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

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FORMER DOCUMENT NUMBER: WHO/PHARM S/NOM 15

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Printed by the WHO Document Production Services, Geneva, Switzerland
The document "The Use of Common Stems in the Selection of INNs" is intended primarily for persons and companies applying to the WHO INN Programme for the selection of an INN for a new pharmaceutical substance and has been designed to assist in the process of devising a suitable proposal. It will also be of assistance to institutions and specialists involved in the review of proposed INNs, including drug regulatory authorities, pharmaceutical manufacturers, patent offices and trade mark officers as well as for scientists, teachers, health professionals and other persons interested generally in drug nomenclature. The document is composed of four main parts and annexes.

Part I "Introduction" describes the WHO INN Programme, INN selection procedure, and criteria for name selection and gives general information on the INN stem system.

Part II contains the list of all INN stems. It is composed of two indexes, one entitled "Alphabetical List of Common Stems" which presents the list of stems, and another entitled "Alphabetical List of Common Stems and their definitions" which includes a definition for each stem.

Part III presents the stem classification system used by the INN Programme to categorize the main activity of pharmaceutical substances. Each category included in the list is given an appropriate code consisting of a capital letter and three digits. When INNs for substances belonging to a given category include a specific stem, appropriate information is included in the table.

Part IV of the document entitled "Alphabetical List of Stems Together With Corresponding INNs" serves as a listing of all proposed INNs (published in lists 1 - 109) containing INN stems. The list is organized in alphabetical order (as set out in Part II) and includes all INNs containing individual stems. In addition, under each stem heading information is given on INNs in which the preferred stem has been used but not in accordance with its definition as well as on INNs which belong to the same group of pharmaceutical substances but in which no preferred stem has been used. To facilitate the use of Part IV, the lay-out of information is presented as a diagram on page 6 and is complemented by additional information given at the end of part I "Introduction".

Six annexes attached to the document are intended to be of assistance to users. Annex 1 reproduces the Procedure for the Selection of Recommended International Nonproprietary Names for Pharmaceutical Substances as approved by the WHO Executive Board in its resolution EB15.R7 as amended by resolution EB115.R4. Annex 2 reproduces General Principles for Guidance in Devising International Nonproprietary Names for Pharmaceutical Substances as approved by the WHO Executive Board in the above-mentioned resolution, as amended. Annex 3 explains the nomenclature scheme for monoclonal antibodies. Annex 4 explains the nomenclature scheme for Gene Therapy Products. Annex 5 gives reference to the volumes of the WHO Drug Information in which proposed lists of INNs have been published. Annex 6 "Why INN?" gives general information on the present situation of WHO INN Programme and its achievements.
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PART I

INTRODUCTION

WHO'S INN PROGRAMME
The World Health Organization (WHO) has a constitutional responsibility to "develop, establish and promote international standards with respect to biological, pharmaceutical and similar products". The International Nonproprietary Names (INN) Programme is a core activity embedded in the normative functions of WHO and has served the global public health and medicines community for over fifty years. The Programme was established to assign nonproprietary names to pharmaceutical substances so that each substance would be recognized by a unique name. Such names are needed for the clear identification, safe prescription and dispensing of medicines, and for communication and exchange of information among health professionals. INNs can be used freely because they are in the public domain. In addition to being a basic component of many WHO medicines activities and programmes, INNs are used in regulatory and administrative processes in many countries. They are also intended for use in pharmacopoeias, labelling, and product information and to provide standardized terminology for the international exchange of scientific information.

INN SELECTION PROCEDURE
Each name proposed for designation as an INN is examined and selected in accordance with a formal procedure. Requests for INNs can be submitted directly to WHO (application forms online at http://www.who.int/medicines/services/inn/en/index.html). In some countries where national nomenclature commissions exist, applications may also be made through the national nomenclature authority.

Members of the WHO Expert Panel on the International Pharmacopoeia and Pharmaceutical Preparations (or other Panel as appropriate) are officially designated to select nonproprietary names. Based on the information provided, an agreed name is selected and published as a proposed INN. During a four month period, any person can make comments or lodge a formal objection to the proposed name. If no objection is raised, this agreed name is published as the recommended INN.

In 1993, the World Health Assembly endorsed resolution WHA46.19 which states that trademarks should not be derived from INNs and INN stems should not be used in trade marks. The Assembly reasoned that such practice could frustrate the rational selection of INNs and ultimately compromise the safety of patients by promoting confusion in drug nomenclature. Above all, INNs are protected for use in the public domain.

CRITERIA FOR SELECTION
International Nonproprietary Names (INN) should be distinctive in sound and spelling. They should not be inconveniently long and not be liable to confusion with names in common use. Information on the selection procedure and general criteria in devising INNs is set out in Annexes 1 and 2.

INN STEMS
Stems define the pharmacologically related group to which the INN belongs. The present document describes stem use procedure and includes, in Parts II and IV, the list of common stems for which chemical and/or pharmacological categories have been established. These stems and their definitions have been selected by WHO experts and are used when selecting new international nonproprietary names. Because the nomenclature process is on-going and constantly under revision, definitions of older stems are modified as and when newer information becomes available.

Whenever possible, an INN should include the "common stem" expressing the pharmacologically-related group to which the substance belongs. Names that are likely to convey an anatomical, physiological, pathological or therapeutic suggestion are avoided.
In addition, certain rules have been established in devising INNs to facilitate their use internationally. For example, to make pronunciation possible in various languages, the letters "h" and "k" should be avoided; "e" should be used instead of "ae" and "oe", "i" instead of "y", "t" instead of "th" and "f" instead of "ph".

INFORMATION ON USING PART IV "ALPHABETICAL LIST OF STEMS TOGETHER WITH CORRESPONDING INNs"
The following information complements or describes the diagram set out on page 6.

1. The list includes INNs published in Proposed International Nonproprietary Names Lists 1 - 109 categorized according to the list of stems (see Annex 5).

For each stem, INNs have been classified as:

(a) INNs in which the preferred stem has been used in accordance with its definition;

(b) INNs in which the preferred stem has been used, but not in accordance with its definition;

(c) INNs which belong to the same group of pharmaceutical substances but in which the preferred stem has not been used. (This part of the list is not exhaustive).

2. References to nationally used syllables published 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 set out in brackets under the INN definition.

3. The codes presented on the diagram as Stem Classification refer to the stem classification system used by the INN Programme described in Part III of the document.

4. Symbol (x) indicates stems included as examples in Article 9 of the “General Principles for Guidance in Devising International Nonproprietary Names for Pharmaceutical Substances” (see Annex 2).

5. Symbol (d) indicates stems that were formerly used, but are no longer formally acknowledged by the INN Programme.
Layout of information

Vitamin D analogues/derivatives

- alfacalcidol (40), calcifediol (26), calcipotriol (61), calcitriol (39), colecalciferol (13), doxercalciferol (82), ergocalciferol (13), falecalcitriol (74), lexacalcitol (71), maxacalcitol (75), paricalcitol (78), secalciferol (62), seocalcitrol (78), tacalcitol (65)
- calcitonin (31) (polypeptide)
- dihydrotachysterol (1)

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 exhaustive)

(x) stems that are included in article 9 of the General Principles

(d) stems that were formerly used, but are no longer formally acknowledged by the INN Programme.
Part II A

ALPHABETICAL LIST OF COMMON STEMS

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(-)eptacog (see -cog)
erg
-eridine
-ermin
estr
-etalane (see -anide)
-ethidine (see -eridine)
exakin (see -kin)
exine

F
-farcept (see -cept)
-fenamate (see -fenamic acid)
-fenamic acid
-fenin
-fenine
-fentanil
-fentrine
-ferin (see -ermin)
-fiban
-fibrate
-fenilane (see -ermin)
-flapon
-flurane
-formin
-fos
-fosine (see -fos)
-fosfamide (see -fos)
-fovir (see vir)
-fradil
-frine (see -drine)
-fungin
-fylline

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 gado-
 -gatan
 -gene
 gest
 -gest (see -istr)
 -gilane
 -gilin
 gli
 -gliflozin (see gli)
 -gliptin (see gli)
 -glitazar (see gli)
 -glitazone (see gli)

H
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 -glutide (see -tide)
 -golide
 -gosivir (see vir)
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 -icam
 -ifene
 -izetide (see -tide)
 -ilide
 -imex
 -imibe
 -imod
 -imus
 -ine
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 -irudin
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 -kalant
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 -kef-
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 -leukin (see -kin)
 -lisib
 -listat (see -stat)
 -lubant
 -lukast (see -ast)
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M
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 -mantadine
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 -mantone (see -mantadine)
 -mapimod (see -imod)
 -mastat (see -stat)
 -meline
 mer/-/-mer
 -mer
 -mesine
 -mestane
 -metacin
 -methylamin (see pred)
 -micin
 -mifene (see -ifen)
 -milast (see -ast)
 -mito-
 -monam
 -morelin (see -relin)
 -mostim (see -stim)
 -motide (see -tide)
 -motine
 -moxin
 -mulin
 -mustine
 -mycin

N
 nab
 -nabat
 -nacept (see -cept)
 -nakin (see -kin)
 -nakrina (see -kinra)
 nal-
 -naritide (see -tide)
 -navir (see vir)
 -nermin (see -ermin)
 -nercept (see -cept)
 -netant (see -tant)
 -netant (see -tart)
 -nicate (see nico-)
 -nicline
 nico-/-nic-/-ni-
 -nidazone
 -nidine (see -onidine)
 -nifur-
 -nil (see -azenil)
 -nitro-/-nit-/-ni-/-ni-
-nixin
(-)nonacog (see -cog)

O
-octakin (see -kin)
-octadekin (see -kin)
(-)octocog (see -cog)
-ol
-olol
-olone (see pred)
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-one
-onide
-onidine
-onium (see -ium)
-opamine (see -dopa)
-orex
-orph- (see orphan)
orphan
-otermin (see -ermin)
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-oxacin
-oxan(e)
-oxanide (see -anide)
-oxef (see cef-)
-oxepin (see -pine)
-oxetine
-oxifam (see -icam)
-oxifene (see -ifene)
-oxipene (see -pine)

P
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-pamide
-pamil
-parcin
-parib
-parin
-parinux (see -parin)
-patril/-patrilat (see -tril/-trilat)
-pendyl (see -dil)
-penem
-perfl(u)-
-peridol (see -perone)
-peridone (see -perone)
-perone
-pidem
-pin(e)
-piprant

-piprazole (see -prazole)
-pirone (see -spirone)
-pirox (see -ox/-alox)
-pitant (see -tant)
-plact
-pladib
-planin
-plase (see -ase)
-plasmid (see -gene)
-platin
-plermin (see -ermin)
-plestim (see -stim and -kin)
-plon
-poetin
-pofin
-poride
-pramine
-prazole
-pred
-prenaline (see -terol)
-previr (see vir)
-pride
-pril
-prilat (see -pril)
-prim
-pristin
-profen
-prost
-prostil (see prost)

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

R
-racetam
-racil
-relin
-relix
-renone
-restat (see -stat)
-retin
-rilbe
-rifam
-rinone
-rixin

-rizine (see -izine)
-rolimus (see -imus)
-rozole
-rsen
-rubicin

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sal
salazo- (see sal)
-salazine/-salazide (see sal)
-salan (see sal)
-sartan
-semide
-sermin (see -ermin)
-serod
-serpine
-sertib
-setron
-som-
-sopine (see -pine)
-spiroine
-stat/-stat-
-steine
-ster-
-steride (see -ster-)
-stigmine
-stim
-sulfa-
-sulfan

T
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-tadine
-tant
-tapide
-taxel
-tecan
-tegrast (see -ast)
-tepa
-tepine (see -pine)
-teplase (see -ase)
-termin (see -ermin)
-terol
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-tiazem
-tibant
-tide
-tidine
-tilide (see -ilide)  
-tiline (see -triptyline)-tinib   
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-tizide  
-tocin  
-toin  
-trakin (see -kin)  
-trakinra (see -kinra)  
-tredekin (see -kin)  
-trexate  
-trexed  
-tricin  
-tril/-trilat  
-triptan  
-triptyline  
-troban  
-trodast (see -ast)  
trop  

U  
-uplase (see -ase)  
-uridine  

V  
-vaptan  
-vastatin (see -stat)  
-vec (see -gene)  
-verine  
-vin/-vin-  
vir  
-vircept (see -cept)  
-virine (see vir)  
-viroc (see vir)  
-virsen  
-virumab (see mab)  
-vos (see fos)  
-vudine (see -uridine)  

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

Y  
-yzine (see -izine)  

Z  
-zAfone  
-zepine (see -pine)  
-zolast (see -ast)  
-zone (see -buzone)  
-zomib  
-zotan
PART II B

ALPHABETICAL LIST OF COMMON STEMS AND THEIR DEFINITION

A

-abine (see -arabine and -citabine) arabinofuranosyl derivatives; nucleosides antiviral or antineoplastic agents, cytarabine or azacitidine derivatives

-ac anti-inflammatory agents, ibufenac derivatives

-acetam (see -raceatam) 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 antagonists of the ionotropic non-NMDA (N-methyl-D-aspartate) glutamate receptors (Namely the AMPA (amino-hydroxymethyl-isoxazole-propionic acid) and/or KA (kainite antagonist) receptors)

-andr steroids, androgens

-anib angiogenesis inhibitors

-anide -

-anserin serotonin receptor antagonists (mostly 5-HT₂)

-antel anthelmintics (undefined group)

-antrone antineoplastics; anthraquinone derivatives
-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 antiasthmatics or antiallergics, not acting primarily as antihistaminics
-astine antihistaminics
-azam (see -azepam) diazepam derivatives
-azenil benzodiazepine receptor antagonists/agonists (benzodiazepine derivatives)
-azepam diazepam derivatives
-azepide cholecystokinin receptor antagonists, benzodiazepine derivatives
-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
-bacept (see -cept) B-cell activating factor receptors
-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 anthelminthics, tiabendazole derivatives
-bercept (see -cept) target: VEGF receptors
-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
-bulin antineoplastics; mitotic inhibitor, tubulin binder
-butazone (see -buzone) anti-inflammatory analgesics, phenylbutazone derivatives
-buvir (see vir) RNA polymerase (NS5B) inhibitors
-buzone anti-inflammatory analgesics, phenylbutazone derivatives

C
-caine local anaesthetics
-cain- class I antiarrhythmics, procainamide and lidocaine derivatives
-calci vitamin D analogues/derivatives
-capone catechol-O-methyltransferase (COMT) inhibitors
-carbef antibiotics, carbacephem 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
-cellose (see cell-/cel-)  cellulose ether derivatives
-cept  receptor molecules, native or modified (a preceding infix should designate the target)
-cic  hepatoprotective substances with a carboxylic acid group
-ciclib  cyclin dependent kinase inhibitors
-ciclovir (see vir)  antivirals, bicyclic heterocycles compounds
-cidin  naturally occurring antibiotics (undefined group)
-ciguat  guanylate cyclase activators and stimulators
-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  nucleosides antiviral or antineoplastic agents, cytarabine or azacitidine derivatives
-clidine/-clidinium  muscarinic receptor agonists/antagonists
-clone  hypnotic tranquillizers
-cocept (see -cept)  complement receptors
-cog  blood coagulation factors
cogin  blood coagulation cascade inhibitors
-conazole  systemic antifungal agents, miconazole derivatives
cort  corticosteroids, except prednisolone derivatives
<table>
<thead>
<tr>
<th>Stem</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-coxib</td>
<td>selective cyclo-oxygenase inhibitors</td>
</tr>
<tr>
<td>-crinat</td>
<td>diuretics, etacrynic acid derivatives</td>
</tr>
<tr>
<td>-crine</td>
<td>acridine derivatives</td>
</tr>
<tr>
<td>-cromil</td>
<td>antiallergics, cromoglicic acid derivatives</td>
</tr>
<tr>
<td>-curium (see -ium)</td>
<td>curare-like substances</td>
</tr>
<tr>
<td>-cycline</td>
<td>antibiotics, protein-synthesis inhibitors, tetracycline derivatives</td>
</tr>
<tr>
<td>D</td>
<td></td>
</tr>
<tr>
<td>-dan</td>
<td>cardiac stimulants, pimobendan derivatives</td>
</tr>
<tr>
<td>-dapsone</td>
<td>antimycobacterials, diaminodiphenylsulfone derivatives</td>
</tr>
<tr>
<td>-decakin (see -kin)</td>
<td>interleukin-10 analogues and derivatives</td>
</tr>
<tr>
<td>-denoson</td>
<td>adenosine A receptor agonists</td>
</tr>
<tr>
<td>-dermin (see -ermin)</td>
<td>epidermal growth factors</td>
</tr>
<tr>
<td>-dil</td>
<td>vasodilators</td>
</tr>
<tr>
<td>-dilol (see -dil)</td>
<td>vasodilators</td>
</tr>
<tr>
<td>-dipine</td>
<td>calcium channel blockers, nifedipine derivatives</td>
</tr>
<tr>
<td>-dismase (see -ase)</td>
<td>enzymes with superoxide dismutase activity, see -ase item V</td>
</tr>
<tr>
<td>-distim (see -stim)</td>
<td>combination of two different types of colony stimulating factors</td>
</tr>
<tr>
<td>-dodekin (see -kin)</td>
<td>interleukin-12 analogues and derivatives</td>
</tr>
<tr>
<td>-dopa</td>
<td>dopamine receptor agonists, dopamine derivatives, used as antiparkinsonism/prolactin inhibitors</td>
</tr>
<tr>
<td>-dox (see -ox/-alox)</td>
<td>antibacterials, quinazoline dioxide derivatives</td>
</tr>
<tr>
<td>-dralazine</td>
<td>antihypertensives, hydrazinephthalazine derivatives</td>
</tr>
<tr>
<td>-drine</td>
<td>sympathomimetics</td>
</tr>
<tr>
<td>-dronic acid</td>
<td>calcium metabolism regulator, pharmaceutical aid</td>
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<tr>
<td>-dutant (see -tant)</td>
<td>neurokinin NK₂ receptor antagonist</td>
</tr>
<tr>
<td>-dyl (see -dil)</td>
<td>vasodilators</td>
</tr>
</tbody>
</table>
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
-enicokin (see -kin)  interleukin-21 human analogues and derivatives
-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

-farcept (see -cept)  subgroup of interferon receptors
-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  opioid receptor agonists, analgesics, fentanyl derivatives
-fentrine  inhibitors of phosphodiesterases
-fermin (see -ermin)  fibroblast 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
-fosfamide (see -fos)  alkylation agents of the cyclophosphamide group
-fosine (see -fos)  cytostatic
-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
-gene  gene therapy products
gest  steroids, progestogens
-gestr- (see estr)  estrogens
-giline  monoamine oxydase (MAO)-inhibitors type B
-gillin  antibiotics produced by Aspergillus strains
gli antihyperglycaemics
-gliptin (see gli) dipeptidyl aminopeptidase–IV inhibitors
-glitazar (see gli) peroxisome proliferator activating receptor-γ (PPAR-γ) agonists
-glitazone (see gli) peroxisome proliferator activating receptor-γ (PPAR-γ) agonists, thiazolidinedione derivatives
-glumide cholecystokinin (CCK) antagonists, antiulcer, anxiolytic agent
-glumide cholecystokinin (CCK) antagonists, antiulcer, anxiolytic agent
-glutide (see -tide) Glucagon-Like Peptide (GLP) analogues
-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
guan- antihypertensives, guanidine derivatives

I
-ibine (see -ribine) ribofuranyl-derivatives of the “pyrazofurin” type
-icam anti-inflammatory, isoxicam derivatives
-ifene antiestrogens or estrogen receptor modulators, 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  
alcohol and organic bases
-inostat (see stat)  
histone deacetylase inhibitors
-io-  
iiodine-containing contrast media
-iod-/io-  
iiodine-containing compounds other than contrast media
-irudin  
thrombin inhibitors, hirudin derivatives
-isomide  
class I antiarrhythmics, disopyramide derivatives
-iium  
quaternary ammonium compounds
-izine (-yzine)  
diphenylmethyl piperazine derivatives

K
-kacin  
antiotics, kanamycin and bekamycin derivatives (obtained from Streptomyces kanamyceticus)
-kalant  
kpotassium channel blockers
-kalim  
kpotassium channel activators, antihypertensive
-kef-  
enkephalin agonists
-kin  
interleukin type substances
-ki(n)- (see -mab)  
target: interleukin
-kinra (see -kin)  
interleukin receptor antagonists
-kiren  
renin inhibitors

L
-lefacept (see -cept)  
lymphocyte function-associated antigen 3 receptors
-leukin (see -kin)  
interleukin-2 analogues and derivatives
-lisib  
phosphatidylinositol 3-kinase inhibitors, antineoplastics
-listat (see –stat)  
gastrointestinal lipase inhibitors
-lubant  
leukotriene B4 receptor antagonist
-lukast (see –ast)  
leukotriene receptor antagonists
-lutamide non-steroid antiandrogens

M
-mab monoclonal antibodies
-mantadine adamantane derivatives
-mantine (see -mantadine) adamantane derivatives
-mantone (see -mantadine) adamantane derivatives
-mapimod (see -imod) mitogen-activated protein (MAP) kinase inhibitors
-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
-mer polymers
-mesine sigma receptor ligands
-mestane aromatase inhibitors
-metacin anti-inflammatory, indometacin derivatives
-met(h)asone (see pred) prednisone and prednisolone derivatives
-micin aminoglycosides, antibiotics obtained from various Micromonospora
-mifene (see -ifene) antiestrogens, clomifene and tamoxifen derivatives
-milast (see -ast) phosphodiesterase IV (PDE IV) inhibitors
-mito- antineoplastics, nucleotoxic agents
-monam monobactam antibiotics
-morelin (see -relin) growth hormone release-stimulating peptides
-mostim (see -stim) macrophage stimulating factors (M-CSF) type substances
-motide (see -tide) immunological agents for active immunization
-motine antivirals, quinoline derivatives
-moxin  monoamine oxidase inhibitors, hydrazine derivatives
-mulin  antibacterials, pleuromulin derivatives
-mustine  antineoplastic, alkylating agents, (β-chloroethyl)amine derivatives
-mycin  antibiotics, produced by *Streptomyces* strains (see also -kacin)

**N**

nab  cannabinoid receptors agonists
-nabant  cannabinoid receptors antagonists
-nacept (see -cept)  interleukin-1 receptors
-nakin (see -kin)  interleukin-1 analogues and derivatives
-nakinra (see -kin)  interleukin-1 receptor antagonists
nal-  opioid receptor antagonists/agonists related to normorphine
-naritide (see -tide)  peptides and glycopeptides
-navir (see vir)  Human Immunodeficiency Virus (HIV) protease inhibitors
-nermin (see -ermin)  tumour necrosis factor
-nercept (see -cept)  tumour necrosis factor receptors
-nerant (see -tant)  neurotensin antagonists
-netant (see -tant)  neurokinin NK3 receptor antagonists
-nicate (see nico-)  antihypercholesterolaemic and/or vasodilating nicotinic acid esters
-nicline  nicotinic acetylcholine receptor partial agonists / 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-/nit-/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
-octadekin (see -kin)  interleukin-18 human analogues and derivatives
(-)octocog (see -cog)  blood factor VIII
-ol  for alcohols and phenols
-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
-orex  anorexics
-orph- (see orphan)  opioid receptor antagonists/agonists, morphinan derivates
orphan  opioid receptor antagonists/agonists, morphinan derivates
-octermin (see -ermin)  bone morphogenetic proteins
-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 serotonin and/or norepinephrine reuptake inhibitors, fluoxetine derivatives

-oxicam (see -icam) anti-inflammatory, isoxicam derivatives

-oxifene (see -ifene) antiestrogens or estrogen receptor modulators, clomifene and tamoxifen derivatives

-oxopine (see -pine) tricyclic compounds

P

-pafant platelet-activating factor antagonists

-pamide diuretics, sulfamoylbenzoic acid derivatives (could be sulfamoylbenzamide)

-pamil calcium channel blocker, verapamil derivatives

-parcin for glycopeptide antibiotics

-parib poly-ADP-Ribose polymerase inhibitors

-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

perflu- 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

-piprant prostaglandin receptors antagonists, non-prostanoids

-piprazole (see -prazole) psychotropics, phenylpiperazine derivatives
-pirone (see -spirone) 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
-pladib phospholipase A₂ inhibitors
-planin glycopeptide antibacterials (*Actinoplanes* strains)
-plase (see -ase) enzymes
-plasmid (see -gene) gene therapy products
-platin antineoplastic agents, platinum derivatives
-plermin (see -ermin) platelet-derived growth factor
-plestim (see -stim and -kin) interleukin-3 analogues and derivatives
-plon imidazopyrimidine or pyrazolopyrimidine derivatives, used as anxiolytics, sedatives, hypnotics
-poetin erythropoietin type blood factors
-porfim benzoporphyrin derivatives
-poride Na⁺/H⁺ antiport inhibitor
-pramine substances of the imipramine group
-prazol antiulcer, benzimidazole derivatives
-pred prednisone and prednisolone derivatives
-prenaline (see -terol) bronchodilators, phenethylamine derivatives
-pressin vasoconstrictors, vasopressin derivatives
-previr (see vir) Hepatitis Virus C (HVC) protease inhibitors
-pride sulpiride derivatives
-pril angiotensin-converting enzyme inhibitors
-prilat (see -pril) angiotensin-converting enzyme inhibitors
-prim antibacterials, dihydrofolate reductase (DHFR) inhibitors, trimethoprim derivatives
<table>
<thead>
<tr>
<th>Stem</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>-pris-</td>
<td>Steroidal compounds acting on progesterone receptors (excluding -gest- compounds)</td>
</tr>
<tr>
<td>-pristin</td>
<td>Antibacterials, streptogramins, protein synthesis inhibitors, pristinamycin derivatives</td>
</tr>
<tr>
<td>-profen</td>
<td>Anti-inflammatory agents, ibuprofen derivatives</td>
</tr>
<tr>
<td>prost</td>
<td>Prostaglandins</td>
</tr>
<tr>
<td>-prostil (see prost)</td>
<td>Prostaglandins, anti-ulcer</td>
</tr>
</tbody>
</table>

**Q**

<table>
<thead>
<tr>
<th>Stem</th>
<th>Description</th>
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<tbody>
<tr>
<td>-quidar</td>
<td>Drugs used in multidrug resistance, quinoline derivatives</td>
</tr>
<tr>
<td>-quin(e)</td>
<td>Quinoline derivatives</td>
</tr>
<tr>
<td>-quinil (see -azenil)</td>
<td>Benzodiazepine receptor agonists, also partial or inverse (quinoline derivatives)</td>
</tr>
</tbody>
</table>

**R**

<table>
<thead>
<tr>
<th>Stem</th>
<th>Description</th>
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<tbody>
<tr>
<td>-racetam</td>
<td>Amide type nootrope agents, piracetam derivatives</td>
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<tr>
<td>-racil</td>
<td>Uracil type antineoplastics</td>
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<tr>
<td>-relin</td>
<td>Pituitary hormone-release stimulating peptides</td>
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<tr>
<td>-relax</td>
<td>Gonadotropin-releasing-hormone (GnRH) inhibitors, peptides</td>
</tr>
<tr>
<td>-renone</td>
<td>Aldosterone antagonists, spironolactone derivatives</td>
</tr>
<tr>
<td>-restat (see -stat)</td>
<td>Aldose reductase inhibitors</td>
</tr>
<tr>
<td>retin</td>
<td>Retinol derivatives</td>
</tr>
<tr>
<td>-ribine</td>
<td>Ribofuranyl-derivatives of the &quot;pyrazofurin&quot; type</td>
</tr>
<tr>
<td>rifa-</td>
<td>Antibiotics, rifamycin derivatives</td>
</tr>
<tr>
<td>-rinone</td>
<td>Cardiac stimulants, amrinone derivatives</td>
</tr>
<tr>
<td>-rixin</td>
<td>Chemokine CXCR receptors antagonists</td>
</tr>
<tr>
<td>-rizine (see -izine)</td>
<td>Antihistaminics/cerebral (or peripheral) vasodilators</td>
</tr>
<tr>
<td>-rolimus (see -imus)</td>
<td>Immunosuppressants, rapamycin derivatives</td>
</tr>
</tbody>
</table>
-rozole aromatase inhibitors, imidazole-triazole derivatives
-rsen antisense oligonucleotides
-rubicin antineoplastics, daunorubicin derivatives

S
sal salicylic acid derivatives
salazo- phenylazosalicylic acid derivatives antibacterial
-salan brominated salicylamide derivatives disinfectant
-sartan angiotensin II receptor antagonists, antihypertensive (non-peptidic)
-semide diuretics, furosemide derivatives
-sermin (see -ermin) insulin-like growth factors
-serod serotonin receptor antagonists and partial agonists
-serpine derivatives of Rauwolfia alkaloids
-sertib serine/threonine kinase inhibitors
-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
-stat/-stat- enzyme inhibitors
-steine mucolytics, other than bromhexine derivatives
-ster- androgens/anabolic steroids
-steride (see -ster-) androgens/anabolic steroids
-stigmine acetylcholinesterase inhibitors
-stim colony stimulating factors
-sulfa- anti-infectives, sulfonamides
-sulfan antineoplastic, alkylating agents, methanesulfonates

**T**

- tacept (see -cept) cytotoxic T lymphocyte-associated antigen 4 (CTLA-4) receptors
- tadine tricyclic histamine-H₁ receptor antagonists, tricyclic compounds
- tant neurokinin (tachykinin) receptor antagonists
- tapide microsomal triglyceride transfer protein (MTP) inhibitors
- taxel antineoplastics; taxane derivatives
- tecan antineoplastics, topoisomerase I inhibitors
- tegrast (see –ast) integrin antagonists
- tepa antineoplastics, thiotepa derivatives
- tepine (see -pine) tricyclic compounds
- teplase (see -ase) tissue type plasminogen activators, see -ase item VI
- tercept (see -cept) transforming growth factors receptors
- 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
- tibant bradykinin receptor antagonists
- tide peptides and glycopeptides (for special groups of peptides see -actide, -pressin, -relin, -tocin)
- tidine histamine-H₂-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, hydantoin derivatives
-trakin (see -kin), interleukin-4 analogues and derivatives
-trakinra (see -kinra), interleukin-4 receptor antagonists
-tredekin (see -kin), interleukin-13 analogues and derivatives
-trexate, folic acid analogues
-trexed, antineoplastics; thymidilate synthetase inhibitors
-tricin, antibiotics, polyene derivatives
-tril/trilat, endopeptidase inhibitors
-triptan, serotonin (5HT1) receptor agonists, sumatriptan derivatives
-triptyline, antidepressants, dibenzo[a,d]cycloheptane or cyclopheptene 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), anti hyperlipidaemic substances, HMG CoA reductase inhibitors
-vec (see -gene), gene therapy product
<table>
<thead>
<tr>
<th>Stem</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>-verine</td>
<td>spasmyotics with a papaverine-like action</td>
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<tr>
<td>vin-/-vin-</td>
<td>vinca alkaloids</td>
</tr>
<tr>
<td>vir</td>
<td>antivirals (undefined group)</td>
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<tr>
<td>-vircept (see -cept)</td>
<td>antiviral receptors</td>
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<tr>
<td>-virine (see vir)</td>
<td>non-nucleoside reverse transcriptase inhibitors (NNRTI)</td>
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<tr>
<td>-viroc (see -vir)</td>
<td>CCR5 (Chemokine CC motif receptor 5) receptor antagonists</td>
</tr>
<tr>
<td>-virsen</td>
<td>antisense oligonucleotides</td>
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<tr>
<td>-vos (see fos)</td>
<td>insecticides, anthelminthics, pesticides etc., phosphorus derivatives</td>
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<tr>
<td>-vudine (see -uridine)</td>
<td>uridine derivatives used as antiviral agents and as antineoplastic</td>
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<td><strong>X</strong></td>
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<tr>
<td>-xaban</td>
<td>blood coagulation factor $X_A$ inhibitors, antithrombotics</td>
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<tr>
<td>-xanox (see -ox/-alox)</td>
<td>anti-allergics, tixanox group</td>
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<tr>
<td><strong>Y</strong></td>
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<tr>
<td>-yzine (see -izine)</td>
<td>diphenylmethyl piperazine derivatives</td>
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<tr>
<td>-zafone</td>
<td>alozafone derivatives</td>
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<td>-zepine (see -pine)</td>
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<td>-zolast (see -ast)</td>
<td>leukotriene biosynthesis inhibitors</td>
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<tr>
<td>-zomib</td>
<td>proteasome inhibitors</td>
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<tr>
<td>-zone (see -buzone)</td>
<td>anti-inflammatory analgesics, phenylbutazone derivatives</td>
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<tr>
<td>-zotan</td>
<td>5-HT$_{1A}$ receptor agonists / antagonists acting primarily as neuroprotectors</td>
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Acknowledgements

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

Stem classification with corresponding examples of stems and their definition

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<tr>
<th>Code</th>
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<th>Example</th>
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<tr>
<td>A000</td>
<td>CNS DEPRESSANTS</td>
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<td>A100</td>
<td>General anaesthetics</td>
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<td>A110</td>
<td>General anaesthetics, volatile</td>
<td>-flurane</td>
<td>halogenated compounds used as general inhalation anaesthetics</td>
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<td>A120</td>
<td>General anaesthetics, other</td>
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<td>Hypnotics - sedatives</td>
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<td>A210</td>
<td>Barbiturates</td>
<td>barb</td>
<td>hypnotics, barbituric acid derivatives</td>
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<tr>
<td>A220</td>
<td>Hypnotic sedatives, other</td>
<td>-clone</td>
<td>hypnotic tranquillizers</td>
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<tr>
<td>A220</td>
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<td>-plon</td>
<td>imidazopyrimidine or pyrazolopyrimidine derivatives, used as anxiolytics, sedatives, hypnotics</td>
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<tr>
<td>A240</td>
<td>Chloral derivatives, hypnotic sedatives</td>
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<td>A300</td>
<td>Centrally acting voluntary muscle tone modifying drugs</td>
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<tr>
<td>A310</td>
<td>Antiepileptics</td>
<td>-bersat</td>
<td>anticonvulsants, benzoylamino-benzpyran derivatives</td>
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<td>A311</td>
<td>Hydantoins, Antiepileptics</td>
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<td>antiepileptics, hydantoin derivatives</td>
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<td>Acetylureas, Antiepileptics</td>
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<td>Succinimides, Antiepileptics</td>
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<td>Code</td>
<td>Description</td>
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<tr>
<td>A330</td>
<td>Centrally acting voluntary-muscle relaxants</td>
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<tr>
<td>A400</td>
<td>Analgesics and antipyretics, please see AA code here below.</td>
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</tr>
<tr>
<td>A500</td>
<td>Antivertigo drugs</td>
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</table>

### AA- ANALGESICS AND ANTIPYRETICS*

* The stems here below have been extracted from the A-CNS depressant category since not all analgesics are CNS depressants. In this context, a subcategory “AA- Analgesics and antipyretics” has been created to better reflect this information.

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<thead>
<tr>
<th>Code</th>
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<tr>
<td>A410</td>
<td>Opioids</td>
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<td>A410</td>
<td>-adol or -adol- analgesics</td>
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<tr>
<td>A410</td>
<td>-azocine narcotic antagonists/agonists related to 6,7-benzomorphan</td>
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<tr>
<td>A410</td>
<td>-eridine analgesics, pethidine derivatives</td>
</tr>
<tr>
<td>A410</td>
<td>-ethidine see -eridine</td>
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<tr>
<td>A410</td>
<td>-fentanil opioid receptor agonists, analgesics, fentanyl derivatives</td>
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<tr>
<td>A410</td>
<td>nal- opioid receptor antagonists/agonists related to normorphine</td>
</tr>
<tr>
<td>A410</td>
<td>orphan opioid receptor 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>
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<td>A420</td>
<td>Non-steroidal anti-inflammatory agents, arylbutanoic acid derivatives</td>
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<td>A420</td>
<td>Anti-inflammatory analgesics, phenylbutazone derivatives</td>
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<tr>
<td>A420</td>
<td>Anti-inflammatory analgesics, phenylbutazone derivatives</td>
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<tr>
<td>A420</td>
<td>Selective cyclo-oxygenase inhibitors</td>
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<td>&quot;fenamic acid&quot; derivatives</td>
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<tr>
<td>A420</td>
<td>Anti-inflammatory, anthranilic acid derivatives</td>
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<tr>
<td>A420</td>
<td>Anti-inflammatory, isoxicam derivatives</td>
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<tr>
<td>A420</td>
<td>Anti-inflammatory, indometacin derivatives</td>
</tr>
<tr>
<td>A420</td>
<td>Anti-inflammatory, anilinonicotinic acid derivatives</td>
</tr>
<tr>
<td>A420</td>
<td>Anti-inflammatory agents, ibuprofen derivatives</td>
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<tr>
<td>A430</td>
<td>Analgesics, other</td>
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<tr>
<td>A430</td>
<td>Analgesics, glafenine derivatives (subgroup of fenamic acid group)</td>
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<td>A440</td>
<td>Central antiemetics</td>
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<td>B000</td>
<td>CNS STIMULANTS</td>
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<tr>
<td>B100</td>
<td>Analeptics</td>
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<tr>
<td>B100</td>
<td>Amide type nootrope agents, piracetam derivatives</td>
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### INN – The use of stems

<table>
<thead>
<tr>
<th>B100</th>
<th>vin- (and -vin-)</th>
<th>vinca alkaloids</th>
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<tr>
<td>B200</td>
<td>Opioid receptor antagonists</td>
<td>nal-</td>
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<td></td>
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<td>orphan</td>
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<td>B300</td>
<td>Benzodiazepine receptor antagonists</td>
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### PSYCHOPHARMACOLOGICS

<table>
<thead>
<tr>
<th>C000</th>
<th>-piprazole</th>
<th>psychotropics, phenylpiperazine derivatives (future use is discouraged due to conflict with the stem – prazole)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C000</td>
<td>-pride</td>
<td>sulpiride derivatives</td>
</tr>
<tr>
<td>C000</td>
<td>-racetam</td>
<td>amide type nootrope agents, piracetam derivatives</td>
</tr>
<tr>
<td>C000</td>
<td>-triptan</td>
<td>serotonin (5-HT1) receptor agonists, sumatriptan derivatives</td>
</tr>
<tr>
<td>C000</td>
<td>-zotan</td>
<td>serotonin 5-HT1A receptor agonists/antagonists acting primarily as neuroprotectors</td>
</tr>
<tr>
<td>C100</td>
<td>Anxiolytic sedatives</td>
<td>-azenil</td>
</tr>
<tr>
<td>C100</td>
<td>-azepam</td>
<td>diazepam derivatives</td>
</tr>
<tr>
<td>C100</td>
<td>-bamate</td>
<td>tranquillizers, propanediol and pentanediol derivatives</td>
</tr>
<tr>
<td>C100</td>
<td>-carnil</td>
<td>benzodiazepine receptor antagonists/agonists (carboline derivatives)</td>
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<tr>
<td>C100</td>
<td>-peridone</td>
<td>see -perone: antipsychotics, risperidone derivates</td>
</tr>
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<td>Category</td>
<td>Stem</td>
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<tr>
<td>C100</td>
<td>-perone</td>
<td>Tranquillizers, neuroleptics, 4'-fluoro-4-piperidinobutyrophene derivatives</td>
</tr>
<tr>
<td>C100</td>
<td>-pidem</td>
<td>Hypnotics/sedatives, zolpidem derivatives</td>
</tr>
<tr>
<td>C100</td>
<td>-plon</td>
<td>Imidazopyrimidine or pyrazolopyrimidine derivatives, used as anxiolytics, sedatives, hypnotics</td>
</tr>
<tr>
<td>C100</td>
<td>-quinil</td>
<td>Benzodiazepine receptor agonists also partial or inverse (quinoline derivatives), see -azenil</td>
</tr>
<tr>
<td>C100</td>
<td>-spirone</td>
<td>Anxiolytics, buspirone derivatives</td>
</tr>
<tr>
<td>C100</td>
<td>-zafone</td>
<td>Alozafone derivatives</td>
</tr>
<tr>
<td>C200 Antipsychotics (neuroleptics)</td>
<td>-perone</td>
<td>Tranquillizers, neuroleptics, 4'-fluoro-4-piperidinobutyrophene derivatives; -peridol: antipsychotics, haloperidol derivatives; -peridone: antipsychotics, risperidone derivatives</td>
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<tr>
<td>C210</td>
<td>Brain amine depleters</td>
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<tr>
<td>C220</td>
<td>Central adrenoreceptor antagonists</td>
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<tr>
<td>C300 Antidepressants</td>
<td>-oxetine</td>
<td>Serotonin and/or norepinephrine reuptake inhibitors, fluoxetine derivatives</td>
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<tr>
<td>C310</td>
<td>MAO inhibitors</td>
<td>-giline</td>
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<td>C310</td>
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<td>-maxin</td>
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<td>C320</td>
<td>Tricyclic antidepressants</td>
<td>-pin(e)</td>
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<td>Code</td>
<td>Definition</td>
<td>Examples</td>
</tr>
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<td>C320</td>
<td>(-pramine)</td>
<td>substances of the imipramine group</td>
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<td>(-triptyline)</td>
<td>antidepressants, dibenzo[a,d]cycloheptane or cycloheptene derivatives</td>
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<td>C330</td>
<td>Tetracyclic antidepressants</td>
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<td>C340</td>
<td>Bicyclic antidepressants</td>
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<tr>
<td>C400</td>
<td>(\text{Indirect releasers of catecholamines})</td>
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<td>C500</td>
<td>(\text{Psychodysleptics (hallucinogens)})</td>
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<td>C600</td>
<td>CNS metabolites</td>
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<td>(\text{Serotonin receptor antagonists}) (-anserin)</td>
<td>serotonin receptor antagonists (mostly 5-HT(_2))</td>
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<td>C700</td>
<td>(\text{erg})</td>
<td>ergot alkaloid derivatives</td>
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<td>C700</td>
<td>(-setron)</td>
<td>serotonin receptor antagonists (5-HT(_3)) not fitting into other established groups of serotonin receptor antagonists, see (-anserin)</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Definition</th>
<th>Examples</th>
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<td>E000</td>
<td>(\text{DRUGS ACTING AT SYNAPTIC AND NEUROEFFECTOR JUNCTIONAL SITES})</td>
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<td>E000</td>
<td>(-nabant)</td>
<td>cannabinoid receptors antagonists</td>
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<td>local anaesthetics</td>
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<td>Spasmolytics, general</td>
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<td>spasmolytics with a papaverine-like action</td>
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<td>Vasodilators</td>
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<td>inhibitors of PDE5 with vasodilator action</td>
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<td>Coronary vasodilators, also calcium channel blockers</td>
<td>-ciguat</td>
<td>guanylate cyclase activators and stimulators</td>
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<td>Vasodilators</td>
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<td>vasodilators</td>
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<td>Coronary vasodilators, also calcium channel blockers</td>
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<td>endothelin receptor antagonists</td>
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<td>calcium channel blockers, nifedipine derivatives</td>
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<td>Vasodilators</td>
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<td>calcium channel blockers acting as vasodilators</td>
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<td>calcium channel blockers, verapamil derivatives</td>
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<td>antihypercholesterolaemic and/or vasodilating nicotinic acid esters</td>
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<td>HISTAMINE AND ANTIHISTAMINICS</td>
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<tr>
<td>G100</td>
<td>Histamine and histamine-like drugs</td>
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<td>G200</td>
<td>Antihistaminics</td>
<td>-astine</td>
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<tr>
<td>G210</td>
<td>Histamine H₁-receptor antagonists</td>
<td>-tadine</td>
<td>histamine-H₁ receptor antagonists, tricyclic compounds</td>
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<tr>
<td>G220</td>
<td>Histamine H₂-receptor antagonists</td>
<td>-tidine</td>
<td>histamine-H₂-receptor antagonists, cimetidine derivatives</td>
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<td>G230</td>
<td>Histamine H₃-receptor antagonists</td>
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<td>Histamine metabolism agents</td>
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<td>CARDIOVASCULAR AGENTS</td>
<td>-bradine</td>
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<td>-denoson</td>
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<td></td>
<td>-vaptan</td>
<td>vasopressin receptor antagonists</td>
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<td>H100</td>
<td>Cardiac glycosides and drugs with similar action</td>
<td>-dan</td>
<td>cardiac stimulants, pimobendan derivatives</td>
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<td>H100</td>
<td></td>
<td>-rinone</td>
<td>cardiac stimulants, amrinone derivatives</td>
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<td>H200</td>
<td>Antiarrhythmics</td>
<td>-afenone</td>
<td>antiarrhythmics, propafenone derivatives</td>
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<td>-aj-</td>
<td>antiarrhythmics, ajmaline derivatives</td>
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<tr>
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<td></td>
<td>-cain-</td>
<td>Class I antiarrhythmics, procainamide and lidocaine derivatives (antifibrillants with local anaesthetic activity)</td>
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<td>-isomide</td>
<td>class I antiarrhythmics, disopyramide derivatives</td>
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<td>-kalant</td>
<td>potassium channel blockers</td>
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<td><strong>H300</strong></td>
<td><strong>Antihypertensives</strong></td>
<td>-azosin</td>
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<td>guan-</td>
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<td>-kalim</td>
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<td><strong>H300</strong></td>
<td>-kiren</td>
<td>renin inhibitors</td>
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<td>-pril(at)</td>
<td>angiotensin-converting enzyme inhibitors</td>
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<td><strong>H300</strong></td>
<td>-sartan</td>
<td>angiotensin II receptor antagonists, antihypertensive (non-peptidic)</td>
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<td><strong>H400</strong></td>
<td><strong>Antihyperlipidaemic drugs</strong></td>
<td>-fibrate</td>
<td>clofibrate derivatives</td>
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<td><strong>H400</strong></td>
<td>-nicate</td>
<td>antihypercholesterolaemic and/or vasodilating nicotinic acid esters</td>
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<td><strong>H400</strong></td>
<td>-tapide</td>
<td>microsomal triglyceride transfer protein (MTP) inhibitors</td>
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<td><strong>H400</strong></td>
<td>-vastatin</td>
<td>see -stat; antihyperlipidaemic substances, HMG CoA reductase inhibitors</td>
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<td><strong>H500</strong></td>
<td><strong>Antivaricose drugs</strong></td>
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<td><strong>H510</strong></td>
<td>Sclerosing drugs</td>
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<td>H600</td>
<td>Capillary-active drugs, haemostyptics</td>
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<td>H700</td>
<td>Calcium channel blockers</td>
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<td>H800</td>
<td>Agents influencing the renin-angiotensin system</td>
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<td>H810</td>
<td>Angiotensin converting enzyme inhibitors</td>
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<td>H820</td>
<td>Angiotensin receptor antagonists</td>
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<th>I000</th>
<th>BLOOD AND AGENTS ACTING ON THE HAEMOPOIETIC SYSTEM (EXCL. CYTOSTATICS)</th>
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<tbody>
<tr>
<td>I100</td>
<td>Antianaemic agents</td>
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<tr>
<td>I110</td>
<td>Iron preparations</td>
</tr>
<tr>
<td>I120</td>
<td>Haematinics, other (Vit. B-12, folic acid, etc.)</td>
</tr>
<tr>
<td>I130</td>
<td>Miscellaneous antianaemic agents</td>
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<table>
<thead>
<tr>
<th>I200</th>
<th>Agents influencing blood coagulation</th>
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<tbody>
<tr>
<td></td>
<td>-cog</td>
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<tr>
<td></td>
<td>(-)eptacog: blood coagulation VII, (-)octocog: blood factor VIII, (-)nonacog: blood factor IX</td>
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<tr>
<td>I200</td>
<td>-cogin</td>
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<tr>
<td></td>
<td>blood coagulation cascade inhibitors</td>
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<tr>
<td>I200</td>
<td>-fiban</td>
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<tr>
<td></td>
<td>fibrinogen receptor antagonists (glycoprotein IIb/IIIa receptor antagonists)</td>
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<td>I200</td>
<td>-gatran</td>
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<tr>
<td></td>
<td>thrombin inhibitor, antithrombotic agents</td>
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<tr>
<td>I200</td>
<td>-parin</td>
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<tr>
<td></td>
<td>heparin derivatives including low molecular mass heparins</td>
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<tr>
<td>I210</td>
<td>Anticoagulants</td>
</tr>
<tr>
<td></td>
<td>-arol</td>
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<tr>
<td></td>
<td>anticoagulants, dicoumarol derivatives</td>
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<tr>
<td>I210</td>
<td>-grel or -grel</td>
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<tr>
<td>-------</td>
<td>---------------</td>
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<tr>
<td>I210</td>
<td>-irudin</td>
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<td>I210</td>
<td>-pafant</td>
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<tr>
<td>I210</td>
<td>-troban</td>
</tr>
<tr>
<td>I220</td>
<td>Prothrombin inhibitors</td>
</tr>
<tr>
<td>I230</td>
<td>Prothrombin synthesis inhibitors</td>
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<tr>
<td>I240</td>
<td>Anticoagulant inhibitors</td>
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<tr>
<td>I250</td>
<td>Agents affecting fibrinolysis</td>
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<tr>
<td>I260</td>
<td>Coagulation promoting agents</td>
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<tr>
<td>I261</td>
<td>Blood clotting factors</td>
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<tr>
<td>I300</td>
<td>Blood proteins and their fractions</td>
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<tr>
<td>I310</td>
<td>Blood substitutes (macromolecular)</td>
</tr>
<tr>
<td>I400</td>
<td>Platelet-function regulators</td>
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</tbody>
</table>
| I500   | Colony stimulating factors | -stim colony stimulating factors: -
  \*stim\*: combination of two different types of CSF;
  -gramostim: granulocyte macrophage colony stimulating factor (GM-CSF) type substances;
  -grastim: granulocyte colony stimulatory factor (G-CSF) type substances;
  -mostim: macrophage stimulating factors (M-CSF) type substances;
  -plestim: interleukin-3 analogues and derivatives |
<table>
<thead>
<tr>
<th>I500</th>
<th>Granulocyte stimulating factors</th>
<th>-grastim</th>
<th>see -stim</th>
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<tbody>
<tr>
<td>I500</td>
<td>Macrophage stimulating factor</td>
<td>-mostim</td>
<td>macrophage stimulating factors (M-CSF) type substances; see -stim</td>
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</table>

<table>
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<tr>
<th>J000</th>
<th>AGENTS INFLUENCING THE GASTROINTESTINAL TRACT</th>
<th>-emcinal</th>
<th>erythromycin derivatives lacking antibiotic activity, motilin agonists</th>
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</thead>
<tbody>
<tr>
<td>J000</td>
<td></td>
<td>-glumide</td>
<td>cholecystokinin antagonists, antiulcer, anxiolytic agents</td>
</tr>
<tr>
<td>J000</td>
<td></td>
<td>-prazole</td>
<td>antiulcer, benzimidazole derivatives</td>
</tr>
<tr>
<td>J000</td>
<td></td>
<td>-serod</td>
<td>serotonin receptor antagonists and partial agonists</td>
</tr>
<tr>
<td>J100</td>
<td>Drugs acting on gastrointestinal system</td>
<td>-azepide</td>
<td>cholecystokinin receptor antagonists</td>
</tr>
<tr>
<td>J100</td>
<td></td>
<td>-pride</td>
<td>sulpiride derivatives</td>
</tr>
<tr>
<td>J120</td>
<td>Choleretics (and hepatoprotective agents)</td>
<td>-cic</td>
<td>hepatoprotective substances with a carboxylic acid group</td>
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<tr>
<td>J130</td>
<td>Digestive enzymes</td>
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<tr>
<td>J200</td>
<td>Emetics</td>
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<tr>
<td>J300</td>
<td>Hepato-protective agents</td>
<td></td>
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<tr>
<td>J400</td>
<td>Gastro-intestinal anti-infectives (see S000)</td>
<td></td>
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<tr>
<td>J500</td>
<td>Antidiarrhoeals</td>
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</table>
### ANTS INFLUENCING THE RESPIRATORY TRACT AND ANTIALLERGICS

<table>
<thead>
<tr>
<th>K000</th>
<th>Agents influencing the respiratory tract and antiallergics</th>
<th>-ast</th>
<th>antiasthmatics or antiallergics, not acting primarily as antihistaminics; -lukast: leukotriene receptor antagonists; -milast: phosphodiesterase IV (PDE IV) inhibitors; -trodast: thromboxane A2 receptor antagonists, antiasthmatics, -zolast: leukotriene biosynthesis inhibitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>K000</td>
<td>-cromil</td>
<td>antiallergics, cromoglicic acid derivatives</td>
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<tr>
<td>K000</td>
<td>-exine</td>
<td>mucolytic, bromhexine derivatives</td>
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<tr>
<td>K000</td>
<td>-fentrine</td>
<td>inhibitors of phosphodiesterases</td>
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<tr>
<td>K000</td>
<td>-lukast</td>
<td>leukotriene receptor antagonists, see -ast</td>
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<tr>
<td>K000</td>
<td>-steine</td>
<td>mucolytics, other than bromhexine derivatives</td>
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<tr>
<td>K000</td>
<td>-trodast</td>
<td>thromboxane A2 receptor antagonists, antiasthmatics; see -ast</td>
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<tr>
<td>K000</td>
<td>-xanox</td>
<td>antiallergic respiratory tract drugs, xanoxic acid derivatives</td>
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**K100** Antitussives

**K110** Antitussives - central

**K120** Antitussives - peripheral

**K200** Expectorants
<table>
<thead>
<tr>
<th>L000</th>
<th>CYTOTOXICS, TARGETED THERAPIES AND HORMONES IN CANCER THERAPY</th>
<th>-anib</th>
<th>angiogenesis inhibitors</th>
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<tbody>
<tr>
<td>L000</td>
<td>-antrone</td>
<td></td>
<td>antineoplastics; anthraquinone derivatives</td>
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<tr>
<td>L000</td>
<td>-(ar)abine</td>
<td></td>
<td>arabinofuranosyl derivatives</td>
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<tr>
<td>L000</td>
<td>-bulin</td>
<td></td>
<td>antineoplastics; mitotic inhibitors, tubulin binders</td>
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<tr>
<td>L000</td>
<td>-mestane</td>
<td></td>
<td>aromatase inhibitors</td>
</tr>
<tr>
<td>L000</td>
<td>mito-</td>
<td></td>
<td>antineoplastics, nucleotoxic agents</td>
</tr>
<tr>
<td>L000</td>
<td>-platin</td>
<td></td>
<td>antineoplastic agents, platinum derivatives</td>
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<tr>
<td>L000</td>
<td>-quidar</td>
<td></td>
<td>drugs used in multidrug resistance; quinoline derivatives</td>
</tr>
<tr>
<td>L000</td>
<td>-racil</td>
<td></td>
<td>uracil type antineoplastics</td>
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<tr>
<td>L000</td>
<td>-ribine</td>
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<td>ribofuranil-derivatives of the &quot;pyrazofurin&quot; type</td>
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<td>aromatase inhibitors, imidazole-triazole derivatives</td>
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<td>L000</td>
<td>-sertib</td>
<td></td>
<td>serine/threonine kinase inhibitors</td>
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<td>L000</td>
<td>-taxel</td>
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<td>antineoplastics; taxane derivatives</td>
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<tr>
<td>L000</td>
<td>-tecan</td>
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<td>antineoplastics, topoisomerase I inhibitors</td>
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<td>tyrosine kinase inhibitors</td>
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<td>antineoplastics; thymidylate synthetase inhibitors</td>
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<td>Immunosuppressants</td>
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<td>Alkylating agents</td>
<td>-mustine</td>
<td>antineoplastic, alkylating agents, (beta-chloroethyl)amine derivatives</td>
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<td>-sulfan</td>
<td>antineoplastic, alkylating agents, methanesulfonates</td>
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<td>L200</td>
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<td>-tepa</td>
<td>antineoplastics, thiotepa derivatives</td>
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<td>L300</td>
<td>Radioisotopes (except diagnostics)</td>
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<tr>
<td>L310</td>
<td>Radioisotopes - systemic</td>
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<td>L320</td>
<td>Radioisotopes - locally applied</td>
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<td>L400</td>
<td>Antineoplastics - antimetabolites</td>
<td>-abine</td>
<td>see -arabine, -citabine</td>
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<tr>
<td>L400</td>
<td></td>
<td>-citabine</td>
<td>nucleosides antiviral or antineoplastic agents, cytarabine or azacitidine derivatives</td>
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<tr>
<td>L400</td>
<td></td>
<td>-trexate</td>
<td>folic acid analogues</td>
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<td>L400</td>
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<td>-uridine</td>
<td>uridine derivatives used as antiviral agents and as antineoplastics; also -udine</td>
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<tr>
<td>L410</td>
<td>Ornithine decarboxylase inhibitors</td>
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<td>Antineoplastics - natural products (incl. antibiotics)</td>
<td>-rubicin</td>
<td>antineoplastics, daunorubicin derivatives</td>
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<td>vin- or -vin-</td>
<td>vinca alkaloids</td>
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<td>L600</td>
<td>Antineoplastics - sex hormone analogues and inhibitors</td>
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<td>L610</td>
<td>Aromatase inhibitors</td>
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<td>L620</td>
<td>Luteinizing hormone-releasing hormone agonists</td>
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<td>M000</td>
<td>METABOLISM AND NUTRITION (EXCL. WATER AND MINERAL METABOLISM)</td>
<td>-stat (or -stat-)</td>
<td>enzyme inhibitors; -lipastat: pancreatic lipase inhibitors; -restat or -restat-: aldose-reducing inhibitors; -vastatin: antihyperlipidaemic substances, HMG CoA reductase inhibitors</td>
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<tr>
<td>M100</td>
<td>Anorectics</td>
<td>-orex</td>
<td>anorectics</td>
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<td>M200</td>
<td>Dietetics and antiadipositas drugs</td>
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<td>M210</td>
<td>Bulk forming drugs</td>
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<td>M300</td>
<td>Agents influencing lipid and fat metabolism</td>
<td>-imibe</td>
<td>antihyperlipidaemics, acyl CoA:cholesterol acyltransferase (ACAT) inhibitors,</td>
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<td>M300</td>
<td></td>
<td>-listat</td>
<td>see -stat</td>
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<tr>
<td>M310</td>
<td>Antiatherosclerosis agents</td>
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<td>M320</td>
<td>Lipotropic agents</td>
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<td>-begron</td>
<td>β3-adrenoreceptor agonists</td>
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<td>M330</td>
<td>Lipogenesis inducing agents</td>
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<td>M400</td>
<td>Agents influencing protein metabolism</td>
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<td>Anabolic steroids</td>
<td>bol</td>
<td>anabolic steroids</td>
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<td>Amino acids</td>
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<td>M500</td>
<td>Agents influencing carbohydrate metabolism</td>
<td>-restat (or -restat-)</td>
<td>see -stat; aldose-reductase inhibitors</td>
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<tr>
<td>M510</td>
<td>Insulins</td>
<td></td>
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<td>M520</td>
<td>Oral antidiabetics - islet mediated</td>
<td>-formin</td>
<td>antihyperglycaemics, phenformin derivatives</td>
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</tbody>
</table>

**INN – The use of stems**
### INN – The use of stems

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Example</th>
<th>Details</th>
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<tbody>
<tr>
<td>M520</td>
<td>gli-, -gli-</td>
<td>previously gly-; antihyperglycaemics</td>
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<td>-gliptin</td>
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<td>N.1.2.0 -etanide: diuretics, piretanide derivatives; S.3.0.0 -oxanide: antiparasitic, salicylanilides and analogues</td>
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<p>| S000 | ANTI-INFECTIVES AND DRUGS ACTING ON IMMUNITY |          |                     |
| S100 | Ectoparasiticides |          |                     |
| S200 | Antiseptics and disinfectants |          |                     |
| S210 | Antiseptics (excl. heavy metal antiseptics) | -nifur- | 5-nitrofuran derivatives |</p>
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<td>-ectin</td>
<td>antiparasitics, ivermectin derivatives</td>
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<td>-oxanide</td>
<td>antiparasitics, salicylanilides and analogues; see -anide</td>
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<td>Anthelminthics (excl. antinematode agents)</td>
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<td>anthelminthics (undefined group)</td>
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</table>
| S500 | Antibiotics, antibacterial and antiviral agents  | -planin      | glycopeptide antibacterials
<p>|      |                                                  |              | (Actinoplanes strains) |
| S510 | Sulfonamides                                     | sulfa-       | anti-infectives, sulfonamides |
| S520 | Antimycobacterials                               | -dapsone     | antimycobacterials, diaminodiphenylsulfone derivatives |
| S520 |                                                  | -pirox       | see -ox |
| S530 | Antiviral                                        | -arabine     | arabinofuranosyl derivatives |
| S530 |                                                  | -motine      | antivirals, quinoline derivatives |
| S530 |                                                  | -ribine      | ribofuranil-derivatives of the pyrazofurin type |
| S530 |                                                  | -uridine     | uridine derivatives used as antiviral agents and as antineoplastics; -udine |
| S530 |                                                  | vir          | antivirals (undefined group): -amivir, -cavir, -ciclovir, -fovir, -gosivir, -navir, -virsen, -virumab |
| S550 | Antibacterial/other                              | -citabine    | nucleosides antiviral or antineoplastic agents, cytarabine or azacitidine derivatives |
| S550 |                                                  | -oxacin      | antibacterials, nalidixic acid derivatives |
| S550 |                                                  | -prim        | antibacterials, dihydrofolate reductase (DHFR) inhibitors, trimethoprim derivatives |
| S600 | Antibiotics (except antineoplastic antibiotics)  | -cidin       | naturally occurring antibiotics (undefined group) |
| S600 |                                                  | -fungin      | antifungal antibiotics |
| S600 |                                                  | -gillin      | antibiotics produced by Aspergillus strains |
| S600 | -monam | monobactam antibiotics |
| S600 | -mycin | antibiotics, produced by <em>Streptomyces</em> strains (see also -kacin) |
| S600 | -parcin | for glycopeptide antibiotics |
| S600 | -penem | analogues of penicillanic acid antibiotics modified in the five-membered ring |
| S600 | -pristin | antibacterials, streptogramins, protein-synthesis inhibitors, pristinamycin derivatives |
| S610 | Antibiotics acting on the bacterial cell wall | -carbef | antibiotics, carbacephem derivatives |
| S610 | cef- | antibiotics, cefalosporanic acid derivatives |
| S610 | -cillin | antibiotics, 6-aminopenicillanic acid derivatives |
| S610 | -oxef | see cef-; antibiotics, oxacefalosporanic acid derivatives |
| S620 | Antibiotics affecting cell membrane and with detergent effect | -tricin | antibiotics, polyene derivatives |
| S630 | Antibiotics affecting protein synthesis | -cycline | antibiotics, protein-synthesis inhibitors, tetracycline derivatives |
| S630 |  | -kacin | antibiotics, kanamycin and bekanamycin derivatives (obtained from <em>Streptomyces kanamyceticus</em>); S.6.5.0: -micin: aminoglycosides, antibiotics obtained from various <em>Micromonospora</em> |
| S640 | Antibiotics affecting nucleic acid metabolism | rifa- | antibiotics, rifamycin derivatives |</p>
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| S710 | Interferons and immunomodulators | |

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<td>Adsorbents, astringents</td>
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<td>T220</td>
<td>Lubricant cathartics</td>
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<td>Irritant cathartics</td>
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<td>Gastro-intestinal anti-infectives, non-resorbed</td>
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<td>Saponins</td>
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<td>iodine-containing contrast media</td>
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<td>Category</td>
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<td>U310</td>
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<td>U320</td>
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<td>V000</td>
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<td>Z000</td>
<td>GENE THERAPY PRODUCTS</td>
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</tbody>
</table>
PART IV

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)  -clofenac: aceclofenac (52), alclofenac (23), diclofenac (28), fenclofenac (30)
     -dolac: dexpemedolac (71), etodolac (45), pemedolac (58)
     -fenac: amfenac (38), bromfenac (55), furofenac (40), ibufenac (14), lexofenac (38), nepafenac (78)
     -zolac: bufezolac (39), isofezolac (39), lonazolac (34), mofezolac (64), pirazolac (43), trifezolac (34)
     others: anirolac (52), bendazac (22), cinfenoac (41), clidanac (39), clofurac (42), clopirac (30), eltenac (53), felbinac (54), fenclorac (33), fentiazac (32), isoxepac (37), ketorolac (51), oxepinac (36), oxindanac (54), (quinclorac, ISO name for a herbicide), sulindac (33), tianafac (31), tifurac (57), tiopinac (40), zomepirac (37)

(b)  bufexamac (20) (anti-inflammatory; acetohydroxamic acid group instead of acetic acid group)

(c)  amtolmetin guacil (65), clamidoxic acid (17), fenclozic acid (22), metiazinic acid (20), prodolic acid (29), tolmetin (23)

-acetam  see -racetam

-actide  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), tridecactide (97)
-adol (x) or -adol-
analgesics

A.4.1.0 (USAN: analgesics (mixed opiate receptor agonists/antagonists))

A.4.2/3.0

(a) A.4.1.0: acetylmethadol (5), alimadol (39), alphacetylmethadol (5), alphamethadol (5), axomadol (87), betacetylmethadol (5), betamethadol (5), indantadol (94), levacetylmethadol (27), noracymethadol (12), tapentadol (87)

A.4.2/3.0: apadoline (74), asimadoline (74), befiradol (99), bromadoline (49), cebranopadol (107), ciprefadol (41), ciramadol (39), cloracetadol (16), dibusadol (24), dimenoxadol (7), diproxadol (34), eluxadoline (109), enadoline (68), faxeladol (97), filenadol (47), flumexadol (36), fluradoline (48), gaboxadol (48), insalmadol (92), levonantradol (43), lestanopadol (109), lorcinadol (57), moxoradoline (45), (deleted in List 48: moxifadol (47)), myfadol (17), nafoxadol (50), nantradol (42), nerbacadol (56), oxapadol (40), picenadol (47), pinadoline (50), pipradimadol (42), pipramadol (42), pravadoline (60), vadoline (60), profadol (20), radolmidine (82), ruzadolane (71), spiradoline (53), tazarolene (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  
(USAN: PDE5 inhibitors)

(a)  avanafil (92), beminafil (90), dasantafil (91), gisadenafil (101), lodenafil carbonate (94), mirodenafil (95), sildenafil (75), tadalafil (85), udenafil (93), vardenafil (82)

-aj-  
antiarrhythmics, ajmaline derivatives

H.2.0.0

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

-al (d)  
aldehydes

-aldrate  
antacids, aluminium salts

N.5.2.0

(a)  carbaldrate (53), potassium glucaldrate (14), magaldrate (49), simaldrate (15), sodium glucaspaldrate (17)

algeldrate (15), almadrate sulfate (15), almagodrate (52)

(c)  alexitol sodium (45), almagate (41), almasilate (43), dosmalfate (75), glucalox (13), hydrotalcite (23), lactalfe (53), sucralox (13)

-alol  
see -olol

-alox  
see -ox

-amivir  
see -vir
INN – The use of stems

-ampanel antagonists of the ionotropic non-NMDA (N-methyl-D-aspartate) glutamate receptors (Namely the AMPA (amino-hydroxymethyl-isoxazole-propionic acid) and/or KA (kainite antagonist) receptors)

B.0.0.0 (USAN: ionotropic non-NMDA glutamate receptors (AMPA and/or KA receptors) antagonists)

(a) becampanel (90), dasolampanel (105), fanapanel (80), irampanel (82), perampanel (97), selurampanel (104), talampanel (80), tezampanel (95), zonampanel (85)

-andr (d) steroids, androgens

Q.2.3.0 (USAN: -andr- androgens)

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

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

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

(b) i. _andr_: oxandrolone (12), propetandrol (13)

ii. ster: aldosterone (6), bolasterone (13), dihydrotachysterol (1), dimethisterone (8), ethisterone (4), noretisterone (6), norvinisterone (6), stercuronium iodide (21) (neuromuscular blocking agent)

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

-anib angiogenesis inhibitors

L.0.0.0 (USAN)

(a) beloranib (100), bevasiranib (108), brivanib alaninate (97), cediranib (95), crenolanib (105), motesanib (97), nintedanib (105), linifanib (102), lucitanib (107), pazopanib (94), pegaptanib (88), pegdinetanib (103), semaxanib (85), tivozanib (102), toceranib (100), trebananib (106), vandetanib (91), vatalanib (84)
-anide

-etanide  diuretics, piretanide derivatives

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

\[
\text{NH}_2\text{SO}_2\text{O}\text{CO}_2\text{H}
\]

(a) bumetanide (24), piretanide (33)
(c) besunide (30)

-oxanide  antiparasitics, salicylanilides and analogues

S.3.0.0  (USAN: antiparasitics (salicylanilide derivatives))

\[
\text{NH}\text{OH}\text{O}
\]

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

-thio analogues: 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) (antiarthritic; gout-remedy), ceforanide (39) (antibiotic), oglufanide (86) (immunomodulator), polihexanide (24) (antibacterial), tiprostanide (48) (antihypertonic)

-anserin  serotonin receptor antagonists (mostly 5-HT\(_2\))

C.7.0.0  (USAN: serotonin 5-HT\(_2\) receptor antagonists)

(a) adatanserin (70), altanserin (50), blonanserin (76), butanserin (51), eplivanserin (80), fananserin (69), fibanserin (75), iferanserin (89), ketanserin (46), lidanserin (62), nelotanserin (101), pelanserin (57), pimavanserin (97), pruvanserin (90), seganserin (56), trelanserin (97), tropanserin (55), volinanserin (95)
(b) serotonin receptor antagonists, psychoactive: cinanserin (17), glemanserin (68), mianserin (20), ritanserin (51)

-antel anthelminthics (undefined group)  

S.3.1.0

(a) amidantel (40), carbantel (35), closantel (36), derquantel (99), epsiprantel (57), febantel (38), flurantel (25), monepantel (98), morantel (22), oxantel (31), pexantel (22), praziquantel (34), pyrantel (17), resorantel (23), salantel (29), zilantel (33), antelmycin (15)

-antrone antineoplastics; anthraquinone derivatives  

L.0.0.0/ L.5.0.0

(a) ametantrone (45), banoxantrone (90), butantrone (49), ledoxantrone (76), losoxantrone (68), mitoxantrone (44), nortopixantrone (87), piroxantrone (59), pixantrone (89), sepantronium bromide (105), teloxantrone (68), topixantrone (87)

-apine see -pine

-(ar)abine arabinofuranosyl derivatives  

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

(a) clofarabine (90), cytarabine (14), fazarabine (56), fludarabine (48), nelarabine (80), vidarabine (23)  
See also the stem -citabine: ancitabine (36), apricitabine (95), capecitabine (73), decitabine (61), dexelvucitabine (95), elvucitabine (89), emtricitabine (80), enocitabine (46), fiaicitabine (59), flurocitabine (38), galocitabine (65), gemcitabine (62), ibacitabine (57), mercitabine (108), sapacitabine (94), tezacitabine (84), torcitabine (87), troxacitabine (81), valopicitabine (93), valtorcitabine (90), zalcitabine (66)

c S.5.3.0: ribavirin (31), taribavirin (95)
-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 (lobenzarit type))

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

(c)  tarenflurbil (97)

-arol (d)  anticoagulants, dicoumarol derivatives

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

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

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

(c)  diarbarone (15), ethyl biscoumacetate (4), phenprocoumon (11), tecarfarin (101), warfarin (23)

-arone

(USAN: antiarrhythmics)

amiodarone (16) (antiarrhythmic), benzarone (13), benzbromarone (13) (uricosuric), benzodiarone (11), brinazarone (64) (calcium channel blocker), bucromarone (48) (antiarrhythmic), budiodarone (101), celivarone (94), diarbarone (15), dronedarone (75) (antianginal, antiarrhythmic), etabenzarone (17), fantofarone (65) (calcium channel blocker), furidarone (19), inicarone (27), mecinarone (30), pyridarone (16), rilozarone (58)

-arotene  arotinoid derivatives

P.1.0.0  

(a)  adarotene (100), amsilarotene (98), betacarotene (38), hexarotene (80), etarotene (64), linarotene (65), mofarotene (70), palovarotene (99), sumarotene (64), tamivarotene (73), tazarotene (72), temarotene (54), trifarotene (107)
arte- antimalarial agents, artemisinin related compounds

S.3.3.0

(a) artefenomel (109), artemefene (70), artemether (61), artemisone (95), artemisinin (56), artemotil (80), artemimol (81), arterolane (97), artesunate (61)

-ase enzymes

W.0.0.0

(a) agalsidase alfa (84), agalsidase beta (84), algluacerase (68), alglucosidase alfa (91), brinase (22), asfotase alfa (104), bucelpipase alfa (95), calaspargase pegol (105), cocarboxylase (1), condoliase (106), crisantasaspe (107), dornase alfa (70), eolosulfase alfa (108), eufasaurerase (84), galsulfase (92), glucarpidase (92), hyalosidase (50), hyaluronidase (1), idursulfase (90), kallidinogenase (22), ocrase (28), pepasargase (64), penicillillase (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), fibrinolysin (human) (10), 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>crisantasapase (107)</td>
<td>Erwinia chrysanthemi</td>
<td>asparaginase</td>
</tr>
<tr>
<td>brinase (22)</td>
<td>Aspergillus oryzae</td>
<td>fibrinolytic</td>
</tr>
<tr>
<td>calaspargase pegol (105)</td>
<td>Escherichia coli</td>
<td>asparaginase</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>Aspergillus ochraceus</td>
<td>fibrinolytic (topically: cleaning wounds)</td>
</tr>
<tr>
<td>pegasparase (64)</td>
<td>Aspergillus melleus</td>
<td>asparaginase</td>
</tr>
<tr>
<td>promelase (46)</td>
<td>Aspergillus melleus</td>
<td>proteinase (chronic bronchitis)</td>
</tr>
<tr>
<td>Enzyme</td>
<td>Origin</td>
<td>Function</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>serrapeptase (31)</td>
<td>Serratia sp. E15</td>
<td>proteinase (chronic paranasal sinusitis etc.)</td>
</tr>
<tr>
<td>sfericase (40)</td>
<td>Bacillus sphaericus</td>
<td>proteinase (chronic paranasal sinusitis etc.)</td>
</tr>
<tr>
<td>streptokinase (6)</td>
<td>Streptococcus haemolyticus</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>
<tr>
<td>(c) without -ase suffix:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>batroxobin (29)</td>
<td>the venom of the serpent Bothropsatrox</td>
<td>thrombin like enzyme</td>
</tr>
<tr>
<td>bromelains (18)</td>
<td>Ananas comosus Merr.</td>
<td>fibrin depolymerizing (anti-inflammatory)</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 (anti-inflammatory, antioedema)</td>
</tr>
<tr>
<td>defibrotide (44)</td>
<td>mammalian pancreas</td>
<td>proteolytic (anti-inflammatory, antioedema)</td>
</tr>
<tr>
<td>fibrinolysin (human) (10)</td>
<td>human</td>
<td>fibrinolytic</td>
</tr>
<tr>
<td>sutilains (18)</td>
<td>Bacillus subtilis</td>
<td>proteolytic</td>
</tr>
</tbody>
</table>

II

- **lipase**

<table>
<thead>
<tr>
<th>Enzyme</th>
<th>Origin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>bucelpase alfa (95)</td>
<td>human origin</td>
<td>lipase</td>
</tr>
<tr>
<td>rizolipase (22)</td>
<td>Rhizopus arrhizus var. Delemar</td>
<td>lipase</td>
</tr>
</tbody>
</table>

III

**co-enzymes**

<table>
<thead>
<tr>
<th>Enzyme</th>
<th>Origin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) cocarboxylase (1)</td>
<td>chemically defined</td>
<td>co-enzyme in the metabolism of pyruvic acid</td>
</tr>
<tr>
<td>(c) ubidecarenone (48)</td>
<td>chemically defined</td>
<td>naturally occurring co-enzyme, a component in the electron transfer system in mitochondria (congestive heart failure)</td>
</tr>
</tbody>
</table>

### Notes:
- **Co-enzyme (a)**: Cocarboxylase is a co-enzyme involved in the metabolism of pyruvic acid.
- **Co-enzyme (c)**: Ubidecarenone is a co-enzyme that is naturally occurring and plays a role in electron transfer systems in mitochondria, particularly in cases of 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), desmoteplase (80), duteplase (62), lanoteplase (76), monteplase (71), nateplase (73), pamiteplase (78), reteplase (69), silteplase (65), tenecteplase (79)
  
  (c)  anistreplase (59)

### VII

- **-uplase**  urokinase-type plasminogen activators
  
  (a)  nasaruplase (68), nasaruplase beta (85), saruplase (58)

### VIII

- **others**
  
  agalsidase alfa (84)  human origin  treatment of deficiency of alpha-galactosidase activity (Fabry’s disease)
  
  agalsidase beta (84)  hamster  treatment of deficiency of alpha-galactosidase activity (Fabry’s disease)
  
  alfiremprase (85)  *Agkistrodon contrix contrix*  antithrombotic
  
  alglucerase (68)  human origin (placenta isoenzyme)  glucocerebrosidase
  
  alglucosidase alfa (91)  recombinant  treatment of Pompe’s disease
  
  asfotase alfa (104)  recombinant  phosphatase
  
  condoliase (106)  *Proteus vulgaris*  endolyase
  
  dornase alfa (70)  human origin  treatment of cystic fibrosis
<table>
<thead>
<tr>
<th>Name</th>
<th>Source</th>
<th>Function/Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>elosulfase alfa (108)</td>
<td>CHO cells</td>
<td>N-acetylgalactosamine-6-sulfatase</td>
</tr>
<tr>
<td>epafipase (85)</td>
<td>human origin</td>
<td>antiallergic, antiasthmatic</td>
</tr>
<tr>
<td>eufauserase (84)</td>
<td><em>Euphausia superba</em></td>
<td>digests proteins and selected cell surface adhesion molecules (wound healing; vaginal/oral candidosis)</td>
</tr>
<tr>
<td>galsulfase (92)</td>
<td>recombinant</td>
<td>Maroteaux-Lamy syndrome</td>
</tr>
<tr>
<td>glucarpidase (92)</td>
<td><em>Pseudomonadaceae gen. sp.</em></td>
<td>adjunctive treatment of patients at risk of methotrexate toxicity</td>
</tr>
<tr>
<td>hyalosidase (50)</td>
<td></td>
<td>hyaluronoglucosaminidase (treatment of myocardial infarction)</td>
</tr>
<tr>
<td>hyaluronidase (1)</td>
<td>various origins</td>
<td>depolymerizing hyaluronic acid (cellular diffusion factor)</td>
</tr>
<tr>
<td>idursulfase (90)</td>
<td></td>
<td>treatment of Hunter Syndrome (Mucopolysaccharidosis Type II), degrades glycosaminoglycans heparan and dermatan sulfate</td>
</tr>
<tr>
<td>imiglucerase (72)</td>
<td>human origin (placenta isoenzyme)</td>
<td></td>
</tr>
<tr>
<td>laronidase (85)</td>
<td>human origin</td>
<td></td>
</tr>
<tr>
<td>pegademase (63)</td>
<td>Origin should be indicated</td>
<td></td>
</tr>
<tr>
<td>pegadricase (105)</td>
<td><em>Candida utilis</em></td>
<td>urate oxidase</td>
</tr>
<tr>
<td>pegloticase (98)</td>
<td><em>Sus scrofa</em></td>
<td>uricase</td>
</tr>
<tr>
<td>penicillinase (10)</td>
<td><em>Bacillus cereus</em></td>
<td>inactivating penicillin</td>
</tr>
<tr>
<td>ranpirnase (81)</td>
<td><em>Rana pipiens</em></td>
<td>ribonuclease (antineoplastic)</td>
</tr>
<tr>
<td>rasburicase (81)</td>
<td><em>Aspergillus flavus</em></td>
<td>urate oxidase (hyperuricaemia)</td>
</tr>
<tr>
<td>streptodornase (6)</td>
<td><em>Streptococcus haemolyticus</em></td>
<td>hydrolysing desoxyribonucleoprotein beta-glucocerebrosidase</td>
</tr>
<tr>
<td>taliglucerase alfa (101)</td>
<td>recombinant</td>
<td>beta-glucocerebrosidase</td>
</tr>
<tr>
<td>tilactase (50)</td>
<td></td>
<td>β-D-glactosidase</td>
</tr>
<tr>
<td>velaglucerase alfa (98)</td>
<td></td>
<td>beta-glucocerebrosidase</td>
</tr>
<tr>
<td>Stems</td>
<td>Description</td>
<td></td>
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<tr>
<td>-------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td><strong>-ast (x)</strong>*</td>
<td><strong>antiasthmatics or antiallergics, not acting primarily as antihistaminics</strong>*</td>
<td></td>
</tr>
<tr>
<td><strong>K.0.0.0</strong></td>
<td>(BAN: antiasthmatics, antiallergics when not acting primarily as antihistamines) (USAN: antiasthmatics / antiallergics: not acting primarily as antihistamines)</td>
<td></td>
</tr>
<tr>
<td><strong>(a)</strong></td>
<td>acitazanolast (72), acreozast (77), andolast (67), asobamast (63), ataquimast (82), bamaquimast, (76), batebulast (66), bunaprolast (60), dametralast (54), dazooquinast (54), doqualast (48), eflumast (61), enofelast (67), enoxamast (52), fenprinast (48), filaminast (75), ibudilast (58), idenast (58), loxanast (46), melquinast (62), oxalinast (49), pemirolast (61), picumast (47), piromodast (64), quinotolast (64), raxofelast (68), repirinast (55), revenast (51), scopinast (76), suplatast tosilate (64), tazanolast (59), tiacrilast (52), tibenelast (58), tioxamast (53), tiprinast (50), tranilast (46), zaprinast (46)</td>
<td></td>
</tr>
<tr>
<td><strong>-lukast</strong></td>
<td><strong>leukotriene receptor antagonists</strong></td>
<td></td>
</tr>
<tr>
<td><strong>USAN</strong></td>
<td>(a) ablukast (61), cinalukast (70), iralukast (70), masilukast (94), montelukast (73), poblukast (70), pranlukast (67), ritolukast (64), sulukast (63), tipelukast (95), tomelukast (59), verlukast (65), zafirlukast (71)</td>
<td></td>
</tr>
<tr>
<td><strong>-milast</strong></td>
<td><strong>phosphodiesterase IV (PDE IV) inhibitors</strong></td>
<td></td>
</tr>
<tr>
<td><strong>USAN</strong></td>
<td>(a) apremilast (97), catramilast (95), cilomilast (82), lirimilast (86), ogremilast (94), piclamilast (73), revamilast (102), roflumilast (77), elbimilast (107), tetomilast (91), toofilast (85)</td>
<td></td>
</tr>
<tr>
<td><strong>-tegrast</strong></td>
<td><strong>integrin antagonists</strong></td>
<td></td>
</tr>
<tr>
<td><strong>USAN</strong></td>
<td>(a) carotegrast (102), firategrast (96), lifitegrast (107), valategrast (93), zaurategrast (101)</td>
<td></td>
</tr>
<tr>
<td><strong>-trodast</strong></td>
<td><strong>thromboxane A₂ receptor antagonists, antiasthmatics</strong></td>
<td></td>
</tr>
<tr>
<td><strong>USAN</strong></td>
<td>(a) imitrodast (70), seratrodast (70)</td>
<td></td>
</tr>
<tr>
<td><strong>-zolast</strong></td>
<td><strong>leukotriene biosynthesis inhibitors</strong></td>
<td></td>
</tr>
<tr>
<td><strong>USAN</strong></td>
<td>(a) binizolast (60), eclazolast (55), ontazolast (72), quazolast (55), tetrazolast (67) (c) bufrolin (34), oxarbazole (38), pirolate (44)</td>
<td></td>
</tr>
<tr>
<td><strong>-astine (x)</strong></td>
<td><strong>antihistaminics</strong></td>
<td></td>
</tr>
<tr>
<td><strong>G.2.0.0</strong></td>
<td>(BAN: antihistamines, not otherwise classifiable) (USAN: antihistaminics (histamine-H₁ receptor antagonists))</td>
<td></td>
</tr>
</tbody>
</table>
| **(a)** | acrivastine (51), alinastine (74), azelastine (36), bamirastine (91), barmastine (59), bepiastine (19), bepotastine (78), bilastine (82), cabastinen (50), carebastine (52), clemastine (22), dorastine (23), ebastine (52), emedastine (59), epinastine (55),
flezelastine (67), levocabastine (50), linetastine (74), mapinastine (72), mizolastine (64), moxastine (15), noberastine (59), octastine (37), perastine (15), piclopastine (22), rocastine (57), setastine (39), talastine (18), temelastine (54), zepastine (26)

(b) cloperastine (18) (antitussive), vinblastine (12) (vinca-alkaloid)

(c) astemizole (45), carboxam (4)

-azam see -azepam

-azenil benzodiazepine receptor antagonists/agonists (benzodiazepine derivatives)
  (USAN: benzodiazepine receptor antagonists/agonists)

(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)
  (USAN: benzodiazepine receptor agonists, partial agonists, inverse agonists (quinoline derivatives)

(a) lirequinil (72), radequinil (93) (replaces resequin (90)), terbequinil (63)

-azepam (x) diazepam derivatives
  (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), motrarepam (31), nimetazepam (26), nitrazepam (16), nordazepam (39), nortetrazepam (20), oxazepam (13), pinazepam (32), pivoxazepam (34), prazepam (14), profazepam (31), quazepam (36), reclazepam (53), sulazepam (14), temazepam (22), tetrazepam (17), tolufazepam (51), tuclazepam (40), uldazepam (30)

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

related: adinazolam (45), alprazolam (30), arfendazam (39), clazolam (29), climazolam (51), clobazam (25), clobenezepam (25), cloxazolam (29), ecopipam (80), estazolam (31), flutazolam (32), haloxazolam (38), ketazolam (26), levotofisopam (92), lofendazam (36), loprazolam (44), mexazolam (40), midazolam (40), nefopam (25), oxazolam (25), razobazam (52), remimazolam (102), tofisopam (26), trepipam (38), triazolam (30), triflubazam (28), zapizolam (43), zomebazam (49)

(c) brotizolam (40), chlordiazepoxide (11), ciclozolam (40), demoxepam (23), dipotassium chlorazepate (17), ethyl carbazepate (43), ethyl dirazepate (44), ethyl lofazepate (43), etizolam (40), potassium nitrazepate (17)

not related: anxiolytic: fenobam (36), muscle relax.: xilobam (36)

<table>
<thead>
<tr>
<th>-azepide</th>
<th>cholecystokinin receptor antagonists, benzodiazepine derivatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>J.1.0.0</td>
<td>(USAN: cholecystokinin receptor antagonists)</td>
</tr>
<tr>
<td>(a)</td>
<td>devazepide (62), pranazepide (75), netazepide (106), tarazepide (68)</td>
</tr>
<tr>
<td>(c)</td>
<td>lorglumide (56)</td>
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</table>

<table>
<thead>
<tr>
<th>-azocine</th>
<th>narcotic antagonists/agonists related to 6,7-benzomorphan</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.4.1.0</td>
<td>(USAN: narcotic antagonists/agonists, 6,7-benzomorphan derivatives)</td>
</tr>
<tr>
<td>(a)</td>
<td>anazocine (30), bremaocine (43), butinazocine (53), carbazocine (16), cogazocine (36), cyclazocine (14), eptazocine (45), gemazocine (29), ibazocine (36), ketazocine (34), metazocine (9), moxazocine (38), pentazocine (14), phenazocine (9), quadazocine (54), tonazocine (46), volazocine (19) related compounds: dezocine (35)</td>
</tr>
<tr>
<td>(b)</td>
<td>streptozocin (33)</td>
</tr>
</tbody>
</table>
-azolam see -azepam

-azoline antihistaminics or local vasoconstrictors, antazoline derivatives

E.4.0.0 (USAN: antihistamines/local vasoconstrictors (antazoline type))

(a) antazoline (1), cilutazoline (61), cirazoline (38), clonazoline (18), coumazoline (26), domazoline (30), fenoxazoline (12), indanazoline (42), metrafazoline (33), naphazoline (1), nemazoline (63), oxymetazoline (13), phenamazoline (6), prednazoline (22), talazoline (01), 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)

-bacept see -cept

-bactam β-lactamase inhibitors

S.6.5.0

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

(c) clavulanic acid (44)
**-bamate**  
**tranquillizers, propanediol and pentanediol derivatives**  
C.1.0.0 (USAN: tranquilizers/antiepileptics (propanediol and pentanediol groups))

(a) carisbamate (96), cyclarbamate (13), felbamate (54), 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**  
**hypoetics, 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), barbexaclone (16), barbital (4), barbital sodium (4), benzoobarbital (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), probarbital sodium (1), proxibarval (33), secbutabarbital (12), secobarbital (4), tetrabarbital (4), thialbarbital (4), thiotetabarbital (4), vinbarbital (1)

(c) butalbital (4), buthalital sodium (8), metharbital (1), methitural (6), methohexital (8), phetharbital (10), talbutal (17), thiopental sodium (4), vinylbital (12)

(c) 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) amibegron (94), fasobegron (98), lubabegron (109), mantabegron (88), mirabegron (98), rafabegron (88), ritobegron (91), solabegron (90), talibegron (86), vibegron (108)
-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),
    ciclo bendazole (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)

-bercept  see -cept

-bermin  see -ermin

-betasol  see pred

-bersat  anticonvulsants, benzoylamino-benzpyran derivatives

A.3.1.0  (USAN: anticonvulsants; antimigraine (benzoylamino-benzpyran derivatives))

(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), furazabol (16), mebolazine (21), mibolerone (27),
    norboletone (15), norclostebol (22)

    -bolone: formebolone (31), mesabolone (29), metribolone (17), oxabolone cipionate (14),
    quinbolone (14), roxibolone (40), stenbolone (17), tibolone (22), trenbolone (24)
(c) ethylestrenol (13), hydroxystenozole (10), metandienone (12), metenolone (12), oxandrolone (12), propetandrol (13), tiomesterone (14)

-bradine  bradycardic agents
H.0.0.0
(a) cilobradine (63), ivabradine (75), zatebradine (62)

-brate  see -fibrate

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

-bulin  antineoplastics; mitotic inhibitors, tubulin binders
L.0.0.0
(a) batabulin (90), cevipabulin (96), crolibulin (104), denibulin (95), eribulin (97), fosbretabulin (100), indibulin (91), lexibulin (105), mivobulin (77), ombrabulin (99), plinabulin (102), rosabulin (95), taltobulin (91), verubulin (103)
(b) thyroglobulin (26)

-buzone  see -buzone

-buzone  anti-inflammatory analgesics, phenylbutazone derivatives
A.4.2.0

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

-buzone  (USAN: anti-inflammatory analgesics (phenylbutazone type))

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

-zone  clofezone (17), proxifezone (24)

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

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

-caine (x)  local anaesthetics

E.0.0.0

(a) ambucaine (6), amoxecaine (1), aptocaine (21), articaine (47) (previously carticaine (27)), benzocaïne (42), betoxycaïne (13), buricular (49), bumecaine (25), bupivacaine (17), butacaïne (4), butanicoline (16), chloroprocaine (6), cinchocaine (1), clibucaine (14), clodacaïne (13), clormecaïne (17), cyclomethycaine (6), dextivacaine (20), diamocaïne (22), edronocaine (84), elucaine (29), etidocaine (29), fexicaine (25), flomycaine (18), hexylaïcaine (4), hydroxyprocaïne (1), hydroxytetraçaine (1), ipravacaine (85), ketocaïne (15), leucinocaine (17), levobupivacaine (74), lidocaine (1), lutocaïne (27), mepipivacaine (11), meprylaïcaine (4), myrtecaine (15), octacaïne (14), oxetacaïne (13), oxybuprocaine (8), parethoxycaine (l), paridocaïne (8), phenacaine (4), pinolcaïne (32), pipercaine (1), piridocaïne (l), pramocaïne (4), pribecaïne (32), prilocaine (14), procaine (10), propanocaïne (6), propipaïcaine (16), propoxycaïne (4) proxymetacaine (6), pyrocaine (13), quaticaine (18), quinsocaïne (4), risocaïne (26), rodocaïne (27), ropivacaine (50), tetracaïne (4), tolycaïne (16), trapencaine (56), trimcaine (11), vadocaïne (57)

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

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

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

(a) acecaïnide (39), asocainol (47), barucainide (52), bucaïnide (35), carcinium chloride (36), carocaïnide (46), droxicainaïd (47), encaïnide (40), epicaïnide (40), erocaïnide (50), flecainaïd (37), guafeacainol (38), indecaïnide (48) (originally ricainide (47)), itrocaïnide (54), ketocaïnol (32), lorcaïnide (38), milacainide (77), mocaïnide (63), murocaïnide (46), nicainoprol (46), nofeccainide (44), pilscainide (62), pincaïnide (49), procainamide
(1), quinacainol (50), recainam (54), solpecainol (55), stirocainide (47), suricainide (55),
tocainide (36), transcainide (51), (verocainine (42) - replaced by tiapamil in List 43),
zocainone (41)

**calci**  
Vitamin D analogues/derivatives

N.8.0.0  
(USAN: calci- or -calci-: Vitamin D analogues)

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

(a) alfacalcidol (40), atocalcitol (88), becocalcidiol (92), calcifediol (26), calcipotriol (61),
calcitriol (39), colecalciferol (13), doxercalciferol (82), ecalcidene (85), eldecalcitol (97),
elocalcitol (95), ergocalciferol (13), falecalcitriol (74), inecalcitol (87), lexacalcitol (71),
lucaalcipol (102), maxacalcitol (75), paricalcitol (78), pefcalcit (107), secalciferol (62),
seocalcit (78), tacalcitol (65)

(b) calcititon (31) (polypeptide)

(c) dihydrotachysterol (1)

**-capone**  
catechol-O-methyltransferase (COMT) inhibitors

entacapone (65), nebicapone (96), nitecapone (62), opicapone (103), tolcapone (66)

**-carbef**  
antibiotics, carbacephem 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) cefacetrile (25), cefaclor (36), cefadroxil (33), cefalexin (18), cefaloglycin (16), cefalonym (16), cefalarom (16), cefaloridine (15), cefalotin (14), cefamandole (30), cefaparole (33), cefapirin (23), cefatrizine (34), cefazaxflur (36), cefazedone (36), cefazolin (25), cefbuperazone (48), cefcanel (60), cefcanel daloxate (59), cefcapene (68), cefclidin (64), cefdaloxime (64), cefdinir (61), cefditoren (66), cefedrolor (53), cefempidone (58), cefepime (57), cefetamet (49), cefetecol (63), cefetizole (44), cefivitril (52), cefixime (53), cefluprenam (71), cefmatilen (81), cefmenoxime (44), cefmepidium chloride (57), cefmetazoline (39), cefminox (53), cefodizime (44), cefonicid (42), cefoperazone (42), ceforanide (39), cefoselis (71), cefotaxime (42), cefotetan (48), cefotiam (40), cefovecin (87), cefoxazole (34), cefoxitin (29), cefozopran (66), cefpimizole (50), cefpiramide (47), cefpirome (50), cefpodoxime (58), cefprozil (62), cefquinome (59), cefradine (26), cefrotile (34), cefroxadine (42), cefsulodin (38), cefsulamide (38), ceftorolarine fosamil (97), ceftriaxone (44), cefteram (55), ceftezole (34), ceftibuten (60), ceftefur (53), ceftiolene (49), ceftioxide (43), ceftizoxime (59), ceftizoxime alapivoxil (77), ceflubipro (92), ceflubipro medocaril (92), cefluzotizone (105), ceftriaxone (44), cefuracetam (45), cefuroxime (34), cefuzonam (55)

-oxef antibiotics, oxacefalosporanic acid derivatives

S.6.1.0 (USAN: antibiotic, oxacefalosporanic acid derivatives)

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

cell- or cellulosic derivatives

cel- [cel- in Spanish]

U.4.0.0

(a) celuclocloral (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  [-celosa in Spanish]

(a) -

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

-cept  receptor molecules, native or modified (a preceding infix should designate the target)

S.7.0.0

(a) -ba-  B-cell activating factor receptors
        briobacet (98)

-ber-  vascular endothelial growth factor (VEGF) receptors
        aflibercept (96), conbercept (105)

-co-  complement receptors
        mirococept (91)

-far-  subgroup of interferon receptors
        bifarcept (86)

-lefa-  lymphocyte function-associated antigen 3 receptors
        alefacept (84)

-na-  interleukin-1 receptors
        rilonacept (95)

-ner-  Tumour Necrosis Factor (TNF) receptors
        baminercept (99), etanercept (81), lenercept (72), onercept (82), pegsunercept (87)

-ta-  cytotoxic T lymphocyte-associated antigen 4 (CTLA-4) receptors
        abatacept (91), belatacept (93)

-ter-  transforming growth factor receptors
        dalantercept (105), ramatercept (108), sotatercept (104)

-vir-  antiviral receptors
        alvircept sudotox (69)

other:  atacicept (95), ipafricept (109)
-cic  hepatoprotective substances with a carboxylic acid group  
J.1.2.0  (USAN: hepatoprotectives (timonacic group))  
(a) limazocic (69), tidiacic (33), timonacic (33), (tiofacic (45) replaced by stepronin (46))  
(b) bisorcic (34) (psychostimulant)  
(c) stepronin (46)  

-ciclib  cyclin dependant kinase inhibitors  
L.0.0.0  dinaciclib (102), milciclib (105), palbociclib (109), riviciclib (109), roniciclib (109), seliciclib (92), voruciclib (109)  

-ciclovir  see -vir  

-cidin  naturally occurring antibiotics (undefined group)  
S.6.0.0  (USAN: natural antibiotics (undefined group))  
(a) brilacidin (108), candicidin (17), gramicidin (1), gramicidin S (26), methocidin (6)  
(b) guancidin (18) (hypotensive)  

ciguat  guanylate cyclase activators and stimulators  
F.2.0.0  (USAN: guanidine cyclase activators)  
(a) ataciguat (88), cinaciguat (97), etriciguat (88), lificiguat (95), nelociguat (105), riociguat (98), vericiguat (109)  

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), carbencillin (20), carbecillin (30), carindacillin (29), ciclacillin (22), clemizole penicillin (8), clometocillin (12), cloxacillin (13), dicloxacillin (16), epicillin (25), fenbenicillin (13), fibracillin (30),
flucloxacillin (17), fomidacillin (55), fumoxicillin (47), furbucillin (31), fuzlocillin (47), hetacillin (16), isopropicillin (12), lenampicillin (50), levopropicillin (12), metampicillin (20), meticillin (12), mezlocillin (34), nafticillin (13), oxacillin (15), oxetacillin (33), penamccillin (16), pheneticillin (11), phenoxyethyl penicillin (6), phenyraclillin (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), talampicillin (31), tameticillin (35), temecillin (46), ticarcillin (29), tifencillin (12), tobicillin (78)

(b) xantocillin (12)

(c) penimepicycle (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 nucleosides antiviral or antineoplastic agents, cytarabine or azacitidine derivatives

(USAN: nucleoside antiviral or antineoplastic agents, cytarabine or azarabine derivatives)

L.4.0.0/S.5.5.0

(a) ancitabine (36), apricitabine (95), capecitabine (73), decitabine (61), dexelvucitabine (95), elvucitabine (89), emtricitabine (80), enocitabine (46), fliacitabine (59), fluocitabine (38), galocitabine (65), gemcitabine (62), gemcitabine elaidate (106), ibacitabine (57), mericcitabine (108), sapacitabine (94), tezacitabine (84), torcitabine (87), troxacitabine (81), valopicitabine (93), valtorcitabine (90), zalcitabine (66)

(c) cytarabine (14), azacitidine (40)
INN – The use of stems 85

-clidine/-clidinium  muscarinic receptors agonists/antagonists

E.1.0.0

aceclidine (13), benzoclidine (25), eticyclidine (44), gacyclidine (76),
phencyclidine (11), procyclidine (01), rolicyclidine (44), talsaclidine (72),
tenocyclidine (44), vedaclidine (76)
aclidinium bromide (100), clidinium bromide (06), droclidinium bromide (33)
umeclidinium bromide (106)

-clone  hypnotic tranquillizers

A.2.2.0 (USAN: hypnotics / tranquillizers (zopiclone type))

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

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

-cocept  see -cept

-cog  blood coagulation factors

I.2.0.0

(-)eptacog  blood coagulation VII:  eptacog alfa (activated) (77), eptacog alfa pegol (activated)
(101), oreptacog alfa (activated) (109), vatreptacog alfa (activated) (98)

(-)octocog  blood factor VIII:  beroctocog alfa (98), damoctocog alfa pegol (109), moroctocog
alfa (72), octocog alfa (73), simoctocog alfa (104), turoctocog
alfa (108), turoctocog alfa pegol (108)

(-)nonacog  blood factor IX:  albutrepenonacog alfa (109), ef trenonacog alfa (109), nonacog
alfa (77), nonacog beta pegol (103), nonacog gamma (108),
trenonacog alfa (107)

(-)tridecacog  blood factor XIII:  catr decacog (99)
Other:  vonicog alfa (102)

-cogin  blood coagulation cascade inhibitors

I.2.0.0

drotrecogin alfa (activated) (86), pegnivacogin (106), tanepacogin alfa (90), tifacogin
(78)
**-conazole (x)**  **systemic antifungal agents, miconazole derivatives**

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

- albaconazole (87), aliconazole (43), alteconazole (53), arasertaconazole (93), azaconazole (45), beclaconazole (65), broconazole (58), butaconazole (40), cisconazole (59), croconazole (55), (cyproconazole (ISO)), democonazole (42), (dimiconazole (ISO C₁₇H₁₇Cl₂N₃O)), doconazole (37), eberconazole (64), econazole (27), efinaconazole (104), embeconazole (92), enilconazole (44), (etaconazole (ISO)), fentaconazole (44), fluconazole (54), fosfluconazole (83), (furconazole (ISO/TC 81 N 872 C₁₅H₁₄Cl₂F₃N₃O₂)), (hexaconazole (ISO C₁₄H₁₇Cl₂N₃O)), isavuconazole (96), isoconazole (30), itraconazole (50), ketoconazole (43), lanoconazole (66), luliconazole (86), miconazole (22), neticonazole (63), omoconazole (45), orconazole (40), oxiconazole (42), parconazole (39), (penconazole, (ISO)), posaconazole (82), (propiconazole (ISO)), pramiconazole (95), ravuconazole (83), saperconazole (56), sulconazole (38), (tebuconazole (ISO C₁₆H₂₂CIN₃O)), terconazole (45) (originally triaconazole), tioconazole (40), (uniconazole (ISO C₁₅H₁₈ClN₃O)), valconazole (40), voriconazole (73), zinoconazole (50), zoficonazole (43)

(c) bifonazole (44), isavuconazonium chloride (96)

**cort (x)**  **corticosteroids, except prednisolone derivatives**

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

- 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), fludroxycortide (12), flucortin (31), formocort (18),
hydrocortamate (6), hydrocortisone (1), hydrocortisone aceponate (54), locicortolone
dicibate (60), naflocort (50), nicocortonide (40), nivacortol (24), resocortol (74), tixocortol
(38)

(b) prednisolone derivatives: clocortolone (16), difluocortolone (18), fluocortolone (15),
halocortolone (31)

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

-coxib (x) selective cyclo-oxygenase inhibitors

A.4.2.0 (USAN: cyclooxygenase-2 inhibitors)

(a) apricoxib (99), celecoxib (80), cimicoxib (89), deracoxib (80), etoricoxib (84), firocoxib
(89), lumiracoxib (87), mavacoxib (94), parecoxib (80), robenacoxib (91), rofecoxib
(80), tilmacoxib (84), valdecoxib (80)

-crinat diuretics, etacrynic acid derivatives

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

H₃C

OC O₂H

O

CH₂

Cl

Cl

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

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

-crine (d) acridine derivatives

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

c) acidorex (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 derivatives))

(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, protein-synthesis inhibitors, tetracycline derivatives
S.6.3.0  (BAN: antibiotics of the tetracycline group)
          (USAN: antibiotics (tetracycline derivatives))

(a)  amicycline (14), apicycline (17), cetocycline (39), chlortetracycline (4), clomocycline (16),
     colimecycline (33), demeclocycline (25), demecycline (14), doxycycline (16), eravacycline
     (108), etamocycline (18), guamecycline (18), guamecycline (22), lymecycline (14), meclocycline (14),
     meglucycline (22), metacycline (12), minocycline (14), nitrocycline (14), omadacycline
     (102), oxytetraycline (1), pecocycline (15), penimepicycline (16), penimocycline (22),
     pipacycline (12), rolitetracycline (11), sarecycline (109), 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  (USAN: positive inotropic agents (pimobendan type))
INN – The use of stems

(a) adibendan (57), bemorodan (61), imazodan (55), indolidan (57), levosimendan (68), meribendan (62), pimobendan (46), prinoxodan (64), senazodan (85), siguazodan (60), simendan (66)

(b) nitrodan (15), tyromedan (15)

-dapsone antituberculous agents, diaminodiphenylsulfone derivatives

S.5.2.0 (USAN: antitubercular (diaminodiphenylsulfone derivatives))

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

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

-decakin see -kin

-denoson adenosine A receptor agonists

H.0.0.0

apadenoson (94), binodenoson (90), capadenoson (95), evodenoson (108), regadenoson (91), selodenoson (91), sonedenoson (101), tecadenoson (87), trabodenoson (107)

-dermin see –ermin

-dil vasodilators

F.2.0.0

F.2.1./2.0 (USAN: -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), cefadroxil (27), cineplexadil (50), dopipidol (59), eliprodil (66), fasudil (64), fenoxedil (27), foscarnet (64), fostedil (51), fronepidil (59), ifenprodil (27), levosemotiadil (72), manozodil (47), mephenidil (48), minoxidil (25), naftopidil (52), naminidil (87), nesapridil (52), perfomedil (60), pinacodil (46), piribedil (23), pitenodil (37), podilfen (22), radiprodil (98), ripasudil (109), stevaladil (34), sulodexide (30), tirodil (44), traxoprodil (86), urapidil (27), viquidil (25)

(c) dilmefone (33)
F.2.1.0

(a) coronary vasodilators: bepridil (30), bumepidil (44), ecipramidil (40), fendiline (24), fenetradil (30), floredil (28), hexadiline (13), ipramidil (51), mepramidil (27), metrifudil (23), nicorandil (44), pirozadil (33), pretiadiil (27), razinodil (38), semotiadiil (64), sinitrodil (74), terodiline (16), tixadil (18), trapidil (29)

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

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

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

-fradil calcium channel blockers acting as vasodilators USAN

(a) mibefradil (72)

-pendyl cloxypendyl (15), isothipendyl (6), oxypendyl (13), prothipendyl (6)

-dyl bisacodyl (13) (laxative), bunamiodyl (10), iofendylate (12), trihexyphenidyl (l) (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))

(a) amlodipine (53), clevidipine (75), darodipine (51) (replaces dazodipine (49)), dexniguldipine (67), elgodipine (61), elnadipine (59), felodipine (44), flordipine (48), isradipine (55), lacidipine (57), lemidipine (69), levamlo dipine (98), levniguldipine (67), mesudipine (40), nicardipine (42), nifedipine (27), niguldipine (60), niludipine (38), nilvadipine (52), nifmodipine (40), nisoldipine (42), nitrendipine (42), olradipine (69), oxodipine (52), riodipine (51), sagandipine (64), teludipine (64) (previously taludipine (61))

-nidipine: aranidipine (69), azelnidipine (69), barnidipine (64), benidipine (58), cilnidipine (66), cronidipine (61), efonidipine (66), furnidipine (67), ieganidipine (70), lercanidipine
(69) (previously masnidipine), manidipine (59), palonidipine (64), pranidipine (66), sornidipine (58), vatanidipine (77)

(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 (USAN: dopamine receptor agonists)

(a) carbidopa (37), ciladopa (52), dopamantine (31), droxidopa (57), etilevodopa (80), fluorodopa (18F) (64), levodopa (21), melevodopa (83), methyldopa (12)

-opamine dopaminergic agents dopamine derivatives used as cardiac stimulant/antihypertensives/diuretics

(USAN: -pamine: dopaminergics (butopamine type))

(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), levodobutamine (65), methyldopa (12) (alpha-2 adrenoreceptor agonist, cardiotonic), zelandopam (84)

-dotril see -tril/trilat

-dox see -ox/-alox
-dralazine  antihypertensives, hydrazinephthalazine derivatives

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), pilodralazine (48), todralazine (26)

-drine  sympathomimetics

E.4.0.0  (USAN: -drine: sympathomimetics)

(a)  alifedrine (49), bedoradrine (95), 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), tinoferdine (32), trecadrine (53)

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

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

-frine  sympathomimetic, phenethyl derivatives

E.4.0.0

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

-dronic acid  calcium metabolism regulator, pharmaceutical aid

N.8.0.0  (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

(USAN: antiparasitics (ivermectin type))

S.3.0.0

\[
\begin{align*}
B_{1a} &: R = C_2H_5 \\
B_{1b} &: R = CH_3
\end{align*}
\]

(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)

-enicokin see -kin

-entan (x) endothelin receptor antagonists

F.2.0.0

(a) ambrisentan (85), atrasentan (83), avosentan (93), bosentan (70), clazosentan (90), darusentan (82), edonentan (86), enrasentan (80), fandosentan (87), feloprentan (85), macitentan (107), nebentan (90), sitaxentan (83), tezosentan (81), zibotentan (94)
(-)ep tacog  see -cog

erg  ergot alkaloid derivatives

F.4.0.0  (USAN: -erg-: ergot alkaloid derivatives)
C.7.0.0

(a) acetergamine (18), amesergide (67), brazergoline (37), bromerguride (51), cabergoline (54), cianergoline (47), delergotril (42), dihydroergotamine (16), disulergine (45), dosergoside (54), ergometrine (4), ergotamine (4), etisulergine (47), lergotrile (32), lysergide (8), mergochristine (54), mesulergine (47), metergoline (18), metergolamine (29), methylergometrine (l), methysergide (11), nicergoline (26), pergolide (41), propisergide (35), proterguride (50), romergoline (66), sergolexole (60), terguride (50), tiomergine (42), voxergolide (61)

(b) ergocalciferol (l3)

-eridine  analgesics, pethidine derivatives

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

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

(b) diaveridine (l8) (coccidiostat.), eseridine (53), nexeridine (34) (somewhat related)

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

-ermin  growth factors

U.0.0.0

-bermin  vascular endothelial growth factors
(a)  telbermin (85)

-dermin  epidermal growth factors
(a)  murodermin (63), nepidermin (97)
-fermin  
(a)  
*fibroblast growth factors* 
erosfermin (66), palifermin (86), repifermin (82), sprifermin (105), trafermin (74), velafermin (94)

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

-nermin  
(a)  
*tumour necrosis factor* 
ardenermin (88), dulanermin (99), plusonerm (73), sonermin (68), tasonermin (76)

-plermin  
(a)  
*platelet-derived growth factor* 
becaplermin (74)

-sermin  
(a)  
*insulin-like growth factors* 
mecasermin (66), mecasermin rinfabate (91)

-termin  
(a)  
*transforming growth factor* 
cetermin (74), liatermin (81)

-otermin  
(a)  
*bone morphogenic proteins* 
avotermin (77), diboterminal alfa (89), eptotermin alfa (89), neboterminal (109), radotermin (92)

*Others:* 
dapiclermin (93)

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### estr

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

(a)  
alimestrone (24), benzestrol (1), broparestrol (8), cloxestradiol (12), dienestrol (1), diethylstilbesterol (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), fosfostrel (15), furostilbestrol (1), hexestrol (1), mestranol (12), methallenestril (6), methestrol (1), moxestrol (24), nilestriol (32), orestrate (17), polyestradiol phosphate (36), promestriene (31), quinestradiol (15), quinestrol (14)

(b)  
alfatradiol (84) (topical), allylestrenol (10) (progest.), ethylestrenol (13) (anabol.), fulvestrant (78) (estrogens receptor antagonist), lynestrenol (13) (progest.)

#### Q.2.2.0  
edogestrone (22), levonorgestrel (30), megestrol (13), melengestrol (13), norgestrel (17), norgestrienone (18), pentagestrone (14), quingestrone (13)

(c)  
chlorotrianisene (6), clomifene (12), enclomifene (33), zuclomifene (33) (antiestrogens)
-etanide  see -anide

-ethidine  see -eridine

-exakin  see -kin

-exine  mucolytic, bromhexine derivatives

K.0.0.0

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

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

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

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

-farcept  see -cept

-fenamate  see -fenamic acid

-fenamic acid  anti-inflammatory, anthranilic acid derivatives

-fenamate  "fenamic acid" derivatives

(USAN: -fenamic acid: anti-inflammatory (anthranilic acid derivatives); -fenamate: "fenamic acid" ester or salt derivatives)

A.4.2.0

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

(a)  clofenamic acid (13), enfenamic acid (45), flufenamic acid (13), meclofenamic acid (17), mfenamic acid (13), tolfenamic acid (24)
colfenamate (29), etofenamate (29), prefenamate (36), terofenamate (32), ufenamate (50)

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

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

(c)  flutiazin (22)
-fenin  diagnostic aids; (phenylcarbamoyl)methyl iminodiacetic acid derivatives

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

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

(USAN: -fenine: analgesics (fenamic acid subgroup))

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

(b)  spasmolytic diphenylacetates: adiphenine (1), drofenine (26)
    other: buphenine (8) (vasodilator), cinfenine (27) (antidepressant)

-fentanil  opioid receptor agonists, analgesics, fentanyl derivatives

(USAN: -fentanil: narcotic analgesics (fentanyl derivatives))

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

-fentrine  inhibitors of phosphodiesterases

K.0.0.0

(a)  benafentrine (44), pumafentrine (86), tolfentrine (70)

-fermin  see -ermin
-fiban fibrinogen receptor antagonists (glycoprotein IIb/IIIa receptor antagonists)
I.2.0.0
carafiban (78), elarofiban (83), fradafiban (72), gantofiban (80), lamifiban (72), lefradafiban (75), lotrafiban (78), orbofiban (75), roxifiban (77), sibrafiban (77), tirofiban (73), xemilofiban (74)

-fibrate clofibrate derivatives
H.4.0.0 (BAN: substances of the clofibrate group)
(USAN: -fibrate, -acic acid: antihyperlipidaemics (clofibrate type))

(a) bezafibrate (35), biclofibrate (28), binifibrate (44), choline fenofibrate (97), ciprofibrate (36), clinofibrate (39), dulofibrate (43), etofibrate (31), fenirofibrate (49), fenofibrate (35), lifibrate (30), nicofibrate (31), picafibrate (35), ponfibrate (37), ronifibrate (55), salafibrate (41), serfibrate (34), simfibrate (22), sitofibrate (32), timofibrate (40), tocofibrate (33), urefibrate (37), xantifibrate (31)
clofibric acid (20), clofibrate (13), aluminium clofibrate (31), calcium clofibrate (34), cinnarizine clofibrate (39), etofylline clofibrate (38), magnesium clofibrate (31)
clofibrate (28), plafibrate (39)
related: arhalofenate (101), beclobrate (35), eniclobrate (39), gemfibrozil (34), halofenate (20), lifibrol (62), metibrìde (53), terbufibrìole (35), tìbric acid (33), (fibrafylline (43) deleted)
(b) bromebric acid (25) (prophylaxis of migraine), fibracillin (30) (antibiotic)
(c) nafenopin (24), treloxinate (25)

-filermin see -ermin

-flapon 5-lipoxygenase-activating protein (FLAP) inhibitors
K.0.0.0
J.0.0.0
fiboflapon (105), quiflapon (72), veliflapon (95)
**INN – The use of stems**

- **flurane**  
  halogenated compounds used as general inhalation anaesthetics

  **A.1.1.0**  
  (USAN: general inhalation anesthetics (halogenated alkane derivatives))

  (a) aliflurane (36), cryofluorane (6), desflurane (62), enfurane (25), isoflurane (28), methoxyflurane (11), norflurane (20), roflurane (12), sevoflurane (25), teflurane (12)

  (b) apaflurane (73)

  (c) fluroxene (12), halothane (6)

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

  **M.5.2.0**  
  (USAN: hypoglycemics (phenformin type))

  

  (a) benfosformin (29), buformin (17), etoformin (34), metformin (21), metformin glycinate (103), phenformin (10), tiformin (22)

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

  **S.3.1.0**  
  (Y.0.0.0)

  1. organophosphorous derivatives:

  

  (a) vet. insecticides:

  quintiofos (25)

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

  (c) vet. insecticides and anthelmintics:

  metrifonate (16)

  antihelmintic: butonate (30)
2. **phosphates:**

\[
\begin{align*}
R & \quad O \quad O \quad R' \\
& \quad O \quad D \quad R''
\end{align*}
\]

(a) **vet. insecticides:** clofenvinfos (23)

(b) **vet. anthelminthics:** bromofenos (43), dichlorvos (28), naftalofos (16)

3. **phosphorothioates:**

\[
\begin{align*}
S & \quad O \quad O \quad R' \\
& \quad O \quad D \quad R''
\end{align*}
\]

(a) **vet. insecticides:**

(b) triclofos (13) (hypnotic, sedative)

(c) **vet. anthelminthics:** fospirate (21), haloxon (16)

4. **phosphorodithioates:**

\[
\begin{align*}
S & \quad S \quad O \quad O \quad R' \\
& \quad O \quad D \quad R''
\end{align*}
\]

(a) benoxafos (22) (vet. pesticide)

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

5. **phosphoramidates**

\[
\begin{align*}
N & \quad H \quad O \quad O \quad R' \\
& \quad O \quad D \quad R''
\end{align*}
\]

- **anthelminthic:**

- **crufomate** (16), uredofos (37)

- **algofos- 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), dexfosferine (68), ferpifos phosfate sodium (69), furifosmin (70), monophosphothiamine (8), sodium picofosfate (37), sofosbuvir (108), sparfosic acid (46), technetium (\(^{99m}\)Tc) furifosmin (70), tetrofosmin (66), trifosmin (74)
**-fosalamide**: alkylating agents of the cyclophosphamide group
(USAN: isophosphoramidine mustard derivatives)
canfosamide (92), cyclophosphamide (10), defosfamide (12), glufosfamide (77),
ifosfamide (23), mafosfamide (51), palifosfamide (99), perfosfamide (66), sufosfamide
(36), trofosfamide (23)

**-fosaline**

cytostatic
edelfosine (59), ilmofosine (56), miltefosine (61), perifosine (78)

**fosa-**
fosalvudine tidoxil (95), fosamprenavir (83), fosaprepitant (94), fosarilate (53), fosazepam
(27), fosbretabulin (100), foscarnet sodium (42), foscolic acid (12), fosdevirine (103),
fosenzamide (48), fosfesterol (15), fosfluconazole (83), fosfluoridine tidoxil (93),
fosfocreatinine (50), fosfomycin (25), fosfonet sodium (35), fosfosal (37), fosfructose (81),
fosinopril (69), fosinoprilat (62), fosmenic acid (49), fosmidomycin (46), fosopamine (69),
fosphenytoin (62), fospirate (21), fospropofol (100), fosquidone (64), fostamatinib (100),
fostedil (51), fostriece (55), fosveset (83)

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**-fobarir**   see vir

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**-fradil**   see -dil

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**-frine**   see -drine

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**-fungin**   antifungal antibiotics

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

B.1.0.0   (USAN: theophylline derivatives)

(a)   acefylline clofibrol (44), acefylline piperazine (14), albifylline (66), aminophylline (4),
apaxifylline (71), arofylline (75), bamifylline (15), cipamfylline (71), denbufylline (55),
derenofylline (102), dimabefylline (19), diniprofylline (18), diprophylline (1), doxofylline (47), enprofylline (44), etamiphylline (6), etofylline (14), etofylline clofibrate (38), fibrafylline (43) (deleted), flufylline (48), fluprofylline (50), furafylline (48), guaifylline (16), isbufylline (62), istradeffylline (89), laprafylline (60), lisofylline (72), lomifylline (37), mercurophylline (1), metescufylline (15), mexafylline (48), midaxifylline (79), naxifylline (86), nestifylline (64), pentifylline (29), pentoxifylline (29), perbufylline (58), pimefylline (21), propentofylline (46), proxyphylline (10), pyridofylline (14), rolofylline (98), spirofylline (58), stacofylline (73), tazifylline (52), theophylline ephedrine (14), tonapofylline (102), torbafylline (56), triclofylline (19), veroxylline (43), visnafylline (24), choline theophyllinate (8), fenetylline (16)

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

radicals and groups: teprosilate (29)

gab (x) gabamimetic agents

E.0.0.0

(a) atagabalin (102), fengabine (53), gabapentin (46), gabapentin enacarbil (94), gaboxyadol (48) (used as analgesic), imagabalin (101), lesoagabalan (100), mirogabalin (109), pivagabine (66), pregabalin (78), progabide (43) (used as antiepileptic), retigabalin (76), tiagabine (63), tolgbide (53), vigabatrin (52) (anticonvulsants)

(b) gabexate (35) (proteolytic)

gado- (x) diagnostic agents, gadolinium derivatives

U.0.0.0 (USAN: gadolinium derivatives (principally for diagnostic use))

(a) gadobenic acid (64), gadobutrol (66), gadocoletic acid (85), gadodenterate (91), gadodiamide (63), gadofosveset (86), gadomelitol (85), gadopenamide (60), gadopenetetic acid (50), gadoterdol (70), gadoteric acid (59), gadoversetamide (71), gadoxetic acid (71)

gatran (x) thrombin inhibitors, antithrombotic agents

I.2.0.0 (USAN: thrombin inhibitors (argatroban type))

(a) atecagatran (103), atecagatran metoxil (105), dabigatran (83), dabigatran etexilate (87), efegatran (71), flovagatran (97), inogatran (72), melagatran (74), napsagatran (72), sofagatran (95), ximelagatran (84)

(c) argatroban (57)
INN – The use of stems

**USAN**

-gene  gene therapy products (see also Annex 4)

Z.0.0.0 A two-word name approach has been selected:

**Word 1**  
-gene  gene component

- **cima**-  cytosine deaminase
- **ermin**-  growth factor
- **kin**-  interleukin
- **lim**-  immunomodulator
- **lip**-  human lipoprotein lipase
- **mul**-  multiple gene
- **stim**-  colony stimulating factor
- **tima**-  thymidine kinase
- **tusu**-  tumour suppression

**Word 2**  
-vec  vector component is a virus

-repvec  replicating viral vector

- **adeno**-  adenovirus
- **cana**-  canarypox virus
- **foli**-  fowlpox virus
- **herpa**-  herpes virus
- **lenti**-  lentivirus
- **morbilli**-  paramoxyviridae morbillivirus
- **parvo**-  adeno-associated virus (parvoviridae dependovirus)
- **retro**-  other retrovirus
- **vaci**-  vaccinia virus

-plasmid  in case the vector is a plasmid

In case of non-plasmid naked DNA, there is no need for a second word in the name.

In case of antisense nucleotides, please refer to the already existing stem -rsen.

(a) alferminogene tadenovec (95), alipogene tiparvovec (99), amolimogene bepiplasmid (98), beperminogene perplasmid (95), contusugene ladenovec (97), golnerminogene pradenovec (101), pexastimogene devacirepvec (108), riferminogene pecaplasmid (100), rilimogene galvacrepvec (107), rilimogene glafolivec (107), sitimagene ceradenovec (97), taberminogene vadenovec (100), talimogene laherparepvec (104), tipapkinogene sovacivec (102), velimogene aliplasmid (97), vocimagene amiretrorepvec (107)

**gest (x)**  
steroids, progestogens

Q.2.2.0 (USAN: -gest-: progestins)

(a) altrenogest (46), anagestone (16), cingestol (20), clogestone (21), clomegestone (20), demegestone (24), desogestrel (38), dексогестрел (30), dienogest (49), dydrogesterone (12), edogestrone (22), etonogestrel (65), flugestone (16), gestaclone (23), gestadienol (22),
gestodene (37), gestonorone caproate (16), gestrinone (39), haloprogesterone (11), hydroxyprogesterone (8), hydroxyprogesterone caproate (8), levonorgestrel (33) (previously dexnorgestrel), medrogestone (15), medroxyprogesterone (10), medrogestone (15), megestrol (13), melengestrol (13), metogest (33), nomegestrol (49), norelgestromin (83), norgesterone (14), norgestimate (35), norgestomet (32), norgestrel (17), norgestrienone (18), oxogestone (19), pentagestrone (14), progesterone (4), progestone (28), promegestone (38), quingestanol (15), quingestrone (13), segesterone (89), tigestol (20), tosagestin (86), trengestone (22), trimegestone (66)

(b) algestone (22) (glucorticoid)

(c) allylestrenol (10), chlormadinone (12), cismadinone (12), delmadinone (23), dimethisterone (8), ethisterone (4), ethynerone (17), etynodiol (13), hydromadinone (12), lynestrenol (13), metynodiol (27), norethisterone (6), noretynodrel (13), norvinisterone (10) clomesterone (15) (antiestrogen), dimepregnen (24) (antiestrogen)

-gestr- see estr

-giline monoamine oxydase (MAO)-inhibitors type B

C.3.1.0
(a) pargyline (13)
clorgilene (23), mofegilene (69), rasagilene (70), selegilene (39)

-gillin antibiotics produced by Aspergillus strains

S.6.0.0
(a) fumagillene (1), mitogillin (17)
(c) mitosper (24), nifungin (24)

-gli (x) antihyperglycaemics
(previously gly-)

M.5.2./3.0 (BAN: sulphonamide hypoglycaemics)
(USAN: gli-: antihyperglycaemics)

(a) 1. sulphonamide derivatives: gliamile (33), glibenclamide (18), glibornuride (22), glibutinine (31), glicaramide (28), glometanil (37), gliclaizide (25), (deleted: glidaniile (23)), glicondamide (44), glidazamide (24), gliflumide (33), glimepiride (53), glipalamide (62), glipizide (27), gliquidone (28), glisamuride (45), glisentide (58) (previously glipentide (27)), gisinamidene (43), glisalamide (43), glisoxepide (24), glybuthiazol (8), glybuzole (15), glycolipamidene (17), glycyclamide (12), glyhexamidene (15), glymidine sodium (15), glyoacetamide (14), glyparamidene (USAN only), glypinamidene (13), glyprothiazol (8), glysobuzole (12)
2. other than sulfonamide derivatives: camiglibose (67), deriglidole (66), emiglitate (55), fasiglifam (107), imeglimin (98), ingliflorib (85), isaglidole (61), limiglidole (100), linoglide (48), managlinat dialanetil (96), meglitinide (34), midaglizole (57), miglitol (55), mitiglinide (78), naglivan (65), nateglinide (77), piragliatin (97), pirogliride (40), repaglinide (65), teglicar (91), tebiglisene (64), voglibose (65)

3. peptide: seglitide (57)

(b) cromoglicate lisetil (72), cromoglicic acid (18), ioglicic acid (33), ioxaglic acid (37), sulglicotide (29) (treatment of peptic ulcers), trogigline (08)

(c) acetohehexamide (12), butadiazamide (10), carbutamide (36), chlorpropamide (8), heptolamide (12), metahexamide (10), palmoxiric acid (48), thiohexamide (12), tolamamide (12), tobutamide (6), tolpentamide (12), tolpyramide (13)

gly-
prior to revision of the General Principles
(a) glybuthiazol (08), glybuzole (15), glycopropamide (17), glyxyhexamide (15), glyximide sodium (15), glyxotamide (14), glyxipamide (13), glyxyprothiazol (08), glyxosubazole (12)

(c) glycerol (4), glycoceasol (1), glycopyryonium bromide (12)

-gliflozin sodium glucose co-transporter inhibitors, phlorizin derivatives

(USAN: phlorizin derivatives, phenolic glycosides)

atigliflozin (100), canagliflozin (102), dapagliflozin (97), emagliflozin (104), ertugliflozin (107), ipragliflozin (103), luseogliflozin (104), remogliflozin etabonate (98), serigliflozin etabonate (98), tofogliflozin (103)

-glitran dipeptidyl aminopeptidase–IV inhibitors

(USAN)

M.5.2.0
(a) alogliptin (96), anagliptin (103), biseglicipin (103), carmegliptin (98), denaglptin (94), dutogliptin (100), evogliptin (107), gemiglptin (103), gosogliptin (101), linaglptin (99), melogliptin (99), omarglptin (107), saxaglptin (92), sitagliptin (94), teneliglptin (99), trelaglipitin (106), vildaglptin (90)

-glitaraz peroxisome proliferator activating receptor-γ (PPAR-γ) agonists

(USAN: PPAR agonists (not thiazolidene derivatives))

M.5.2.0
(a) aleglitazar (95), cvegloartial (94), farglitaraz (84), imiglitazar (91), indeglitaraz (100), muroglitaraz (90), naveglistizar (92), oxe-glitaraz (88), peliglitaraz (92), pemaglitaraz (92), ragaglitazar (85), reglitaraz (87), saroglitaraz (106), sipoglitaraz (93), sodelglitaraz (95), tesaglitaraz (85)

-glizone peroxisome proliferator activating receptor-γ (PPAR-γ) agonists, thiazolidinedione derivatives

(USAN: PPST agonists (thiazolidene derivatives))

M.5.2.0
(a) ciglitazone (50), balaglitazone (84), darglitazone (69), edaglitazone (91), englitazone (64), lobeglitazone (95), netoglitzazone (85), pioglitazone (60), rivoglitzazone (87), rosiglitzazone (78), troglnzazone (69)

(c) efatutazone (102)
-gliflozin  see gli

-gliptin  see gli

-glitazar  see gli

-glitazone  see gli

-glumide  cholecystokinin antagonists, antiulcer, anxiolytic agents

J.0.0.0/C.1.0.0

(a) amiglumide (85), dexloxiuglumide (65), itriglumide (82), lorglumide (56), loxiglomide (57), proglumide (16), spiroglumide (70), tomoglumide (56)

-glutide  see tide

-golide  dopamine receptor agonists, ergoline derivatives

E.1.1.0

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

(c) rotigotine (83)

-gosivir  see vir

-gramostim  see -stim

-grastim  see -stim

-grel-  platelet aggregation inhibitors

I.2.1.0  (USAN: -grel- or -grel: platelet aggregation inhibitors, primarily platelet P2Y12 receptor antagonists)

(a) anagrelide (42), camonagrel (61), cangrelor (97), clopidogrel (57), dazmegrel (51), elinogrel (101), furegrelate (53), isbogrel (59), itazigrel (56), midazogrel (53), nafagrel (64), nicogrelate (48), oxagrelate (47), ozagrel (55), pamicogrel (70), parogrelil (94),
pirmagrel (53), prasugrel (91), rafigrelide (106), regrelor (97), ridogrel (59), rolafagrel (65), samixogrel (72), sarpogrelate (63), satigrel (67), sunagrel (52), temanogrel (103), terbogrel (75), ticagrelor (95), trifenagrel (53)

- **guan-** antihypertensives, guanidine derivatives
  
  H.3.0.0
  
  \[
  \begin{array}{c}
  \text{H} & \text{N} & \text{H} \\
  \text{NH}_2 & \text{NH}_2 & \text{NH}_2
  \end{array}
  \]
  
  (a) guanabenz (26), guanacline (l6), guanadrel (20), guanazodine (27), guancidine (18), guanclofine (36), guanethidine (11), guanfacine (35), guanisouquine (15), guanoctine (16), guanoxan (15), guanoxabenz (31), guanoxyfen (16), guabenxan (32)
  
  (c) guabenxan (32)

- **-ibine** see -ribine

- **-icam** anti-inflammatory, isoxicam derivatives
  
  A.4.2.0 (USAN: anti-inflammatory agents (isoxicam type))
  
  \[
  \begin{array}{c}
  \text{N} & \text{O} & \text{N} & \text{O} \\
  \text{CH}_3 & \text{CH}_3 & \text{CH}_3 & \text{CH}_3
  \end{array}
  \]
  
  (a) ampiroxicam (56), droxicam (52), enolicam (45), isoxicam (30), lornoxicam (59),

- **-ifene** antiestrogens or estrogen receptor modulators, clomifene and tamoxifen derivatives
  
  (USAN: -ifen(e): antiestrogens of the clomifene and tamoxifen groups)
  
  \[
  \begin{array}{c}
  \text{R} & \text{N} & \text{R}' \\
  \text{Cl} & \text{C}_2\text{H}_5 & \text{CH}_3
  \end{array}
  \]
  
  (a) acolbifene (86), clomifenoxide (54), tesmilifene (81)
  -oxifene: afimoxifene (95), arzoxifene (80), bazedoxifene (86), droloxifene (53), idoxifene (68), lasoxifene (81), levormeloxifene (73), miproxiifene (74), ormeloxifene (69), pipendoxifene (84), raloxifene (54), tamoxifen (28), trioxifene (41), zindoxifene (54)
  -mifene: clomifene (12), enclomifene (33), fispemifene (89), nitromifene (33), ospemifene (85), panomifene (58), sivifene (99), toremifene (53), zucloclipifene (33)
  
  (b) dextropropoxyphene (7), levopropoxyphene (7), suloxifen (30) (bronchodilator)
  
  (c) nafoxidine (16)
-igetide  see -tide

-ilide  class III antiarrhythmics, sematilide derivatives

H.2.0.0  (USAN: class III antiarrhythmic agents)

![Chemical structure]

(a)  ambasilide (59), artilide (67), azimilide (72), dofetilide (65), ersentilide (72), ibutilide (63), ipazilide (62), risotilide (62), sematilide (58), trecetilide (79)

(b)  bromacrylide (13), flaxilide (32), gliamilide (33)

-imex  (d) 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), canosimibe (100), eflucimibe (84), eldacimibe (76), ezetimibe (83), lecimibide (70), octimibate (52), pactimibe (89)

-imod  immunomodulators, both stimulant/suppressive and stimulant

S.7.0.0  (USAN: immunomodulators)

(a)  agatolimod (98), apilimod (95), atiprimod (75), blisibimod (107), ceralifimod (109), cridanimod (83), defoslimod (79), entolimod (108), epetirimod (97), esonarimod (79), fingolimod (91), forgeririmod (104), golotimod (97), glaspimod (74), iguratimod (86), imiquimod (66), ivarimod (60), laquinimod (85), litenimod (96), paquinimod (94), pidotimod (63), ponesimod (103), rabeximod (97), resiquimod (82), rintatolimod (102), siponimod (106), sotirinimod (94), susalimod (73), tasquinimod (93), tisolimod (57)

-mapimod  mitogen-activated protein (MAP) kinase inhibitors

(a)  balamapimod (96), bentamapimod (98), dilmapimod (102), doramapimod (88), losmapimod (101), pamapimod (96), talmapimod (99), semapimod (89)
-imus immunosuppressants (other than antineoplastics) USAN
S.7.0.0 (USAN: immunosuppressives)

(a) abetimus (81), anisperimus (82), gusperimus (68), laflunimus (70), manitimus (93), napirimus (60), tresperimus (75), vidofludimus (103)

-rolimus immunosuppressants, rapamycin derivatives USAN

(a) everolimus (82), olcorolimus (105), pimecrolimus (81), ridaforolimus (108), sirolimus (69), tacrolimus (66), temsirolimus (94), umirolimus (103), zotarolimus (94)

-ine (d) alkaloids and organic bases

(a) 1669 (18.9%) INNs ending in -ine in Lists 1-109 of proposed INNs

-inostat see stat

io- (x) iodine-containing contrast media BAN, USAN
U.1.1.0

(a) iobenzamic acid (14), iobitridol (68), iobutoic acid (20), iocarmic acid (22), iocetamic acid (18), iodamide (15), iodecinol (51), iodeteryl (1), iodixanol (53), iodophthalein sodium (1), iodoxamic acid (26), iofendylate (12), ioforminol (103), iofratol (67), ioglicic acid (33), iogluclol (41), ioglumonide (41), iogunile (40), ioglycamic acid (15), iohexol (43), iolidonic acid (26), iolixanic acid (26), iomeglamic acid (26), iomeprol (54), iomoric acid (37), iopamidol (40), iopanoic acid (1), iopentol (52), iophenoic acid (4), ioprocmic acid (39), iopromide (44), iopronic acid (28), iopyadol (14), iopydine (14), iopyronol (15), iosefamic acid (14), ioseric acid (33), iosinol (88), iosimide (50), iosulamide (39), iosumetic acid (33), iotalamic acid (13), iotasul (43), iotetic acid (37), iotric 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), pheniodal 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-contained radiopharmaceuticals

(a) ethiodized oil ($^{131}$I) (24), iobenguane ($^{131}$I) (57), iocanlidic acid ($^{125}$I) (77), iodinated ($^{125}$I) human serum albumin (24), iodinated ($^{131}$I) human serum albumin (24), iodine ($^{124}$I) girentuximab (101), iodocentric acid ($^{125}$I) (47), iodocholesterol ($^{131}$I) (39), iodofiltic acid ($^{123}$I) (95), iofolast ($^{125}$I) (105), iofutismab ($^{125}$I) (51), iodobenzamide ($^{131}$I) (103), ioflupane ($^{123}$I) (75), iolopride ($^{123}$I) (73), iomazenil ($^{125}$I) (66), iometin ($^{125}$I) (24), iometin ($^{131}$I) (24), iometopane ($^{123}$I) (76), sodium iodide ($^{125}$I) (24), sodium iodide ($^{131}$I) (24), sodium iodohippurate ($^{131}$I) (24), sodium iotalamate ($^{125}$I) (24), sodium iotalamate ($^{131}$I) (24)

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

irudin hirudin derivatives

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

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

-isomide class I antiarrhythmics, disopyramide derivatives

H.2.0.0 (USAN: -isomide: antiarrhythmics (disopyramide derivatives))

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

(c) disopyramide (12)

-ium quaternary ammonium compounds

E.3.0.0 (USAN: -ium or -onium: quaternary ammonium derivatives)

neuromuscular blocking agents with a flexible structure

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

(a)  -curonium: alcuronium chloride (17), candocuronium iodide (70), dacuronium bromide (21), pancuronium bromide (19), piperucuronium bromide (69), rapacuronium bromide (78), rocuronium bromide (66), stercuronium iodide (21), vecuronium bromide (46)

-curium (d) (curare-like substances): atracurium besilate (42), cisatracurium besilate (73), doxacurium chloride (58), gantacurium chloride (91), mivacurium chloride (58), truxicurium iodide (22), truxipicurium iodide (22)

-others: dimethyltubocurarine chloride (1), fazadinium bromide (32), hexafluronium bromide (12), laudexium metilsulfate (4), pentacyonium chloride (6), phenactropinium chloride (8), piprocurarium iodide (11), thiazinamium metilsulfate (37), trimethidinium methosulfate (8)

(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), furtrethonium 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), ecothiopate iodide (6), neostigmine bromide (4), obidoxime chloride (16), pralidoxime iodide (10), pyridostigmine bromide (6)

E.2.0.0  anticholinergic agents

(a)  aclidinium bromide (100), benzilonium bromide (13), benzopyronium bromide (12), beperidium (57), bevonium metilsulfate (19), butropium bromide (30), ciclonium bromide (19), ciclotropium bromide (50), cimetropium bromide (51), clidinium bromide (6), cyclopentroxonium bromide (12), dimetipirium bromide (37), diponium bromide (15), dotefonium bromide (24), droclidinium bromide (33), emepronium bromide (18), etipirium iodide (22), fencluxonium metil sulfate (20), fenpiverinium bromide (26), fentonium bromide (29), flutropium bromide (50), glycopyrobonium bromide (12), heteronium bromide (14), hexazonium iodide (15), hexocyclium metilsulfate (6), hexopyronium bromide (13), ipratropium bromide (31), methanthelinium bromide (1), methylbenactyzinium bromide (34), metocinium iodide (26), nolinium bromide (37), otilonium bromide (38), oxapip iodide (26), oxecerium bromide (18), oxitropium bromide (36), oxyphenonium bromide (1), oxypropium bromide (13), oxysonium iodide (15), pentapiperium metilsulfate (26), prifinium bromide (20), ritopirronium bromide (33), sintropium bromide (47), sulprotonium (18), tematropium metilsulfate (64), tiemonium iodide (13), tinepidium bromide (29), totripium bromide (67), tiquizium bromide (47), trantelinium bromide (24), trispium chloride (25), umeclidinium bromide (106), xentropium bromide (15)
atropine methonitrate (4), buzepide metiodide (14), chlorisondamine chloride (6),
diphemanil metilsulfate (4), homatropine methylbromide (1), isopropramide iodide (8),
mebenzolate bromide (10), octatropine methylbromide (10), parapenzolate bromide (14),
pipenzolate bromide (6), poldine metilsulfate (11), propantheline bromide (1),
propyromazine bromide (12), tridihexethyl iodide (6), tropenziline bromide (11),
thihexinol methylbromide (1), tricyclamol chloride (4)

S.2.3.0 surfactants used as antibacterials and antiseptics

S.2.3.0 surfactants used as antibacterials and antiseptics

(a) acriflavinium chloride (1), amantanium bromide (39), benzalkonium chloride (1),
benzodoncicine chloride (1), benzoxonium chloride (36),
cenaluronium (16), cefmepidium chloride (57), cetylalkonium chloride (15), cethexonium
chloride (36), cetrimonium bromide (1), cetlypyridinium chloride (1), chlorophenoctium
amsonate (8), deditoniom bromide (15), denatonium benzoate (15), dequalinium chloride
(8), disiquonium chloride (55), dodeclonium bromide (16), dofarim chloride (21),
fluadazonium chloride (33), furazolium chloride (15), halopenium chloride (10),
hedaquinium chloride (8), lapirinium chloride (27), lauralkonium chloride (62), laurcetium
bromide (70), lauretinium acetate (12), mecetronium etilsulfate (51), metalokonium chloride
(60), methylbenzethonium chloride (1), methylbrosanilinium chloride (1), methylthioninium
chloride (1), miripirium chloride (63), mistalkonium chloride (41), octafonium chloride
(16), opratonium iodide (76), penoctonium bromide (20), pirralkonium bromide (19),
polidronium chloride (67), polixetonium chloride (70), pronilium iodide (14),
sanguinarium chloride (68), sepazonium chloride (34), tetradonium bromide (18),
tibezonium iodide (32), tiloconium chloride (36), tolonium chloride (4),
triclobisonium chloride (10)

c domiphen bromide (23)

other agents

alagebrium chloride (91), albitiazolium bromide (101), amezinium metilsulfate (36),
amprolium chloride (16), azaspirium chloride (25), bephennium hydroxynaphthoate (11),
bibenzonium bromide (12), bidazium iodide (27), bretylium tosilate (10),
butoxymonmonium iodide (8), carcininium chloride (36), clorfilm phosphate (42),
datelliptium chloride (57), detajmiium bitartrate (34), dibropidium chloride (51),
ditercalinium chloride (49), edrophonium chloride (4), elliptinium acetate (43), emilium
tosilate (37), enisamium iodide (101), famiparaprinium chloride (58), fenodionium chloride
(23), gallium (67Ga) citrate (33), homidium bromide (36), isavuconazonium chloride (96)
isometamidium chloride (18), mfenidramium metilsulfate (52), meldonium (86),
mequitamium iodide (61), nolpitantium besilate (75), pinaverium bromide (32), pirdonium
bromide (28), praajmalium bitartrate (23), pranolium chloride (32), pretamazium iodide
(29), propagermanium (65), prosphidium chloride (22), pyritidium bromide (16), pyriminium
chloride (6), quindonium bromide (14), quinuclium bromide (40), repagermanium (63),
rizamoium metilsulfate (26), roxolinium metilsulfate (33), samarium (153Sm) lexidronam
(74), sepantronium bromide (105), sevitropium mesilate (56), spirogermanium (43),
stibazium iodide (13), thenium closilate (12), tipetroplium bromide (42), tolonium chloride
(4), trazium esilate (54), trethisium tosilate (14), tronoxium tosilate (13), troxypyrrolion
tosilate (13)
(c) alazanine triclofenate (13) (anthelminthic), colfosceril palmitate (64) (pulmonary surfactant), dithiazanine iodide (8) (anthelminthic), hexadimethrine bromide (8) (heparin antagonist)

-izine (-yzine)  diphenylmethyl piperazine derivatives

\[
\begin{align*}
N & \quad N\\
Ar & \quad Ar'
\end{align*}
\]

(a) antihistaminics: G.2.0.0: buclizine (4), cetirizine (51), chlorcyclizine (1), clocinizine (15), cyclizine (1), efetirizine (71), elbanizine (60), flotrenizine (48), levocetirizine (78), lomerizine (68), pibaxizine (62), trenizine (48)

homochlorcyclizine (10) (serotonin antagonist)

tranquillizers: etodroxizine (18), hydroxyzine (6)

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

-rizine  antihistaminics/cerebral (or peripheral) vasodilators

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

chemically related: pipoxizine (32) (respiratory insufficiency)

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

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

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

antibiotic "cef": cefatrizine (34)

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

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

(c) medibazine (16)
-kacin antibiotics, kanamycin and bekamycin derivatives (obtained from Streptomyces kanamyceticus)

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

![Chemical Structure](image)

(a) amikacin (30), arbekacin (56), butikacin (41), dibekacin (31), propikacin (43)

(c) bekamycin (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 (USAN: potassium channel antagonists)

(a) adekalant (83), almokalant (64), clamikalant (81), inakalant (95), nifekalant (75), pinokalant (82), terikalant (66), vernakalant (96)

-kalim potassium channel activators, antihypertensive

H.3.0.0 (USAN: potassium channel agonists)

(a) aprikalim (64), bimakalim (64), cromakalim (58), levermakalim (66), emakalim (66), mazokalim (75), rilmakalim (65), sarakalim (81)
-**kef**-  **enkephalin agonists**

(USAN: enkephalin agonists (various indications))
casokefamide (65), frakefamide (81), metenkefalin (97), metkefamide (44)

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

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<td>S.7.0.0</td>
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</table>
| (a) IL-1: | -nak | interleukin-1 analogues and derivatives  
- onakin: interleukin-1 α analogues and derivatives: pifonakin (77)  
- benakin: interleukin-1 β analogues and derivatives: mobenakin (72) |
| IL-2: | -leuk | interleukin-2 analogues and derivatives: adargileukin alfa (89), aldesleukin (63), celmoleukin (65), denileukin diftitox (78), teceleukin (54)  
pegaldesleukin (74), tucotuzumab celmoleukin (95) |
| IL-4: | -trak | interleukin-4 analogues and derivatives: binetraukin (82) |
| IL-6: | -exak | interleukin-6 analogues and derivatives: atexakin alfa (72) |
| IL-8: | -octak | interleukin-8 analogues and derivatives: emoctakin (74) |
| IL-10: | -deca | interleukin-10 analogues and derivatives: ilodecaukin (81) |
| IL-11: | -elve | interleukin-11 analogues and derivatives: oprelvekin (76) |
| IL-12: | -dodek | interleukin-12 analogues and derivatives: edodekin alfa (79) |
| IL-13: | -tred | interleukin-13 analogues and derivatives: cintredekin besudotox (92) |
| IL-18: | -octad | interleukin-18 human analogues and derivatives: iboctadekin (92)  
tadekinig alfa (90) (fraction of IL-18 human) |
| Il-21 | -enicok | interleukin -21 human analogues and derivatives: denenicokin (99) |
| (c) IL-3: | -plest | interleukin-3 analogues and derivatives:  
muplestim (72), daniplestim (76) |

-**kinra**  **interleukin receptor antagonists**

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<tr>
<td>IL-1</td>
<td>-nakina</td>
<td>interleukin-1 receptor antagonists: anakinra (72)</td>
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<tr>
<td>IL-4</td>
<td>-trakinra</td>
<td>interleukin-4 receptor antagonists: pitrakinra (84)</td>
</tr>
</tbody>
</table>
-kiren  renin inhibitors  USAN
H.3.0.0
(a)  aliskiren (83), ciprokiren (69), ditekiren (62), enalkiren (61), remikiren (66), terlakiren (66), zankiren (70)

-lefacept  see -cept

-leukin  see -kin

-lisib  phosphatidylinositol 3-kinase inhibitors, antineoplastics  USAN
L.0.0.0  (USAN: phosphatidylinositol 3-kinase inhibitors)
acalisib (109), apitolisib (108), buparlisib (106), copanlisib (108), dactolisib (107), idelalisib (107), panulisib (109), pictilisib (107), pilaralisib (108), recalisib (108)

-listat  see -stat

-lubant  leukotriene B₄ receptor antagonists  USAN
U.3.0.0  (USAN: leukotriene receptor antagonists (treatment of inflammatory skin disorders))
(a)  amelubant (85), moxilubant (78), ticolubant (76)

-lukast  leukotriene receptor antagonists, see -ast

-lutamide  non-steroid antiandrogens  USAN
Q.2.3.1
(a)  bicalutamide (70), enzalutamide (107), flutamide (33), nilutamide (56), topilutamide (91)
(b)  aceglutamide (15)

-lutril  see -tril
INN – The use of stems

-mab monoclonal antibodies (see also Annex 3)

S.7.0.0

-amab rat origin
-emab hamster origin
-imab primate origin
-omab mouse origin:

  b(a) bacterial: edobacomab (69)
  co(l) colon: edrecolomab (74), nacolomab tafenatox (71)
  go(v) ovary (tumours): abagovomab (95), igovomab (74), oregovomab (86)
  l(i) 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)
  c(i) cardiovascular: biciromab (66), imciromab (66)
  le(s) inflammatory lesions: besilesomab (92), lemalesomab (84), sulesomab (75),
      technetium (99mTc) fanolesomab (86)
  pr(o) tumour (prostate): capromab (70)
  t(u) tumour (miscellaneous): altumomab (68), anatumomab mafenatox (79),
      arcitumomab (74), bectumomab (75), blinatumomab (100), detumomab (70),
      epitumomab (82), epitumomab cituxetan (89), ibritumomab tiuxetan (81),
      minretumomab (80), mitumomab (82), moxetumomab pasudotox (102),
      naptumomab estafenatox (96), racotumomab (100), satumomab (67), solitomab
      (106), taplitumomab paptox (84), technetium (99mTc) nofetumomab merpentan
      (76), technetium (99mTc) pintumomab (75), tenatumomab (98), tositumomab
      (80)

  Others: catomaxomab (92), ertumaxomab (92)

-umab human origin:

  b(a) bacterial: nebacumab (66), raxibacumab (92)
  c(i) cardiovascular: alirocumab (107), enoticumab (107), evolocumab (108),
      icrucumab (104), inclacumab(106), nesvacumab (108), orticumab (107),
      ramucirumab (100), vesencumab (104)
f(k) fungal: efungumab (95)

k(i) interleukin: briakinumab (101), canakinumab (97), fezakinumab (101), guselkumab (109), secukinumab (102), sirukumab (105), tralokinumab (102), ustekinumab (99)

l(i) immunomodulator: adalimumab (82), anifrolumab (109), atorolimumab (80), belimumab (89), bertilimumab (88), brodalumab (105), carlumab (104), dupilumab (108), eldersumab (109), foralumab (103), fresolimumab (101), golimum (91), ipilimumab (94), leredlimumab (83), lirilumab (107), mavrilimumab (102), metelimumab (86), morolimumab (79), namilumab (104), nivolumab (107), oxelumab (103), placulumab (107), sarilumab (106), sifalimumab (101), tabalumab (105), tremelimumab (97), urelumab (104), zanelimumab (90), ziralimumab (84)

n(e) neural: atinumab (104), fasinumab (107), fulranumab (104), gantenerumab (108)

s(o) bone: denosumab (94)

tox(a) toxin as target: actoxumab (107), bezlotoxumab (107), tosatoxumab (109)

t(u) tumour: adecatumumab (90), anetumab ravtansine (109), cixutumumab (100), conatumumab (99), daratumumab (101), drozitumab (103), duligotumab (107), dusigatumab (108), enfortumab vedotin (109), figatumumab (100), flanvotumab (106), ganiatumab (103), glembatumumab (102), intetatumumab (101), iratumumab (94), lexatumumab (95), lucatumumab (98), mapatumumab (93), naratumum (105), necitumumab (100), ofatumumab (93), olaratumab (103), patritumab (106), panitumumab (96), pritumumab (89), radretumab (104), rilotumumab (101), robutumumab (100), seribantumab (108), tarextumab (109), teprotumumab (108), tovetumab (109), vantictumumab (109), votumumab (70), zalutumumab (93), yttrium (90Y) clivatuzumab tetraxetan (102)

v(i) viral: exbivirumab (91), foravirumab (99), libivirumab (91), rafivirumab (99), regavirumab (71), sevirumab (66), suvizumab (102), tuvirumab (66)

Other: bimagrumab (108), stamulumab (94), roledumab (103)

-ximab chimeric origin

b(a) bacterial: pagibaximab (93)

c(i) cardiovascular: abciximab (70), volociximab (93)

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

me(l) melanoma: ecromeximab (87)
### INN – The use of stems

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Description</th>
<th>Examples</th>
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</thead>
</table>
| **t(u)** | **tumor:** amatuximab (104), bavituximab (95), brentuximab vedotin (103), cetuximab (82), coltuximab ravtansine (109), dinutuximab (109), ensituximab (103), futuximab (107), girentuximab (101), indatuximab ravtansine (105), iodine 
\( ^{124}I \) girentuximab (101), margetuximab (109), pritoxaximab (108), rituximab (77), setoximab (108), siltuximab (100), ublituximab (104), zatuximab (107) | |
| | **-xizumab** | **chimeric/humanized:** otelixizumab (98), ontuxizumab (109) |
| | **-zumab** | **humanized origin** |
| \( anib \) | **angiogenesis inhibitor:** ranibizumab (90) | |
| \( b(a) \) | **bacterial:** tefibazumab (92) | |
| \( c(i) \) | **cardiovascular:** alacizumab pegol (98), bevacizumab (83), caplacizumab (106), concizumab (108), demcizumab (107), etaracizumab (99), idarucizumab (109), lodelcizumab (108), tadocizumab (94) | |
| \( k(i) \) | **interleukin:** anrukinzumab (98), clazakizumab (107), enokizumab (104), gevokizumab (104), ixekizumab (105), lebrikizumab (101), olokizumab (103), perakizumab (108), tildrakizumab (108) | |
| \( l(i) \) | **lymphocyte:** apolizumab (87), aselizumab (88), benralizumab (102), cedelizumab (77), certolizumab pegol (90), daclizumab (78) (previously: dacliximab), eculizumab (87), efalizumab (85), erlizumab (84), etrolizumab (104), fontolizumab (87), ibalizumab (97), itolizumab (103), lambrolizumab (109), lampalizumab (107), ligelizumab (107), mepolizumab (81), mogamulizumab (104), natalizumab (79), ocrelizumab (94), omalizumab (84), ozoralizumab (105), palivizumab (79), pascolizumab (87), pateclizumab (105), pexelizumab (85), pifilibizumab (108), quillizumab (106), reslizumab (85), rontalizumab (101), rovelizumab (81), ruplizumab (83), samalizumab (103), sipilizumab (87), talizumab (89), teplizumab (97), tocilizumab (90), toralizumab (87), tregalizumab (104), valtelizumab (105), vedolizumab (100), visilizumab (84) | |
| \( n(e) \) | **neural:** bapineuzumab (93), crenezumab (105), ozanezumab (108), ponezumab (104), solanezumab (107), tanezumab (99) | |
| \( s(o) \) | **bone:** blosozumab (105), romosozumab (106) | |
| \( tox(a) \) | **toxin as target:** urtoxazumab (90) | |
| \( t(u) \) | **tumor:** (miscellaneous): abituzumab (109), alemtuzumab (83), bivatuzumab (83), cantuzumab mertansine (105), cantuzumab ravtansine (105), citatuzumab bogatox (99), codrituzumab (109), dacetuzumab (98), dalotuzumab (107), elotuzumab (100), enavatuzumab (104), epratuzumab (82), farletuzumab (100), ficlatuzumab (105), gemtuzumab (83), imgatuzumab (107), inotuzumab ozogamicin (92), labetuzumab (85), lintuzumab (76), lorvotuzumab mertansine | |
INN – The use of stems

(103), matuzumab (88), milatuzumab (98), nimotuzumab (94), obinutuzumab (109), ocaratuzumab (107), onartuzumab (104), oportuzumab monatox (100), parsatuzumab (107), pertuzumab (89), pinatuzumab vedotin (108), polatuzumab vedotin (108), sibrotuzumab (81), simtuzumab (107), sountuzumab (94), tigatuzumab (98), trastuzumab (78), trastuzumab emtansine (103), tucotuzumab celmoleukin (94), veltuzumab (98), vorsetuzumab (107), vorsetuzumab mafodotin (107), yttrium (90Y) tacatuzumab tetraxetan (93)

ν(i) viral: felvizumab (77), motavizumab (95)

(c) muromonab CD3 (59)

- mantadine adamantine derivatives
- mantine (USAN: -mantadine or -mantine: antivirals/antiparkinsonians (adamantane derivatives))

(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) adafenoxate (48) (nootropic agent), adamexine (36) (mucolytic), adapalene (64) (antiacne agent), adaprolol (63) (ß-adrenoreceptor antagonist), adatanserin (70) (serotonin receptor antagonist), amantanium bromide (39) (disinfectant), amantocillin (17) (antibiotic), arterolane (97) (antimalarial), bolmantalate (16) (anabolic), meclinertant (88) (neurotensin antagonist), mantabegron (88) (β3-adrenoreceptor agonist), saxagliptin (92) (antidiabetic), vildagliptin (90) (antidiabetic)

-mapimod see -imod

-mastat see -stat

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

E.1.0.0 (USAN: cholinergic agonists (arecoline derivatives used in the treatment of Alzheimer's disease))

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

Mercury-containing drugs, antimicrobial or diuretic

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

N.1.3.0 diuretic: chlormerodrin (4), chlormerodrin (197Hg) (24), meralluride (1), mercaptomerin (1), mercuderamide (1), mercumatilin sodium (4), mercurophylline (1), merisoprol (197Hg) (24) (diagnostic), mersalyal (4)

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

(c) hydrargaphen (10)

-mer polymers

(a) amilomer (33), azoximer bromide (97), bixalomer (103), cadexomer (60), carbetimer (50), carbomer (21), crilanomer (53), dextranomer (33), eldexomer (60), exatecan alideximer (89), firtecan peglumer (108), hemoglobin glutamer (80), hemoglobin raffimer (89), leuciglumer (68), maletamer (14), ompinamer (108), patiromer calcium (106), poloxamer (34), porfimer sodium (64), sevelamer (77), surfomer (44), tolevamer (88), zinostatin stimalamer (74)

(b) succimer (42)

-mesine sigma receptor ligands

Cutamesine (100), igmesine (68), panamesine (73), siramesine (81)

-mestane aromatase inhibitors

L.0.0.0 /Q.2.1.0 (USAN: antineoplastics, aromatase inhibitors)

Atamestane (54), exemestane (65), formestane (66), minamestane (64), plomestane (66)
-metacin (x)  anti-inflammatory, indometacin derivatives

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

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

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

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

-met(h)asone see pred

-micin  aminoglycosides, antibiotics obtained from various Micromonospora

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

astromicin (44), betamicin (38), etisomicin (47), evenmimicin (82), fidaxomicin (109), gentamicin (22), isepamicin (54), maduramicin (52), megalomicin (37), micronomicin (45), mirosamicin (58), netilmicin (36), ozogamicin (83), pentisomicin (41), plazomicin (106), repromicin (37), rosamericin (41) (prev. rosamicin), semduramicin (60), sisomicin (25)

-mifene see -ifene

-milast see -ast

mito- (d) antineoplastics, nucleotoxic agents

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), mitopodizide (17), mitorquidone (54), mitosper (24), mitotane (21), mitotename (17), mitoxantrone (44), mitozolomide (51)

(c) 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

-mostat  see -stat

-mostim  see -stim

-motine  antivirals, quinoline derivatives
S.5.3.0

(a) famotine (23), memotine (22)

-moxin (d)  monoamine oxidase inhibitors, hydrazine derivatives
C.3.1.0

(a) benmoxin (20), cimemoxin (17), domoxin (14), octamoxin (15)
(c) carbenzide (11), etryptamine (12), fenoxypyrazine (12), iproclozide (13), iproniazid (1), isocarboxazid (11), mebanazine (15), nialamide (10), pargyline (13), phenelzine (10), pheniprazine (11), tranylcypromine (11)

-mulin  antibacterials, pleuromulin derivatives
S.6.0.0

(a) azamulin (54), pleuromulin (35), retapamulin (91), tiamulin (35), valnemulin (74)
(b) nonathymulin (56), thmostimulin (45)
-mustine  antineoplastic, alkylating agents, (β-chloroethyl)amine derivatives

L.2.0.0  (USAN: antineoplastic agents (chlorethylamine derivatives))

\[
\begin{align*}
R-N &- \text{Cl} \\
\text{Cl} &
\end{align*}
\]

(a)  alesbramustine (68), ambamustine (60), atrimustine (61), bendamustine (48), bofumustine (44), carmustine (24), ditionustine (49), ecomustine (61), ecmustine (49), estramustine (24), fotemustine (57), galamustine (61), laromustine (98), 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)  canfosfamide (92), chlorambucil (6), chlormethine (1), chlornaphazine (1), cyclophosphamide (10), defosfamide (12), glufosfamide (77), ifosfamide (23), mafosfamide (51), melphalan (8), melphalan flufenamide (105), metamelfalan (41), mitoclomine (18), mitoteneamine (17), palifosfamide (99), perfosfamide (66), sarcolysin (17), sufosfamide (36), trichlormethine (11), trofosfamide (23)

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

S.6.0.0  (USAN: antibiotics, Streptomyces strains)

(a)  alvespimycin (96), amfomycin (12), antelmcycin (15), apramycin (31), avilamycin (46), azalomycin (26), azithromycin (58), bambermycin (21), bekamycin (24), berythromycin (26), bicozamycin (38), biniramycin (23), bluensomyacin (14), capreomycin (12), carbomycin (1), cethromycin (87), clarithromycin (59), clindamycin (21), coumamycin (15), daptomycin (58), dihydrostreptomycin (1), diproleandomycin (33), dirithromycin (53), efrotomycin (53), endomyacin (6), enramycin (23), enviromycin (31), erythromycin (4), estomycin (14 - deleted in List 28), flurithromycin (51), fosfomycin (25), fosmidomycin (46), gamithromycin (95), ganeffromycin (68), hachimycin (23), heliomycin (25), hydroxymycin (8 - deleted in List 28), josamycin (23), kanamycin (10), kitasamycin (13), laidlomycin (61), leithromycin (65), lincomycin (13), lividomycin (32), maridomycin (32), midemycin (30), mikamycin (17), mirincamycin (31), mocimycin (28), modithromycin (101), natamycin (15), nebramycin (19), neomycin (1), neotramycin (15), oleandomycin (6), palidomycin (55), paromomycin (10), paulomycin (47), pirlimycin (47), primycin (38), pristinamycin (12), ranimycin (20), relaxomycin (15), retasphimycin (99), ribostamycin (27), rifamycin (13), rokitamycin (53), roxithromycin (54), salinomycin (37), sedecamycin (55), solithromycin (104), spectinomycin (13), spiramycin (6), stallimycin (30), steffimycin (20), streptomycin (1), surotomycin (107), tamespimycin (96), telithromycin (80), terdecamycin (65), tobramycin (28), troleandomycin (24), trospectomycin (53), tulathromycin (87) (vet.), vancomycin (6), viomycin (4), virginiamycin (18)

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

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

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

(c) **antibiotic, antibacterial:**
aspartocin (11), azidamfenicol (14), cetofenicol (14), chloramphenicol (1), cloramfenicol pantotenate complex (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 -rubin

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**USAN**

**-nabant**

**cannabinoid receptors antagonists**

E.0.0.0

(a) drinabant (99), giminabant (107), ibipinabant (99), otenabant (99), rimonabant (83), rosonabant (97), surinabant (93), taranabant (97)

---

**-nacept**

see -cept
-nakin  see -kin

-nakinra  see -kinra

**USAN**

**nal-**  
opioid receptor antagonists/agonists related to normorphine

A.4.1.0  (USAN: narcotic agonists/antagonists (normorphine type))
B.2.0.0

![Chemical structure]

a) methylnaltrexone bromide (96), nalbuphine (21), naldemedine (105), nalfurafine (87), nalmefene (49) (originally nalmetrene (47)), nalmexone (19), nalorphine (1), naloxegol (105), naloxone (13), naltalimide (107), naltrexone (29)

(b) nalidixic acid (13), naluzotan (101)

-naritide  see -tide

-navir  see vir

-nermin  see -ermin

-nercept  see -cept

-nertant  see -tant

-netant  see -tant

-nicate  see nico-

**USAN**

-nicline  nicotinic acetylcholine receptor partial agonists / agonists

E.1.1.2

(a) altinicline (82), dianicline (93), facinicline (105), ispronicline (93), pozanicline (100), rivanicline (93), sofinicline (100), tebanicline (86), varenicline (89)
nico- or nic- or ni-
nicotinic acid or nicotinoyl alcohol derivatives

\[
\text{P.7.0.0}
\]

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

inositol nicotinate (16), xantinol nicotinate (16)

**nic-** (40), nicainoprol (46), nicametate (15), nicardipine (42), nicanartine (72), nicergoline (26), niciprol (23), niceverine (15), nictindole (28), nizofenene (44)

**ni-** (10), niaprazine (24), nifenazone (15), niemetacin (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:** nimazine (21)

  **other:** nifungin (24), nimidine (34), nisbuterol (38)

  (c) **NO**₂ - **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**
  
  **Y.0.0.0**

  (USAN: antiprotozoal substances (metronidazole type))

  (a) abunidazole (52), azanidazole (38), bamnidazole (37), benznidazole (31), carnidazole (32), doranidazole (90), etanidazole (57), fexinidazole (37), flortanidazole (18F) (108), flunidazole (21), ipronidazole (21), metronidazole (11), misonidazole (38), moxnidazole (33), ornidazole (28), panidazole (24), pimonidazole (57), piridazole (32), propenidazole (45), ronidazole (18), satranidazole (48), seconidazole (30), sulindazole (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), furmexhadone (8), levofuraltadone (17), nidoxyzone (6), nhydrazone (10), nitrofural (1), nitrofurantoin (11), thiofuradene (11)

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

nitro-  NO₂ - derivatives

or nitr- or nit-
or ni- or -ni-

nifur-  all INN of this series (see under nifur-)

nitr-: nitroclofene (41), nitrocycline (14), nitrodan (15), nitrofural (1), nitrofurantoin (11), nitromifene (33), nitroscanate (33), nitrosulfathiazole (1), nitrovinil (19), nitroxnile (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), nidoxyzone (6), nifenalol (22), nihydrazone (10), nimesulide (44), nimorazole (22), niridazole (17)

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

-nidazole:  for INNs of this series see under –nidazole
INN – The use of stems

- nixin

anti-inflammatory, anilinonicotinic acid derivatives

A.4.2.0

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

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

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

(-)nonacog see -cog

-octakin see -kin

(-)octocog see -cog

-ol (d) for alcohols and phenols

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

E.5.2.0

(BAN: beta-adrenoreceptor antagonists)

(USAN: beta-blockers (propranolol type))

\[ \text{Ar} \quad \text{O} \quad \text{H} \quad \text{OH} \quad \text{N} \quad \text{R} \]

aromat. ring -O-CH\(_2\)-CHOH-CH\(_2\)-NH-R

(a) acebutolol (28), adaprolol (63), adimolol (50), afurolol (40), alprenolol (19), ancarolol (47), arnolol (56), arotinolol (48), atenolol (33), befunolol (39), betaxolol (40), bevantolol (36), bisoprolol (48), bometolol (42), bopindolol (42), bornaprolol (46), bucindolol (43), bucumolol (35), bufetolol (30), bunitrolol (28), bunolol (22), bupranolol (27), butocrolo (38), butofilolol (40), carazolol (36), carpindolol (42), carteolol (35), celiprolol (35), cetamolol (47), cicloprolol (48), cinamolol (44), cloranolol (41), crinolol (41) (replaced by pacrinolol (44)), dexnebivolol (98), dexpopropanolol (21), diacetolol (41), draquinolol (54), ecastrolol (56), epanolol (52), ericolol (50), esatenolol (76), esmolol (50), exaprolol (32), falintolol (53), flestolol (53), flusoxolol (50), idropranolol (31), imidolol (49) (replaced by adimolol (50)), indenolol (37), indopranolol (48), iprocrolol (39), isoxaprolol (45), landiolol (75), levobetaxolol (61), levobunolol (42), levomoprolol (58), levonebivolol (98), mepindolol (36), metipranolol (38), metoprolol (30), moprolol (36), nadolol (34), nadoxolol (28), nafetolol (39), nebulolol (56), nipradilol (50) (previously nipradolol (49)), oxprenolol (20), pacrinolol (44), pafeno (46), pamatolol (36), pargolol (36), penbutolol (25), penirolol (36), pindolol (23), pirepabuol (48), pracecolol (23), primidolol (42), procinolol (25), propranolol (15), ridazolol (51), ronactolol (57), soquinolol (43), spirendolol (46), talinolol (28), tazolol (31), teoprolol (43), tertatolol (48), tienoxolol (56), tilisolol (57), timolol (29),
tiprenolol (23), tolamolol (29), toliprolol (28), trigevolol (56), xibenolol (48), xipranolol (22), zoleprodolol (102)

(b) Q.2.3.0: stanozolol (18) (anabolic steroid)

-alol aromatic ring -CH-CH₂-NH-R related to -olols

E.5.2.0 (USAN: combined alpha and beta blockers)

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

(c) butidrime (16)

-olone see pred

-onakin see -kin

-one (d) ketones

(a) 638 (approx. 7.3 %) INNs ending in -one in Lists 1-109 of proposed INNs

-onide steroids for topical use, acetal derivatives

Q.3.0.0

(a) acrocinonide (27), amcinonide (33), budesoni de (37), ciclesonide (62), cicortonide (28), ciprocironide (38), desonide (24), dexcibudesonide (80), drocinonide (29), fluclorolone acetonide (22), fluocinolone acetonide (11), flumoxonide (38), flucinonide (25), halcinonide (29), itrocinonide (62), nicocortonide (40), procionide (38), rofleponide (72), tralonide (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 anti-infective: octenidine (43), piritendine (57)
antibacterial: sulfaguanidine (4)
 veterinary coccidiostatic: 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: anorexiants)
(a) acridorex (21), amfepentorex (16), aminorex (14), benfluorex (25), clobenzorex (18), clofexorex (16), clorinorex (14), difemorex (41), etolorex (20), fenisorex (29), fenproporex (17), flucetorex (30), fludorex (19), fluminorex (14), formetorex (14), furfenorex (16), indanorex (30), mefenorex (19), morforex (26), oxifentorex (20), pentorex (16), picilorex (40), tiflorex (34)
(b) almorexant (98), filorexant (108), suvorexant (105)
(c) bupropion (84) (replaces amfebutamone (31)), amfecloral (12), amfepramone (13), amfetamine (55), amfetaminil (40), benzamine (55), brolamfetamine (55), chlorphentorexine (11), clortorexine (22), dexamfetamine (55), dexfenfluramine (54), dimetamfetamine (38), etilamfetamine (40), fenbutrazate (12), fenfluamine (14), hexapradol (12), levamfetamine (12), levmetamfetamine (83), levofenfluramine (57), lisdexamfetamine (94), mephteramine (6), ortetamine (13), phendimetrazine (11), phentermine (6), phentermine (11)

orphan opioid receptor antagonists/agonists, morphinan derivates
A.4.1.0
B.2.0.0 (USAN: -orphan, -orphan-: narcotic antagonists/agonists (morphinan derivatives))

(a) A.4.1.0: butorphanol (31), dextromethorphan (1), dextrorphan (1), dimemorfan (30), keterphanol (49), levomethorphan (1), levophenacylormorph (9), levorphanol (4),
methylsamidorphan chloride (109), norlevorphanol (9), oxilorphan (31), phenomorphan (5), proxorphan (43), racemethorphan (1), racemorphan (1), samidorphan (107), xorphanol (48)

B.2.0.0: levallorphan (2)

-orph-

-orphine: acetorphine (17), alletorphine (25), buprenorphine (29), cyprenorphine (17), desomorphine (5), diprenorphine (21), etorphine (17), homprenorphine (25), methylidesorphine (5), methylidihyromorphine (5), morphine glucuronide (92), nalorephine (1), nicomorphine (7), normorphine (7)

-orphinol: hydromorphinol (11)

-orphone: conorfone (46), hydromorphone (1), oxymorphone (5), pentamorphone (60), semorphone (67)

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

-otermin see -ermin

-oxt-antacids, aluminium derivatives (see also -aldrate)

-alox

(a) glucalox (13), sucralox (13)

(b) -dox antibacterials, quinazoline dioxide derivatives: (USAN: -adox: antibacterials (quinoline dioxide derivatives))

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

-pirox antimycotics, pyridone derivatives: USAN

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

-xanox antiallergics, tixanox group:
(USAN: antiallergic respiratory tract drugs (xanoxic acid derivatives))

amlexanox (55), mepixanox (49), sudexanox (44), tixanox (37), traxanox (44)
others: acipimox (33) (antihyperlipidaemic), bifeprunox (87) (antipsychotic), cefminox (53) (antibiotic), deferasirox (86) (chelating agent), etofenprox (57) (insecticide), nifurtimox (21) (antiprotozoal), pardoprunox (96) (antiparkinsonian), sulbenox (37) (animal growth regulator), xanoxic acid (33) (bronchodilator)

-oxacin (x)  antibacterials, nalidixic acid derivatives

S.5.5.0  (BAN: antibacterial agents of the cinoxacin group)
(USAN: antibacterial (quinolone derivatives))

(a)  cinoxacin (32), droxacin (36), fleroxacin (56), enoxacin (49), garenoxacin (87), irloxacin (53), miloxacin (40), nemonoxacin (96), ozenoxacin (96), rosoxacin (36), tioxacin (34)
-floxacin: alatrofloxacin (75), amifloxacin (51), avarofloxacin (109), balofloxacin (71), besifloxacin (98), binfl oxacin (60), cadrofloxacin (81), cetefloxacin (68), ciprofloxacin (50), clinafloxacin (67), danofloxacin (61), delafloxacin (100), difloxacin (55), ecenofloxacin (78), enrofloxacin (56), esafloxacin (60), fandofloxacin (78), finafloxacin (85), gatifloxacin (74), gemifloxacin (81), grepafloxacin (68), ibafloxacin (60), levofloxacin (64), levonadifloxacin (95), lomefloxacin (58), marbofloxacin (65), merofloxacin (69), moxifloxacin (78), nadifloxacin (64), norfloxacin (46), ofloxacin (49), olamufloxacin (79), orbitofloxacin (68), pazufloxacin (71), pefloxacin (45), pradofloxacin (84), premafloxacin (72), prulifloxacin (72), rufloxacin (57), sarafloxacin (62), sitafloxacin (75), sparfl oxacin (63), temafloxacin (58), tosufloxacin (60), trovafloxacin (73), ulifloxacin (89), vebufloxacin (69), zabofoxacin (93)
(b)  itarnafloxin (103)
(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: -oxan or -oxane: α-adrenoreceptor antagonists; benzodioxane derivatives)

(a)  α-adrenoreceptor antagonists: azaloxan (52) (antidepressant), fluparoxan (58) (antidepressant), idazoxan (49) (α₂), imiloxan (52) (α₂) (antidepressant), piperoxan (1) (sympatholytic), proroxan (39)
anti hypertensives: flesinoxan (55), guabexan (32), guanoxan (15)
tranquillizers: butamoxane (12), ethomoxane (12), pentamoxane (12)
muscle relaxant: ambeno xan (21)
oxa, axa, ox: acoxatrine (14) (cardiovascular analeptic), axamoxide (53) (neuroleptic), cinepaxadil (50) (coronary vasodilator), dioxadilol (53) (slight β-adrenoreceptor antagonist), domoxin (14), doxazosin (47), enoxamast (52) (antiallergic), spiroxatrine (14) (analgesic)
related: dexefaroxan (76) (β-adrenoreceptor antagonist), efaroxan (59) (α₂)

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

(c) aplindore (92), bendacalol (59), binosiprone (65), capeserod (94), eltoperazine (57), lecozotan (93), lurtotecan (50), osemozotan (87), quincarbate (31), silibinin (38), sulamserod (82)

---

-usan -oxanide see -anide

-usan -oxef see cef-

-usan -oxepin see -pine

-usan -oxetine serotonin and/or norepinephrine reuptake inhibitors, fluoxetine derivatives
(USAN: antidepressants (fluoxetine type))

C.3.0.0

(a) atomoxetine (86), ansoxetine (58), dapoxetine (65), duloxetine (68), edivoxetine (104), esreboxetine (99), femoxetine (36), fluoxetine (34), ifoxetine (54), litoxetine (64), nisoxetine (34), omiloxetine (76), paroxetine (38), reboxetine (54), seproxetine (66), tedatioxetine (107), vortioxetine (107)

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-usan -oxicam see -icam

-usan -oxifene see -ifene

-usan -oxopine see -pine

-ban -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)*

**N.1.2.0**

(USAN: diuretics (sulfamoylbenzoic acid derivatives))

![Chemical structure](image)

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

- pamil  
**calcium channel blockers, verapamil derivatives**

**F.2.1.0**

(USAN: coronary vasodilators (verapamil type))

![Chemical structure](image)

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

related: bertosamil (64), bisaramil (60)

-parcin  
**glycopeptide antibiotics**

**S.6.0.0**

(a) avoparcin (29), orientiparcin (72)

-parib  
**poly-ADP-ribose polymerase inhibitors**

**L.0.0.0**

iniparib (103), niraparib (107), olaparib (94), rucaparib (105), veliparib (102)
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<tr>
<th>Type</th>
<th>Description</th>
<th>USAN</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>-parin</td>
<td>heparin derivatives including low molecular mass heparins</td>
<td>(USAN: heparin derivatives and low molecular weight (or depolymerized) heparins)</td>
<td>adomiparin sodium (104), ardeparin sodium (68), bemiparin 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), semuloparin sodium (99), sevuparin sodium (107), tafoxiparin sodium (102), tinzaparin sodium (65)</td>
</tr>
<tr>
<td>-parinux</td>
<td>synthetic heparinoids</td>
<td>(USAN: antithrombotic indirect selective synthetic factor Xa inhibitors)</td>
<td>fondaparinux sodium (83) (replaces fondaparinux sodium (79)), idrabiotaparinux sodium (97), idraparinux sodium (84)</td>
</tr>
<tr>
<td>-patril/-patrilat</td>
<td>see -tril/-trilat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-pendyl</td>
<td>see -dil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-penem</td>
<td>analogues of penicillanic acid antibiotics modified in the five-membered ring</td>
<td>(USAN: antibacterials, antibiotics (carbapenem derivatives))</td>
<td>biapenem (69), doripenem (83), ertapenem (84), faropenem (69), imipenem (50), lenapenem (73), meropenem (60), panipenem (64), razupenem (101), ritipenem (67), sulopenem (68), tacapenem (87), tebipenem pivoxil (82), tomopenem (95)</td>
</tr>
<tr>
<td>perfl(u)-</td>
<td>perfluorinated compounds used as blood substitutes and/or diagnostic agents</td>
<td>(USAN: blood substitutes and/or diagnostics (perfluorochemicals))</td>
<td>perflfenapent (78), perflexane (82), perflisobutane (92), perflisopent (78), perfluamine (45), perflubrodec (87), perflubron (66), perflubutane (91) perflunafene (45), perflutren (82)</td>
</tr>
<tr>
<td>-peridol</td>
<td>see -perone</td>
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<td></td>
</tr>
<tr>
<td>-peridone</td>
<td>see -perone</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
-perone  
tranquillizers, neuroleptics, 4'-fluoro-4-piperidinobutyrophenone derivatives

C.1.0.0
C.2.0.0 (USAN: antianxiety agents/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), metrenperone (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

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

-peridone  
antipsychotics, risperidone derivatives

abaperidone (80), belaperidone (78), cloperidone (17), iloperidone (69), lusaperidone (82),
ocaperidone (64), paliperidone (83), risperidone (57), tioperidone (37)
(c) domperidone (36), etoperidone (36) (antiemetic)

-pidem  
hypnotics/sedatives, zolpidem derivatives

C.1.0.0
alpidem (53), necopidem (66), saripidem (67), zolpidem (53)

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

-dipine  
see -dipine
(a) dosulepin (15)

-zepine  
antidepressant/neuroleptic: C.3.2.0: dibenzepin (14), elanzepine (35), enprazepine (30),
erizepine (54), mezepine (22), nuvenzepine (59), prazepine (15), propizepine (19),
tilozepine (40)
<table>
<thead>
<tr>
<th>Stems</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>tricyclic antiulcer: J.0.0.0</td>
<td>darenzepine (52), pirenzepine (30), siltenzepine (63), telenzepine (50), zolenzepine (48)</td>
<td></td>
</tr>
<tr>
<td>tricyclic anticonvulsant: A.3.1.0</td>
<td>carbamazepine (15), eslicarbazepine (91), etizepine (51), licarbazepine (81), oxcarbazepine (41), risperenzepine (63)</td>
<td></td>
</tr>
<tr>
<td>hyperthermia: amezepine (42)</td>
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<td></td>
</tr>
<tr>
<td>-apine</td>
<td>psychoactive: C.0.0.0</td>
<td>amoxapine (25), asenapine (87), batelapine (64), clotiapine (16), clozapine (22), esmirtazapine (93), flumezapine (47), fluperlapine (46), loxapine (22), metiapine (22), mirtazapine (61), olanzapine (67), pentiapine (56), perlapine (23), quetiapine (74), rilapine (52), serazapine (63), tenilapine (52), zicronapine (100)</td>
</tr>
<tr>
<td>-cilpine</td>
<td>antiepileptic: A.3.1.0</td>
<td>dizocilpine (60)</td>
</tr>
<tr>
<td>-oxepin</td>
<td>beloxepin (75), cidoxepin (17), doxepin (15), maroxepin (54), metoxyzopine (33), pinoxepin (18), savoxepin (56), spiroxepin (32)</td>
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<tr>
<td>-oxopine</td>
<td>traboxepine (58)</td>
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<tr>
<td>-opine</td>
<td>adoxopine (63)</td>
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<tr>
<td>-tepine</td>
<td>citatepine (54), clorotepine (29), damotepine (27), metitepine (27), tropatepine (28)</td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td>atromepine (15), noscapine (7), prozepine (14)</td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td>clobenzepam (25), homopipramol (20), opipramol (15)</td>
<td></td>
</tr>
<tr>
<td>-pirant</td>
<td>prostaglandin receptors antagonists, non-prostanoids</td>
<td></td>
</tr>
<tr>
<td>(USAN: prostaglandin receptors antagonists, non prostanoid structure)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K.0.0.0</td>
<td>asapiprant (109), fevipiprant (109), laropiprant (97), setipiprant (104), vidupiprant (104)</td>
<td></td>
</tr>
<tr>
<td>-piprazole</td>
<td>see -prazole</td>
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</tr>
<tr>
<td>-pirone</td>
<td>see -spirone</td>
<td></td>
</tr>
<tr>
<td>-pirox</td>
<td>see -ox/-alox</td>
<td></td>
</tr>
<tr>
<td>-pitant</td>
<td>see -tant</td>
<td></td>
</tr>
<tr>
<td>-plact</td>
<td>platelet factor 4 analogues and derivatives</td>
<td></td>
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<td></td>
<td>iroplact (74)</td>
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<tr>
<td>-pladib</td>
<td>phospholipase A2 inhibitors</td>
<td></td>
</tr>
<tr>
<td>W.0.0.0</td>
<td>darapladib (94), ecopladib (90), efipladib (92), giripladib (96), goxalapladib (94), rilapladib (94), varespladib (87)</td>
<td></td>
</tr>
</tbody>
</table>
### -planin

**S.5.0.0**  
-glycopeptide **antibacterials (Actinoplanes strains)**  
(USAN: antibacterials (Actinoplanes strains))  
actaplanin (34), mideplanin (66), ramoplanin (57), teicoplanin (48)

### -plase

**see -teplase, -uplase under -ase**

### -plasmid

**see -gene** for gene therapy products (See also Annex4)

### -platin (x)

**antineoplastic agents, platinum derivatives**  
**L.0.0.0**  
(USAN: antineoplastics (platinum derivatives))  
(a) carboplatin (48), cisplatin (39), dexormaplatin (64), enloplatin (64), eptaplatin (83), iroplatin (51), lobaplatin (65), miboplatin (66), miriplatin (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

**imidazopyrimidine or pyrazolopyrimidine derivatives, used as anxiolytics, sedatives, hypnotics**  
**A.2.2.0**  
C.1.0.0  
(USAN: non-benzodiazepine anxiolytics, sedatives, hypnotics)  
adipiplon (98), divaplon (61), fasiplon (61), indiplon (86), lorediplon (105), ocinaplon (72), panadiplon (65), taniplon (61), zaleplon (72)

### -poetin (x)

**erythropoietin type blood factors**  
**I.3.0.0**  
(USAN: erythropoietins)  
(a) darbepoetin alfa (85), epoetin alfa (62), epoetin beta (62), epoetin delta (85), epoetin gamma (67), epoetin epsilon (72), epoetin kappa (97), epoetin omega (73), epoetin theta (95), epoetin zeta (92)
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<th>USAN</th>
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<tr>
<td>-porfin</td>
<td>benzoporphyrin derivatives</td>
</tr>
<tr>
<td>(a)</td>
<td>exeporfinium chloride (105), lemuprofin (91), padioporfirin (96), padoporfirin (93), rostaporfirin (83), stannsoporfirin (79), talaporfin (84), temoporfirin (70), verteporfirin (71)</td>
</tr>
<tr>
<td>-poride</td>
<td>Na⁺/H⁺ antiport inhibitor</td>
</tr>
<tr>
<td>H.3.0.0</td>
<td>amiloride (18), cariporide (74), eniporide (79), rimeporide (92), sabiporide (84), zoniporide (85)</td>
</tr>
<tr>
<td>-pramine</td>
<td>substances of the imipramine group</td>
</tr>
<tr>
<td>C.3.2.0</td>
<td>(USAN: antidepressants (imipramine type))</td>
</tr>
<tr>
<td>(a)</td>
<td>saturated dibenzazepine: azipramine (36), carpipramine (16), cianopramine (47), ciclopramine (29), clocapramine (28), clomipramine (17), depramine (31), desipramine (13), imipramine (8), ketimipramine (17), lopipramine (24), lofepramine (24) (replaced by lofepramine (34)), metapramine (34), mosapramine (64), quinupramine (32), tamipramine (54), trimipramine (13), imipraminoxide (36)</td>
</tr>
<tr>
<td>(c)</td>
<td>unsaturated dibenzazepine: carbamazepine (15), homopipramol (20), opipramol (15)</td>
</tr>
<tr>
<td>-prazole</td>
<td>antiulcer, benzimidazole derivatives</td>
</tr>
<tr>
<td>J.0.0.0</td>
<td>(USAN: antiulcer agents (benzimidazole derivatives))</td>
</tr>
<tr>
<td>(a)</td>
<td>cinprazole (34), dexlansoprazole (93), disuprazole (56), esaprazole (45), esomeprazole (79), fuprazole (39), ilaprazole (86), lansoprazole (60), leminoprazole (68), levulansoprazole (93), nepaprazole (74), nilprazole (37), omeprazole (46), pantoprazole (62), picoprazole (46), pumaprazole (76), rabeprazole (69), saviprazole (62), tenatoprazole (80), timoprazole (35), ufiprazole (58)</td>
</tr>
</tbody>
</table>
-piprazole  psychotropics, phenylpiperazine derivatives *(Future use is discouraged due to conflict with the stem –prazole)*

C.0.0.0

![Chemical structure](image)

(a)  aripiprazole (75), brexpiprazole (107), dapioprazole (45), elopiprazole (70), enpiprazole (24), lorpiprazole (60), mepiprazole (24), sonepiprazole (80), tolpiprazole (25)

**pred**  prednisone and prednisolone derivatives

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

![Chemical structure](image)

(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 sulpantanate (56), oxisopred (29), prednazate (16), prednazine (22), prednicarbate (44), prednimustine (31), prednisolamate (13), prednisolone (6), prednisolone steaglate (16), prednione (6), prednylidene (13), tipredane (54)

(b)  various non-steroidal compounds
citiolone (23) (hepatobil. troubles), clorexolone (15) (diuretic), fenozolone (14) (psychotonic), tioxolone (16) (keratolytic), vistatolon (25) (antiviral)

(c)  -betasol: clobetasol (26), doxibetasol (26), ulobetasol (54)

(c)  -methasone or -metasone: alcemetasone (41), amelometasone (74), beclometasone (17), betamethasone (11), betamethasone acibutate (26), cornetasone (29), desoximetasone (20), dexamethasone (8), dexamethasone acefurate (57), dexamethasone cipecllate (94), flumetasone (13), halometasone (41), icometasone enbutate (70), mometasone (56), paramethasone (12)

(c)  -olone: steroids not used as glucocorticosteroids
(USAN: steroids *(not prednisolone derivatives))
bardoxolone (101), clocortolone (16), descinolone (17), diflucortolone (18), flucolorolone acetonide (22), fluocinolone acetonide (11), fluocortolone (15), fluorometholone (8), fluperolone (13), halocortolone (31), rimexolon (38), triacemolone (8), triacemolone benetonide (36), triacemolone furetonide (36), triacemolone hexacetonide (15)
(c) clobetasone (26), cloticasone (52), deprodone (20), dichlorisone (10), diflorasone (30), flunisolide (11), fluticasone (52), fluticasone furoate (96), meclorisone (40), timobesone (51)

-olone

A.1.2.0 general anesthetics, pregnanes: alfadolone (27), alfaxalone (27), eltanolone (65), ganaxolone (76), minaxolone (39), renanolone (8), sepranolone (107)

H.2.0.0 antiarrhythmic: amafolone (40), edifolone (56)

H.4.0.0 antihyperlipidaemic: colestolone (59)

J.0.0.0 glycyr rhetic acid derivatives: carbonoxolone (15), ciclo xolone (33), cinoxolone (33), deloxolone (51), enoxolone (15), roxolonium metilsulfate (33)

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

Q.2.3.0 androgens: androstanelone (4), drostanolone (13), mesterolone (10), metenolone (12), nandrolone (22), norethandrolone (6), oxandrolone (12), oxymetholone (11)

Q.2.3.1 oxendolone (42), mesterolone (15), rosterolone (59)

M.4.1.0 bolone (see bol, anabolic steroids): form ebolone (31), mesabolone (29), metribolone (17), oxabolone cipionate (14), quinbolone (14), roxibolone (40), stenbolone (17), tibolone (22), trenbolone (24)

-prenaline see -terol

-pressin vasoconstrictors, vasopressin derivatives

Q.1.2.0

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

(a) argipressin (13), desmopressin (33), felypressin (13), lypressin (13), ornipressin (22), selepressin (105), terlipressin (46), vasopressin injection (16)

-previr see vir
**-pride sulpiride derivatives**

\[ R = \text{alizapride (43), alpiropride (49), amisulpride (44), batanopride (61), broclepride (43), cisapride (49), dazopride (50), etacepride (52), eticlopride (52), flubepride (35), monapride (63) (previously emonapride (61)), peralopride (43), prosulpride (43), prucalopride (78), sulmepride (43), sultopride (26), sulverapride (44), veralipride (43)} \]

\[ J.1.0.0: \text{alepride (40), bromopride (27), cinitapride (41), cipropride (41), clebopride (32), dobutride (57), irolapride (55), isosulpride (36), itopride (66), lirenpride (65), liroxapride (74), lorapride (44), mezanopride (56), mosapride (66), naronapride (104), pancopride (62), raclopride (52), remoxipride (49), renzapride (60), revexepride (108), tiapride (28), ticalopride (83), tinsulapride (44), trazolopride (51), tropapride (48), zacopride (55)} \]

\[ K.0.0.0: \text{cloxacepride (42)} \]

\[ U.1.1.0/C.0.0.0: \text{iolopride} [{^{123}}\text{I}] (73) \]

- **-pril (x) angiotensin-converting enzyme inhibitors**

\[ \text{BAN, USAN} \]

\[ H.3.0.0: (\text{BAN: inhibitors of angiotensin-converting enzyme}) \]

\[ (\text{USAN: antihypertensive (ACE inhibitors)}) \]

\[ \text{(a) alacepril (50), benazepril (58), captopril (39), ceronapril (64), cilazapril (53), delapril (54), enalapril (46), fosinopril (56), idrapril (66), imidapril (60), indolapril (50), libenzapril (58), lisinopril (50), moexipril (60), movetipril (58), orbutopril (57), pentopril (53), perindopril (53), pivopril (52), quinapril (54), ramipril (52), rentiapril (55), spirapril (56), temocapril (64), trandolapril (53), utibapril (63), zacicpril (58), zofenopril (51)} \]

- **-prilat (x) USAN**

\[ (\text{USAN: antihypertensives (ACE inhibitors) (diacid analogs of the -pril entity)}) \]

\[ (\text{a) benazeprilat (58), cilazaprilat (54), enalaprilat (50), fosinoprilat (62), imidaprilat (71), moexiprilat (67), perindoprilat (56), quinaprilat (60), ramiprilat (53), spiraprilat (60), temocaprilat (78), trandolaprilat (60), utibaprilat (65), zacicprilat (64), zofenoprilat (63)} \]
-prim antibiotics, dihydrofolate reductase (DHFR) inhibitors, trimethoprim derivatives

(USAN: antibacterials (trimethoprim type))

S.5.5.0

\[
\begin{array}{c}
\text{N} \\
\text{N} \\
\text{NH}_2 \\
\text{NH}_2 \\
\text{OCH}_3 \\
\text{H}_3\text{CO} \\
\text{H}_3\text{CO}
\end{array}
\]

(a) aditoprim (49), baquiloprim (56), brodimoprim (44), epiroprim (44), iclaprim (88), metioprim (42), ormetoprim (21), talmetoprim (41), tetroxoprim (33), trimethoprim (11), vaneprim (48)

(c) diaveridine (18)

-pris- steroidal compounds acting on progesterone receptors (excluding -gest- compounds)

Q.2.0.0 (USAN: -prisnil: selective progesterone receptor modulators (SPRM); -pristine: progesterone receptor antagonists)

(a) aglepristone (70), asoprisnil (88), asoprisnil ecamate (89), lilopristone (54), lonaprisan (97), mifepristone (54), onapristone (58), telapristone (103), toripristone (61), ulipristal (107), vilaprisan (109)

(c) epristeride (69), saprisartan (72), and the stem -pristin selected for antibacterials, streptogramins, protein-synthesis inhibitors, pristinamycin derivatives

-pristin antibiotics, streptogramins, protein-synthesis inhibitors, pristinamycin derivatives

S.6.0.0 (USAN: antibacterials, pristinamycin derivatives)

(a) dalfopristin (67), efepristin (75), flopristin (98), quinupristin (65), linopristin (98), volpristin (80)
-profen (x)  anti-inflammatory agents, ibuprofen derivatives

A.4.2.0  (USAN: anti-inflammatory/analgesic agents (ibuprofen type))

(a)  alminoprofen (40), araprofen (65), atliprofen (74), bakeprofen (61), benoxaprofen (34), bermopron (57), bifeprofen (57), carprofen (35), ciclopreno (32), cliprofen (32), dexibuprofen (61), dexindoprofen (49), dexketoprofen (70), esflurbiprofen (56), fenoprofen (26), flunoxaprofen (44), fluprofen (18), flurbiprofen (28), frabuprofen (51), furaprofen (42), furcloprofen (44), hexaprofen (30), ibuprofen (16), indoprofen (32), isoprofen (40), ketoprofen (28), lobuprofen (53), lonaprofen (61), losmiprofen (61), loxoprofen (50), mabuprofen (64), mexoprofen (33), miroprofen (44), odalprofen (66), pelubiprofen (76), piketoprofen (40), pirprofen (32), pranoprofen (38), suprofen (31), tazeprofen (50), tetriprofen (29), tilnoprofen arbalen (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

Q.0.0.0  (USAN: -prost- or -prost: prostaglandins)

(a)  alfaprostol (45), alprostadil (39), ataprost (62), beraprost (106), bimatoprost (85), butaprost (55), carboprost (36), cicaprost (54), ciprostene (51), clinprost (68), cloprostenol (33), cobiprost (98), delprofen (42), dimoprostil (52), dinoprost (26), dinoprostone (26), doxaprost (34), ecraprost (83), eganoprost (84), enisoprost (50), epoprostenol (44), eptaloprost (56), etiprost (46), fenprostalene (42), flunoprost (53), fluprostenol (33), froxiprost (55), gemeprost (42), iloprost (48) (originally ciloprost (46)), lanproston (72), latanoprost (67), latanoprostene bunod (107), limaprost (56), lubiprostone (89), lubrostil (44), meteneprost (45), misoprostil (47), naxaprostene (58), nileaprost (45), nobiprostolan (109), nocloprost (51), oxaprostil (44), penprostene (37), pimilprost (71), piprost (51), posaraprost (97), prostanle (34), remiprostil (63), rivenprost (93), rosaprostil (48), sulprostone (37), taprostene (58), tiaprost (41), tafluprost (89), tilsuprost (51), tiprostanide (48), travoprost (80), treprostinil (87), unoprostone (66), vapiprost (58), viprostil (53)

-prostil  prostaglandins, anti-ulcer

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

-quidar drugs used in multidrug resistance; quinoline derivatives

L.0.0.0  (USAN: multidrug resistance inhibitors (quinoline derivatives))

dofequidar (88), laniquidar (85), tariquidar (86), zosuquidar (86)
-quine (d) quinoline derivatives

\[ \text{quinoline derivatives} \]

(a) antimalarial: amodiaquine (1), amopyroquine (8), bulaquine (82), chloroquine (4), ferroquine (95), hydroxychloroquine (8), mefloquine (33), moxipraquine (26), pamaquine (4), pentaquine (4), primaquine (1), quinocide (34), tafenoquine (80), tebuquine (49)

acequinoline (22), actinoquinol (15), aminoquinol (22), amquinate (21), amiquinsin (17), aminooquinuride (45), benzoxiquine (18), broquinaldol (17), buquineran (40), buquinolate (16), clamoxyquine (16), clotroquine (20), chlorquinaldol (1), cinoquidox (40), ciproquinate (22), cloquinoxol (16), cloquine (11), cloxiquine (30), debrisoquine (15), decoquinate (20), diiodohydroxyquinoline (1), esproquine (31), flumequine (34), guanisoquine (15), hedaquinium chloride (8), intiquinatine (99), iquindamine (34), isotiquimide (49), loidinquimate (18), mebique (29), nequinat (22), nifuroquin (36), olaquindox (31), oxamniquine (28), pamaquin (29), pirquinol (43), proquinolate (17), quinaldine blue (17), quincarbate (31), quindecamine (15), quindoxin (26), quinetate (16), quinifamide (40), quinisocaine (4), quinprenaline (17), quinuclidine bromide (40), quipazine (17), sitamaquine (80), tilbroquinol (45), tiliquinol (45), tiquinamide (35), tiquizium bromide (47), toquizine (17), tretoquinol (21), viquidil (25)

(c) broxaldine (12), cinchoquaine (1), cinchophen (1), climiquinamine (33), dehydroemetine (15), dequalinium chloride (8), dimethylthubocurarinium chloride (1), dimoxine (1), drotaverine (17), ethaverine (4), euprocin (22), famotine (23), flucarbil (14), glafenine (15), laudexium metilsulfate (4), laurolinium acetate (12), memotine (22), metofoline (12), neocinchophen (1), niceverine (15), nitroxoline (15), noscapine (7), octaverine (18), oxolinic acid (15), oxycinchophen (6), pyrvinium chloride (6), trethinium tosilate (14), tritoqualine (14), tubocurarine chloride (1)

-quinil see -azenil

-racetam amide type nootrope agents, piracetam derivatives

B.1.0.0 (BAN: substances of the piracetam group)
(USAN: nootropics (learning, cognitive enhancers) piracetam type)

\[ \text{amide type nootrope agents, piracetam derivatives} \]

(a) aloracetam (62), aniracetam (44), brivaracetam (93), cebaracetam (66), coloracetam (86), dimiracetam (68), doliracetam (53), dupracetam (38), etiracetam (40), fasoracetam (79), fonturacetam (104), imuracetam (42), levetiracetam (62), molracetam (55), nebracetam (62), nefiracetam (64), nicoracetam (63), oxiracetam (43), piracetam (22), pramiracetam (46), rolziracetam (54), seletracetam (93)

related: tenilsetam (51)
INN – The use of stems

-racil uracil type antineoplastics
L.0.0.0

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

-thiouracil uracil derivatives used as thyroid antagonists
M.7.3.0 (USAN: -uracil: uracil derivatives used as thyroid antagonists and as antineoplastics)

(a) iodothiouracil (01), methylthiouracil (01), propylthiouracil (01)

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

(USAN: prehormones or hormone-release stimulating peptides)

(a) LHRH-release-stimulating peptides: avorelin (74), buserelin (36), deslorelin (61), gonadorelin (32), goserelin (55), histrelin (53), leuprolelin (47), lutrelin (51), nafarelin (50), peforelin (93), triptorelin (56), zoptarelin doxorubicin (107)

-morelin growth hormone release-stimulating peptides:

(a) anamorelin (97), capromorelin (83), dumorelin (59), examorelin (72), ipamorelin (78), lenomorelin (106), macimorelin (100), pralmorelin (77), rismorelin (74), sermorelin (56), tabimorelin (80), tesamorelin (96), ulimorelin (103)

(c) somatorelin (57)

-tirelin thyrotropin releasing hormone analogues:

(a) azetirelin (60), fertirelin (42), montirelin (58), orotirelin (58), posatirelin (60), protirelin (31), rovatirelin (107), taltirelin (75)

other: corticorelin (64) (diagnostic agent)

(c) thyrotropin alfa (78) (thyrotropin releasing hormone (TRH) analog)

-relix gonadotropin-releasing-hormone (GnRH) inhibitors, peptides
Q.0.0.0 (USAN: -relix: hormone-release inhibiting peptides)

(a) abarelix (78), cetrorelix (66), degarelix (86), detirelix (56), ganirelix (65), iturelix (79), ozarelix (94), prazarelix (81), ramorelix (69), teverelix (78)
-renone  
**aldosterone antagonists, spironolactone derivates**  
N.1.8.0  
(USAN: aldosterone antagonists (spironolactone type))

(a)  
- canrenoic acid (20) and potassium canrenoate (20), canrenone (20), dicirenone (50), drospirenone (63), finerenone (108), 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), prorenoate potassium (32), spironolactone (11), spiroxasone (14)

-restat  
**see -stat**

-renin  
**retinol derivatives**  
P.1.0.0  
(USAN: -retin- or -retin: retinol derivatives)

(a)  
- acitretin (56) (previously etretin (51)), alitretinoin (80), doretinel (60), etretinate (41), fenretinide (51), isotretinoin (41), motretinide (38), pelretin (60), peretinoin (98), retinol (18), tretinoin (25), tretinoin tocoferil (66)
(b)  
- noretynodrel (13), secretin (1), trethinium tosilate (14)

-ribine  
**ribofuranyl-derivatives of the "pyrazofurin" type**  
L.0.0.0/  
S.5.3.0

(a)  
- azaridine (19), cladribine (68), isatoridine (83), loxoridine (64), mizoridine (46), triciridine (46)
(c) pirazofurin (31), ribavirin (31), riboprine (20), tiazofurine (48)
related: benaxibine (50)

rifa- antibiotic, 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))

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

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

-rixin chemokine CXCR receptors antagonists
S.7.0.0 (USAN: Chemokine (C-X-C motif) receptor 2 (CXCR2) modulators)
dazirixin (107), elubrixin (107), ladarixin (105), navarixin (105), reparixin (91)

-rizine see -izine

-rolimus see -imus
-rozole aromatase inhibitors, imidazole-triazole derivatives

L.0.0.0

\[
\text{R}^1 \quad \text{N} \quad \text{N} \quad \text{R} \quad \text{or} \quad \text{Ar}
\]

anastrozole (72), fadrozole (64), finroazole (81), letrozole (70), liarozole (64), talarozole (99), vorozole (64)

(b) aminitrozole (4), sulfatrozole (24), tenonitrozole (47)

-rsen antisense oligonucleotides

aganirsen (101), alicaforsen (85), anivamersen (105), aprinocarsen (89), beclanorsen (01), cenersen (97), custirsen (99), drisapersen (106), gataparsen (103), eteplirsen (103), mipothersen (99), oblimersen (87), trabedersen (97)

-virsen (antivirals): afovirsen (71), fomivirsen (75), miravirsen (101), radavirsen (106), trecovirsen (77)

-rubicin antineoplastics, daunorubicin derivatives

L.5.0.0 (USAN: antineoplastic antibiotics (daunorubicin type))

(a) aclorubicin (44), aldoxorubicin (108), amrubinic (65), berubicin (98), carubicin (40), daunorubicin (20), detorubicin (41), doxorubicin (25), epirubicin (48) (originally pidorubicin (47)), esorubicin (47), galarubicin (80), idarubicin (47), ladirubicin (83), leurubicin (64), medorubicin (47), nemorubicin (71), pirarubicin (55), rodorubicin (54), sabarubicin (90), valrubinic (79), zorubicin (39), zoptarelin doxorubicin (107)

sal salicylic acid derivatives

(USAN: -sal-; -sal; or sal-: anti-inflammatory agents (salicylic acid derivatives))
(a) **sal-**  analgesic anti-inflammatory A.4.2.0
choline salicylate (15), imidazole salicylate (51), salacetamide (1), salcolex (23), saletamide (20), salfluerine (29), salicylamide (1), salnacedin (73), salprotoside (31), salsalate (28), salverine (15)

**various**
salafibrate (41) (antihyperlipidaemic), salantel (29) (anthelmintic), salcaprozic acid (88) (absorption promoter), salclobuzic acid (92) (pharmaceutical aid), salinazid (8) (antituberculosis agent), salirasib (97) (antineoplastic)

**-sal**  analgesic anti-inflammatory A.4.2.0
detanosal (23), diflunisal (33), fendosal (35), flufenisal (22), fosfosal (37), guacetisal (40), guaminesal (50), paracetasal (65), pranosal (24), sulprosal (36), tenosal (63)

**antithrombotic**
flufosal (42)

**various: antituberc.**
fenamisal (15), thiomersal (1) (disinfect.), triflusal (37) (antithrombotic)

**-sal-**  analgesic anti-inflammatory A.4.2.0
acetaminosalol (1), carbasalate calcium (27), carsalam (13), etersalate (50), etosalamide (14), isalmadol (92), parsalmide (32), talosalate (43)

**various**
amotosalen (85), calcium benzamidosalicylate (10), homosalate (28) (sunscreen agent), isalsteine (63) (mucolytic), lasalocid (30) (antibiotic (veterinary)), mersaly (4) (mercurial diuretic), octisalate (83) (sunscreen), osalmid (15) (choleretic), susalimod (73) (immunomodulator), xenysalate (12) (antiseborrheic)

**salazo-**  phenylazosaliclyc acid derivatives antibacterial 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)

**-solan**  brominated salicylamide derivatives disinfectant S.2.1.0
bensalan (18), dibromosalan (14), flusalan (16), fursalan (18), metabromosalan (16), tiosalan (18), tribromosalan (14)

(b) **non-salicylic acid derivatives**
fosalvudine tidoxil (95), macrosalb (99mTc) (33), rusalatide (96), trioxysalen (16) (pigmenting agent)

**bronchodilators**
levosalbutamol (78), salbutamol (20), salmefamol (23)
analgesic, anti-inflammatory A.4.2.0
aloxiprin (13), anilamate (13), benorilate (21), brosotamide (29), cresotamide (28), dibusadol (24), dipyrocetyl (6), ethenzamide (10), fenamifuril (16), gentisic acid (01), hydroxytoluic acid (17), sodium gentisate (1), sodium glucaspaldrate (17)

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

antihypertensives H.3.0.0: labetalol (35)

anti-tussives K.1.0.0: alloclamide (16), flualamide (20)
saluretics N.1.2.0: xipamide (22) (sulfamoyl derivative),

mercurial diuretics N.1.3.0: mercuderamide (1)
anthelmintics S.3.1.0: bromoxanide (31), clioxanide (19), niclosamide (13), rafoxanide (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 (x) angiotensin II receptor antagonists, antihypertensive (non-peptidic) USAN
H.3.0.0 (USAN: -sartan: angiotensin II receptor antagonists)
abitesartan (73), azilsartan (95), azilsartan medoxomil (97), candesartan (71), elisartan (72), embusartan (78), eprosartan (71), fimasartan (94), forasartan (74), irbesartan (71), losartan (66), milfesartan (76), olmesartan (93), olmesartan medoxomil (86), pomisartan (73), pratosartan (85), ripisartan (73), saprisartan (72), tasosartan (72), telmisartan (70), valsartan (68), zolasartan (70)

-semide diuretics, furosemide derivatives USAN
N.1.1.0

(a) azosemide (35), furosemide (14), galosemide (33), sulosemide (49), torasemide (35)

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

J.0.0.0

(a) capeserod (94), piboserod (79), sulamserod (82), tegaserod (79)

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)

L.0.0.0

afuresertib (108), alisertib (104), barasertib (102), cenisertib (104), danusertib (99), delcasertib (105), galunisertib (109), ilorasertib (108), ipatasertib (108), pimasertib (105), rabusertib (107), rigosertib (106), silmitasertib (103), tanzisertib (106), tozasertib (100), volasertib (102)

C.7.0.0

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

Q.0.0.0

(a) -bove: bovine type substances: somagrebove (63), somavubove (63), sometribove (74), somidobove (58)
-por: porcine-type substances: somalapor (62), somenopor (62), somfasepor (66), sometripor (55)
-salm: salmon-type substances: somatosalm (69)
Others: somatrem (54), somatropin (56), somatropin pegol (103)

(b) somatorelin (57), somantadine (51), somatostatin (46)

-sopine see -pine

-spirone anxiolytics, buspirone derivatives

C.1.0.0

(a) alnespirone (70), binospirone (65), buspirone (30), enilospirone (52), perospirone (71), revospirone (61), tandospirone (60), tiospirone (57), umespirone (60), zalospirone (64)
(c) eptapirone (82), gepirone (54), ipsapirone (54)

-stat- or -stat

-stat

-castat dopamine β-hydroxylase inhibitors
(a) etamicastat (101), nepicastat (78), zamicastat (108)

-elestat elastase inhibitors
(a) alvelestat (104), depelestat (91), freselestat (89), sivelestat (78), tiprelestat (103)

-inostat histone deacetylase inhibitors
(a) abexinostat (105), belinostat (97), dacinostat (89), entinostat (99), givinostat (101), mocetinostat (101), panobinostat (96), pracinostat (104), quisinostat (107), resminostat (102), tefinostat (105), vorinostat (94)

-listat gastrointestinal lipase inhibitors
(a) cetilistat (91), orlistat (66)

-mastat matrix metalloproteinase inhibitors
(a) batimastat (70), cipemastat (81), ilomastat (73), marimastat (75), prinomastat (82), rebimastat (89), ricolinostat (109), solimastat (80), tanomastat (82)

-mostat proteolytic enzyme inhibitors:
(a) camostat (46), nafamostat (53), patamostat (69), sepimostat (68), upamostat (105)
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>aloxistatin (57)</td>
<td>aldose reductase inhibitors</td>
</tr>
<tr>
<td>ulinastatin (56)</td>
<td></td>
</tr>
<tr>
<td>-restat or -restat-</td>
<td></td>
</tr>
<tr>
<td>M.5.0.0 (a)</td>
<td>alrestatin (37), epalrestat (55), fidarestat (78), imirestat (59), lidorestat (87), minalrestat (76), ponalrestat (58), ranirestat (91), risarestat (82), tolrestat (51), zenarestat (64), zopolrestat (64)</td>
</tr>
<tr>
<td>various:</td>
<td></td>
</tr>
<tr>
<td>afegostat (101)</td>
<td>β-glucocerebrosidase inhibitor</td>
</tr>
<tr>
<td>apratastat (93)</td>
<td>inhibition of TNF-α converting enzyme</td>
</tr>
<tr>
<td>avagacestat (104)</td>
<td>gamma secretase inhibitor</td>
</tr>
<tr>
<td>azalanstat (73)</td>
<td>lanosterol 14α-demethylase inhibitor</td>
</tr>
<tr>
<td>begacestat (97)</td>
<td>gamma secretase inhibitor</td>
</tr>
<tr>
<td>benurestat (31)</td>
<td>urease inhibitor</td>
</tr>
<tr>
<td>cilastatin (50)</td>
<td>renal dehydropeptidase inhibitor</td>
</tr>
<tr>
<td>cindinustat (107)</td>
<td>nitric oxide synthase inhibitor</td>
</tr>
<tr>
<td>cobicistat (103)</td>
<td>cytochrome P450 3A4 (CYP3A4) inhibitor</td>
</tr>
<tr>
<td>conestat alfa (98)</td>
<td>human plasma protease C1 inhibitor</td>
</tr>
<tr>
<td>duvoglustat (102)</td>
<td>Pompe's disease therapy</td>
</tr>
<tr>
<td>eliglustat (103)</td>
<td>glucosylerceramide synthase inhibitor</td>
</tr>
<tr>
<td>emixustat (108)</td>
<td>retinol isomerase inhibitor</td>
</tr>
<tr>
<td>ezatiostat (98)</td>
<td>glutathione-S-transferase inhibitor</td>
</tr>
<tr>
<td>febuxostat (85)</td>
<td>xanthine oxidase and xanthine dehydrogenase inhibitor</td>
</tr>
<tr>
<td>imetelstat (101)</td>
<td>antineoplastic, telomerase inhibitor</td>
</tr>
<tr>
<td>iofolastat (123I)</td>
<td>radiopharmaceutical</td>
</tr>
<tr>
<td>irosustat (104)</td>
<td>antineoplastic</td>
</tr>
<tr>
<td>lapaquistat (96)</td>
<td>squalene synthase inhibitor</td>
</tr>
<tr>
<td>lucerastat (106)</td>
<td>ceramide glucosyltransferase inhibitor</td>
</tr>
<tr>
<td>migalastat (95)</td>
<td>alpha-galactosidase A enzyme inhibitor</td>
</tr>
<tr>
<td>miglustat (85)</td>
<td>glucosyltransferase inhibitor</td>
</tr>
<tr>
<td>niraxostat (99)</td>
<td>xanthine oxidase inhibitor</td>
</tr>
<tr>
<td>molidustat (108)</td>
<td>HIF (hypoxia induced factor)-prolyl hydroxylases inhibitor</td>
</tr>
<tr>
<td>pentostatin (38)</td>
<td>vidarabin activity potentiator; inhibitor of enzymatic deaminative metabolism</td>
</tr>
<tr>
<td>pepstatin (28)</td>
<td>pepsin inhibitor</td>
</tr>
<tr>
<td>pevonedistat (109)</td>
<td>antineoplastic</td>
</tr>
<tr>
<td>pradigastat (106)</td>
<td>acyl CoA:diacylglycerol acyltransferase inhibitor</td>
</tr>
<tr>
<td>roxadustat (108)</td>
<td>HIF (hypoxia induced factor)-prolyl hydroxylases inhibitor</td>
</tr>
<tr>
<td>selisistat (106)</td>
<td>inhibitor of sirtuin enzymes</td>
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<tr>
<td>semgacestat (99)</td>
<td>gamma secretase inhibitor</td>
</tr>
<tr>
<td>somatostatin (43)</td>
<td>growth hormone release inhibiting factor</td>
</tr>
<tr>
<td>talabostat (92)</td>
<td>antineoplastic</td>
</tr>
<tr>
<td>technetium (109)</td>
<td>radiolabelled diagnostic agent</td>
</tr>
<tr>
<td>telotristat (104)</td>
<td>tryptophan hydroxylase inhibitor</td>
</tr>
<tr>
<td>tendamistat (44)</td>
<td>amylase inhibitor</td>
</tr>
</tbody>
</table>
topiroxostat (102) xanthine oxidase and xanthine dehydrogenase inhibitor
tosedostat (99) antineoplastic, aminopeptidase inhibitor
vistatolon (25): antiviral antibiotic
zinostatin (40): antineoplastic
zinostatin stimalamer (74)

(b) nystatin (6)

- vastatin antihyperlipidaemic substances, HMG CoA reductase inhibitors USAN
H.4.0.0 (USAN: -statin: antihyperlipidaemic substances, HMG CoA reductase inhibitors)
(a) atorvastatin (71), bervastatin (72), cerivastatin (74), crilvastatin (63), dalvastatin (64),
    fluvastatin (62), glenvastatin (70), lovastatin (57), mevastatin (44), pitavastatin (86)
    (replaces itavastatin (80)), pravastatin (57), rosuvastatin (94), simvastatin (58),
    tenivastatin (85)

-steine mucolytics, other than bromhexine derivatives BAN
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), muguisteine (61),
    nesosteine (52), omonasteine (40), prenisteine (42), salmisteine (58),
    taurosteine (63), telmesteine (63)

- ster- androgens/anabolic steroids USAN
Q.2.3.1
(a) -testosterone: cloxotestosterone (12), methyltestosterone (4),
    testosterone (4), testosterone ketolaurate (16)
    -sterone: bolasterone (13), fluoxymesterone (6), oxymesterone (12),
    prasterone (23), tiomesterone (14)
    -ster:- mesterolone (15), penmesterol (14), rosterolone (59)
(b) progestational steroids
    -gesterone: dydrogesterone (12), haloprogesterone (11),
    hydroxyprogesterone (8), medroxyprogesterone (10),
    norgesterone (14), progestosterone (4),
    segesterone (89)
    -sterone: dimethisterone (8),
    ethisterone (4), norethisterone (6), norvinisterone (10)
    various: -sterone: aldosterone (6) (corticostroid),
    calusterone (23) (antineoplastic)
**-sterol:** azacosterol (16) (hypcholesterolemic), dihydrotachysterol (1) (anti-hypoparathyroid), iodocholesterol (131I) (39)

**ster:** misterine (38) (contraceptive agent), stercuronium iodide (21) (neuromuscular blocking agent)

<table>
<thead>
<tr>
<th><strong>-steride</strong></th>
<th><strong>testosterone reductase inhibitors</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>USAN</strong></td>
</tr>
<tr>
<td></td>
<td>bexlosteride (81), dutasteride (78), epristeride (69), finasteride (62), izonsteride (81), lapisteride (85), turosteride (67)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>-stigmine (d)</strong></th>
<th><strong>acetylcholinesterase inhibitors</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USAN</strong></td>
<td></td>
</tr>
<tr>
<td>E.1.2.0</td>
<td>(USAN: cholinesterase inhibitors (physostigmine type))</td>
</tr>
<tr>
<td>(a)</td>
<td>distigmine bromide (16), eptastigmine (62), ganstigmine (81), neostigmine bromide (4), pyridostigmine bromide (6), quilstigmine (76), rivastigmine (77), terestigmine (77)</td>
</tr>
<tr>
<td>(c)</td>
<td>eseridine (53)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>-stim</strong></th>
<th><strong>colony stimulating factors</strong></th>
</tr>
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<tbody>
<tr>
<td><strong>USAN</strong></td>
<td></td>
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<tr>
<td>I.5.0.0</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>ancestim (79) (cell growth factor), garnocestim (85) (immunomodulator), pegacaristim (80) (megakaryocyte growth factor), romiplostim (97) (platelet stimulating factor)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>-distim</strong></th>
<th><strong>combination of two different types of colony stimulating factors</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(USAN: conjugates of two different types of colony-stimulating factors)</td>
</tr>
<tr>
<td>(a)</td>
<td>leridistim (80), milodistim (74)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>-gramostim</strong></th>
<th><strong>granulocyte macrophage colony stimulating factor (GM-CSF) types substances</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>ecogramostim (62), molgramostim (64), regramostim (64), sargramostim (66)</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th><strong>-grastim</strong></th>
<th><strong>granulocyte colony stimulating factor (G-CSF) type substances</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>balugrastim (107), empegfilsgrastim (107), filgrastim (64), lenograstim (64), lipegfilsgrastim (105), nartogristim (66), pegbovigrastim (109), pegfilgrastim (85), pegnantragristim (80), pegteograstim (109)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>-mostim</strong></th>
<th><strong>macrophage stimulating factors (M-CSF) type substances</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>cilmostim (71), lanimostim (91), mirimostim (65)</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th><strong>-plestim</strong></th>
<th><strong>interleukin-3 analogues and derivatives</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(USAN: interleukin-3 derivatives, pleiotropic colony-stimulating factors)</td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>daniplestim (76), muplestim (72)</td>
</tr>
</tbody>
</table>
sulfabenz (17), sulfabenzamide (27), sulfacarbamide (12), sulfacecole (30), sulfacetamide (1), sulfachloropyridazine (10), sulfachrysoidine (1), sulfacitine (23), sulfaclomide (17), sulfadiazole (25), sulfadoxine (25), sulfadiazonsodium (1), sulfadiazine (4), sulfadiazine sodium (4), sulfadicramide (4), sulfadimethoxine (10), sulfadimidine (1), sulfadoxine (20), sulfathidole (8), sulfafurazone (1), sulfaguanidine (4), sulfaguanole (23), sulfalene (12), sulfaloxic acid (15), sulfamazone (40), sulfamazine (4), sulfamerazine sodium (4), sulfamethizole (1), sulfamethoxazole (14), sulfamethoxypyridazine (8), sulfametomidine (12), sulfametoxydiazine (17), sulfametroxole (31), sulfamonomethoxine (11), sulfamoxole (12), sulfanalimide (4), sulfanitran (15), sulfaperin (14), sulfaphenazole (10), sulfaproxyline (4), sulfapyrazole (18), sulfapyridine (1), sulfquinoxaline (46), sulfasalazine (55), sulfasomizole (10), sulfasymazine (12), sulfathiazole (4), sulfathioam (1), sulfatolamide (10), sulfatroxazole (29), sulfatrozole (24)

(b) galsulfase (92), idursulfase (90), sulfarsphenamine (4)

(c) benzylsulfamide (1), glucosulfamide (1), maleylsulfinamide (1), mesulfamide (41), nitrosulfinamide (1), phthalylsulfamide (6), phthalylsulfinamide (1), salazodine (22), salazosulfamidimide (11), salazosulfamide (1), salazosulfathiazole (1), steorylsulfamide (1), succinylsulfamide (4), sulfisomidine (1), vanylsulfamide (1), mafenide (1) (sulfonamide, but not sulfanilamide)

-sulfan antineoplastic, alkylation agents, methanesulfonates

L.2.0.0

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

-tacept see -cept

-tadekin see -kin
-tadine  *histamine-H\(_1\) receptor antagonists, tricyclic compounds*

G.2.1.0  (USAN: -(a)tadine: tricyclic histaminic-H\(_1\) receptor antagonists, loratadine derivative (formerly -tadine))

(a)  alcaftadine (94), azatadine (18), cyproheptadine (10), desloratadine (80), loratadine (54), napactadine (46), olopatadine (72), rupatadine (74), vapitadine (95)

(b)  amantadine (15), carmactadine (31), rimantadine (17), somantadine (51), tromantadine (28) (see -mantadine)

-tant  *neurokinin (tachykinin) receptor antagonists*

-pitant  neurokinin NK\(_1\) (substance P) receptor antagonist

(a)  aprepitant (84), befetupitant (91), burapitant (101), casopitant (94), dapitant (74), ezlopitant (82), figopitant (82), fosaprepitant (94), lanepitant (77), maropitant (90), netupitant (90), nolpitantium besilate (75), orvepitant (94), rolapitant (97), serlopitant (100), telmapitant (108), vestipitant (91), vofopitant (82)

-dutant  neurokinin NK\(_2\) receptor antagonist

(a)  ibodutant (98), nepadutant (78), saredutant (75)

-nertant  neurotensin receptor antagonist

(a)  meclinertant (88) (replaces reminertant (85))

-netant  neurokinin NK\(_3\) receptor antagonist

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

-tapide  *microsomal triglyceride transfer protein (MTP) inhibitors*

H.4.0.0  dirlotapide (91), granotapide (104), implitapide (82), mitratapide (90), lomitapide (101), usistapide (104)

-taxel  *antineoplastics, taxane derivatives*

L.0.0.0  cabazitaxel (98), docetaxel (71), larotaxel (94), milataxel (91), ortataxel (87), paclitaxel (68), paclitaxel ceribate (91), paclitaxel poliglumex (90), paclitaxel trevatide (109), simotaxel (94), tesetaxel (93)
-tecan  antineoplastics, topoisomerase I inhibitors

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

afeletecan (85), atiratecan (101), belotecan (91), cositecan (100), delimotecan (97),
diflomotecan (84), elemotecan (92), etirinotecan pegol (107), exatecan (81), exatecan
alideximer (89), firtecan peglumer (108), firtecan pegol (107), gimatecan (86), irinotecan
(64), lurtotecan (74), mureletecan (85), namitecan (100), pegamotecan (91), rubitecan (82),
tenifatecan (102), topotecan (65)

-tepa  antineoplastics, thiotepa derivatives

L.2.0.0

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

-tepine  see -pine

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

-termin  see -ermin

-terol  bronchodilators, phenethylamine derivatives

(Previously -prenaline
  or -terenol unofficial)

E.4.0.0

(a) abediterol (104), amiterol (26), arformoterol (90), bitolterol (34), broxaterol (51),
carmoterol (91), cimaterol (54), colterol (36), difeterol (36), etanterol (53), fenoterol
(26), formoterol (44), imoxiterol (52), indacaterol (91), milveterol (97), naminterol (53),
nardeterol (62), olodaterol (106), picumeterol (64), procaterol (37), reproterol (30),
rimeterol (26), salmeterol (55), sulfonterol (31), vilanterol (103), zilpaterol (60), zinterol
(38)
-buterol: bambuterol (49), carbuterol (29), clenbuterol (28), divabuterol (51), flerobuterol (59), ibuterol (31), mabuterol (46), nisbuterol (38), pirbuterol (30), tobuterol (45), tulobuterol (40)

cardiac stimulants: metaterol (43), prenalterol (38), xamoterol (48)

previously -prenaline or -terenol: clorprenaline (17), hexoprenaline (21), isoprenaline (1), levisoprenaline (10), metiprenaline (24), orciprenaline (14), quinprenaline (17), deterenol (25), soterenol (20)

(b) azacosterol (16), dihydrotachysterol (1), penmesterol (14)

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

-terone antiandrogens

(Q.2.3.1)

(a) abiraterone (74), benor-terone (15), cyproterone (16), delanterone (42), galeterone (105), inocoterone (54), osaterone (68), topterone (39), zanoterone (67)

(b) clometerone (15) (antiestrogen)

(c) cioteronel (62), orteronel (104), oxendolone (42), rosterolone (60),

-tiazem calcium channel blockers, diltiazem derivatives

F.2.1.0

USAN

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

-tibant bradykinin receptors antagonists

(USAN: antiasthmatics (bradykinin antagonists))

H.0.0.0

anatibant (88), deltibant (75), fasitibant chloride (103), icatibant (67), safotibant (105)
-tide peptides and glycopeptides (for special groups of peptides see -actide, -pressin,-relin,-tocin)

analgesic: leconotide (86), ziconotide (78)

angiogenesis inhibitor: cilengitide (81)

angiotensin convers. inhibitor: teprotide (36)

anti-inflammatory: icrocaptide (89)

antianaemic: peginesatide (108)

antiarrhythmic: danegaptide (101), rotigaptide (94)

antidepressant: nemifitide (87)

antidiabetic: amlintide (76), davalintide (101), exenatide (89), langlenatide (109), lixisenatide (99), pramlintide (74), seglitide (57)

antidiarrhoeal: lagatide (75)

antithrombotic: eptifibatide (78)

antiviral: enfuvirtide (85), tifuvirtide (91)

autoimmune disorders: dirucotide (100)

atrial natriuretic factor type substances: anaritide (57), carperitide (65), cenderitide (105), neseritide (80), ularitide (69)

calcium sensing receptor agonist: velcalcetide (109)

cicatrisation promoter: ensereptide (107)

diagnostic: betiatide (58), bibapcitide (78), ceruletide (34), depreotide (80), flotegatide (18F) (108), fluciclatide (18F) (103), maraciclatide (103), mertiatide (60), pendetide (70), technetium (99mTc) apcitide (78), technetium (99mTc) etarfolatide (107), teriparatide (50)

expectorant (in cystic fibrosis): lancovutide (99)

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

gastrointestinal functions normalizing agent: linaclotide (96), plecanatide (104)

growth stimulant-veterinary: nosiheptide (35)
gut motility increasing: ociltide (52)

hormone analogues: abaloparatide (109), semparatide (80), teriparatide (50) (see also diagnostic)

immunological agents - antineoplastic: almutride (74), delmitide (92), edratide (89), goratalide (72), mifamurtide (95), murabutide (49), paclitaxel trevatide (109), pentigetide (60), pimelautide (53), preza tide copper acetate (67), rolipoltide (94), romurtide (61), tabilautide (60), temurtide (60), tigapotide (95),

inhibition of growth hormone release: pasireotide (90)

kallikrein inhibitor: ecallantide (93)

melanocortin receptor agonist: afamelanotide (100), bremelanotide (95)

neuromodulator: davunetide (100), ebiratide (56), obinepitide (96)

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

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

sedative: emideltide (70)

thrombin fragment: rusalatide (96)

transforming growth factor inhibitor: disitertide (99)

treatment of Alzheimer's disease: vanutide cridificar (100)

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

treatment of coeliac disease: larazotide (99)

-glutide Glucagon-like Peptide (GLP) analogues USAN
albiglutide (97), dulaglutide (103), elsiglutide (104), liraglutide (87), semaglutide (101),
taspoglutide (99), teduglutide (90)

-motide immunological agents for active immunization
abecomotide (109), alicdamotide (109), amilomotide (105), asudemotide (107), disomotide
(94), elpamotide (103), latromotide (107), ovemotide (94), pradimotide (107),
tanurmotide (109), tecemotide (108), tectomotide (98), tiplimotide (82), trempamotide (107)

defibrotide (44) (nucleotide), diamfenetide (28) (fasciolicide),
diclometide (19) (behaviour modifier), fluadoxycortide (12), glisentide (58)

angiotensin II (65), angiotensinamide (12)
**-tidine**  
**histamine-H\(_2\)-receptor antagonists, cimetidine derivatives**

**G.2.2.0**  
(BAN: H\(_2\)-receptor antagonists of the cimetidine group)  
(USAN: H\(_2\)-receptor antagonists (cimetidine type))

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

- azacitidine (40) (antineoplastic), benzethidine (9), furethidine (9), guanethidine (11), hexetidine (6), hydroxypethidine (5), pethidine (4), propinetidine (12)

- metiamide (30)

**-tiline**  
see -triptyline

**-tinib**  
tyrosine kinase inhibitors

**L.0.0.0**

- adelatinib (108), afatinib (104), alectinib (108), amuvatinib (103), axitinib (94), bafetinib (101), baricitinib (107), binimetinib (109), bosutinib (94), cabozantinib (105), canertinib (87), ceritinib (109), cobimetinib (107), crizotinib (103), dacomitinib (103), dasatinib (94), dovitinib (97), erlotinib (85), fedratinib (108), filgotinib (108), foretibinib (102), fostatuminib (100), gandotinib (108), gefitinib (85), golvatinib (107), ibrutinib (107), imatinib (86), lapatinib (89), lenvatinib (104), lestaurtinib (91), linsitinib (104), masitinib (96), momelotinib (107), mubritinib (90), neratinib (97), nilotinib (95), oclacitinib (105), orantinib (103), pacritinib (104), pelitinib (93), ponatinib (104), poziotinib (108), quizartinib (104), radotinib (104), ralimetinib (109), rebastinib (107), refametinib (106), ruxolitinib (103), sapitinib (106), saracatinib (99), selumetinib (100), sunitinib (93), tandutinib (91), telatinib (96), tivantinib (103), tofacitinib (105), trametinib (105), varlitinib (102)

**-tirelin**  
see -relin
INN – The use of stems

**-tizide** diuretics, chlorothiazide derivatives

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

- altizide (13), bemetizide (27), butizide (13), carmetizide (30), epitizide (13), hydrobentizide (14), mebutizide (15), paraflutizide (16), penflutizide (29), sumetizide (20)
- bendroflumethiazide (11), benzthiazide (10), chlorothiazide (8), cyclopenthiazide (12), cyclothiazide (12), disulfamide (11), ethiazide (14), flumethiazide (10), hydrochlorothiazide (10), hydroflumethiazide (10), methyclothiazide (11), polythiazide (12), teclothiazide (12), trichlormethiazide (11)

**-tocin** oxytocin derivatives

Q.1.2.0

- argiprestocin (13), aspartocin (11), carbetocin (45), cargutocin (35), demoxytocin (22), nacartocin (49), oxytocin (13)

**-toin (d)** antiepileptics, hydantoin derivatives

A.3.1.1

- albutoin (13), doxenitoin (3l), ethotoin (6), fosphenytoin (62), imepitoin (96), mephenytoin (1), metetoin (12), phenytoin (4)
- ropitoin (40) (H.2.0.0.)
- clodantoin (13) (antifungal), nitrofurantoin (11) (antibacterial)

**-trakin** see -kin

**-trakinra** see -kinra

**-tredekin** see -kin
-trexate  folic acid analogues  

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

(a) edatrexate (61), ketotrexate (50), methotrexa te (10), pralatrexate (92), trimetrexate (46)

(c) aminopterin sodium (04)

-trexed  antineoplastics; thymidylate synthetase inhibitors  

L.0.0.0

nolatrexed (78), pemetrexed (78), plevitrexed (89), raltitrexed (94)

-tricin  antibiotics, polyene derivatives  

S.6.2.0

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

(b) tyrothricin (1)

(c) amphotericin B (10), candicidin (17), filipin (20), hachimycin (23), hamycin (17), levorin (15), mocimycin (28), natamycin (15), nystatin (6), pecilocin (16)

tril/trilat  endopeptidase inhibitors  

H.3.0.0

candoxatril (62), candoxatrilat (62), sacubitril (109)

\[ \text{-dotril} \quad \text{dexecadotril (73), ecadotril (68), fasidotril (74), racecadotril (73)} \]

\[ \text{-lutril} \quad \text{daglutril (90)} \]

\[ \text{-patril/-patrilat} \quad \text{gemopatrilat (84), ilepatril (95), omapatrilat (78), sampatrilat (74)} \]
-triptan serif (5-HT\textsubscript{1}) receptor agonists, sumatriptan derivatives
C.0.0.0
(a) almotriptan (76), avitriptan (76), donitriptan (82), eletriptan (74), frovatriptan (78), naratriptan (69), oxitriptan (39), rizatriptan (75), sumatriptan (59), zolmitriptan (74)
(c) alniditan (72)

-triptiline 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), levoprotileline (56), noxiptiline (20), oxaprotiline (45), setiptiline (56)
(b) oxitriptyline (21) (anticonvulsant)
(c) hepdidine (15)

see also Pharm S/Nom 970

-troban thromboxane A\textsubscript{2}-receptor antagonists; antithrombotic agents
I.2.1.0 (USAN: antithrombotics (thromboxane A\textsubscript{2} receptor antagonists))

argatroban (57), daltroban (57), domitroban (73), ifetroban (71), linotroban (69), mipitroban (73), ramatroban (73), sulotroban (55), terutroban (93)

-trodast see -ast

trop atropine derivatives
E.2.0.0 (USAN: trop- ; –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), cimetropium bromide (50),
darotropium bromide (99), flutropium bromide (50),
homatropine methylbromide (1), ipratropium bromide (28), octatropium methylbromide
(10), oxtropium bromide (36), phenactropinium chloride (8), ritropirronium bromide (33),
sevitropium mesilate (56), sintropium bromide (47), sultroponium (18), tematropium
metilsulfate (64), tiotropium bromide (67), tipetropium bromide (42), tropenziline bromide
(11), xenytropium bromide (15)

various:
clobenztropine (13) (antihistaminic), cyheptropine (15) (antiarrhythmic), deptropine (12)
(antiasthmatic), revatropate (74) (bronchodilator), tropabazate (41) (tranquillizer),
tropanserin (55) (serotonin receptor antagonist), tropapride (48) (antipsychotic), tropirine
(20) (respiratory disorders), tropantiol (97) (chelating agent), tropisetron (62) (serotonin
antagonist)

(b) dextropropoxyphene (7), somatropin (56), somatropin pegol (103), varfollitropin alfa (101)

(c) parasympatholytic/anticholinergic, tertiary amines:
postkine (8), prampine (11), tigloidin (14)

various:
zepastine (26) (antihistaminic)

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

- uridine  uridine derivatives used as antiviral agents and as antineoplastics
(USAN: antivirals; antineoplastics (uridine derivatives))

S.5.3.0
L.4.0.0

L.4.0.0: broxuridine (30), doxifuridine (44)

related: carmofur (45), clanfenur (58), tegafur (41)

S.5.3.0: fialuridine (68), floxuridine (16), fosfluvidine tidalix (93), idoxuridine (17),
navuridine (84), ropidoxuridine (97), trifluridine (37), uridine triacetate (103)
-vudine  (USAN: -vudine: antineoplastics; antivirals (zidovudine type))

(a)  alovudine (68), brivudine (59), clevudine (78), epervudine (61), fosalvudine tidoxil (95), fozivudine tidoxil (73), lamivudine (66), netivudine (72), sorivudine (64), stavudine (65), telbivudine (88), zidovudine (56)

(c)  edoxudine (52)

-vaptan (x)  vasopressin receptor antagonists  
H.0.0.0

(a)  conivaptan (82), lixivaptan (83), mozavaptan (87), nelivaptan (98), relcovaptan (82), satavaptan (93), tolvaptan (83)

-vastatin  see -stat

-vec  see -gene for gene therapy products

-verine  spasmolytics with a papaverine-like action  
F.1.0.0  (USAN: spasmolytic agents (papaverine type))

(a)  alverine (16), amifloverine (28), bietamiverine (6), butaverine (13), camiverine (29), caroverine (28), clofeverine (31), demelverine (17), denaverine (25), dexsecoverine (53), dicycloverine (6), dihexyverine (4), diprooverine (10), diprooverine (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), preoverine (41), propiverine (45), rociverine (33), salfluverine (29), salverine (15), secoverine (38), temiverine (76), zardaverine (59)  
Related:  
fenpiverinium bromide (26), pinaverium bromide (32)

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

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

**vinca alkaloids**

(USAN: vin-; or -vin-)

(a) **B.1.0.0 stimulation of cerebrovascular circulation**
apovincamine (48), brovincamine (42), vinburnine (45), vincamine (22), vincanol (37),
vincantril (51), vinconate (47), vindeburnol (49), vinmegallate (59), vinpocetine (36),
vipoline (35), vintoperol (61)

(b) **L.5.0.0 cytostatic**
vinblastine (12), vincristine (13), vindesine (35), vinepidine (50), vinflunine (75),
vinfosiltine (64), vinglycinate (16), vinleucinol (64), vinleurosine (13),
vinorelbine (57), vinrosidine (13), vintafolide (107), vintriptol (51), vinzolidine (46)

(b) **barbiturates**
vinbarbital (l), vinylbital (12)

-others: vincofos (28) (phosphate, antihelmintic), vintiamol (16) (vitamin B derivative, antineuralgic)

**vir**

**antivirals (undefined group)**

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

(a) alisporivir (100), alvircept sudotox (69), amdoxovir (85), amenamevir (100), amitivir (67),
atevirdine (69), balapiravir (100), bevirimat (96), daclatasvir (107), delavirdine (71),
denotivir (70), dolutegravir (105), efavirenz (78), elvitegravir (97), enfuvirtide (85),
eviradene (49), enviroxime (44), favipiravir (98), ledipasvir (109), letermovir (104),
litomeglovir (84), loviride (70), maribavir (80), nevirapine (66), opaviraline (83),
pirodavir (63), pocapavir (107), pritelivir (106), raltegravir (97), ribavirin (31), rupintrivir
(88), taribavirin (95), talviraline (75), tecovirimat (99), tifuvirtide (91), tivirapine (74),
tomeglovir (84), trovirdine (73), umifenovir (103), vapendavir (106), viroxime (49),
zinviroxime (44)

- **amivir**
neuraminidase inhibitors: laninamivir (100), oseltamivir (80), peramivir (86), zanamivir
(72)

- **buvir**
RNA polymerase (NS5b) inhibitors: dasabuvir (109), deleobuvir (108), filibuvir (101),
lomibuvir (107), nesbuvir (98), setrobuvir (106), sofosbuvir (108), tegobuvir (103)

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

- **ciclovir**
bicyclic heterocycle compounds: aciclovir (42), buclovir (52), desciclovir (55),
detiviclovir (86), famciclovir (61), ganciclovir (56), lagociclovir (101), lagociclovir
valactate (101), omaciclovir (84), penciclovir (61), rociclovir (62), tiviciclovir (86),
valaciclovir (69), valganciclovir (78), valomaciclovir (84)
phosphonic acid derivatives: adefovir (72), alamivudine (89), besifovir (105), cidofovir (72), pradefovir (93), tenofovir (82)

guloside inhibitors: cegosivir (77)

HIV protease inhibitors: amprenavir (79), atazanavir (88), brecanavir (94), darunavir (88), drotindenavir (74), fosamprenavir (83), indinavir (74), lasinavir (76), lopinavir (80), mozenavir (84), nelfinavir (76), palinavir (74), ritonavir (74), saquinavir (69), telinavir (73), tipranavir (80)

Hepatitis Virus C (HVC) protease inhibitors: asunaprevir (105), boceprevir (97), ciluprevir (90), danoprevir (102), faldaprevir (106), narlaprevir (102), neceprevir (107), simaprevir (105), sovaprevir (106), telaprevir (94), vaniprevir (103), vedoprevir (109)

Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTI): capravirine (83), dapivirine (86), doravirine (109), emivirine (82), etravirine (88), fosdevirine (103), lersivirine (101), rilpivirine (82)

CCR5 (Chemokine CC motif receptor 5) receptor antagonists: ancriviroc (92), aplaviroc (94), cenicriviroc (103), maraviroc (94), vicriviroc (94)

virine see -vir

virsen see -rsen

virumab see -mab

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

(c) aranotin (21), arildone (38), avridine (50), didanosine (64), disoxaril (55), dimepranol (42), foscarnet sodium (42), fosfonate sodium (35), ketoxal (22), impacarzine (36), inosine (42), lodenosine (75), metisazone (14), moroxydine (22), pleconaril (77), tilorone (24), xenazoic acid (11)

vircept see -cept

virine see -vir

viroc see -vir

virsen see -rsen

virumab see -mab
-vos see -fos

-vudine see -uridine

-xaban blood coagulation factor $X_A$ inhibitors, antithrombotics

1.2.0.0
(a) apixaban (93), betrixaban (98), darexaban (104), edoxaban (99), eribaxaban (98), fidexaban (91), letaxaban (104), otamixaban (86), razaxaban (90), rivaroxaban (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

-zolast see -ast

-zomib proteasome inhibitors

L.0.0.0 (USAN: proteozome inhibitors)

bortezomib (88), carfilzomib (97), delanzomib (105), ixazomib (104), marizomib (102), oprozomib (107)
-zone   see -buzone

-zotan  serotonin $5-HT_{1A}$ receptor agonists/antagonists acting primarily as neuroprotectors

C.0.0.0  ebalzotan (72), lecozotan (93), naluzotan (101), osemozotan (87), piclozotan (92), robalzotan (90), sarizotan (94)
ANNEX 1

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

The following procedure shall be followed by the World Health Organization (hereinafter also referred to as “WHO”) in the selection of recommended international nonproprietary names for pharmaceutical substances, in accordance with resolution WHA3.11 of the World Health Assembly, and in the substitution of such names.

Article 1
Proposals for recommended international nonproprietary names and proposals for substitution of such names shall be submitted to WHO on the form provided therefor. The consideration of such proposals shall be subject to the payment of an administrative fee designed only to cover the corresponding costs of the Secretariat of WHO (“the Secretariat”). The amount of this fee shall be determined by the Secretariat and may, from time to time, be adjusted.

Article 2
Such proposals shall be submitted by the Secretariat to the members of the Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations designated for this purpose, such designated members hereinafter referred to as “the INN Expert Group”, for consideration in accordance with the “General principles for guidance in devising International Nonproprietary Names for Pharmaceutical Substances”, annexed 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.

Article 3
Subsequent to the examination provided for in article 2, the Secretariat shall give notice that a proposed international nonproprietary name is being considered.

(a) Such notice shall be given by publication in WHO Drug Information and by letter to Member States and to national and regional pharmacopoeia commissions or other bodies designated by Member States.

(i) Notice shall also be sent to the person who submitted the proposal (“the original applicant”) and other 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 the 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 WHO is acting and refer to these rules of procedure.

2 See Annex 2
3 Before 1987, lists of international nonproprietary names were published in the Chronicle of the World Health Organization.
(c) In forwarding the notice, the Secretariat 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 WHO.

**Article 4**
Comments on the proposed name may be forwarded by any person to WHO within four months of the date of publication, under article 3, of the name in *WHO Drug Information*.

**Article 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 *WHO Drug Information*. Such objection shall:
(i) identify the person objecting;
(ii) state his or her interest in the name;
(iii) set forth the reasons for his or her objection to the name proposed.

**Article 6**
Where there is a formal objection under article 5, WHO 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 WHO of a substitute name or names, a name shall not be selected by WHO as a recommended international nonproprietary name while there exists a formal objection thereto filed under article 5 which has not been withdrawn.

**Article 7**
Where no objection has been filed under article 5, or all objections previously filed have been withdrawn, the Secretariat shall give notice in accordance with subsection (a) of article 3 that the name has been selected by WHO as a recommended international nonproprietary name.

**Article 8**
In forwarding a recommended international nonproprietary name to Member States under article 7, the Secretariat 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 and to prohibit registration of the name as a trademark or trade name.

**Article 9**
(a) In the extraordinary circumstance that a previously recommended international nonproprietary name gives rise to errors in medication, prescription or distribution, or a demonstrable risk thereof, because of similarity with another name in pharmaceutical and/or prescription practices, and it appears that such errors or potential errors cannot readily be resolved through other interventions than a possible substitution of a previously recommended international nonproprietary name, or in the event that a previously recommended international nonproprietary name differs substantially from the nonproprietary name approved in a significant number of Member States, or in other such extraordinary circumstances that justify a substitution of a recommended international nonproprietary name, proposals to that effect may be filed by any interested person. Such proposals shall be submitted on the form provided therefore and shall:

(i) identify the person making the proposal;

(ii) state his or her interest in the proposed substitution; and

(iii) set forth the reasons for the proposal; and
(iv) describe, and provide documentary evidence regarding, the other interventions undertaken in an effort to resolve the situation, and the reasons why these other interventions were inadequate.

Such proposals may include a proposal for a new substitute international nonproprietary name, devised in accordance with the General principles, which takes into account the pharmaceutical substance for which the new substitute international nonproprietary name is being proposed.

The Secretariat shall forward a copy of the proposal, for consideration in accordance with the procedure described in subsection (b) below, to the INN Expert Group and the original applicant or its successor (if different from the person bringing the proposal for substitution and provided that the original applicant or its successor is known or can be found through diligent effort, including contacts with industry associations).

In addition, the Secretariat shall request comments on the proposal from:

(i) Member States and national and regional pharmacopoeia commissions or other bodies designated by Member States (by including a notice to that effect in the letter referred to in article 3(a), and

(ii) any other persons known to be concerned by the proposed substitution.

The request for comments shall:

(i) state the recommended international nonproprietary name that is being proposed for substitution (and the proposed substitute name, if provided);

(ii) identify the person who submitted the proposal for substitution (if so requested by such person);

(iii) identify the substance to which the proposed substitution relates and reasons put forward for substitution;

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

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

Comments on the proposed substitution may be forwarded by any person to WHO within four months of the date of the request for comments.

(b) After the time period for comments referred to above has elapsed, the Secretariat shall forward any comments received to the INN Expert Group, the original applicant or its successor and the person bringing the proposal for substitution. If, after consideration of the proposal for substitution and the comments received, the INN Expert Group, the person bringing the proposal for substitution and the original applicant or its successor all agree that there is a need to substitute the previously recommended international nonproprietary name, the Secretariat shall submit the proposal for substitution to the INN Expert Group for further processing.

Notwithstanding the foregoing, the original applicant or its successor shall not be entitled to withhold agreement to a proposal for substitution in the event the original applicant or its successor has no demonstrable continuing interest in the recommended international nonproprietary name proposed for substitution.
In the event that a proposal for substitution shall be submitted to the INN Expert Group for further processing, the INN Expert Group will select a new international nonproprietary name in accordance with the General principles referred to in article 2 and the procedure set forth in articles 3 to 8 inclusive. The notices to be given by the Secretariat under article 3 and article 7, respectively, including to the original applicant or its successor (if not the same as the person proposing the substitution, and provided that the original applicant or its successor is known or can be found through diligent effort, including contacts with industry associations), shall in such event indicate that the new name is a substitute for a previously recommended international nonproprietary name and that Member States may wish to make transitional arrangements in order to accommodate existing products that use the previously recommended international nonproprietary name on their label in accordance with national legislation.

If, after consideration of the proposal for substitution and the comments received in accordance with the procedure described above, the INN Expert Group, the original applicant or its successor and the person bringing the proposal for substitution do not agree that there are compelling reasons for substitution of a previously recommended international nonproprietary name, this name shall be retained (provided always that the original applicant or its successor shall not be entitled to withhold agreement to a proposal for substitution in the event that the original applicant or its successor has no demonstrable continuing interest in the recommended international nonproprietary name proposed to be substituted). In such an event, the Secretariat shall advise the person having proposed the substitution, as well as the original applicant or its successor (if not the same as the person proposing the substitution, and provided that the original applicant or its successor is known or can be found through diligent effort, including contacts with industry associations), Member States, national and regional pharmacopoeia commissions, other bodies designated by Member States, and any other persons known to be concerned by the proposed substitution that, despite a proposal for substitution, it has been decided to retain the previously recommended international nonproprietary name (with a description of the reason(s) why the proposal for substitution was not considered sufficiently compelling).
ANNEX 2

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. Where a stem is shown without any hyphens it may be used anywhere in the name.
<table>
<thead>
<tr>
<th>Latin</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>-acum</td>
<td>-ac          anti-inflammatory agents, ibufenac derivatives</td>
</tr>
<tr>
<td>-adolum</td>
<td>-adol       analgesics</td>
</tr>
<tr>
<td>-adol-</td>
<td>-adol-     antiasthmatic, antiallergic substances not acting primarily as antihistaminics</td>
</tr>
<tr>
<td>-astum</td>
<td>-ast       antiasthmatic, antiallergic substances not acting primarily as antihistaminics</td>
</tr>
<tr>
<td>-astinum</td>
<td>-astine     antihistaminics</td>
</tr>
<tr>
<td>-azepamum</td>
<td>-azepam     diazepam derivatives</td>
</tr>
<tr>
<td>bol</td>
<td>bol         anabolic steroids</td>
</tr>
<tr>
<td>-cain-</td>
<td>-cain-     class I antiarrhythmics, procainamide and lidocaine derivatives</td>
</tr>
<tr>
<td>-cainum</td>
<td>-caine     local anaesthetics</td>
</tr>
<tr>
<td>cef-</td>
<td>cef-        antibiotics, cefalosporanic acid derivatives</td>
</tr>
<tr>
<td>-cilinium</td>
<td>-cilin     antibiotics, 6-aminopenicillanic acid derivatives</td>
</tr>
<tr>
<td>-conazolum</td>
<td>-conazole   systemic antifungal agents, miconazole derivatives</td>
</tr>
<tr>
<td>cort</td>
<td>cort        corticosteroids, except prednisolone derivatives</td>
</tr>
<tr>
<td>-coxibum</td>
<td>-coxib     selective cyclo-oxygenase inhibitors</td>
</tr>
<tr>
<td>-entanum</td>
<td>-entan     endothelin receptor antagonists</td>
</tr>
<tr>
<td>gab</td>
<td>gab         gabamimetic agents</td>
</tr>
<tr>
<td>gado-</td>
<td>gado-      diagnostic agents, gadolinium derivatives</td>
</tr>
<tr>
<td>-gatranum</td>
<td>-gatran    thrombin inhibitors, antithrombotic agents</td>
</tr>
<tr>
<td>gest</td>
<td>gest        steroids, progestogens</td>
</tr>
<tr>
<td>gli</td>
<td>gli         antihyperglycaemics</td>
</tr>
<tr>
<td>io-</td>
<td>io-         iodine-containing contrast media</td>
</tr>
<tr>
<td>-metacinum</td>
<td>-metacin   anti-inflammatory, indometacin derivatives</td>
</tr>
<tr>
<td>-mycinum</td>
<td>-mycin     antibiotics, produced by <em>Streptomyces</em> strains</td>
</tr>
<tr>
<td>-nidadolum</td>
<td>-nidade     antiprotozoals and radiosensitizers, metronidazole derivatives</td>
</tr>
<tr>
<td>-ololum</td>
<td>-olol      β-adrenoreceptor antagonists</td>
</tr>
<tr>
<td>-oxacinum</td>
<td>-oxacin    antibacterials, nalidixic acid derivatives</td>
</tr>
<tr>
<td>-platinum</td>
<td>-platin    antineoplastic agents, platinum derivatives</td>
</tr>
<tr>
<td>-poetinum</td>
<td>-poetin    erythropoietin type blood factors</td>
</tr>
<tr>
<td>-pril(at)um</td>
<td>-pril(at)  angiotensin-converting enzyme inhibitors</td>
</tr>
<tr>
<td>-profenum</td>
<td>-profen    anti-inflammatory agents, ibuprofen derivatives</td>
</tr>
<tr>
<td>prost</td>
<td>prost       prostaglandins</td>
</tr>
<tr>
<td>-relinum</td>
<td>-relin     pituitary hormone release-stimulating peptides</td>
</tr>
<tr>
<td>-sartanum</td>
<td>-sartan    angiotensin II receptor antagonists, antihypertensive (non-peptidic)</td>
</tr>
<tr>
<td>-vaptanum</td>
<td>-vaptan    vasopressin receptor antagonists</td>
</tr>
<tr>
<td>vin-</td>
<td>vin-       vinca alkaloids</td>
</tr>
<tr>
<td>-vin-</td>
<td>-vin-</td>
</tr>
</tbody>
</table>
ANNEX 3

General policies for monoclonal antibodies

· INN for monoclonal antibodies (mAbs) are composed of a prefix, a substem A, a substem B and a suffix.

· The common stem for mAbs is -mab, placed as a suffix.

· The stem -mab is to be used for all products containing an immunoglobulin variable domain which binds to a defined target.

· Substem B indicates the species on which the immunoglobulin sequence of the mAb is based:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>rat</td>
</tr>
<tr>
<td>axo (pre-sub-stem)</td>
<td>rat/mouse</td>
</tr>
<tr>
<td>e</td>
<td>hamster</td>
</tr>
<tr>
<td>i</td>
<td>primate</td>
</tr>
<tr>
<td>o</td>
<td>mouse</td>
</tr>
<tr>
<td>u</td>
<td>human</td>
</tr>
<tr>
<td>xi</td>
<td>chimeric</td>
</tr>
<tr>
<td>xizu</td>
<td>chimeric/humanized</td>
</tr>
<tr>
<td>zu</td>
<td>humanized</td>
</tr>
</tbody>
</table>

The distinction between chimeric and humanized antibodies is as follows:

**Chimeric:** A chimeric antibody is one of which both chain types are chimeric as a result of antibody engineering. A chimeric chain is a chain that contains a foreign variable domain (V-D-J-REGION) (originating from one species other than human, or synthetic) linked to a constant region (C-REGION) of human origin.

**Humanized:** A humanized antibody is one of which both chain types are humanized as a result of antibody engineering. A humanized chain is a chain in which the complementarity determining regions (CDR) of the variable domains are foreign (originating from one species other than human, or synthetic) whereas the remaining chain is of human origin. By extension an antibody is described as humanized if more recent protocols were used for the humanization.

The –xizu- infix is used for an antibody having both chimeric and humanized chains.
The -axo- infix is used for an antibody having both rat and mouse chains.
Substem A indicates the target (molecule, cell, organ) class:

<table>
<thead>
<tr>
<th>-b(a)-</th>
<th>bacterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>-c(i)-</td>
<td>cardiovascular</td>
</tr>
<tr>
<td>-f(u)-</td>
<td>fungal</td>
</tr>
<tr>
<td>-k(i)-</td>
<td>interleukin</td>
</tr>
<tr>
<td>-l(i)-</td>
<td>immunomodulating</td>
</tr>
<tr>
<td>-n(e)-</td>
<td>neural</td>
</tr>
<tr>
<td>-s(o)-</td>
<td>bone</td>
</tr>
<tr>
<td>-tox(a)</td>
<td>toxin</td>
</tr>
<tr>
<td>-t(u)-</td>
<td>tumour</td>
</tr>
<tr>
<td>-v(i)-</td>
<td>viral</td>
</tr>
</tbody>
</table>

In principle, a single letter, e.g. -b- for bacterial is used as substem A. Whenever substem B starts with a consonant (e.g. x or z), to avoid problems in pronunciation, an additional vowel indicated in the table, e.g. -ba- is inserted.

**Prefix**

The prefix should be random, e.g. the only requirement is to contribute to an euphonious and distinctive name.

**Second word**

If the product is radiolabelled or conjugated to another chemical, identification of this conjugate is accomplished by use of a separate, second word or acceptable chemical designation. For instance, for mAbs conjugated to a toxin, the suffix -tox can be used in the second word.

If the monoclonal antibody is used as a carrier for a radioisotope, the latter will be listed first in the INN, e.g. \textit{technetium ($^{99m}$Tc) nofetumomab merpentan (81)(42)}.

The prefix \textit{peg-} can be used for pegylated mAbs, but this should be avoided if it leads to over-long INN. In most cases, it is best to adopt two-word INN for pegylated mAbs, with the first word describing the mAb and the second being pegol or a related designation.

**References**

2. World Health Organization. International Nonproprietary Names (INN) for biological and biotechnological substances (a review), INN Working Document 05.179, update November 2009 *

* These documents are available on the INN Programme Website at:

\texttt{http://www.who.int/medicines/services/inn/en/index.html}
ANNEX 4

INNs FOR GENE THERAPY PRODUCTS

The following nomenclature scheme was adopted by the members of the INN Expert Group designated to deal with the selection of nonproprietary names in December 2005 after a broad consultative process. These tables show the latest developments.

A two-word name approach has been selected:

**Word 1**  
*gene component*

<table>
<thead>
<tr>
<th>prefix</th>
<th>infix</th>
<th>suffix</th>
</tr>
</thead>
</table>
| random to contribute to euphonious and distinctive name | to identify the gene using, when available, existing infixes for biological products or using similar infix as for the protein for which the gene codes. | -(a vowel)gene  
e.g. -(o)gene |
| e.g.  
- *cima* -: cytosine deaminase  
- *ermin* -: growth factor  
- *kin* -: interleukin  
- *lim* -: immunomodulator  
- *lip* -: human lipoprotein lipase  
- *mul* -: multiple gene  
- *stim* -: colony stimulating factor  
- *tima* -: thymidine kinase  
- *tusu* -: tumour suppression | |

**Word 2**  
*vector component*

<table>
<thead>
<tr>
<th>prefix</th>
<th>infix</th>
<th>suffix</th>
</tr>
</thead>
</table>
| random to contribute to euphonious and distinctive name | e.g.  
- *adeno* -: adenovirus  
- *cana* -: canarypox virus  
- *foli* -: fowlpox virus  
- *herpa* -: herpes virus  
- *lenti* -: lentivirus  
- *morbilli* -: paramyxoviridae morbillivirus  
- *parvo* -: adeno-associated virus (paroviridae dependovirus)  
- *retro* -: other retrovirus  
- *vaci* -: vaccinia virus | -vec (nonreplicating viral vector)  
-repvec (replicating viral vector)  
-plasmid (plasmid vector) |

In the case of non-plasmid naked DNA products, there is no need for a second word in the name.

In case of antisense oligonucleotides, please refer to the already existing stem –rsen.
## ANNEX 5

Reference to publications containing proposed lists of INNs

<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>70 WHO Drug Information 7: No. 4 (1993)</td>
</tr>
<tr>
<td>54 WHO Chronicle 39: No. 4, suppl. (1985)</td>
<td>Lists 1-105 of proposed INN are included in Cumulative List</td>
</tr>
<tr>
<td>56 WHO Chronicle 40: No. 5, suppl. (1986)</td>
<td></td>
</tr>
</tbody>
</table>
ANNEX 6

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 8800 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.

28/10/2013