(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)

(a) chloroprednisone (12), cloprednol (31), difluprednate (21), domoprednate (47), etiprednol dicloacetate (88), fluprednidene (19), fluprednisolone (13), halopredone (36), isoflupredone (36), isoprednidene (24), loteprednol (64), mazipredone (32), meprednisone (15), methylprednisolone (8), methylprednisolone aceponate (52), methylprednisolone sulenptanate (56), oxisopred (29), prednazolone (22), prednicarbate (44), prednimustine (31), prednisolamate (13), prednisolone (6), prednisolone steaglate (16), prednisone (6), prednylidene (13), tipredane (54)

(c) -methasone or -metasone: alclometasone (41), amelometasone (74), beclometasone (17), betamethasone (11), betamethasone acibutate (26), crometasone (29), desoximetasone (20), dexamethasone (8), dexamethasone acefurate (57), flumetasone (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 -alone: clocortolone (16), descinolone (17), diflucortolone (18), fluclorolone acetonide (22), fluocinolone acetonide (11), flucortolone (15), fluorometholone (8), fluperolone (13), ganaxolone (76), halocortolone (31), rimexolone (38), triamcinolone (8), triamcinolone benetonide (36), triamcinolone furetonide (36), triamcinolone hexacetonide (15)

clobetasone (26), cloticasone (52), deprodone (20), dichlorisone (10), diflorasone (30), flunisolide (11), fluticasone (52), meclorisone (40), timobesone (51)
-gone  
steroids other than prednisolone derivatives

A.1.2.0  
genral anesthetics, pregnanes: alfadolone (27), alfapxalone (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), mesabalone (29), mestanolone (10), mesterolone (15), metenolone (12), metribolone (17), nandrolone (22), norethandrolone (6), oxabolone cipionate (14), oxandrolone (12), oxymetholone (11), quinbolone (14), rosterolone (59), stenbolone (17), tibolone (22), trenbolone (24)

J.0.0.0  
glycyrhrhetic acid derivatives: carbenoxolone (15), cicloxxolone (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), vistatolone (25) (antiviral)

-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)

-pride (x)  sulpiride derivatives

C.0.0.0  
J.1.0.0

(a)  C.0.0.0: alizapride (43), alpiropride (49), amisulpride (44), batanolpride (61), broclepride (43), cisapride (49), dazopride (50), denipride (58), etacepride (52), eticlopride (52), flubepride (35), nemonapride (63) (previously emonaprind (61)), peralopride (43), prosulpride (43), prucalopride (78), sulmepride (43), sultopride (26), sulverapride (44), veralipride (43)
INN – The use of stems

J.1.0.0: alepride (40), bromopride (27), cinatapride (41), cipropride (41), clebopride (32),
dobupride (57), irolapride (55), isosulpride (36), itopride (66), lintopride (65), firexapride
(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: iolapride (I²) (73)

(b) glimepride (66)

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

J.1.0.0: metoclopramide (17)

---

BAN, USAN

-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), indolapril (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), zacicpril (58), zofenopril (51)

-prilat (x)

(a) benazeprilat (58), cilazaprilat (54), enalaprilat (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

Aditoprim (49), baquilocaprim (56), brodimoprim (44), epiroprim (44), iclaprim (88),
metioprim (42), ormetoprim (21), tetroxoprim (33), trimethoprim (11), vaneprim (48)

c diaveridine (18)
pristin antibacterials, pristinamycin derivatives

S.6.0.0

(a) dalfopristin (67), efepristin (75), quinupristin (65), volpristin (80)

prisen (x) anti-inflammatory agents, ibuprofen derivatives

BAN, USAN

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

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

(a) alminoprofen (40), araprofen (65), atliprofen (74), bakeprofen (61), benoxaprofen (34), bermoprofen (57), bifeprofen (57), carpoprofen (35), cicloprofen (32), cliroprofen (32), dexibuprofen (61), dexindoprofen (49), dexketoprofen (70), esflurbiprofen (56), fenoprofen (26), flunoxaprofen (44), fluoprofen (18), flurbiprofen (28), frabuprofen (51), furaprofen (42), furcloprofen (44), hexaprofen (30), ibuprofen (16), indoprofen (32), isoprofen (40), ketoprofen (28), lobaprofen (44), lomiprofen (61), losmiprofen (61), loxoprofen (50), mabuprofen (64), mexaprofen (33), mepiketoprofen (40), pirprofen (32), pranoprofen (36), suprofen (31), tavaprofen (50), tetriprofen (29), tilnoprofen aramel (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)

prost (x) prostaglandins

BAN, USAN

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

(a) alfaprostol (45), alprostadil (39), ataprost (62), beraprost (59), bimatoprost (85), butaprost (55), carprofest (36), cicaprost (54), ciproprost (51), clindiprofen (68), cloprostenol (33), delprostenate (42), dimoxaprost (52), dinaprost (26), dinoprostone (26), doxaprost (34), ecraprost (83), eganaprost (84), erisaprost (50), epoprostenol (44), eptalaprost (56), etiprost (46), fenprostsalene (42), flunaprost (53), fluprostenol (33), frotaprost (55), gemeprost (42), iloprost (48) (originally cilaprost (46)), lanprost (72), latanaprost (67), limaprost (56), lubiprostone (87), luprostol (44), metenaprost (45), misoprostol (47), naxaprostene (58), nileaprost (45), noclaprost (51), oxaprost (44), penprostene (37), pimilaprost (71), piriprost (51), protasalene (34), remiprostil (65), rosaprost (48), sulprostone (37), taprostone (58), tiaaprost (41), tafluprost (89), tilsuprost (51), tiprostanide (48), travoprost (80), treprostinil (87), unoprostone (66), vapiprost (58), viprostol (53)
INN – The use of stems

**-prostil**

*prostaglandins, anti-ulcer*

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

**-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), mebiqueine (29) (gastrointestinal, antisecretory), benoxiquine (18) (antisecretory), cletequine (20) (anti-inflammatory), cloxiquine (30) (antisecretory), debrisoquine (15) (hypotensive agent), esproquine (31) (cardiovascular agent), flumequine (34) (antibacterial), guanisquione (15) (hypotensive agent), nifuroquione (36), oxamniquione (28) (schistosomacide)

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

antibacterial: actinoquinol (15), aminoquinuride (45), broquinaldol (17), broxaldine (12), chlorquinaldol (1), cloquinol (16), dequalinium chloride (8), diiodohydroxyquinoline (1), laurolinium acetate (12), nitrotyl (15), quindecamine (15), tilbroquinol (45), tiliquino (45)

antifungal: hedaquinum chloride (8)

anthelminthic: pyrvinium chloride (6)

treatment of leishmaniasis etc: aminoquinol (22), sitamaquine (80)

amebicidal: cloquinol (11), dehydroemetine (15), quinfamide (40)

antiproteus: oxolinic acid (15)

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

growth promoter, bactericide: cinoquidox (40), olaquindox (31) (quinoloxaline derivative)

antiviral: famotine (23), memotine (22)

antihypertensive: amiquinsin (17), leniquinsin (18), peraquinsin (29) (quinazolinone derivative), trethinium tosilate (14), quinquclium bromide (40)
heart failure: buquineran (40)

diuretic: quinacarbote (31)

vasodilator, treatment of cerebrovascular insuff.: viquildil (25)

curarizing agent: dimethyltubocurarinium 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: quinaprenaline (17), tretosquínol (21), (bronchial asthma)

oxytocic: quipazine (17)

analgesic: glafenine (15), metofoline (12)

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

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

diagnostic aid: quinaldine blue (17)

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

antihyperlipidemic: climiquialine (33) (isoquin. der.)

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

-quinil see -azenil

-racetam amide type nootrope agents, piracetam derivatives

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

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

related: tenilsetam (51)

-racil uracil type antineoplastics

L.0.0.0

(a) eniluracil (77), fluorouracil (13), gimeracil (80), oteracil (80)

-thiouracil uracil derivatives used as thyroid antagonists

(a) iodothiouracil (01), methylthiouracil (01), pripylthiouracil (01)

-relin (x) pituitary 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), somatorelin (57), tabimorelin (80)

-tirelin thyrotropin releasing hormone analogues:

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

(a) other: corticorelin (64)

-relix hormone-release inhibiting peptides

(a) abarelix (78), cetorelix (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))

![Chemical structure of anrenone](image)

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

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

(c)  oxprenoate potassium (53), prorenenate potassium (32), spironolactone (11), spiroxasone (14)

---

-restat  see -stat

---

retin  retinol derivatives

P.1.0.0  (USAN: -retin-)

![Chemical structure of retinol](image)

(a)  acitretin (56) (previously etretin (51)), alitretinoin (80), doretinel (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)
INN – The use of stems

rubofuranyl-derivatives of the "pyrazofurin" type

L.0.0.0.0/  
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)

rifamycins, 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))

-cardiac stimulants, amrinone derivatives

H.1.0.0 (USAN: cardiotonic agents (amrinone type))

(a) amrinone (38), beminoribine (57), medorinone (54), milrinone (50), nanterinone (60), olprinone (70), pelrinone (53), saterinone (56), toborinone (72), vesnarinone (57)

(b) gestrinone (39), indacrinone (51), taziprinone (48)

-izine see -izine
-rozole  
**aromatase inhibitors, imidazole-triazole derivatives**

L.0.0.0  

![Chemical structure of aromatase inhibitors](image)

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

---

-rubicin  
**antineoplastic antibiotics, daunorubicin derivatives**

L.5.0.0  

(USAN: antineoplastic antibiotics (daunorubicin type))

![Chemical structure of antineoplastic antibiotics](image)

(a) aclrarubicin (44), amrubcin (65), carubic in (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), rodorubicin (54), sabarubicin (90), valrubicin (79), zorubicin (39)

---

sal  
**salicylic acid derivatives**

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

![Chemical structure of salicylic acid](image)

(a) **sal**-  
**analgesic anti-inflammatory A.4.2.0**

choline salicylate (15), imidazole salicylate (51), salacetamide (1), salcolex (23), saletamide (20), salfluverine (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**

detansal (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) (dissinfect.), 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), parasalmide (32), talosalate (43)

various
amotosalen (85), calcium benzamidosalicylate (10), homosalate (28) (sunscreen agent), lasalocid (30) (antibiotic. vet.), mersalyl (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), balsalazine (48), ipsalazine (48)

-salan

brominated salicylamide derivatives disinfect. S.2.1.0
bensalan (18), dibromsalan (14), flusalan (16), fursalan (18), metabromsalan (16), tiosalan (18), tribromosalan (14)

(b) non-salicylic acid derivatives
macrosalb (99mTc) (33), trioxysalen (16) (pigmenting agent)

bronchodil.
levoalbutamol (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), dipyracetyl (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), hydroxyprocaïne (1), hydroxytetraçaine (1), propoxycaine (4)

antihypertensives H.3.0.0
labetalol (35)

antitussives K.1.0.0
alloclamid (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), cloxanide (19), niclosamide (13), rafloxanide (24)
closantel (36), flurantel (25), resorantel (23)

antifungals S.4.0.0
buclosamide (16), exalamide (37), pentalamide (13)

See also Pharm S/Nom 557

-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), milfasartan (76), olmesartan (80), pomisartan (73), pratosartan (85), ripisartan (73), saprisartan (72), tasosartan (72), telmisartan (70), valsartan (68), zolasartan (70)

-semide diuretics, furosemide derivatives
N.1.1.0

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

-serpin derivatives of Rauwolfia alkaloids
E.5.4.0

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

(c) chloroserpidine (11), deserpidine (6), methoserpidine (11), metoserpate (20), rescimetol (44), rescinnamine (6), syrosingopine (10)
<table>
<thead>
<tr>
<th>usan</th>
<th>serotonin receptor antagonists (5-HT₃) not fitting into other established groups of serotonin receptor antagonists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(BAN: serotonin receptor antagonists (5HT₃) used as antihyper-tensives)</td>
</tr>
<tr>
<td></td>
<td>(a) alosetron (66), azasetron (68), bemesetron (64), cilansetron (68), dolasetron (65), fabesetron (74),</td>
</tr>
<tr>
<td></td>
<td>galdansetron (72), granisetron (59), indisetron (76), itasetron (68), lerisetron (69), lurosetron (69),</td>
</tr>
<tr>
<td></td>
<td>mirisetron (72), ondansetron (59), palonosetron (74), ramosetron (70), ricasetron (70), tropisetron (62),</td>
</tr>
<tr>
<td></td>
<td>zatosetron (64)</td>
</tr>
<tr>
<td>USAN</td>
<td>growth hormone derivatives</td>
</tr>
<tr>
<td></td>
<td>(a) somagrebove (63), somalapor (62), somatosalm (69), somatrem (54), somatropin (56), somavuboove (63),</td>
</tr>
<tr>
<td></td>
<td>somenopor (62), sometribove (54), sometripor (55), somodobove (58)</td>
</tr>
<tr>
<td></td>
<td>(b) somatorelin (57), somantadine (51), somatostatin (46)</td>
</tr>
<tr>
<td>USAN</td>
<td>anxiolytics, buspirone derivatives</td>
</tr>
<tr>
<td></td>
<td>(a) alnespirone (70), binospirone (65), buspirone (30), enilospirone (52), perosphirone (71), revospirone (61), tandospirone (60), tiospirone (57), umespirone (60), zalospirone (64)</td>
</tr>
<tr>
<td></td>
<td>(c) eptapirone (82), gepirone (54), ipsapirone (54)</td>
</tr>
<tr>
<td>BAN, USAN</td>
<td>enzyme inhibitors</td>
</tr>
<tr>
<td></td>
<td>(BAN: -stat: enzyme inhibitors)</td>
</tr>
<tr>
<td></td>
<td>-castat dopamine-hydroxylase inhibitors</td>
</tr>
<tr>
<td></td>
<td>nepicastat (78)</td>
</tr>
</tbody>
</table>
-elestat  elastase inhibitors
freselestat (89), sivelestat (78)

-inostat  histone deacetylase inhibitors
(a)  dacinostat (89)

-listat  pancreatic lipase inhibitors
(a)  orlistat (66)

-mastat  matrix metalloproteinase inhibitors
(a)  batimastat (70), cipemastat (81), ilomastat (73), marimastat (75), prinomastat (82), rebinostat (89), solimastat (80), tanomastat (82)

-restat  or  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), crilva-statin (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): vidarabin 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
zinoostatin (40): antineoplastic
zinoostatin 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
eketolaurate (16)

-**sterone**: bolasterone (13), fluoxymesterone (6), oxymesterone (12), prasterone (23),
tiomerone (14)

-**ster-**: mesterolone (15), penmesterol (14), rosterolone (59)

(b) progestational steroids

-**gesterone**: dydrogesterone (12), haloprogesterone (11), hydroxyprogesterone (8),
medroxyprogesterone (10), norgesterone (14), progesterone (4), segesterone (89)

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

**various**: -**sterone**: aldosterone (6) (corticosterone), calusterone (23) (antineoplastic)

-**sterol**: azacostrol (16) (hypocholesterolemic), dihydrotachy-sterol (1)
(antihypoparathyroid), iodocholesterol (131I) (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

I.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), pegrartograstim
    (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), sulfactine (23), sulfadimazine (17), sulfadiazine (25), sulfadoxine (25), sulfadiazine sodium (1), sulfadiazine (4), sulfadiflazone sodium (4), sulfadoxine (10), sulfadimidine (1), sulfadion (20), sulfadithole (8), sulfafurazone (1), sulfaguanidine (4), sulfaguanidine (23), sulfapenate (12), sulfalactic acid (15), sulfamazone (40), sulfamerazine (4), sulfamerazine sodium (4), sulfamethizone (1), sulfamethoxazole (14), sulfamethoxypyridazine (8), sulfametomidone (12), sulfametoxazole (17), sulfapetrole (31), sulfamonemethoxine (11), sulfamoxole (12), sulfaniyamide (4), sulfanitran (15), sulfaperin (14), sulfaphenazole (10), sulfaproxylne (4), sulfapyrazole (18), sulfapyridine (1), sulfaquinoxaline (46), sulfasalazine (55), sulfasomidine (10), sulfasucinamidene (41), sulfasymazine (12), sulfathiazole (4), sulfathieure (1), sulfatolamide (10), sulfatroxazole (29), sulfatrozone (24)

(b) sulfarsphenamine (4)

(c) benzylsulfamide (1), glucosulfamide (1), maleylsulfathiazole (1), mesulfamide (41), nitrosulfathiazole (1), phthalylsulfathiazole (6), phthalylsulfathiazole (1), salazodine (22), salazosulfamidimide (1), salazosulfamide (1), salazosulfathiazole (1), stearyl sulfamide (1), succinylsulfathiazole (4), sulfisomidine (1), vanyldisulfamide (1), mafenide (1) (sulfonamide, but not sulfanilamide)

---

**USAN**

**-sulfan** antineoplastic, alkylating agents, methanesulfonates

L.2.0.0

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

---

**-tadine** tricyclic histamine-H1 receptor antagonists, tricyclic compounds

G.2.1.0

(a) amantadine (15), azatadine (18), carmantadine (31), cyproheptadine (10), desloratadine (8) loradine (54), napactadine (46), olopatadine (72), rimantadine (17), rupatadine (74), somantadine (51), tromantadine (28)

---

**-tant** neurokinin (tachykinin) receptor antagonists

**-pitant** neurokinin NK1 (substance P) receptor antagonist

(a) aprepitant (84), dapitant (74), ezlopitant (82), figopitant (82), voqopitant (82), lanepitant (77), maropitant (90), netupitant (90), nolpitatum besilate (75)
<table>
<thead>
<tr>
<th>Stem</th>
<th>Description</th>
</tr>
</thead>
</table>
| -dutan | neurokinin NK₂ receptor antagonist  
nepadutan (78), sa-redutan (75) |
| -nertan | neurotensin antagonist  
meclinertan (88) (replaces reminertan (85)) |
| -netan | neurokinin NK₃ receptor antagonist  
(osanetan (74), talnetan (81)) |

**-tecan**  
**antineoplastics, topoisomerase I inhibitors**  
L.0.0.0  
(USAN: anti-neoplastics (camptothecine derivatives))  
a-feletecan (85), diflomotecan (84), exatecan (81), exatecan alideximer (89), 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)  
avatepa (12), pumitepa (48), thiotepa (10)  

**-tepine**  
see -pine  

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

**-termin**  
see -ermin
INN – The use of stems

-terol (x) bronchodilators, phenethylamine derivatives

(previously -prenaline or -terenol unofficial)

(USAN: bronchodilators (phenethylamine derivatives))

E.4.0.0

(b) azacos terol (16), dihydrotachysterol (1), penmesterol (14)

(c) dioxethedrine (6), isoetarine (13), methoxyphenamine (1), pseudoephedrine (11), salbutamol (20), salmefamol (23), terbutaline (22)

-terone antiandrogens

(Q.2.3.1)

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

(b) oxendolone (42)

(c) clometerone (15) (anti-estrogen)
INN – The use of stems

-tiazem calcium channel blockers, diltiazem derivatives

USAN

F.2.1.0

clentiazem (61), diltiazem (30), iprotiazem (56), nictiazem (54), siratiazem (68)

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

USAN

analgesic: leconotide (86), ziconotide (78)

angiogenesis inhibitor: cilengitide (81)

anti-inflammatory: icreapptide (89)

antibiotic: nosiheptide (35)

antidepressant: nemifitide (87)

antidiabetic: amlintide (76), liraglutide (87), seogleitide (57), pramlintide (74)

antidiarrhoeal: lagatide (75)

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) acpitide (78), teriparatide (50)

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

gastro-intestinal functions normalizing agent: teduglutide (90)

gut motility increasing: ociltide (52)
immunomodulator: almurtide (74), edratide (89), goralatide (72), murabutide (49),
pentigetide (60), pimelautide (53), prezatide copper acetate (67), romurtide (61), tabilautide
(60), temurtide (60), tiplimotide (82)

inhibition of growth hormone release: pasireotide (90)

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), diamfenetide (28) (fasciolicide), diclometide (19) (behaviour
modifier), fludroxcortide (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)), lupitudine (53), mifentidine (50), niperotidine (54), nizatidine (48),
osutidine (76), oxemetidine (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)

-tiline see -triptyline
-tinib  tyrosine kinase inhibitors

L.0.0.0

(a) canertinib (87), erlotinib (85), gefitinib (85), imatinib (86), lapatinib (89), mubritinib (90)

-tirelin  see -relin

-tizide  diuretics, chlorothiazide derivatives

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

\[
\text{H}_2\text{N} = \text{O} \quad \text{O} \quad \text{NH}
\]

(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), disulfam ide (11), ethiazide (14), flumethiazide (10), hydrochlorothiazide (10), hydroflumethiazide (10), methyclothiazide (11), polythiazide (12), teclothiazide (12), trichlormethiazide (11)

-tocin  oxytocin derivatives

Q.1.2.0  

\[
\text{H} - \text{Cys} - \text{Tyr} - \text{Ile} - \text{Gln} - \text{Asn} - \text{Cys} - \text{Pro} - \text{Leu} - \text{Gly} - \text{NH}_2
\]

(a) argiprestocin (13), aspartocin (11), carbetocin (45), c argutocin (35), demoxytocin (22), nacartocin (49), oxytocin (13)

-toin (d) antiepileptics, hydantoin derivatives

A.3.1.1  

\[
\text{O} \quad \text{H} = \text{N} = \text{O}
\]

(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.)
-trakin  see -kin

-trexate (x)  folic acid analogues

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

(a)  edatrexate (61), ketotrexate (50), methotre xate (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 (5HT₁) receptor agonists, sumatriptan derivatives

(a)  almotriptan (76), avitriptan (76), donitriptan (82), ele triptan (74), frovatr iptan (78), naratriptan (69), oxitriptan (39), rizatriptan (75), sumatriptan (59), zolmitriptan (74)

(c)  alniditan (72)

-triptline  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), protriptyline (14), amitriptylineoxide (36), demexiptiline (43), levoprotiline (56), noxiptiline (20), oxaprotiline (45), setiptiline (56)
(b) oxitriptyline (21) (anticonvuls.)
(c) hepzidine (15)

see also Pharm S/Nom 970

-troban  thromboxane A<sub>2</sub>-receptor antagonists; antithrombotic agents

I.2.1.0  
arugatroban (57), dalltroban (57), domitroban (73), ifetroban (71), linotroban (69), mipitroban (73), ramatroban (73), sulotroban (55)

-trodast  see -ast

---

**trop**  atropine derivatives

E.2.0.0  (USAN: trop- ; or –trop-)

(a) parasympatholytic/anticholinergic: E.2.2.0:  
tertiary amines:  
atropine oxyde (12), benzatropine (4), decitropine (18), etybenzatropine (12), eucatropine (1), tropatepine (28), tropicamide (11), tropigline (8), tropodifene (18)
closely related:
esbatropate (65)

quaternary ammonium salts:  
atropine methonitrate (4), butropium bromide (30), ciclotropium bromide (50), cimetrotpium bromide (51), flutropium bromide (50), homatropine methylbromide (1), irpratropium bromide (28), octatropine methylbromide (10), oxtiropium bromide (36), phenacropinium chloride (8), ritropirronium bromide (33), sevitropium mesilate (56), sintropium bromide (47), sultroponium (18), tematrotpium metilsulfate (64), tiotropium bromide (67), tipetropium bromide (42), tropenziline bromide (11), xenytropium bromide (15)

various:  
clobenztropine (13) (antihistaminic), cyheptopine (15) (anti-arrhythmic), deptrpine (12) (antiasthmatic), revatropate (74) (bronchodilator), tropabazate (41) (tranquillizer), tropanserin (55), tropapride (48) (antipsychotic), tropirine (20) (respiratory disorders), tropisetron (62)
(b) dextropropoxyphene (7), somatropin (56)

(c) parasympatholytic/anticholinergic, tertiary amines:
    poskine (8), prampine (11), tigloidin (14)
    various:
    zepastine (26) (antihistaminic)

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

-url see –uridine

-uridine uridine derivatives used as antiviral agents and as antineoplastic

S.5.3.0
L.4.0.0

L.4.0.0: broxuridine (30), doxifluridine (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: antineoplastic; 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),
telbivudine (88), zidovudine (56)

-vaptan vasopressin receptor antagonists
H.0.0.0
(a) conivaptan (82), lixivaptan (83), mozavaptan (87), relcovaptan (82), tolvaptan (83)

-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), dixhexyverine (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)  cinnamaaverine (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), fenyramil (12),
    metindizate (16), oxybutynin (13), papaveroline (29), pentapiperide (10), prozapine (14),
    triclazate (10), tropenziline bromide (11)

**vin- and vin- (x) vinca alkaloids**

(USAN: vin-; or -vin-)

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

    **L.5.0.0 cytostatic**
    vinblastine (12), vincristine (13), vindesine (35), vinpeptine (50), vinfleumine (76),
    vinformide (38), vinositine (64), vinglucinate (16), vinleucinol (64), vinluer (13),
    vinorelbine (57), vinrosidine (13), vintriportol (51), vinzolidine (46)

(b)  **barbiturates**
    vinbarbital (1), vinylbital (12)
    **others:** vincofos (28) (phosphate, anthelmintic), vintiamol (16) (vit. B. deriv., antineuralgic)
INN – The use of stems

vir  antivirals (undefined group)

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

(a) aciclovir (42), adefovir (72), alvircept sudotox (69), amdoxovir (85), amitivir (67), atevidine (69), bucciclovir (52), caprivarine (83), cidofovir (72), ciluprevir (90), dapivirine (86), delavirdine (71), denotivir (70), desciclovir (55), detiviciclovir (86), efavirenz (78), emivirine (82), enufuvirtide (85), enviradene (49), enviroxime (44), etravirine (88), famiciclovir (61), ganciclovir (56), lithomeglovir (84), loviride (70), maribavir (80), nevirapine (66), omaciclovir (84), opaviraline (83), penciclovir (61), pirodavir (63), ribavirin (31), rociclovir (62), rupintrivir (88), talviraline (75), tenofovir (82), tiviciclovir (86), tivirapine (74), tomeglovir (84), trovirdine (73), valaciclovir (69), valganciclovir (78), valomaciclovir (84), viroxime (49), zinviroxime (44)

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

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

-fovir phosphonic acid derivatives: adefovir (72), alamifovir (89), cidfovir (72), tenofovir (82)

-gosivir glucoside inhibitors: celgosivir (77)

-navir HIV protease inhibitors: amprenavir (79), atazanavir (88), darunavir (88), drixiviravir (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) afovirseren (70), fomivirsen (75), trecovirsen (77)

(b) virginiamycin (18), viridofulvin (16)

(c) avridine (50)

-vos see -fos

-vudine see -urdine

-xaban blood coagulation factor X inhibitors, antithrombotics

(a) otamixaban (86), rivaroxaban (90), razaxaban (90)
-xanox     see -ox/-alox

-yzine     see -izine

-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
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:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>u</td>
<td>human</td>
</tr>
<tr>
<td>o</td>
<td>mouse</td>
</tr>
<tr>
<td>a</td>
<td>rat</td>
</tr>
<tr>
<td>e</td>
<td>hamster</td>
</tr>
<tr>
<td>i</td>
<td>primate</td>
</tr>
<tr>
<td>xi</td>
<td>chimeric</td>
</tr>
<tr>
<td>zu</td>
<td>humanized</td>
</tr>
</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 (Infix)</th>
<th>Disease/Target Class</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>inflammatory lesions</td>
</tr>
<tr>
<td>-li(m)-</td>
<td>immunomodulator</td>
</tr>
<tr>
<td>-vi(r)-</td>
<td>viral</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sub-stem (Infix)</th>
<th>Disease/Target Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>-co(l)-</td>
<td>colon</td>
</tr>
<tr>
<td>-go(t)-</td>
<td>testis</td>
</tr>
<tr>
<td>-go(v)-</td>
<td>ovary</td>
</tr>
<tr>
<td>-ma(r)-</td>
<td>mammary</td>
</tr>
<tr>
<td>-me(l)-</td>
<td>melanoma</td>
</tr>
<tr>
<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.

If the monoclonal antibody is used as a carrier for a radioisotope, the latter will be listed first in the INN, e.g. technetium (99mTc) pintumomab.

VI. -toxa- infix:

For monoclonals conjugated to a toxin, the infix –toxa- can be inserted either into the first (main) name or included in the second word.
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.


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.
### Latin English

- **-acum** - *ac* anti-inflammatory agents, ibufenac derivatives  
- **-adolum** - *adol* ) analgesics  
- **-adol-** - *adol-*)  
- **-astum** - *ast* antiasthmatic, antiallergic substances not acting primarily as antihistaminics  
- **-astinum** - *astine* antihistaminics  
- **-azepamum** - *azepam* diazepam derivatives  
- **bol** bol anabolic steroids  
- **-cain-** - *cain-*) class I antiarrhythmics, procainamide and lidocaine derivatives  
- **-cainum** - *caine* local anaesthetics  
- **cef-** cef antibiotics, cefalosporanic acid derivatives  
- **-cilinum** - *cilin* antibiotics, 6-aminopenicillanic acid derivatives  
- **-conazolum** - *conazole* systemic antifungal agents, miconazole derivatives  
- **cort** cort corticosteroids, except prednisolone derivatives  
- **-coxibum** - *coxib* selective cyclo-oxygenase inhibitors  
- **-entanum** - *entan* endothelin receptor antagonists  
- **gab** gab gabamimetic agents  
- **gado-** gado- diagnostic agents, gadolinium derivatives  
- **-gatranum** - *gatran* thrombin inhibitors, antithrombotic agents  
- **gest** gest steroids, progestogens  
- **gli** gli antihyperglycaemics  
- **io-** io- iodine-containing contrast media  
- **-metacinum** - *metacin* anti-inflammatory substances, indometacin derivatives  
- **-mycinum** - *mycin* antibiotics, produced by *Streptomyces* strains  
- **-nidazolum** - *nidazole* antiprotozoals, metronidazole derivatives  
- **-ololum** - *olol* β-adrenoreceptor antagonists  
- **-oxacinum** - *oxacin* antibacterials, nalidixic acid derivatives  
- **-platinum** - *platin* antineoplastic agents, platinum derivatives  
- **-poetinum** - *poetin* erythropoetin type blood factors  
- **-pril(at)um** - *pril(at)* angiotensin-converting enzyme inhibitors  
- **-profenum** - *profen* anti-inflammatory substances, ibuprofen derivatives  
- **prost** prost prostaglandins  
- **-relinum** - *relin* pituitary hormone release-stimulating peptides  
- **-sartanum** - *sartan* angiotensin II receptor antagonists, antihypertensive (non-peptidic)  
- **-vaptanum** - *vaptan* vasopressin receptor antagonists  
- **vin-** vin- ) vinca alkaloids  
- **-vin-** - *vin-*)

* 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.
Reference to the volumes of the *WHO Drug Information* in which the respective proposed lists of INNs have been published:

<table>
<thead>
<tr>
<th>List no. and reference</th>
<th>List no. and reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>14  WHO chronicle 18: 433 (1964)</td>
<td>63  WHO drug information 4: No. 2 (1990)</td>
</tr>
<tr>
<td>15  WHO chronicle 19: 446 (1965)</td>
<td>64  WHO drug information 4: No. 4 (1990)</td>
</tr>
<tr>
<td>27  WHO chronicle 26: 121 (1972)</td>
<td>76  WHO drug information 10: No. 4 (1996)</td>
</tr>
<tr>
<td>42  WHO chronicle 33: No. 9, suppl. (1979)</td>
<td>91  Cumulative List</td>
</tr>
<tr>
<td>44  WHO chronicle 34: No. 9, suppl. (1980)</td>
<td>92  Lists 1-85 of proposed INN are included in Cumulative List</td>
</tr>
<tr>
<td>46  WHO chronicle 35: No. 5, suppl. (1981)</td>
<td>94  Lists 1-85 of proposed INN are included in Cumulative List</td>
</tr>
<tr>
<td>48  WHO chronicle 36: No. 5, suppl. (1982)</td>
<td>96  Lists 1-85 of proposed INN are included in Cumulative List</td>
</tr>
</tbody>
</table>
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.