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

2009
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PREFACE

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 - 101) 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 trade marks 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 ongoing 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 - 101* 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 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

Stem classification -> Stem definition -> National Name(s)

Stem: calci
National Name(s): USAN

Graphic Formula

Vitamin D analogues/derivatives

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

(b) calcitonin (31) (polypeptide)

(c) dihydrotachysterol (1)

INN (English)

List of proposed INN

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

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

Names which belong to the same group of pharmaceutical substances and in which no preferred stem has been used (this part of the list is not 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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<td>-abine</td>
<td>-bactam</td>
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<tr>
<td>(see -arabine and -citabine)</td>
<td>-bamate</td>
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<td>-ac</td>
<td>barb</td>
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<td>-acetam (see -racetam)</td>
<td>-begrion</td>
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<td>-actide</td>
<td>-benakin (see -kin)</td>
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<td>-adol/-adol-</td>
<td>-bendan (see -dan)</td>
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<td>-adom</td>
<td>-bendazole</td>
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<td>-afenone</td>
<td>-bercept (see -cept)</td>
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<td>-afil</td>
<td>-bermin (see -ermin)</td>
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<td>-bersat</td>
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<td>-betasol (see pred)</td>
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<td>-alol (see -olol)</td>
<td>-bradine</td>
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<td>-lox (see -ox)</td>
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<td>-bufen</td>
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<td>-bulin</td>
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<td>-buxazone (see -buzone)</td>
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<td>-apine (see -pine)</td>
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<td>-dotril (see -tril/-trilat)</td>
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<td>-emcinal</td>
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<td>-entan</td>
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<td>(-)ertacog (see -cog)</td>
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-ermín
estr
-etanide (see -anide)
-ethidine (see -eridine)
exakin (see -kin)
exine

F
-farcept (see -cept)
-fenamate (see -fenamic acid)
-fenamic acid
-fenin
-fenine
-fentanil
-fentrine
-fermin (see -ermin)
fiban
-fibrate
-filermin (see -ermin)
-flapon
-flurane
-formin
fos
-fovir (see vir)
-fradil
-frine (see -drine)
-fungin
-fyline

G
-gab
gado-
gatran
-gene
gest
-gestr- (see estr)
gilene
-gillin
gli
-gliptin (see gli)
glitzar (see gli)
glitzzone (see gli)
glumide
golide
gosivir (see vir)
gramostim (see -stim)
grastim (see -stim)
grel/-grel

guan-

I
-ibeine (see -ribine)
icam
-ifene
-igetide (see -tide)
ilide
imex
-imibe
-imod
-imus
-ine
io-
io-/-io-
-irudin
-isomide
-iun
-izine (-yzone)

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

L
-lefacept (see -cept)
-leukin (see -kin)
-listat (see -stat)
lubant
-lukast (see -ast)
lutril (see -tril/-trilat)

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

N
nab
-nacept (see -cept)
-nabant
-nakin (see -kin)
nakinra (see -kinra)
nal-
naritide (see -tide)
-navir (see vir)
n-nermin (see -ermin)
n-nercept (see -cept)
n-nercept (see -tant)
n-netant (see -tand)
n-nicate (see nico-)
n-nicline
nico/-nic/-ni-
nidazole
-nidine (see -onidine)
nifur-
nil (see -azetil)
nito/-nitr/-nit/-ni/-ni-
nixin
(-)nonacog (see -cog)

O
-octakin (see -kin)
octadekin (see -kin)
(-)octocog (see -cog)
-ol
-olol
-olone (see pred)
-onakin (see -kin)  -plestim (see -stim and -kin)
-one  -plon
-onide  -poetin
-ondine  -porfin
-onium (see -ium)  -poride
-opamine (see -dopa)  -pramine
-oex  -prazole
-orph- (see orphan)  pred
-orphan  -prenaline (see -terol)
-otermin (see -ermin)  -pressin
-ox/-alox  -pride
-oxacin  -pril
-oxan(e)  -prilat (see -pril)
-oxanide (see -anide)  -prim
-oxef (see cef-)  pris
-oxepin (see -pine)  -pristin
-oxetine  -profen
-oxicam (see -icam)  prost
-oxifene (see -ifene)  -prostil (see prost)
-oxopine (see -pine)

**P**

-pafant  -serpine
-pamide  -setron
-pamil  som-
-parcin  -sopine (see -pine)
-parinux (see -parin)  -spironene
-patril/-patrilat (see -tril/-trilat)  -stat/-stat-
-pendyl (see -dil)  -steine
-perfl(u)-  -ster-
-peridol (see -perone)  -stigmine
-peridone (see -perone)  -stim
-perone  sulf-
-pidem  -sulfan
-pin(e)  -T

-Q

-quidar  -tacept (see cept)
-quin(e)  -tadine

-R

-racetam  -tart
-racil  -tecan
-relin  -tepa
-relix  -tepine (see -pine)
-renone  -teplase (see -ase)
-restat (see -stat)  -termin (see -ermin)
-retin  -terol
-riline  -terone
-sartan  -thiouracil (see -racil)
-sal  -tiazem
-sartan  -tide
-sartan  -tidine
-semide  -tilide (see -ilide)
-sermin (see -ermin)  -tiline (see -triptyline)
-serod  -tinib
-setron  -tirelin (see -relin)
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U
-uplase (see -ase)
-uridine

V
-vaptan
-vastatin (see -stat)
-vec (see -gene)
-verine
vin-/vin-
vir
-vircept (see -cept)
-viroc (see vir)
-virsen
-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)
-zotan
PART II B
ALPHABETICAL LIST OF COMMON STEMS AND THEIR DEFINITION

A
-abine (see -arabine and -citabine) arabinofuranosyl derivatives; nucleoside antiviral or antineoplastic agents, cytarabine or azactidine derivatives
-ac anti-inflammatory agents, ibufenac derivatives
-acetam (see -racetam) amide type nootrope agents, piracetam derivatives
-actide synthetic polypeptide with a corticotropin-like action
-adol/-adol- analgesics
-adom analgesics, tifluadom derivatives
-afenone antiarrhythmics, propafenone derivatives
-afil inhibitors of phosphodiesterase PDE5 with vasodilator action
-aj- antiarrhythmics, ajmaline derivatives
-al aldehydes
-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 saluretics
-anserin serotonin receptor antagonists (mostly 5-HT₂)
-antel anthelmintics (undefined group)
-antrone antineoplastics; anthraquinone derivatives
-amine (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
-(a)steride (see -ster-) androgens/anabolic steroids
-astine antihistaminics
-azam (see -azepam) diazepam derivatives
-azam (see -azepam) 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
-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
-bermin (see -ermin) vascular endothelial growth factors
-bercept (see -cept) target: VEGF receptors
-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, aryIbutanoic acid derivatives
-bulin antineoplastics; mitotic inhibitor, tubulin binder
### INN – The use of stems

<table>
<thead>
<tr>
<th>Stem</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>-butazone (see -buzone)</td>
<td>anti-inflammatory analgesics, phenylbutazone derivatives</td>
</tr>
<tr>
<td>-buzone</td>
<td>anti-inflammatory analgesics, phenylbutazone derivatives</td>
</tr>
</tbody>
</table>

**C**

<table>
<thead>
<tr>
<th>Stem</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>-caine</td>
<td>local anaesthetics</td>
</tr>
<tr>
<td>-cain-</td>
<td>class I antiarrhythmics, procainamide and lidocaine derivatives</td>
</tr>
<tr>
<td>calci</td>
<td>vitamin D analogues/derivatives</td>
</tr>
<tr>
<td>carbef</td>
<td>antibiotics, carbacephem derivatives</td>
</tr>
<tr>
<td>-carnil (see -azenil)</td>
<td>benzodiazepine receptor antagonists/agonists (carboline derivatives)</td>
</tr>
<tr>
<td>-castat (see -stat)</td>
<td>dopamine-hydroxylase inhibitors</td>
</tr>
<tr>
<td>-cavir (see vir)</td>
<td>carbocyclic nucleosides</td>
</tr>
<tr>
<td>cef-</td>
<td>antibiotics, cefalosporanic acid derivatives</td>
</tr>
<tr>
<td>cell-/cel-</td>
<td>cellulose derivatives</td>
</tr>
<tr>
<td>cell-ate (see cell-/cel-)</td>
<td>cellulose ester derivatives for substances containing acidic residues</td>
</tr>
<tr>
<td>-cellose (see cell-/cel-)</td>
<td>cellulose ether derivatives</td>
</tr>
<tr>
<td>-cept</td>
<td>receptor molecules, native or modified (a preceding infix should designate the target)</td>
</tr>
<tr>
<td>-cic</td>
<td>hepatoprotective substances with a carboxylic acid group</td>
</tr>
<tr>
<td>-ciclovir (see vir)</td>
<td>antivirals, bicyclic heterocycles compounds</td>
</tr>
<tr>
<td>-cidin</td>
<td>naturally occurring antibiotics (undefined group)</td>
</tr>
<tr>
<td>-ciguat</td>
<td>guanylate cyclase activators and stimulators</td>
</tr>
<tr>
<td>-cillide (see -cillin)</td>
<td>antibiotics, 6-aminopenicillanic acid derivatives</td>
</tr>
<tr>
<td>-cillin</td>
<td>antibiotics, 6-aminopenicillanic acid derivatives</td>
</tr>
<tr>
<td>-cillinam (see -cillin)</td>
<td>antibiotics, 6-aminopenicillanic acid derivatives</td>
</tr>
<tr>
<td>-cilpine (see -pine)</td>
<td>tricyclic compounds</td>
</tr>
<tr>
<td>-cisteine (see -steine)</td>
<td>mucolytics, other than bromhexine derivatives</td>
</tr>
<tr>
<td>-citabine</td>
<td>nucleoside antiviral or antineoplastic agents, cytarabine or azactidine derivatives</td>
</tr>
<tr>
<td>-clone</td>
<td>hypnotic tranquillizers</td>
</tr>
<tr>
<td>-cocept (see -cept)</td>
<td>target: complement receptors</td>
</tr>
<tr>
<td>-cog</td>
<td>blood coagulation factors</td>
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<tr>
<td>-cogin</td>
<td>blood coagulation cascade inhibitors</td>
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<tr>
<td>-conazole</td>
<td>systemic antifungal agents, miconazole derivatives</td>
</tr>
</tbody>
</table>
cort corticosteroids, except prednisolone derivatives
-coxib selective cyclo-oxygenase inhibitors
-crinat diuretics, etacrylic acid derivatives
-crine acridine derivatives
-cromil antiallergics, cromoglicic acid derivatives
-curium (see -ium) curare-like substances
-cycline antibiotics, tetracycline derivatives

d -dan cardiac stimulants, pimobendan derivatives
-dapsone antimycobacterials, diaminodiphenylsulfone derivatives
-decakin (see -kin) interleukin-10 analogues and derivatives
-denoson adenosine A receptor agonists
-dermin (see -ermin) epidermal growth factors
-dil vasodilators
-dilol (see -dil) vasodilators
-dipine calcium channel blockers, nifedipine derivatives
-dismase (see -ase) enzymes with superoxide dismutase activity, see -ase item V
-distim (see -stim) combination of two different types of colony stimulating factors
-dodekin (see -kin) interleukin-12 analogues and derivatives
-dopa dopamine receptor agonists, dopamine derivatives, used as antiparkinsonism/prolactin inhibitors
-doxx (see -ox/-alox) antibacterials, quinazoline dioxide derivatives
-dralazine antihypertensives, hydrazinephthalazine derivatives
-drine sympathomimetics
-dronic acid calcium metabolism regulator, pharmaceutical aid
-duvant (see -tant) neurokinin NK₂ receptor antagonist
-dyl (see -dil) vasodilators

e -ectin antiparasitics, ivermectin derivatives
-elestat (see -stat) elastase inhibitors
-elvekin (see -kin) interleukin-11 analogues and derivatives
-emcinal erythromycin derivatives lacking antibiotic activity, motilin agonists
-entan, (-)-eptacog (see -cog), erg, -eridine, -ermin, estr, -etanide (see -anide), -ethidine (see -eridine), -exakin (see -kin), -exine

endothelin receptor antagonists
blood coagulation VII
ergot alkaloid derivatives
analgesics, pethidine derivatives
growth factors
estrogens
diuretics, piretanide derivatives
analgesics, pethidine derivatives
interleukin-6 analogues and derivatives
mucolytic, bromhexine derivatives

target: subgroup of interferon receptors
"fenamic acid" derivatives
anti-inflammatory, anthranilic acid derivatives
diagnostic aids; (phenylcarbamoyl)methyl iminodiacetic acid derivatives
analgesics, glafenine derivatives (subgroup of fenamic acid group)
narcotic analgesics, fentanyl derivatives
inhibitors of phosphodiesterases
fibroblast growth factors
fibrinogen receptor antagonists (glycoprotein IIb/IIIa receptor antagonists)
clofibrate derivatives
leukemia-inhibiting factor
5-lipoxygenase-activating protein (FLAP) inhibitor
halogenated compounds used as general inhalation anaesthetics
antihyperglycaemics, phenformin derivatives
insecticides, anthelmintics, pesticides etc., phosphorous derivatives
phosphonic acid derivatives
calcium channel blockers acting as vasodilators
sympathomimetic, phenethyl derivatives
antifungal antibiotics
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 MAO-inhibitors type B

gillin antibiotics produced by Aspergillus strain

gli antihyperglycaemics

gliptin (see gli) dipeptidyl aminopeptidase-IV inhibitors

glitazar (see gli) peroxisome proliferator activating receptor (PPAR) agonists

glitazone (see gli) peroxisome proliferator activating receptor (PPAR) agonists, thiazolidinedione derivatives

glumide CCK antagonists, antiulcer, anxiolytic agent

golide dopamine receptor agonists, ergoline derivatives

gosivir (see vir) glucoside inhibitors

gramostim (see -stim) granulocyte macrophage colony stimulating factor (GM-CSF) types substances

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

grel-/-grel platelet aggregation inhibitors

guan- antihypertensives, guanidine derivatives

I

-ibine (see -ribine) ribofuranyl-derivatives of the “pyrazofurin” type

-icam anti-inflammatory, isoxicam derivatives

-ifene antiestrogens, clomifene and tamoxifen derivatives

-igetide (see -tide) peptides and glycopeptides

-ilide class III antiarrhythmics, sematilide derivatives

-imex immunostimulants

-imibe antihyperlipidaemics, acyl CoA: cholesterol acyltransferase (ACAT) inhibitors

-imod immunomodulators, both stimulant/suppressive and stimulant

-imus immunosuppressants (other than antineoplastics)

-ine alkaloids and organic bases
-inostat (see stat)                 histone deacetylase inhibitors
io-                               iodine-containing contrast media
iod-/io-                          iodine-containing compounds other than contrast media
-irudin                           hirudin derivatives
-isomide                          antiarrhythmics, disopyramide derivatives
-iium                             quaternary ammonium compounds
-izine (-yzine)                   diphenylmethyl piperazine derivatives

K
-kacin                            antibiotics, kanamycin and bekanamycin derivatives (obtained from Streptomyces kanamyceticus)
-kalant                           potassium channel blockers
-kalim                            potassium 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)             target: lymphocyte function-associated antigen 3 receptors
-leukin (see -kin)                interleukin-2 analogues and derivatives
-listat (see -stat)               pancreatic lipase inhibitors
-lubant                           leukotriene B4 receptor antagonist
-lukast (see -ast)                leukotriene receptor antagonists

M
-mab                              monoclonal antibodies
-mantadine                        adamantane derivatives
-mantine (see -mantadine)         adamantane derivatives
-mantone (see -mantadine)         adamantane derivatives
-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)
<table>
<thead>
<tr>
<th>Stems</th>
<th>Description</th>
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<tbody>
<tr>
<td>mer-/-mer</td>
<td>mercury-containing drugs, antimicrobial or diuretic (deleted from General Principles in List 28 prop. INN)</td>
</tr>
<tr>
<td>-mer</td>
<td>polymers</td>
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<tr>
<td>-mesine</td>
<td>sigma receptor ligands</td>
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<tr>
<td>-mestane</td>
<td>aromatase inhibitors</td>
</tr>
<tr>
<td>-metacin</td>
<td>anti-inflammatory, indometacin derivatives</td>
</tr>
<tr>
<td>-met(h)asone (see pred)</td>
<td>prednisone and prednisolone derivatives</td>
</tr>
<tr>
<td>-micin</td>
<td>antibiotics obtained from <em>various Micromonospor</em></td>
</tr>
<tr>
<td>-mifene (see -ifene)</td>
<td>antiestrogens, clomifene and tamoxifen derivatives</td>
</tr>
<tr>
<td>-milast (see -ast)</td>
<td>phosphodiesterase IV (PDE IV) inhibitors</td>
</tr>
<tr>
<td>mito-</td>
<td>antineoplastics, nucleotoxic agents (deleted from General Principles in List 24 prop. INN)</td>
</tr>
<tr>
<td>-monam</td>
<td>monobactam antibiotics</td>
</tr>
<tr>
<td>-morelin (see -relin)</td>
<td>growth hormone release-stimulating peptides</td>
</tr>
<tr>
<td>-mostim (see -stim)</td>
<td>macrophage stimulating factors (M-CSF) type substances</td>
</tr>
<tr>
<td>-motine</td>
<td>antivirals, quinoline derivatives</td>
</tr>
<tr>
<td>-moxin</td>
<td>monoamine oxidase inhibitors, hydrazine derivatives</td>
</tr>
<tr>
<td>-mulin</td>
<td>antibacterials, pleuromulin derivatives</td>
</tr>
<tr>
<td>-mustine</td>
<td>antineoplastic, alkylating agents, (β-chloroethyl)amine derivatives</td>
</tr>
<tr>
<td>-mycin</td>
<td>antibiotics, produced by <em>Streptomyces</em> strains (see also -kacin)</td>
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<tr>
<th>Stems</th>
<th>Description</th>
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<tbody>
<tr>
<td>nab</td>
<td>cannabinol derivatives</td>
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<tr>
<td>-nabant</td>
<td>cannabinoid receptors antagonists</td>
</tr>
<tr>
<td>-nacet (see -cept)</td>
<td>target: interleukin-1 receptors</td>
</tr>
<tr>
<td>-nakin (see -kin)</td>
<td>interleukin-1 analogues and derivatives</td>
</tr>
<tr>
<td>-nakinra (see -kin)</td>
<td>interleukin-1 receptor antagonists</td>
</tr>
<tr>
<td>nal-</td>
<td>narcotic antagonists/agonists related to normorphine</td>
</tr>
<tr>
<td>-naritide (see -tide)</td>
<td>peptides and glycopeptides</td>
</tr>
<tr>
<td>-navir (see vir)</td>
<td>HIV protease inhibitors</td>
</tr>
<tr>
<td>-nermin (see -ermin)</td>
<td>tumour necrosis factor</td>
</tr>
<tr>
<td>-nercept (see -cept)</td>
<td>target: tumour necrosis factor</td>
</tr>
<tr>
<td>-nertant (see -tant)</td>
<td>neurotensin antagonist</td>
</tr>
<tr>
<td>-netant (see -tant)</td>
<td>neurokinin NK₃ receptor antagonist</td>
</tr>
<tr>
<td>-nicate (see nico-)</td>
<td>antihypercholesterolaemic and/or vasodilating nicotinic acid esters</td>
</tr>
</tbody>
</table>
-nicline  nicotinic acetylcholine receptor partial agonists / agonists
nico-/nic-/ni-  nicotinic acid or nicotinoyl alcohol derivatives
-nidazole  antiprotzoals 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
(-)octocog (see -cog)  blood factor VIII
-ol  for alcohols and phenols (deleted from General Principles in 14th Report)
-olol  β-adrenoreceptor antagonists
-olone (see pred)  steroids other than prednisolone derivatives
-onakin (see -kin)  interleukin-1 analogues and derivatives
-one  ketones
-onide  steroids for topical use, acetal derivatives
-onidine  antihypertensives, clonidine derivatives
-onium (see -ium)  quaternary ammonium compounds
-opamine (see -dopa)  dopaminergic agents dopamine derivatives used as cardiac stimulant/antihypertensives/diuretics
-orex  anorexics
-orph- (see orphan)  narcotic antagonists/agonists, morphinan derivates
orphan  narcotic antagonists/agonists, morphinan derivates
-otermin (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  antidepressants, fluoxetine derivatives
-oxicam (see -icam) anti-inflammatory, isoxicam derivatives
-oxifene (see -ifene) antiestrogens, clomifene and tamoxifen derivatives
-oxopine (see -pine) tricyclic compounds

P
-pafant platelet-activating factor antagonists
-pamide diuretics, sulfamoylbenzoic acid derivatives (could be sulfamoylbenzamide)
-pamil coronary vasodilators, verapamil derivatives
-parcin for glycopeptide antibiotics
-parin heparin derivatives including low molecular mass heparins
-parinux (see -parin) synthetic heparinoids
-pendyl (see -dil) vasodilators
-penem analogues of penicillanic acid antibiotics modified in the five-membered ring
-perfl(u)- perfluorinated compounds used as blood substitutes and/or diagnostic agents
-peridol (see -perone) antipsychotics, haloperidol derivatives
-peridon (see -perone) antipsychotics, risperidone derivatives
-perone tranquillizers, neuroleptics, 4'-fluoro-4-piperidinobutyrophenone derivatives
-pidem hypnotics/sedatives, zolpidem derivatives
-pin(e) tricyclic compounds
-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 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

-porf-in  benzoporphyrin derivatives

-poride  Na\(^+\)/H\(^+\) antiport inhibitor

-pramine  substances of the imipramine group

-prazole  antiulcer, benzimidazole derivatives

pred  prednisone and prednisolone derivatives

-prenaline (see -terol)  bronchodilators, phenethylamine derivatives

-pressin  vasoconstrictors, vasopressin derivatives

-pride  sulpiride derivatives

-pril  angiotensin-converting enzyme inhibitors

-prilat (see -pril)  angiotensin-converting enzyme inhibitors

-prim  antibacterials, trimethoprim derivatives

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

-pristin  antibacterials, pristinamycin derivatives

-profen  anti-inflammatory agents, ibuprofen derivatives

prost  prostaglandins

-prostil (see prost)  prostaglandins, anti-ulcer

Q

-quidar  drugs used in multidrug resistance, quinoline derivatives

-quin(e)  quinoline derivatives (deleted from General Principles in List 28 prop. INN)

-quinil (see -azenil)  benzodiazepine receptor agonists, also partial or inverse (quinoline derivatives)

R

-racetam  amide type nootrope agents, piracetam derivatives

-racil  uracil type antineoplastics

-relin  prehormones or hormone-release stimulating peptides

-relix  hormone-release inhibiting peptides

-renone  aldosterone antagonists, spironolactone derivates

-restat (see -stat)  aldose reductase inhibitors

retin  retinol derivatives
-ribine - ribofuranyl-derivatives of the "pyrazofurin" type
rifa- - antibiotics, rifamycin derivatives
-rinone - cardiac stimulants, amrinone derivatives
-rizine (see -izine) - antihistaminics/cerebral (or peripheral) vasodilators
-rolimus (see -imus) - immunosuppressants, rapamycin derivatives
-rozole - aromatase inhibitors, imidazole-triazole derivatives
-rsen - antisense oligonucleotides
-rubicin - antineoplastic antibiotics, daunorubicin derivatives

S
sal - salicylic acid derivatives
-sartan - angiotensin II receptor antagonists, antihypertensive (non-peptidic)
-semide - diuretics, furosemide derivatives
-sermin (see -ermin) - insulin-like growth factors
-serod - serotonin receptor antagonists and partial agonists
-serpine - derivatives of Rauwolfia alkaloids
-setron - serotonin receptor antagonists (5-HT₃) not fitting into other established groups of serotonin receptor antagonists
som- - growth hormone derivatives
-sopine (see -pine) - tricyclic compounds
-spirone - anxiolytics, buspirone derivatives
-stat/-stat- - enzyme inhibitors
-steine - mucolytics, other than bromhexine derivatives
-ster- - androgens/anabolic steroids
-stigmine - acetylcholinesterase inhibitors
-stim - colony stimulating factors
-sulf- - 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
-taxel - antineoplastics; taxane derivatives
-tecan antineoplastics, topoisomerase I inhibitors
-tepa antineoplastics, thiotepa derivatives
-tepine (see -pine) tricyclic compounds
-teplase (see -ase) tissue type plasminogen activators, see -ase item VI
-termin (see -ermin) transforming growth factor
-terol bronchodilators, phenethylamine derivatives
-terone antiandrogens
-thiouracil (see -racil) uracil derivatives used as thyroid antagonists
-tiazem calcium channel blockers, diltiazem derivatives
-tide peptides and glycopeptides (for special groups of peptides see -actide, -pressin, -relin, -tocin)
-tidine histamine-H2-receptor antagonists, cimetidine derivatives
-tilide (see -ilide) class III antiarrhythmics, sematilide derivatives
-tiline (see -triptyline) antidepressants, dibenzo[a.d]cycloheptane or cyclopheptene 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
-trexate folic acid analogues
-tril/trilat endopeptidase inhibitors
-tricin antibiotics, polyene derivatives
-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)  antihyperlipidaemic substances, HMG CoA reductase inhibitors
-vec (see -gene)  gene therapy product
-verine  spasmolytics with a papaverine-like action
vin/-vin-  vinca alkaloids
vir  antivirals (undefined group)
-vircept (see -cept)  target: antiviral receptors
-virsen  antisense oligonucleotides
-vos (see fos)  insecticides, anthelmintics, pesticides etc., phosphorus derivatives
-vudine (see -uridine)  uridine derivatives used as antiviral agents and as antineoplastics

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

Y
-yzine (see -izine)  diphenylmethyl piperazine derivatives

Z
-zafone  alozafone derivatives
-zepine (see -pine)  tricyclic compounds
-zolast (see -ast)  leukotriene biosynthesis inhibitors
-zone (see -buzone)  anti-inflammatory analgesics, phenylbutazone derivatives
-zotan  5-HT_1A receptor agonists / antagonists acting primarily as neuroprotectors

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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<td>-stim colony stimulating factors: -distim 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</td>
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### J110 Stomachics
- **J120** Choleretics (and hepatoprotective agents)
  - *cic*
  - Hepatoprotective substances with a carboxylic acid group
- **J130** Digestive enzymes
- **J200** Emetics
- **J300** Hepato-protective agents
- **J400** Gastro-intestinal anti-infectives (see S000)
- **J500** Antidiarrhoeals

### K000 AGENTS INFLUENCING THE RESPIRATORY TRACT
- **-ast**
  - Antiasthmatics or antiallergics, not acting primarily as antihistaminics;
  - *lukast*: leukotriene receptor antagonist;
  - *milast*: phosphodiesterase IV (PDE IV) inhibitors;
  - *trodast*: thromboxane A₂ receptor antagonists, antiasthmatics, 
  - *zolast*: leukotriene biosynthesis inhibitors
- **-cromil**
  - Antiallergics, cromoglicic acid derivatives
- **-exine**
  - Mucolytic, bromhexine derivatives
- **-fentrine**
  - Inhibitors of phosphodiesterases
- **-lukast**
  - Leukotriene receptor antagonists, see -ast
- **-steine**
  - Mucolytics, other than bromhexine derivatives
- **-trodast**
  - Thromboxane A₂ receptor antagonists, antiasthmatics; see -ast
- **-xanox**
  - Antiallergic respiratory tract drugs, xanoxic acid derivatives

### K100 Antitussives
- **K110** Antitussives - central
- **K120** Antitussives - peripheral
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<td>Hypophysis posterior lobe (incl. other oxytocics)</td>
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<td>Q200</td>
<td>Sex hormones and analogues</td>
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<tr>
<td>Q210</td>
<td>Estrogens, also interceptive contraceptive agents e.g. epostane</td>
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<tr>
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<td>-ifene</td>
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<tr>
<td>Q220</td>
<td>Progestogens</td>
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<tr>
<td>Q230</td>
<td>Androgens</td>
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<td>-ster-</td>
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<tr>
<td>Q231</td>
<td>Androgens</td>
</tr>
<tr>
<td>Q240</td>
<td>Gonadotrophins and gonadotrophin secretion stimulating drugs</td>
</tr>
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<td>Q241</td>
<td>Antigonadotrophins</td>
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<td>Q300</td>
<td>Adrenocortical hormones and analogues</td>
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<td>-onide</td>
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<td>Q310</td>
<td>Mineralosteroids</td>
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<td>Q340</td>
<td>Glucosteroids antagonists</td>
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<td>R100</td>
<td>Sera and immunoglobulins</td>
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<td>R200</td>
<td>Vaccines</td>
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<td>Vaccines, live</td>
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<td>R220</td>
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<td>Biological response modifier</td>
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<td>Antiseptics and disinfectants</td>
</tr>
<tr>
<td>S210</td>
<td>Antiseptics (excl. heavy metal antiseptics)</td>
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<tr>
<td>S220</td>
<td>Heavy metal antiseptics</td>
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<td>S230</td>
<td>Detergent antiseptics</td>
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<td>S300</td>
<td>Chemotherapeutics of parasitic diseases</td>
</tr>
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<td>S310</td>
<td>Anthelminthics (excl. antinematode agents)</td>
</tr>
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<td>Code</td>
<td>Category</td>
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<td>S310</td>
<td>-fos- or fos-</td>
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<td>S320</td>
<td>Antinematode agents</td>
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<td>S330</td>
<td>Antiprimateal agents (incl. all arsphenamines)</td>
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<td>S330</td>
<td>-nidazole</td>
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<td>S400</td>
<td>Chemotherapeutics of fungal diseases</td>
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<td>S410</td>
<td>Antifungal agents</td>
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<td>S420</td>
<td>Fungicides</td>
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<td>Antifungal antibiotics</td>
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<td>Antibiotics, antibacterial and antiviral agents</td>
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<td>S550</td>
<td>Antibacterial/other</td>
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<td>Code</td>
<td>Description</td>
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<td>-prim</td>
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<td>S600</td>
<td><strong>Antibiotics (except antineoplastic antibiotics)</strong></td>
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<td>-mycin</td>
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<td>-parcin</td>
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<td>-pristin</td>
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<td><strong>Antibiotics acting on the bacterial cell wall</strong></td>
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<td>S610</td>
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<td>-oxef</td>
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<td>**Antibiotics affecting cell membrane and with</td>
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<td><strong>Antibiotics affecting protein synthesis</strong></td>
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<td>Description</td>
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<td>Antibiotics affecting nucleic acid metabolism</td>
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<tr>
<td>S640</td>
<td>Antibiotics-action unclassified (including β-lactamase inhibitors)</td>
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<td>Antibiotics-action unclassified (including β-lactamase inhibitors)</td>
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<td>Antibiotics-action unclassified (including β-lactamase inhibitors)</td>
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<td>S700</td>
<td>Immunomodulators and immunostimulants (incl. gamma globulins)</td>
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<td>Interferons and immunomodulators</td>
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<td>LOCALLY ACTING AGENTS (INCL. DERMATOLOGIC AND INTERNALLY USED DRUGS)</td>
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<td>Locally acting externally-applied agents</td>
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<td>Description</td>
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<td>Vasodilators (external) - rubefaciens</td>
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<td>Locally acting internally-applied agents</td>
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<td>T210</td>
<td>Adsorbents, astringents</td>
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<td>T220</td>
<td>Lubricant cathartics</td>
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<td>T230</td>
<td>Irritant cathartics</td>
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<td>T240</td>
<td>Gastro-intestinal anti-infectives, non-resorbed</td>
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<td>T250</td>
<td>Saponins</td>
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<td>Detergents</td>
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<td>Intravaginal contraceptives</td>
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<td>MISCELLANEOUS DRUGS</td>
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<td>Diagnostic aids</td>
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<td>U110</td>
<td>Radiocontrast media</td>
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<tr>
<td>U120</td>
<td>Diagnostic aids, other</td>
</tr>
<tr>
<td>U130</td>
<td>Diagnostic radioisotopes</td>
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<td>Chelating agents, detoxicants, etc.</td>
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<td>Alcohol deterrents</td>
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<td>U300</td>
<td>Anti-inflammatory agents</td>
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<td>Description</td>
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<td>Non-antipyretic antirheumatics</td>
</tr>
<tr>
<td>U320</td>
<td>Anti-inflammatory agents, other</td>
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<tr>
<td>U400</td>
<td>Pharmaceutical adjuncts</td>
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<td>V000</td>
<td>UNCLASSIFIED PHARMACOLOGICAL MECHANISMS</td>
</tr>
<tr>
<td>V100</td>
<td>Intrauterine contraceptive device</td>
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<tr>
<td>V200</td>
<td>Medicinal plants</td>
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<td>V300</td>
<td>Homoeopathic preparations</td>
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<td>ENZYMES AND VARIOUS</td>
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<td>Y000</td>
<td>VETERINARY DRUGS</td>
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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))

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

(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),
               isoexpac (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), fencloxic acid (22), metiazinic acid (20),
     prodolic acid (29), tolmetin (23)

-acetam  see -racetam

-actide (x)  synthetic polypeptides with a corticotropin-like action

Q.1.1.1  (USAN: synthetic corticotropins)

(a)  alsactide (45), codactide (24), giractide (29), norleusactide (18), seractide (31),
     tetracosactide (18), tosactide (24), tricosactide (44)
-adol (x) or -adol- analgesics (14th Report, 1967)

A.4.1.0
A.4.2/3.0 (USAN: analgesics (mixed opiate receptor agonists/antagonists))

(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), ciprefadol (41), ciramadol (39), cloracetadol (16), dibusadol (24), dimenoxadol (7), diproxadol (34), enadoline (68), faxeladol (97), filenadol (47), flumexadol (36), fluradoline (48), gadoxadol (48), levonantradol (43), lorcinadol (57), moxadolen (45), (deleted in List 48: moxifadol (47)), myfadol (17), nafoxadol (50), nantradol (42), nerbacadol (56), oxapadol (40), picenadol (47), pinadoline (50), pipradimadol (42), pipramadol (42), pravadoline (60), vadoline (60), profadol (20), radolmidine (82), ruzadoline (71), spiradoline (53), tazadolene (52), tolpadol (48), tramadol (22), veradoline (47)

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

(c) A.4.1.0: dimepheptanol (5)

-adom analgesics, tifluadom derivatives

A.4.3.0

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

-afenone antiarrhythmics, propafenone derivatives

H.2.0.0

(a) alprafenone (62), berlafenone (63), diprafenone (48), etafenone (19), propafenone (29)
INN – The use of stems

-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

(deleted from General Principles in 14th Report)

-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
-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), fanapanal (80), irampanel (82), perampanel (97), 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), silandrene (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), penmesterol (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), norethisterone (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

(a) beloranib (100), bevasiranib (99), brivanib alaninate (97), cediranib (95), motesanib (97), pazopanib (94), pegaptanib (88), semaxanib (85), toceranib (100), vandetanib (91), vatalanib (84)
-anide

-ethanide  diuretics, piretanide derivatives

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

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

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

(c) besunide (30)

-oxanide  antiparasitics, salicylanilides and analogues

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

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

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

thioanalogues: brotianide (24)

related: diloxanide (8), nitazoxanide (45)

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

(c) oxyclozanide (16)

other -anides: aurothioglycanide (1) (antiarthritic; gout-remedy), ceforanide (39) (antibiotic), oglufanide (86) (immunomodulator), polihexanide (24) (antibacterial), tiprostanide (48) (antihypertonic)

BAN, USAN

-anserin  serotonin receptor antagonists (mostly 5-HT₂)

C.7.0.0  (USAN: serotonin 5-HT₂ receptor antagonists)

(a) adatanserin (70), altanserin (50), blonanserin (76), butanserin (51), eplivanserin (80), fananserin (69), flibanserin (75), iferanserin (89), ketanserin (46), lidanserin (62),
nelotanserin (101), pelanserin (57), pimavanserin (97), pruvanserin (90), seganserin (56),
trelanserin (97), tropanserin (55)

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

-antel    anthemelthics (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), antelmymcin (15)

-antrone    antineoplastics; anthraquinone derivatives

USAN

L.0.0.0/  (USAN: -antrone as above, and -(x)ant rone with following definition: antineoplastics,
L.5.0.0 mitoxantrone derivatives aza-anthracenedione class of antitumor agents)

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

-apine    see -pine

-(ar)abine    arabinofuranosyl derivatives

USAN

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

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

(c) S.5.3.0: ribavirin (31)
-arit

antiarthritisic 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))

\[
\text{Cl} - \text{C}_6\text{H}_4 - \text{O} - \text{CH}_3 \\
\text{Cl} - \text{C}_6\text{H}_4 - \text{N} - \text{CO}_2\text{H} \\
\text{CH}_3
\]

(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))

\[
\text{OH} - \text{C}_6\text{H}_4 - \text{O} - \text{C}_6\text{H}_4 - \text{OH}
\]

(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), benziodarone (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  (USAN: -arot-: arotinoids, and -arotene: arotinoid derivatives)

(a)  adarotene (100), amsilarotene (98), betacarotene (38), bexarotene (80), etarotene (64), linarotene (65), mofarotene (70), palovarotene (99), sumarotene (64), tamibarotene (73), tazarotene (72), temarotene (54)

arte- antimalarial agents, artemisinin related compounds

S.3.3.0

(a)  arteflene (70), artemether (61), artemifone (92), artemisinin (56), artemotil (80), artemimol (81), arterolane (97), artesunate (61)

-ase enzymes

W.0.0.0

(a)  agalsidase alfa (84), agalsidase beta (84), alglucerase (68), alglucosidase alfa (91), brinase (22), bucelipase alfa (95), cocarboxylase (1), domnase alfa (70), eufauserase (84), galsulfase (92), glucarpidase (92), hyalosidase (50), hyaluronidase (1), idursulfase (90), kallidinogenase (22), ocrase (28), pegaspargase (64), penicillinase (10), promelase (47), rizolipase (22), serrapeptase (31), sfericase (40), streptodornase (6), streptokinase (6), tilactase (50), urokinase (48)

(c)  batroxobin (29), bromelains (18), chymopapain (26), chymotrypsin (10), defibrotide (44), 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>brinase (22)</td>
<td><em>Aspergillus oryzae</em></td>
<td>fibrinolytic</td>
</tr>
<tr>
<td>kallidinogenase (22)</td>
<td>pancreas or urine of mammals</td>
<td>splitting kinin, kallidin from kininogen (vasodilator)</td>
</tr>
<tr>
<td>Enzyme</td>
<td>Source</td>
<td>Function</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>ocrase (28)</td>
<td>Aspergillus ochraceus</td>
<td>fibrinolytic (topically: cleaning wounds)</td>
</tr>
<tr>
<td>pegaspargase (64)</td>
<td>Aspergillus melleus</td>
<td>asparaginase</td>
</tr>
<tr>
<td>promelase (46)</td>
<td>Aspergillus flavus</td>
<td>proteinase (chronic bronchitis)</td>
</tr>
<tr>
<td>rasburicase (81)</td>
<td>Serratia sp. E15</td>
<td>urate oxidase (hyperuricaemia)</td>
</tr>
<tr>
<td>serrapeptase (31)</td>
<td>Bacillus sphaericus</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>batroxoxin (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**
  - bucelpase alfa (95) human origin lipase
  - rizolipase (22) Rhizopus arrhizus var. Delemar lipase
### III co-enzymes

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

### IV -dismase enzymes with superoxide dismutase activity

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

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

### V -diplase plasminogen activator combined with another enzyme

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>amediplase (79)</td>
</tr>
</tbody>
</table>

### VI -teplase tissue-type plasminogen activators

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>alteplase (59), desmoteplase (80), duteplase (62), lanoteplase (76), monteplase (71), nateplase (73), pamiteplase (78), reteplase (69), silteplase (65), tenecteplase (79)</td>
</tr>
<tr>
<td>(c)</td>
<td>anistreplase (59)</td>
</tr>
</tbody>
</table>

### VII -uplase urokinase-type plasminogen activators

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>nasaruplase (68), nasaruplase beta (85), saruplase (58)</td>
</tr>
</tbody>
</table>

### VIII others

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>agalsidase alfa (84) human origin treatment of deficiency of alpha-galactosidase activity (Fabry’s disease)</td>
</tr>
<tr>
<td>Enzyme Name</td>
<td>Source/Origin</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>agalsidase beta (84)</td>
<td>hamster</td>
</tr>
<tr>
<td>alfimeprase (85)</td>
<td><em>Agkistrodon contrix contrix</em></td>
</tr>
<tr>
<td>alg glucerase (68)</td>
<td>human origin (placenta isoenzyme)</td>
</tr>
<tr>
<td>alg glucosidase alfa (91)</td>
<td>recombinant</td>
</tr>
<tr>
<td>dornase alfa (70)</td>
<td>human origin</td>
</tr>
<tr>
<td>epafipase (85)</td>
<td>human origin</td>
</tr>
<tr>
<td>eufauserase (84)</td>
<td><em>Euphausia superba</em></td>
</tr>
<tr>
<td>galsulfase (92)</td>
<td>recombinant</td>
</tr>
<tr>
<td>glucarpidase (92)</td>
<td><em>Pseudomonadaceae gen. sp.</em></td>
</tr>
<tr>
<td>hyalosidase (50)</td>
<td></td>
</tr>
<tr>
<td>hyaluronidase (1)</td>
<td>various origins</td>
</tr>
<tr>
<td>idursulfase (90)</td>
<td></td>
</tr>
<tr>
<td>imiglucerase (72)</td>
<td>human origin (placenta isoenzyme)</td>
</tr>
<tr>
<td>laronidase (85)</td>
<td>human origin</td>
</tr>
<tr>
<td>pegademase (63)</td>
<td>Origin should be indicated</td>
</tr>
<tr>
<td>pegloticase (98)</td>
<td><em>Sus scrofa</em></td>
</tr>
<tr>
<td>penicillinase (10)</td>
<td><em>Bacillus cereus</em></td>
</tr>
</tbody>
</table>
**INN – The use of stems**

<table>
<thead>
<tr>
<th>Stems</th>
<th>Origin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>ranpirnase (81)</td>
<td><em>Rana piniens</em></td>
<td>ribonuclease (antineoplastic)</td>
</tr>
<tr>
<td>streptodornase (6)</td>
<td><em>Streptococcus haemolyticus</em></td>
<td>hydrolyzing desoxyribonucleoprotein</td>
</tr>
<tr>
<td>taliglucerase alfa (101)</td>
<td>recombinant</td>
<td>beta-glucocerebrosidase</td>
</tr>
<tr>
<td>tilactase (50)</td>
<td></td>
<td>beta-galactosidase</td>
</tr>
<tr>
<td>velaglucerase alfa (98)</td>
<td></td>
<td>beta-glucocerebrosidase</td>
</tr>
</tbody>
</table>

**-ast (x)**  

**antiasthmatics or antiallergics, not acting primarily as antihistaminics**

**K.0.0.0**  

(BAN: antiasthmatics, antiallergics when not acting primarily as antihistamines)  
(USAN: antiasthmatics / antiallergics: not acting primarily as antihistamines; leukotriene biosynthesis inhibitors)

(a) acitazanolast (72), acreozast (77), andolast (67), asobamast (63), ataquimast (82), bamaquimast, (76), batebulast (66), bunaprolast (60), dametralast (54), dazoquinast (54), doqualast (48), eflumast (61), enofelast (67), enoxamast (52), fenprinast (48), filaminast (75), firategrast (96), ibudilast (58), idenast (58), loxanast (46), melquinast (62), oxalinast (49), pemirolast (61), picumast (47), piromodast (64), repirinast (55), revenast (51), scopinast (76), suplatast tosilate (64), tazanolast (59), tiacrilast (52), tibenelast (58), tioxamast (53), tiprinast (50), tranilast (46), valategrast (93), zaprinast (46), zaurategrast (101)

**-lukast**  

**leukotriene receptor antagonist**

(a) abluukast (61), cinalukast (70), irlukast (70), masilukast (94), montelukast (73), poblukast (70), pranlukast (67), ritolukast (64), sulukast (63), tipelukast (95), tomelukast (59), verlukast (65), zafirlukast (71)

**-milast**  

**phosphodiesterase IV (PDE IV) inhibitors**

(a) apremilast (97), catramilast (95), cilomilast (82), lirilmilast (86), oglemilast (94), piclamilast (73), rofamilast (77), tetomilast (91), tofimilast (85)

**-trodast**  

**thromboxane A_2 receptor antagonists, antiasthmatics**

(USAN: thromboxane A2 receptor antagonists)

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

**-zolast**  

**leukotriene biosynthesis inhibitors**

(USAN: benzoazazole derivatives)

(a) binizolast (60), eclazolast (55), ontazolast (72), quazolast (55), tetrazolast (67),

(c) bufrolin (34), oxarbazole (38), pirolate (44)
- (a) steride see -ster-

- astine (x) antihistaminics

G.2.0.0 (BAN: antihistamines, not otherwise classifiable)
(USAN: antihistaminics (histamine-H$_1$ receptor antagonists))

(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), carboxinoxamine (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, also partial or inverse (quinoline derivatives)

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

-bazepam (x) diazepam derivatives

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

(b) 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), meclonazepam (44), medazepam (20), menitrazepam (22), metaltazepam (46), motrazepam (31), nimetazepam (26), nitrazepam (16), nordiazepam (39), nortetrazepam (20), oxazepam (13), pinazepam (32), pivoxazepam (34), prazepam (14), profrazepam (31), quazepam (36), reclazepam (53), sulazepam (14), temazepam (22), tetraazepam (17), tofizepam (51), tuclazepam (40), uldazepam (30)

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

related: adinazolam (45), alprazolam (30), arfendazam (39), clazolam (29), climazolam (51), clobazam (25), clobenzepam (25), cloxazolam (29), ecopipam (80), estazolam (31), flutzazolam (32), haloxazolam (38), ketazolam (26), levotofisopam (92), lopendazol (36), loprazolam (44), mexazolam (40), midazolam (40), nefopam (25), oxazolam (25), razobazol (52), tofisopam (26), trepipam (38), triazolam (30), triflubazol (28), zapizolam (43), zomebazol (49)

(c) brotizolam (40), chlor Diazepoxide (11), ciclotizolam (40), demoxyol (23), dipotassium clorazepate (17), ethyl carfluzepam (43), ethyl dirazepate (44), ethyl loflazepate (43), etizolam (40), potassium nitrazepate (17)

not related: anxiolytic: fenobam (36), muscle relax.: xilobam (36)
-azepide  cholecystokinin receptor antagonists, benzodiazepine derivatives

J.1.0.0  (USAN: cholecystokinin receptor antagonists)

(a)  devazepide (62), pranazepide (75), sograzepide (101), tarazepide (68)

(c)  lorglumide (56)

-azocine  narcotic antagonists/agonists related to 6,7-benzomorphan

A.4.1.0  (USAN: narcotic antagonists/agonists, 6,7-benzomorphan)

(a)  anazocine (30), bremazocine (43), butinazocine (53), carbazocine (16), cogazocine (36), cyclazocine (14), eptazocine (45), gemazocine (29), ibazocine (36), ketazocine (34), metazocine (9), moxazocine (38), pentazocine (14), phenazocine (9), quadazocine (54), tonazocine (46), volazocine (19)
related compounds: dezocine (35)

(b)  streptozocin (33)

-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), prednазoline (22), tefazoline (24), tinazoline (39), tramazoline (15), xylometazoline (8)

(b)  cefazolin (25) (antibiotic)

(c)  tetryzoline (6), metizoline (22)
-zone see -buzone

-azosin antihypertensive substances, prazosin derivatives

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

\[
\text{N} \quad \text{OCH}_3
\]

(a) bunazosin (50), doxazosin (47), neldazosin (60), prazosin (22), quinazosin (17), terazosin (44), tiodazosin (41), trimazosin (31)
related: alfuzosin (49), tamsulosin (65), tipentosin (55)

-bactam β-lactamase inhibitors

S.6.5.0

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

(c) clavulanic acid (44)

-bamate tranquilizers, propanediol and pentanediol derivatives

C.1.0.0 (USAN: tranquilizers/antiepileptics (propanediol and pentanediol groups))

\[
\text{N} \quad \text{OCH}_3
\]

(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 (d)  hypnotics, barbituric acid derivatives

A.2.1.0  (BAN: -barb, -barb-: for barbiturates)
(USAN: -barb; or -barb-: barbituric acid derivatives)

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

(a)  allobarbital (1), amobarbital (1), aprobarbital (1), barbexaclone (16), barbital (4), barbital sodium (4), benzobarbital (25), brallobarbital (41), carbubarb (14), cyclobalbarbital (1), difebarbamate (16), etebarb (32), febarbamate (12), heptabarb (14), hexobarbital (1), methylphenobarbital (1), nealbarbital (11), pentobarbital (1), phenobarbital (4), phenobarbital sodium (4), Probabartil sodium (1), proxibarbal (33), secbutabarbital (12), secobarbital (4), tetrabarital (4), thialbarbital (4), thiotetraabarbital (4), vinbarbital (1)

(c)  butalbital (4), buthalil sodium (8), metharbital (1), methitural (6), methohexitol (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  \(\beta_3\)-adrenoreceptor agonists

M.3.2.1

(a)  amibegron (94), fasobegron (98), mantabegron (88), mirabegron (98), rafabegron (88), ritobegron (91), solabegron (90), talibegron (86)

-benakin  see -kin

-bendan  see -dan

-bendazole  anthelmintics, tiabendazole derivatives

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

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

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

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

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

(c) oxfendazole (35), tioxidazole (39)

related: furodazole (37) (S.3.1.0)

-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) ethylestre

-estrenol (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), denibulin (95), eribulin (97), fosbretabulin (100),

indibulin (91), mivobulin (77), ombrabulin (99), rosabulin (95), taltobulin (91)

(b) thyroglobulin (26)

-butazone see -buzone

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

A.4.2.0

\[
\text{\begin{center}
\includegraphics[width=0.2\textwidth]{butazone.png}
\end{center}}
\]

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

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

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

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

-zone clofezone (17), proxifezone (24)

related: azapropazone (18), benhepazone (15), bumadione (24), cinnopentazone (17), isamfazone (37), metamfazone (12), osmadize (26), ruvazine (26)
(c) benzpiperylone (12), butopyrammonium iodide (8), dibupyrone (17), metamizole sodium (53), metazamide (16), piperylone (11)

BAN, USAN

-caine (x) local anaesthetics

D.1.0.0

(a) ambucaine (6), amoxecaine (1), aptocaine (21), articaine (47) (previously carticaine (27)), benzocaine (42), betoxycaine (13), bucricaine (49), bumecaine (25), bupivacaine (17), butacaine (4), butanilicaine (16), chloroprocaine (6), cinchocaine (1), clibucaine (14), clodacaine (13), clormecaine (17), cyclomethycaine (6), dexivacaine (20), diamocaine (22), edronocaine (84), elucaine (29), etidocaine (29), fexica (25), fomocaine (18), hexylcaine (4), hydroxyprocaine (1), hydroxytetracaine (1), ipravacaine (85), ketocaine (15), leucinocaine (17), levobupiva (74), lidocaine (1), lotucaine (27), mepivacaine (11), meprylcaine (4), myrtocaine (15), octacaine (14), oxetacaine (13), oxybuproca (8), parethoxyca (1), paridocaine (8), phenacaine (4), pinolcaine (32), pipercaine (1), piridocaine (1), pramocaine (4), prilecaine (32), priloca (14), proca (10), propanocaine (6), propipocaine (16), propoxyca (4) proxymetacaine (6), pyrrocaine (13), quacaine (18), quinisocaine (4), risocaine (26), rodocaine (27), ropivacaine (50), tetracaine (4), tolvcaine (16), trapencaine (56), trimocaine (11), vadocaine (57)

(c) amolanone (6), benzyl alcohol (1), cryofluor (6), diperodon (1), dyclonine (6), midamaline (6)

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

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

(a) acecainide (39), asocainol (47), barucainide (52), buca (35), carca (16), drixica (47), encainide (40), epicainide (40), eroca (50), fleca (37), guafecainol (38), indeca (48) (originally ricainide (47)), itrocainide (54), ketoca (32), lorcanain (38), milacainide (77), modeca (63), murocainide (46), nicainoprol (46), nofe (44), pilscainide (62), pinca (49), procainamide (1), quina (50), reca (54), solpeca (55), stirocaine (47), surica (55), toca (36), transca (51), (veroca (42) - replaced by tiapamil in List 43), zo-
calci Vitamin D analogues/derivatives

N.8.0.0 (USAN: Vitamin D analogues)

(a) alfalcaldol (40), atocalcitol (88), becocalcidiol (92), calcifediol (26), calcipotriol (61), calcitriol (39), colecalciferol (13), doxercalciferol (82), ecalcidene (85), eldecalcitol (97), eloalcitol (95), ergocalciferol (13), falecalcitriol (74), inealcitol (87), lexacalcitol (71), maxacalcitol (75), paricalcitol (78), secalciferol (62), seocalcitol (78), tacalcitol (65)

(b) calcitonin (31) (polypeptide)

(c) dihydrotachysterol (1)

-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)
INN – The use of stems

(a) cefacetrile (25), cefaclor (36), cefadroxil (33), cefalexin (18), cefaloglycin (16), cefalonomium (16), cefaloram (16), cefaloridine (15), cefalotin (14), cefamandole (30), cefaparole (33), cefapirin (23), cefatrizine (34), cefazaflur (36), cefazedone (36), cefazolin (25), cefbuperazone (48), cefcanel (59), cefcanel daloxate (59), cefcapene (68), cefclidine (64), cefDaloxime (64), cefdinir (61), cefditoren (66), cefedrolor (53), cefempidone (58), cefepime (57), cefetamet (49), cefetecol (64), cefetizole (44), cefivitril (52), cefixime (53), cefizopran (66), cefloperazone (71), cefmatilen (81), cefmenoxime (44), cefmepidium chloride (57), cefmetazole (39), cefminox (53), cefodizime (44), cefonicid (42), cefoperazone (42), ceforanide (39), cefoselis (71), cefotaxime (40), cefotetan (48), cefotiam (40), cefoxazole (34), cefoxitin (29), cefozopran (66), cefpimizole (50), cefpiramide (47), cefpirome (50), cefpodoxime (58), cefprozil (60), cefquinome (59), cefradine (26), cefrotile (34), cefroxadine (42), cefsulodin (38), cefsumide (38), ceftaroline fosamil (97), ceftazidime (44), ceftaram (55), ceftiezeole (34), ceftributene (60), ceftiofur (53), ceftiolene (49), ceftioxide (43), ceftizoxime (42), ceftizoxime alaproxil (77), ceftobiprole (92), ceftobiprole medicaril (92), ceftriaxone (44), cefuroacetone (45), cefuroxime (34), cefuzonam (55)

-oxef antibiotics, oxacefalosporanic acid derivatives

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

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

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cell- or cellulose 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) -ber- vascular endothelial growth factor (VEGF) receptors
    aflibercept (96)

    -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)

    -vir- antiviral receptors
    alvircept sudotox (69)

other: briobacept (98)

-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)
-cidin  naturally occurring antibiotics (undefined group) (14th Report, 1964)
S.6.0.0  (USAN: natural antibiotics (undefined group))
(a)  candididin (17), gramicidin (1), gramicidin S (26), methocidin (6)
(b)  guancidine (18) (hypotensive)

ciguat  guanylate cyclase activators and stimulators
F.2.0.0
(a)  ataciguat (88), cinaciguat (97), etriciguat (88), lificiguat (95), riociguat (98)

cillide  see -cillin

cillin (x)  antibiotics, 6-aminopenicillanic acid derivatives
S.6.1.0  (USAN: penicillins)

(a)  adicillin (14), almecillin (14), amantocillin (17), amoxicillin (27), ampicillin (13), apalcillin (39), aspoxicillin (50), azidocillin (19), azlocillin (36), bacampicillin (32), benethamine penicillin (1), benzathine benzylpenicillin (18), benzylpenicillin (53), carbenicillin (20), carfecillin (30), carindacillin (29), ciclacillin (22), clemizole penicillin (8), clometocillin (12), cloxacillin (13), dicloxacillin (16), epicillin (25), fenbenicillin (13), fibracillin (30), fluoxacillin (17), famidacillin (55), fumoxicillin (47), furbucillin (31), fuzlocillin (47), hetacillin (16), isopropicillin (12), lenampicillin (50), levopropicillin (12), metampicillin (20), meticillin (12), mezlocillin (34), nafcillin (13), oxacillin (15), oxetacillin (33), penamecillin (16), pheneticillin (11), phenoxyethyl penicillin (6), phenyracillin (8), piperacillin (38), pirbenicillin (35), piridicillin (43), piroxicillin (49), pivampicillin (23), prazocillin (27), propicillin (13), quinacillin (14), rotamicillin (35), sarmoxicillin (41), sarpicillin (36), sulbenicillin (26), sultamicillin (48), suncillin (25), talamicillin (31), tameticillin (35), temocillin (46), ticarcillin (29), tifencillin (12), tobicillin (78)
(b)  xantocillin (12)
(c)  penimepicycline (16), penimocycline (22)
-cillide
S.6.1.0  libecillide (32)

-cillinam
S.6.1.0  baemecillinam (38), mecillinam (32), pivmecillinam (32)

-cillinam  see -cillin

-clpine  see -pine

-cisteine  see -steine

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

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

L.4.0.0

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

(c)  cytarabine (14), azacitidine (40)

-clone  hypnotic tranquillizers
A.2.2.0  (USAN: hypnotic / 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

1.2.0.0

(-)eptacog blood coagulation VII:  eptacog alfa (activated) (77), eptacog alfa pegol (activated) (101), vantreptacog alfa (activated) (98)

(-)octocog blood factor VIII:  berococog alfa (98), moroctocog alfa (72), octocog alfa (73)

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

(-)tridecacoeg blood factor XIII:  catridecacoeg (99)

-cogin  blood coagulation cascade inhibitors

1.2.0.0

drotrecogin alfa (activated) (86), taneptacogin 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), becliconazole (65), brolaconazole (58), butaconazole (40), cisaconazole (59), croaconazole (55), (cyproaconazole (ISO)), demaconazole (42), (diniconazole (ISO C17H17Cl2N3O)), doconazole (37), eberconazole (64), econazole (27), embeconazole (92), eniliconazole (44), (etaconazole (ISO)), fenticonazole (44), fluconazole (54), fosfluconazole (83), (furconazole (ISO/TC 81 N 872 C15H14Cl2F3N3O2)), (hexaconazole (ISO C14H17Cl2N3O)), isavuconazole (96), isoconazole (30), itaconazole (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), ravenzalone (83), saperconazole (59), sartaconazole (56), sulconazole (38), (tebuconazole (ISO C16H22CIN3O)), terconazole (45) (originally tripaconazole), tioconazole (40), (uniconazole
(ISO C_{13}H_{18}ClN_{3}O), 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)

(a) amebucort (54), anecortave (80), butixocort (63), cicortonide (28), corticotropin (68), corticotropin-zinc hydroxide (68), cortisone (1), cortisuzol (30), cortivazol (23), cortodoxone (15), deflazacort (39) (previously azacort (38)), desoxycortone (4), fluazacort (30), fludrocortisone (6), fludroxicortide (12), fluocortin (31), formocortal (18), hydrocortamate (6), hydrocortisone (1), locicortolone dicibate (60), naficort (50), nicocortonide (40), nivacortol (24), resocortol (74), tixocortol (38)

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

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

**-coxib**  
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))

(a) brocrinat (51), sulicrinat (52)
etacrylic acid (14), furacrinic acid (29), indacrinone (51), tienilic acid (25)

-**crine (d)** \[acridine derivatives\]

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

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-**-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 (18)

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-**-curium** \[see -ium\]

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-**-cycline (d)** \[antibiotics, tetracycline derivatives\]

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

- **(USAN: antibiotics (tetracycline derivatives))**

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

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

-dan cardiac stimulants, pimobendan derivatives

H.1.0.0 (USAN: positive inotropic agents (pimobendan type))

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

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

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

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

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

-deca kin see -kin

-denoson adenosine A receptor agonists

H.0.0.0

apadenoson (94), binodenoson (90), capadenoson (95), regadenoson (91), seladenoson (91), sonadenoson (101), tecadenoson (87)

dermin see –ermin
-dil

vasodilators (18th Report, 1968)

F.2.0.0

(USAN: -dil; dil-; or -dil-: vasodilators (undefined group))

F.2.0.0

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

(c) dilmefone (33)

F.2.1.0

(a) coronary vasodilators: bepridil (30), bumepepidil (44), ecipramidil (40), fendiline (24), fenetradil (30), floredil (28), hexadiline (13), ipramidil (51), mepramidil (27), metrifudil (23), nicorandil (44), pirozadil (33), pretiadil (27), razi-nodil (38), semotiadil (64), sinitrodil (74), terodiline (16), tixadil (l8), trapidil (29)

(c) dilazep (22), diliazem (30)

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

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

-fradil
calcium channel blockers acting as vasodilators

(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)), elgodipine (61), felodipine (44), flordipine (48), isradipine (55), lacidipine (57), lemildipine (69), levamldipine (98), levniguldipine (67), mesudipine (40), nicardipine (42), nifedipine (27), niguldipine (60), niludipine (38), nilvadipine (52), nimodipine (40), nisoldipine (42), nitrendipine (42), olradipine (69), oxodipine (52), riidipine (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), iganidipine (70), lercanidipine (69) (previously masnidipine), manidipine (59), palonidipine (64), pranidipine (66), sornidipine (58)

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

(USAN: -opamine: 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), levdobutamine (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))

\[
\begin{array}{c}
\text{HN} \\
\text{NH}_{2}
\end{array}
\]

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

drine  sympathomimetics (16th Report, 1966)

E.4.0.0

(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), tinoedrine (32), trecadrine (53)
not phenethyamine derivatives: levopropylhexedrine (37), octodrine (19), propylhexedrine (6)

(b) bufenadrine (13) (antiemetic) related chemically, chlormerodrin (4) (diuretic), chlormerodrin (I97 Hg) (24), dieldrin (10) (insecticide), orphenadrine (8) (spasmolytic)
-frine sympathomimetic, phenethyl derivatives

E.4.0.0

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

-dronic acid calcium metabolism regulator, pharmaceutical aid

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

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

-dutant see -tant

-dyl see -dil

-ectin antiparasitics, ivermectin derivatives

(USAN: antiparasitics (ivermectin derivatives))

S.3.0.0

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

-elestat see -stat
-elvekin  see -kin

**USAN**

-emcinal  erythromycin derivatives lacking antibiotic activity, motilin agonists
J.0.0.0  (USAN: erythromycin derivatives lacking antibiotic activity)
(a)  alemcinal (84), idremcinal (81), mitemcinal (86)

-enicokin  see -kin

**USAN**

-entan  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 (99), nebentan (90), sitaxentan (83), tezosentan (81), zibotentan (94)

(-)eptacog  see -cog

**USAN**

**erg**  ergot alkaloid derivatives
F.4.0.0  (USAN: -erg-: ergot alkaloid derivatives)
C.7.0.0
(a)  acertergamine (18), amesergide (67), brazergoline (37), bromerguride (51), cabergoline (54),
cianergoline (47), delergotride (42), dihydroergotamine (16), disulergine (45),
dosergoside (54), ergometrine (4), ergotamine (4), etisulergine (47), lergotrine (32),
lysergide (8), mergocriptine (54), mesulergine (47), metergoline (18), metergotamine (29),
methylergometrine (l), methysergide (11), nicergoline (26), pergolide (41), propisergide (35),
proterguride (50), romergoline (66), sergolexole (60), terguride (50), tiomergine (42),
voxorolide (61)
(b)  ergocalciferol (I3)
**-eridine**

analgesics, pethidine derivatives (14th Report, 1964)

A.4.1.0

(USAN: analgesics (meperidine type))

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

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

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

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

---

**-ermin**

growth factors

U.0.0.0

**-bermin**

vascular endothelial growth factors

(a) telbermin (85)

**-dermin**

epidermal growth factors

(a) murodermin (63), nepidermin (97)

**-fermin**

fibroblast growth factors

(a) ersofermin (66), palifermin (86), repifermin (82), trafermin (74), velafermin (94)

**-filermin**

leukemia-inhibiting factor

(a) emfilermin (82)

**-nermin**

tumour necrosis factor

(a) ardenermin (88), dulanermin (99), plusonermin (73), sonermin (68), tasonermin (76)

**-plermin**

platelet-derived growth factor

(a) becaplermin (74)
-sermin  insulin-like growth factors

(a) mecasermin (66), mecasermin rinfabate (91)

-termin  transforming growth factor

(a) cetermin (74), liatermin (81)

-otermin  bone morphogenic proteins

(a) avotermin (77), dibotermin alfa (89), eptotermin alfa (89), radotermin (92)

Others: dapiclermin (93)

estr  estrogens

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

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

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

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

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

-etanide see -anide

-ethidine see -eridine

-exakin see -kin
-exine  mucolytic, bromhexine derivatives

K.0.0.0  

(a)  adamexine (36), bromhexine (20), brovanexine (31), cistinexine (54), dembrexine (56), neltenexine (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  anti-inflammatory, anthranilic acid derivatives

-acid -fenamate  "fenamic acid" derivatives

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

A.4.2.0  

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

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

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

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

(c)  flutiazin (22)

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

U.1.0.0  

(a)  arclofenin (52), butilfenin (41), disofenin (43), etifenin (43), galtifenin (59), lidofenin (39), mebrofenin (47)
-fenine  analgesics, glafenine derivatives (subgroup of fenamic acid group)
(USAN: -fenine: analgesics (fenamic acid subgroup))

A.4.3.0

\[
\begin{align*}
\text{O} & \text{O} \\
\text{NH} & \\
\text{Cl} & \\
\end{align*}
\]

(a)  antrafenine (35), floctafenine (24), florifene (50), glafenine (15), nicafenine (40)
(b)  spasmolytic diphenylacetates: adiphenine (1), drofenine (26)
other: buphenine (8) (vasodilator), cifenine (27) (antidepressant)

-fentanil  narcotic analgesics, fentanyl derivatives

A.4.1.0

\[
\begin{align*}
\text{H}_3\text{C} & \text{O} \\
\text{N} & \\
\text{NO} & \\
\end{align*}
\]

(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), tolafentrine (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 (x) clofibrate derivatives

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

\[
\begin{align*}
\text{OC} & \quad \text{H}_3 \quad \text{Cl} \\
\text{H}_3 & \quad \text{C} \quad \text{H}_3 \\
\text{O} & \quad \text{O}
\end{align*}
\]

(a) bezafibrate (35), biclofibrate (28), binifibrate (44), choline fenofibrate (97), ciprofibrate (36), clinofibrate (39), dulofibrate (43), etofibrate (31), fenofibrate (35), lifibrate (30), nicofibrate (31), picafibrate (35), ponfibrate (37), ronifibrate (55), salafibrate (41), serfibrate (34), simfibrate (22), sitofibrate (32), tiafibrate (33), timofibrate (40), tocofibrate (33), urefibrate (37), xantifibrate (31)

clofibric acid (20), clofibrate (13), aluminium clofibrate (31), calcium clofibrate (34), cinnarizine clofibrate (38), etofylline clofibrate (38), magnesium clofibrate (31)

clofibride (28), plafibrate (39)

related: arhalofenate (101), beclobrate (35), eniclobrate (39), gemfibrozil (34), halofenate (20), lifibril (62), metibride (53), terbufibril (35), tibric acid (33), (fibrafylline (43) deleted)

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

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

-flermin see -ermin

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

K.0.0.0
J.0.0.0

quiflapon (72), veliflapon (95)

-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), enflurane (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))

![Chemical structure of phenformin](image)

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

---

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

S.3.1.0 (Y.0.0.0)

1. **organophosphorous derivatives:**

   ![Chemical structure of organophosphorous derivatives](image)

   (a) **vet. insecticides:**

   quintiofos (25)

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

   (c) **vet. insecticides and anthelminthics:**

   metrifonate (16)

   **anthelmintic:** butonate (30)

2. **phosphates:**

   ![Chemical structure of phosphates](image)

   (a) **vet. insecticides:**

   clofenvinfos (23)

   **vet. anthelminthics:**

   bromofenofos (43), dichlorvos (28), naftalofos (16)
anthelminthics: vincofos (28)

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

(c) vet. anthelminthics:

fospirate (21), haloxon (16)

3. phosphorothioates:

\[
\begin{array}{c}
S \quad O \quad O \\
R \quad R' \\
\end{array}
\]

vet. insecticides:

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

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

4. phosphorodithioates:

\[
\begin{array}{c}
S \quad S \quad O \\
R \quad R' \\
\end{array}
\]

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

(c) carbofencatin (23) (vet. insecticide), dioxation (l6) (vet. insecticide), (malathion (46) (deleted!))

5. phosphoramidates

\[
\begin{array}{c}
N \quad H \\
R \quad R' \\
\end{array}
\]

crufomate (16), uredofos (37)

antihelmintic:

imcarbofos (44)

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

- fos-
alafosfalin (41), amifostine (44), belfosdil (61), benfosformin (29), butafosfan (38),
cifostodine (50), creatinolfosfate (20), dextrofosfoserine (68), feripfosate sodium (69),
furifosmin (70), monophosphothiamine (8), sodium picofosfate (37), sparfosic acid (46),
technetium (^{99m}Tc), tetrofosmin (66), trifosmin (74)
-fosfamide: alkylating agents of the cyclophosphamide group
(USAN: isophosphoramidum mustard derivatives)
canfosfamide (92), cyclophosphamide (10), defosfamide (12), glufosfamide (77),
ifosfamide (23), mafosfamide (51), palifosfamide (99), perfosfamide (66), sufosfamide
(36), trofosfamide (23)

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

fos-
fosalsaludine tidoxil (95), fosamprenavir (83), fosaprepitant (94), fosarilate (53), fosazepam
(27), fosbetabulin (100), foscarnet sodium (42), foscolic acid (12), fosenazide (48),
fosfentrol (15), fosfluconazole (83), fosfluridine tidoxil (93), fosfoacetinamidum (50),
fosfomycine (25), fosfonet sodium (35), fosfosal (37), fosfructose (81), fosinopril (69),
fosinoprilat (62), fosmenic acid (49), fosmidomycine (46), fosopamine (69), fosphenytoin
(62), fospirate (21), fospropofol (100), fosquidone (64), fostamatinib (100), fostedil (51),
fostricin (55), fosveset (83)

-fovir see vir

-fragil see -dil

-frine see -drine

-fungin antifungal antibiotics (19th Report, 1968)
S.6.0.0 (USAN: antifungal antibiotics (undefined group))
S.4.3.0
(a) abafungin (74), anidulafungin (81), basifungin (72), caspofungin (80), cilofungin (60),
fusafungine (15), kalafungin (20), micafungin (84), nifungin (24), oxifungin (40),
sinefungin (39), triafungin (40)

-fylline N-methylated xanthine derivatives
B.1.0.0 (USAN: theophylline derivatives)

(a) aceffylline clofibrol (44), aceffylline piperazine (14), albifylline (66), aminophylline (4),
apaxifylline (71), arofylline (75), bamifylline (15), cipamfylline (71), denbufylline (55),
dimabefylline (19), diniprofylline (18), diprophylline (1), doxofylline (47), enprofylline (44), etamiphylline (6), etofylline (14), etofylline clofibrate (38), fibrafylline (43) (deleted), flufylline (48), fluropofylline (50), furafylline (48), guaifylline (16), isbufylline (62), istradefylline (89), laprafylline (60), lisoxylline (72), lonifylline (37), mercurophylline (1), metescufylline (15), mexaffylline (48), midaxifylline (79), naxifylline (86), nestifylline (64), pentifylline (29), pentoxifylline (29), pr Rufbufylline (58), pimefylline (21), propentofylline (46), proxyphylline (10), pyridofylline (14), rolotyline (98), spirofylline (58), stacofylline (73), tazifylline (52), thyrophylline ephedrine (14), torfaylline (56), tri clofylline (19), verofylline (43), visna fylline (24), choline theophyllinate (8), fenetyl line (16)

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

radicals and groups: teprosilate (29)

USAN

gab gabamimetic agents
E.0.0.0

(a) fengabine (53), gabapentin (46), gabapentin enacarbil (94), gaboxadol (48) (used as analgesic), imagabalin (101), lesogaberan (100), pivagabine (66), pregabalin (78), progabide (43) (used as antiepileptic), retigabine (76), tiagabine (63), tolgabide (53), vigabatrin (52) (anticonvulsants)

(b) gabexate (35) (proteolytic)

USAN
gado- 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), gadomelitoll (85), gadopenamide (60), gadopentetic acid (50), gadoteric acid (59), gadoversetamide (71), gadoxetic acid (71)

USAN

-gatran thrombin inhibitors, antithrombotic agents
I.2.0.0 (USAN: thrombin inhibitors (argatroban type))

(a) dabigatran (83), dabigatran etexilate (87), efegatran (71), flovagatran (97), inogatran (72), melagatran (74), napsagatran (72), sofogatran (95), ximelagatran (84)

(c) argatroban (57)
-gene  gene therapy products (see also Annex 4)

A two-word name approach has been selected:

**Word 1**  -gene  gene component

- *ermin(o)*- growth factor
  - *kin(o)*- interleukin
  - *lim(o)*- immunomodulator
  - *mul*- multiple gene
  - *tusu*- tumour suppression

**Word 2**  -vec  vector component is a virus
       - *revec*- replicating viral vector

- *adeno*- adenovirus
- *cana*- canarypox 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 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), golnerminogene pradenovec (101), riferminogene pecaplasmid (100), sitimagene ceradenovec (97), taberminogene vadenovec (100), tipapkinogene sovaci vec (101), velimogene aliplasmid (97)

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**gest (x)**  steroids, progestogens

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

(a) altrenogest (46), anagastone (16), cingestol (20), clogestone (21), clomegestone (20), demegestone (24), desogestrel (38), dnxorgestrel (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), levonorgestrel (33) (previously dnxorgestrel), medrogestone (15), medroxyprogesterone (10), medoxyprogesterone (10), medrogestone (15), megestrol (13), melengestrol (13), metogest (33), norelgestromin (83), norgesterone (14), norgestimate (35), norgestomet (32), norgestrel (17), norgestrienone (18), oxogestone (19), pentagestrone (14), progesterone (4), proligestone (28), promegestone (38), quingestanol (15), quingestrone (13), tigestol (20), tosagestin (86), trenggestone (22), trimegestone (66)
(b) algestone (22) (glucorticoid)

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

-gestr- see estr

-giline MAO-inhibitors type B

C.3.1.0

(a) clorgiline (23), mofegiline (69), pargiline (13), rasagiline (70), selegiline (39)

-gillin antibiotics produced by Aspergillus strains (16th Report, 1966)

S.6.0.0

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

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

gli (x) antihyperglycaemics

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

(a) 1. sulphonamide derivatives: gliamilide (33), glibencamamide (18), glibornuride (22), glibutimine (31), glicaramide (28), glicetanile (37), gliclazide (25), (deleted: glidanile (23)), glicocondamide (44), gidazamide (24), gliflumide (33), glimepiride (53), glipalamide (62), glipizide (27), gliquidone (28), glisamuride (45), glisentide (58) (previously glipentide (27)), glisindamide (43), glisolamide (43), glisoxepide (24), glybuthiazol (8), glybuzole (15), glyclopyramide (17), glycyclamide (12), glyhexamide (15), glymidine sodium (15), glyoctamide (14), glyparamide (USAN only), glypinamide (13), glyprothiazol (8), glysobuzole (12)

2. other than sulphonamide derivatives: atigliflozin (100), camiglibose (67), dapagliflozin (97), deriglidole (66), emiglitate (55), imeglimin (98), ingliforib (85), isaglidole (61), limiglidole (100), linogliride (48), managlinat dialanetil (96), meglitinide (34), midaglizole (57), miglotil (55), mitiphalide (78), naglivan (65), nateglinide (77), piraglatin (97), piroglinride (40), remogliflozin etabonate (98), repaglinide (65), sergliflozin etabonate (98), teglicar (91), tibeglisene (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), tropigline (08)

(c) acetohexamide (12), butadiazamide (10), carbutamide (36), chlorpropamide (8), heptolamide (12), metahexamide (10), palmoxiric acid (48), thiohexamide (12), tolazamide (12), tolbutamide (6), tolpentamide (12), tolpyramide (13)

gly-
(a) glybuthiazol (08), glybuzole (15), glyclopyramide (17), glycyclamide (13), glyhexamide (15), glymidine sodium (15), glyoctamide (14), glypinamide (13), glyprothiazol (08), glysobuzole (12)

(c) glycerol (4), glycobiarsol (l), glycopyrronium bromide (12)

dipeptidyl aminopeptidase–IV inhibitors

M.5.2.0

(a) alogliptin (96), carmegl iptin (98), denagliptin (94), dutogliptin (100), gosogliptin (101), linagliptin (99), melogliptin (99), saxagliptin (92), sitagliptin (94), teneligliptin (99), vildagliptin (90)

peroxisome proliferator activating receptor (PPAR) agonists

(USAN: PPAR agonists (not thiazolidene derivatives))

M.5.2.0

(a) aleglitazar (95), cevoglitazar (94), farglitazar (84), imiglitazar (91), indeglitazar (100), muroglitazar (90), naveglitazar (92), oxeglitazar (88), peliglitazar (92), pemaglitazar (92), ragaglitazar (85), reglitazar (87), sipoglitazar (93), sodelglitazar (95), tesaglitazar (85)

peroxisome proliferator activating receptor (PPAR) 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), netoglitazone (85), pioglitzzone (60), rivoglitazone (87), rosiglitazone (78), troglitazone (69)

(c) inolitazone (99)

dipeptidyl aminopeptidase–IV inhibitors

M.5.2.0

(a) alogliptin (96), carmegl iptin (98), denagliptin (94), dutogliptin (100), gosogliptin (101), linagliptin (99), melogliptin (99), saxagliptin (92), sitagliptin (94), teneligliptin (99), vildagliptin (90)

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peroxisome proliferator activating receptor (PPAR) agonists, thiazolidinedione derivatives

(USAN: PPST agonists (thiazolidene derivatives))

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(a) ciglitazone (50), balaglitazone (84), darglitazone (69), edaglitazone (91), englitazone (64), lobeglitazone (95), netoglitazone (85), pioglitzzone (60), rivoglitazone (87), rosiglitazone (78), troglitazone (69)

(c) inolitazone (99)
-glitazar  see gli

-glitazone  see gli

-glumide  cholecystokinin antagonists, antiulcer, anxiolytic agents

J.0.0.0/C.1.0.0

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

-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

(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), regrelor (97), ridogrel (59), rolafagrel (65), samixogrel (72), sarpogrelate (63), satigrel (67), sunagrel (52), terbogrel (75), ticagrelor (95), trifenagrel (53)
**guan-** anti hypertensives, guanidine derivatives

H.3.0.0

![Guanidine Derivatives](https://example.com/guanidine.png)

(a) guanabenz (26), guanaccline (l6), guanadrel (20), guanazodine (27), guancidine (18), guanclofine (36), guanethidine (11), guanfacine (35), guanisoquine (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))

![Isoxicam Derivatives](https://example.com/isoxicam.png)

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

**-ifene** antiestrogens, clomifene and tamoxifen derivatives

(Q.2.1.0 L.6.0.0)

![Clomifene and Tamoxifen Derivatives](https://example.com/clomifene.png)

(a) acolbifene (86), clomifenoxide (54), tesmilifene (81)

-oxifene: afimoxifene (95), arzoxifene (80), bazedoxifene (86), droloxifene (53), idoxifene (68), lasofoxifene (81), levormeloxifene (73), miproxifene (74), ormelo xifene (69), pipendo xifene (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), zuclo xifene (33)

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

(c) nafo xidine (16)
### USAN: The use of stems

<table>
<thead>
<tr>
<th>Stems</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-getide</td>
<td>see -tide</td>
</tr>
<tr>
<td>-ilide</td>
<td>class III antiarrhythmics, sematilide derivatives</td>
</tr>
</tbody>
</table>

H.2.0.0  (USAN: class III antiarrhythmic agents)

![Chemical Structure](image_url)

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

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

<table>
<thead>
<tr>
<th>Imex (d)</th>
<th>Immunostimulants</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.7.0.0</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Imibe</th>
<th>Antihyperlipidaemics, acyl CoA: cholesterol acyltransferase (ACAT) inhibitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.3.0.0</td>
<td></td>
</tr>
</tbody>
</table>

(a) avasimibe (80), canosimibe (100), eflucimibe (84), eldacimibe (76), ezetimibe (83), lecimibide (70), octimibate (52), pactamibe (89)

<table>
<thead>
<tr>
<th>Imod</th>
<th>Immunomodulators, both stimulant/suppressive and stimulant</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.7.0.0</td>
<td>(USAN: immunomodulators)</td>
</tr>
</tbody>
</table>

(a) agatolimod (98), apilimod (95), atiprimod (75), cridanimod (83), defoslimod (79), epetirimod (97), fingolimod (91), golotimod (97), esonarimod (79), glaspimod (74), iguratimod (86), imiquimod (66), ivarimod (60), laquinimod (85), litenimod (96), paquinimod (94), pidotimod (63), rabeximod (97), resiquimod (82), sotirimod (94), susalimod (73), tasquinimod (93), tiprotimod (57)

<table>
<thead>
<tr>
<th>Mapimod</th>
<th>Mitogen-activated protein (MAP) kinase inhibitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) balamapimod (96), bentamapimod (98), doramapimod (88), losmapimod (101), pamapimod (96), talmapimod (99), semapimod (89)</td>
<td></td>
</tr>
</tbody>
</table>
**-imus**  
immunosuppressants (other than antineoplastics)  

S.7.0.0  
(USAN: immunosuppressives)  

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

**-rolimus**  
immunosuppressants, rapamycin derivatives  

(a)  
everolimus (82), pimecrolimus (81), ridaforolimus (101), sirolimus (69), tacrolimus (66), temsirolimus (94), zotarolimus (94)  

**-ine (d)**  
alkaloids and organic bases  

(a)  
1638 (20.8%) INNs ending in -ine in Lists 1-101 of proposed INNs  

**-inostat**  
see stat  

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

U.1.1.0  

(a)  
iobenzamic acid (14), iobitridol (68), iobutoic acid (20), iocarmic acid (22), iocetamic acid (18), iodamide (15), iodecimol (51), iodetryl (1), iodixanol (53), iodophthalein sodium (1), iodoxamic acid (26), iofendylate (12), iofratol (67), ioglicic acid (33), ioglucol (41), ioglucosmodified acid (41), ioglutamide (40), ioglycamic acid (15), iohexol (43), iolidonic acid (26), iolixamic acid (26), iomeglamic acid (26), iomepryl (54), iomorinic acid (37), iopamil (40), iopanoic acid (1), iopentol (52), iopheenoic acid (4), ioprocemic acid (39), iopromide (44), iopronic acid (28), iopydol (14), iopydone (14), iosarcol (54), iosefamic acid (14), ioseric acid (33), iosomalenol (88), iosimide (50), iotamic acid (13), iotasulamide (39), iotameric acid (33), iotalamic acid (13), iotaseulamide (43), iotaticric acid (37), iotiatric acid (28), iotriside (60), iotrizonic acid (22), iotrolan (51), iotroxic acid (32), ioversol (56), ioxabrolic acid (53), ioxaglic acid (37), ioxilan (59), ioxitamic acid (22), ioxotrizoic acid (33), ioxonic acid (24)  

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

**io(d)/-io-**  
radiopharmaceuticals, iodine-contained  

(a)  
eothiodized oil (131I) (24), iobenguane (131I) (57), iocanalidic acid (123I) (77), iodinated (125I) human serum albumin (24), iodinated (131I) human serum albumin (24), iodine (124I)
girentuximab (101), iodicetylic acid $^{(123)\text{I}}$ (47), iodocholesterol $^{(131)\text{I}}$ (39), iodofiltic acid $^{(125)\text{I}}$ (95), iofoetamine $^{(123)\text{I}}$ (51), ioflupane $^{(123)\text{I}}$ (75), iopropide $^{(123)\text{I}}$ (73), iomazenil $^{(123)\text{I}}$ (66), iometin $^{(125)\text{I}}$ (24), iometin $^{(131)\text{I}}$ (24), iometopane $^{(123)\text{I}}$ (76), sodium iodide $^{(125)\text{I}}$ (24), sodium iodide $^{(131)\text{I}}$ (24), sodium iodohippurate $^{(131)\text{I}}$ (24), sodium iodotalamate $^{(125)\text{I}}$ (24), sodium iodotalamate $^{(131)\text{I}}$ (24)

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

<table>
<thead>
<tr>
<th>USAN</th>
<th>-irudin hirudin derivatives</th>
</tr>
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<tbody>
<tr>
<td>I.2.1.0</td>
<td>(USAN: anticoagulants (hirudin type))</td>
</tr>
<tr>
<td></td>
<td>bivalirudin (72), desirudin (70), lepirudin (73), pegmusirudin (77)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USAN</th>
<th>-isome antiarrhythmics, disopyramide derivatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.2.0.0</td>
<td></td>
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<td></td>
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<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>(a) actisomide (60), bidisomide (63), pentisomide (59)</td>
</tr>
<tr>
<td></td>
<td>(c) disopyramide (12)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BAN, USAN</th>
<th>-ium (x) quaternary ammonium compounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.3.0.0</td>
<td>(USAN: -ium or -onium: quaternary ammonium derivatives)</td>
</tr>
<tr>
<td></td>
<td>neuromuscular blocking agents with a flexible structure</td>
</tr>
<tr>
<td></td>
<td>(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), prodecenonium bromide (6), stilonium iodide (32), suxamethonium chloride (1), suxethonium chloride (1), tetrylammonium bromide (1), tiametonium iodide (15), trepirium iodide (25)</td>
</tr>
<tr>
<td></td>
<td>(c) gallamine triethiodide (1)</td>
</tr>
<tr>
<td>E.3.0.0</td>
<td>neuromuscular blocking agents with rigid structure</td>
</tr>
<tr>
<td></td>
<td>(USAN: -curium, also -curonium; neuromuscular blocking agents; quaternary also ammonium compounds)</td>
</tr>
</tbody>
</table>
(a) -curonium: alcuronium chloride (17), candocuron iodide (70), dacuronium bromide (21), pancuronium bromide (19), pipercuronium 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: dimethyltubocurarinium chloride (1), fazadinium bromide (32), hexafluronium bromide (12), laudexium metilsulfate (4), pentacynium 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), ecothiope iodide (6), neostigmine bromide (4), obidoxime chloride (16), pralidoxime iodide (10), pyridostigmine bromide (6)

E.2.0.0 anticholinergic agents

(a) aclidinium bromide (95), benzilonium bromide (13), benzopyrronium bromide (12), beperidium (57), bevonium metilsulfate (19), butropium bromide (30), ciclorynium bromide (19), ciclotropium bromide (50), cimetropium bromide (51), clidinium bromide (6), cyclopyrronium bromide (12), dimetipirium bromide (37), diponium bromide (15), dotefonium bromide (24), droclidinium bromide (33), empreronium bromide (18), etipirium iodide (22), fencluxion metilsulfate (20), fenpiveninium bromide (26), fentonium bromide (29), flutropium bromide (50), glycopyrronium bromide (12), heteronium bromide (14), hexasonium iodide (15), hexocyclium metilsulfate (6), hexopyrronium bromide (13), irapatropium bromide (31), methathelinium bromide (1), methylbenactyzium bromide (34), metocinium iodide (26), nolinium bromide (37), otilonium bromide (38), oxapium iodide (26), oxitifenonium bromide (18), oxitropium bromide (36), oxyphrenonium bromide (1), oxypyrroabumin bromide (13), oxysounium iodide (15), pentapiperium metilsulfate (26), prifinium bromide (20), ritopirronium bromide (33), sintropium bromide (47), sulprotonium (18), tematropium metilsulfate (64), tiemonium iodide (13), timepidium bromide (29), tiotropium bromide (67), tiquizium bromide (47), trantelinium bromide (24), trospium chloride (25), xenytropium bromide (15)

(c) atropine methonitrate (4), buzepide metiodide (14), chlorisondamine chloride (6), diphenamyl metilsulfate (4), homatropine methylbromide (1), isoamipramide iodide (8), mepenzolate bromide (10), octatropine methylbromide (10), parapenzolate bromide (14), pipenzolate bromide (6), poldine metilsulfate (11), propantheline bromide (1),
propyromazine bromide (12), tridihexyl iodide (6), tropenziline bromide (11), thihexinol methylbromide (1), tricyclamol chloride (4)

S.2.3.0 surfactants used as antibacterials and antiseptics

(a) acriflavinium chloride (1), amantanium bromide (39), benzalkonium chloride (1), benzethonium chloride (1), benzdodecinium chloride (1), benzoxonium chloride (36), cefalonium (16), cefmepidium chloride (57), cetalkonium chloride (15), cethexonium chloride (36), cetromonium bromide (1), cetpyridinium chloride (1), chlorphenocitum amsonate (8), deditonium bromide (15), denatonium benzoate (15), dequalinium chloride (8), disiquonium chloride (55), dodeclonium bromide (16), dofamium chloride (21), fludazonium chloride (33), furazolium chloride (15), halopenium chloride (10), hedquaunium chloride (8), lapirium chloride (27), lauralkonium chloride (62), laurctium bromide (70), laurolinium acetate (12), mececronium etilsulfate (51), metalkonium chloride (60), methylbenzethonium chloride (1), methylrosanilinium chloride (1), methylthioninium chloride (1), miripirium chloride (63), miristalkonium chloride (41), octafonium chloride (16), opratonium iodide (76), penocontonium bromide (20), pirralkonium bromide (19), polidronium chloride (67), polixetonium chloride (70), prolonium iodide (14), sanguinarium chloride (68), sepaconium chloride (34), tetradonium bromide (18), tibezonium iodide (32), tidonium chloride (36), toloconium methilsulfate (17), tonzonium bromide (14), triclobisonium chloride (10)

(c) domiphen bromide (23)

other agents

alagebrum chloride (91), albitiazolium bromide (101), amezinium metilsulfate (36), amprolium chloride (16), azaspirium chloride (25), bephenium hydroxynaphthoate (11), bibenzonium bromide (12), bidimazium iodide (27), bretylum tosilate (10), butopyrammonium iodide (8), carcainium chloride (36), clofilium phosphate (42), datelliptium chloride (57), detajmium bitartrate (34), dibropidium chloride (51), ditercalimum chloride (49), edrophonium chloride (4), elliptinium acetate (43), emilium tosilate (37), enismium iodide (101), famaprumin chloride (58), fenodium chloride (23), gallium ($^{67}$Ga) 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), prajmalium bitartrate (23), pranolium chloride (32), pretemazium iodide (29), propagermanium (65), prospidium chloride (22), pyritidium bromide (16), pyrvinium chloride (6), quindonium bromide (14), quinuclium bromide (40), repagermanium (63), rimazolium metilsulfate (26), roxolinium metilsulfate (33), samarium ($^{155}$Sm) lexidronam (74), sevitropium mesilate (56), spirogermanium (43), stilbazium iodide (13), thenium closilate (12), tipetropium bromide (42), tolonium chloride (4), trazium esilate (54), trethinium tosilate (14), troxonium tosilate (13), troxypyrrolium tosilate (13)

(c) alazanine triclofenate (13) (anthelmintic), colfosceril palmitate (64) (pulmonary surfactant), dithiazanine iodide (8) (anthelmintic), hexadimethrine bromide (8) (heparin antagonist)
-izine **diphenylmethyl piperazine derivatives**

\[
\begin{array}{c}
\text{A'} \\
\text{N} \\
\text{R} \\
\text{A''}
\end{array}
\]

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

homochlorcyclizine (10) (serotonin antagonist)

**tranquillizers**: etodroxizine (18), hydroxyzine (6)

**various**: benderizine (40) (antiarrhythmic), declozizine (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), triamypyzine (15) (anticholinergic)

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

(c) medibazine (16)
-kacin  
**antibiotics, kanamycin and bekanamycin 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) bekanamycin (24), kanamycin (10)

**other aminoglycoside antibiotics:**

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

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

*Bacillus circularis*: butirosin (25)

-kalant  
**potassium channel blockers**

(USAN: potassium channel antagonists)

H.2.0.0

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

-kalim  
**potassium channel activators, antihypertensive**

(USAN: potassium channel agonists)

H.3.0.0

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

(USAN: enkephalin agonists (various indications))

casokefamide (65), frakefamide (81), metenkefalin (97), metkefamide (44)

### USAN -kin interleukin type substances

S.7.0.0

<table>
<thead>
<tr>
<th>IL</th>
<th>-kin</th>
<th>interleukin type substances</th>
</tr>
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<tbody>
<tr>
<td>(a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IL-1</td>
<td>-nakin</td>
<td>interleukin-1 analogues and derivatives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-onakin: interleukin-1 ( \alpha ) analogues and derivatives: pifonakin (77)</td>
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<tr>
<td></td>
<td></td>
<td>-benakin: interleukin-1 ( \beta ) analogues and derivatives: mobenakin (72)</td>
</tr>
<tr>
<td>IL-2</td>
<td>-leukin</td>
<td>interleukin-2 analogues and derivatives: adargileukin alfa (89), aldesleukin (63), celmoleukin (65), denileukin difitox (78), teceleukin (54)</td>
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<tr>
<td></td>
<td></td>
<td>pegaldesleukin (67), tucotuzumab celmoleukin (95)</td>
</tr>
<tr>
<td>IL-4</td>
<td>-trakin</td>
<td>interleukin-4 analogues and derivatives: binetrakin (82)</td>
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<tr>
<td>IL-6</td>
<td>-exakin</td>
<td>interleukin-6 analogues and derivatives: atexakin alfa (72)</td>
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<tr>
<td>IL-8</td>
<td>-octakin</td>
<td>interleukin-8 analogues and derivatives: emoctakin (74)</td>
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<tr>
<td>IL-10</td>
<td>-decakin</td>
<td>interleukin-10 analogues and derivatives: ilodecakin (81)</td>
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<tr>
<td>IL-11</td>
<td>-elvekin</td>
<td>interleukin-11 analogues and derivatives: oprelvekin (76)</td>
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<tr>
<td>IL-12</td>
<td>-dodekin</td>
<td>interleukin-12 analogues and derivatives: edodekin alfa (79)</td>
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<td>IL-13</td>
<td>-tredexin</td>
<td>interleukin-13 analogues and derivatives: cintredexin besudotox (92)</td>
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<td>IL-18</td>
<td>-octadekin</td>
<td>interleukin-18 human analogues and derivatives: iboctadekin (92)</td>
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<td>tadekinig alfa (90) (fraction of IL-18 human)</td>
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<td>II-21</td>
<td>-enicokin</td>
<td>interleukin-21 human analogues and derivatives: denenicokin (99)</td>
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<td>(c)</td>
<td>IL-3:</td>
<td>-plestim: interleukin-3 analogues and derivatives:</td>
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<td>muplestim (72), daniplestim (76)</td>
</tr>
<tr>
<td>Stems</td>
<td>Description</td>
<td>Examples</td>
</tr>
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<tr>
<td>-kinra</td>
<td>interleukin receptor antagonists</td>
<td>IL-1 -nakinra interleukin-1 receptor antagonists: anakinra (72)</td>
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<td></td>
<td></td>
<td>IL-4 -trakinra interleukin-4 receptor antagonists: pitrakinra (84)</td>
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<tr>
<td>-kiren</td>
<td>renin inhibitors</td>
<td>H.3.0.0</td>
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<td>(a) aliskiren (83), ciprokiren (69), ditekiren (62), enalkiren (61), remikiren (66), terlakiren (66), zankiren (70)</td>
</tr>
<tr>
<td>-lefacept</td>
<td>see -cept</td>
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<td>-leukin</td>
<td>see -kin</td>
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<td>-listat</td>
<td>see -stat</td>
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<tr>
<td>-lubant</td>
<td>leukotriene B4 receptor antagonists</td>
<td>USAN</td>
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<td>U.3.0.0</td>
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<tr>
<td></td>
<td></td>
<td>(a) amelubant (85), moxilubant (78), ticolubant (76)</td>
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<td>-lukast</td>
<td>leukotriene receptor antagonists, see -ast</td>
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<td>-lutril</td>
<td>see -tril</td>
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</table>
**-mab**  **monoclonal antibodies** (see also Annex 3)

S.7.0.0

-**amab**  rat origin

-**emab**  hamster origin

-**imab**  primate origin

-**omab**  **mouse origin:**

  - **ba(c)**  **bacterial:** edobacomab (69)

  - **co(l)**  **colon:** edrecolomab (74), nacolomab tafenatox (71)

  - **go(v)**  **ovary (tumours):** abagovomab (95), igovomab (74), oregovomab (86)

  - **li(m)**  **lymphocyte:** afelimomab (72), dorlimomab aritox (66), elsimimomab (89), enlimomab (70), enlimomab pegol (77), faralimomab (76), gavilimomab (84), inolimomab (71), maslimomab (66), nerelimomab (76), odulimomab (73), telimomab aritox (66), vepalimomab (80), zolimomab aritox (69)

  - **ci(r)**  **cardiovascular:** biciromab (66), imciromab (66)

  - **le(s)**  **inflammatory lesions:** besilesomab (92), lemalesomab (84), sulesomab (75), technetium (99mTc) fanolesomab (86)

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

  - **tu(m)**  **tumour (miscellaneous):** anatumomab mafenatox (79), arcitumomab (74), altumomab (68), bectumomab (75), binitumomab (100), detumomab (70), epitumomab (82), epitumomab cituxetan (89), ibritumomab tiuxetan (81), minretumomab (80), mitumomab (82), naptumomab estafenatox (96), racotumomab (100), satumomab (67), taplitumomab paptoc (84), technetium (99mTc) nofetumomab merpentan (76), technetium (99mTc) pintumomab (75), tenatumomab (98), tositumomab (80)

  **Others:** catomaxomab (92), ertumaxomab (92)

-**umab**  **human origin:**

  - **ba(c)**  **bacterial:** nebacumab (66), raxibacumab (92)

  - **ci(r)**  **cardiovascular:** ramucirumab (100)

  - **fung**  **fungal:** efungumab (95)
**ki(n)** interleukin: briakinumab (101), canakinumab (97), fezakinumab (101), ustekinumab (99)

**li(m)** immunomodulator: adalimumab (82), adegatumumab (90), aterolimumab (80), fresolimumab (101), golimumab (91), belimumab (89), bertilimumab (88), ipilimumab (94), lerdelimumab (83), metelimumab (86), morolimumab (79), pritumumab (89), sifalimumab (101), tremelimumab (97), zanolimumab (90), ziralimumab (84)

**os** bone: denosumab (94)

**tu(m)** tumour: cixutumumab (100), conatumumab (99), daratumumab (101), figitumumab (100), intetumumab (101), iratumumab (94), lexatumumab (95), lucatumumab (98), mapatumumab (93), necitumumab (100), ofatumumab (93), panitumumab (96), rilotumumab (101), robatumumab (100), teprotumumab (101), votumumab (70), zalutumumab (93)

**vi(r)** viral: exbivirumab (91), foravirumab (99), libivirumab (91), rafivirumab (99), regavirumab (71), sevirumab (66), tuvirumab (66)

**Other:** stamulumab (94), gantenerumab (97)

**-ximab** chimeric origin

**ba(c)** bacterial: pagibaximab (93)

**ci(r)** cardiovascular: abciximab (70), volociximab (93)

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

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

**tu(m)** tumor: girentuximab (101), bavituximab (95), cetuximab (82), iodine (124I) girentuximab (101), rituximab (77), siltuximab (100)

(c) muromonab CD3 (59), otelixizumab (98)

**-zumab** humanized origin

**anib** angiogenesis inhibitor: ranibizumab (90)

**ba(c)** bacterial: tefibazumab (92)

**ci(r)** cardiovascular: alacizumab pegol (98), bevacizumab (83), etaracizumab (99), tadocizumab (94)

**ki(n)** interleukin: anrakinzumab (98), lebrikizumab (101)
li(m) lymphocyte: apolizumab (87), aselizumab (88), certolizumab pegol (90), daclizumab (78) (previously: dacliximab), eculizumab (87), efalizumab (85), erlizumab (84), fontolizumab (87), ibalizumab (97), mepolizumab (81), Natalizumab (79), ocrelizumab (94), omalizumab (84), palizumab (79), pascolizumab (87), pexelizumab (85), reslizumab (85), rontalizumab (101), rovelizumab (81), ruplizumab (83), sipilizumab (87), talizumab (89), teplizumab (97), tocilizumab (90), toralizumab (87), vedolizumab (100), visilizumab (84)

toxa toxin as target: urtoxazumab (90)

tu(m) tumor: (miscellaneous): alemtuzumab (83), bivatuzumab (83), cantuzumab mertansine (89), cedelizumab (77), citatuzumab bogatox (99), dacetuzumab (98), elotuzumab (100), epratuzumab (82), farletuzumab (100), gemtuzumab (83), inotuzumab ozogamicin (92), labetuzumab (85), lintuzumab (76), matuzumab (88), milatuzumab (98), obinutuzumab (101), oportuzumab monatox (100), pertuzumab (89), sibrotuzumab (81), tucotuzumab celmoleukin (94), tigatuzumab (98), trastuzumab (78), veltuzumab (98), yttrium (90Y) tacatuzumab tetraxetan (93)

vi(r) viral: felvizumab (77), motavizumab (95)

Other: bapineuzumab (93), otelixizumab (98), solanezumab (100), tanezumab (99)

**USAN**

-mantadine -mantine -mantone (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) (β-adrenoreceptor antagonist), adatanserin (70) (serotonin receptor antagonist), amantanim bromide (39) (disinfectant), **amanocillin** (17) (antibiotic), 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)

USAN

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

\[
\text{CH}_3 \quad \text{O} \quad \text{CH}_3
\]

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

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

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

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

(b)  N.1.3.0 diuretic: chlormerodrin (4), chlormerodrin (\(^{197}\)Hg) (24), meralluride (1), mercaptopermethin (1), mercuteramide (1), mercumatilin sodium (4), mercurophylline (1), merisoprol (\(^{197}\)Hg) (24) (diagnostic), mersaly (4)

(c)  difemirine (17) (spasmolytic), dimercaprol (1) (antidote, -SH group), lomerizine (68), (cerebral vasodilator), mercaptopurine (6) (cytostatic, -SH group), nifurmethone (16), pemerid (25), suxemear (25) (antitussive)

(c)  hydrargaphen (10)

-mer  polymers

(a)  amilomer (33), azoximer bromide (97), bixalomer (101), cadexomer (60), carbetimer (50), carbron (21), crilanomer (59), dextranomer (33), eldexomer (60), exatecan alideximer (89), hemoglobin glutamer (80), hemoglobin raffimer (89), leuciglumer (68), maletamer
(14), poloxamer (34), porfimer sodium (64), sevelamer (77), surfomer (44), 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)

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

-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))

(a) acemetacin (32), cinmetacin (24), clometacin (27), delmetacin (48) (originally demetacin (42)), duometacin (27), glucametacin (32), indometacin (13), nioetacin (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 antibiotics obtained from various Micromonospora

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

astromicin (44), betamicin (38), etisomicin (47), evernimicin (82), fidaxomicin (100), gentamicin (22), isepamicin (54), maduramicin (52), megalomicin (37), micronomicin (45), miroisamicin (58), netilmicin (36), ozogamicin (83), pentisomicin (41), reppromicin (37), rosamicin (41) (prev. rosamicin), semduramicin (60), sisomicin (25)
-mifene  see -ifene

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

-monam  monobactam antibiotics
S.6.0.0

- morelin  see -relin

-mostat  see -stat

-mostim  see -stim

-motine  antivirals, quinoline derivatives (19th Report 1970)
S.5.3.0  (USAN: antivirals (quinoline derivatives))

(a)  famotine (23), memotine (22)
<table>
<thead>
<tr>
<th>Stem</th>
<th>Description</th>
<th>Code</th>
<th>Examples</th>
</tr>
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<tbody>
<tr>
<td>-moxin (d)</td>
<td>monoamine oxidase inhibitors, hydrazine derivatives</td>
<td>C.3.1.0</td>
<td>benmoxin (20), cimemoxin (17), domoxin (14), octamoxin (15)</td>
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<td></td>
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<td>carbenzide (11), etryptamine (12), fenoxypropazine (12), iproclozide (13), iproniazid (1), isocarboxazid (11), mebanazine (15), nialamide (10), pargyline (13), phenelzine (10), pheniprazine (11), tranylcypromine (11)</td>
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<tr>
<td>-mulin</td>
<td>antibacterials, pleuromulin derivatives</td>
<td>S.6.0.0</td>
<td>azamulin (54), pleuromulin (35), retapamulin (91), tiamulin (35), valnemulin (74)</td>
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<td>nonathymulin (56), thymostimulin (45)</td>
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<tr>
<td>-mustine</td>
<td>antineoplastic, alkylating agents, (β-chloroethyl)amine derivatives</td>
<td>L.2.0.0</td>
<td>(USAN: antineoplastic agents (chlorethylamine derivatives))</td>
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<td>alestramustine (68), ambamustine (60), atrimustine (61), bendamustine (48), bofumustine (44), carmustine (24), ditiomustine (49), ecomustine (61), elmustine (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)</td>
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<td>canfosfamide (92), chlorambucil (6), chlormethine (1), chlornaphazine (1), cyclophosphamide (10), defosfamide (12), glufosfamide (77), ifosfamide (23), mafosfamide (51), melphalan (8), metalmelafan (41), mitoclomine (18), mitotane (17), palifosfamide (99), perfosfamide (66), sarclys (17), sufosfamide (36), trichlormethine (11), trofosfamide (23)</td>
</tr>
</tbody>
</table>
-mycin (x)  antibiotics, produced by *Streptomyces* strains (see also -kacin)

S.6.0.0  (USAN: antibiotics, *Streptomyces* strains)

(a)  alvespimycin (96), amfomycin (12), antelmycin (15), apramycin (31), avilamycin (46), azalomycin (26), azithromycin (58), bambermycin (21), bekanamycin (24), berythromycin (26), bicozamycin (38), biniramycin (23), bluensomycin (14), capreomycin (12), carbomycin (1), cethromycin (87), clarithromycin (59), clindamycin (21), coumamycin (15), daptomycin (58), dihydrostreptomycin (1), diproleandomycin (33), dirithromycin (53), eftromycin (53), endomycin (6), enramycin (23), enviomycin (31), erythromycin (4), estomycin (14 - deleted in List 28), flurithromycin (51), fosfomycin (25), fosmidomycin (46), gamithromycin (95), ganefromycin (68), hachimycin (23), heliomycin (25), hydroxymycin (8 - deleted in List 28), josamycin (23), kanamycin (10), kitasamycin (13), laidomycin (61), lexithromycin (65), lincomycin (13), lividomycin (32), maridomycin (32), midecamycin (30), mikamycin (17), mirincamycin (31), mocimycin (28), modithromycin (101), natamycin (15), nebramycin (19), neomycin (1), neutranycin (15), oleandomycin (6), palidomycin (55), paromomycin (10), polymycin (47), pirilmycin (47), primycin (38), pristinamycin (12), ramycin (20), reomycin (15), retaspimycin (99), ribostamycin (27), rifamycin (13), rokitamycin (53), roxithromycin (54), salinomycin (37), sedecamycin (55), spectinomycin (13), spiramycin (6), stallimycin (30), steffimycin (20), streptomycin (1), tanespimycin (96), telithromycin (80), terdecamycin (65), tobramycin (28), troleandomycin (24), trospectomycin (53), tulathromycin (87) (vet.), vancomycin (6), viomycin (4), virginiamycin (l8)

**antibiotics, antineoplastics:**
ambomycin (13), antramycin (17), azotomycin (13), bleomycin (23), caetinomycin (15), dactinomycin (18), duazomycin (13), lucimycin (13), mitomycin (26), nogalamicin (16), olivomycin (18), peliomycin (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:**
hanycin (17), lidimycin (20), rutamycin (14)

(c)  aspartocin (11), azidamfenicol (14), cetofenicol (14), chloramphenicol (1), cloramfenicol pantotenate complex (14), cycloserine (6), novobiocin (6), osteogrycin (6), rifamide (15), rifampicin (17), streptoniazid (13), streptovarycin (6), thiamphenicol (10), tylosin (16)

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

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

see also -rubacin
**nab**  |  **cannabinol derivatives**  

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

![Cannabinol Derivative](image)

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

(b) fenabutene (26), guanabenz (26), muromonab-CD3 (59), nabumetone (44), prinaberel (95)

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**-nabant**  |  **cannabinoid receptors antagonists**  

E.0.0.0

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

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**-nacept**  |  see -cept

---

**-nakin**  |  see -kin

---

**-nakinra**  |  see -kinra

---

**nal-**  |  **narcotic antagonists/agonists related to normorphine**

A.4.1.0  
B.2.0.0  

(USAN: narcotic agonists or antagonists (normorphine type))

![Narcotic Agonist/Antagonist](image)

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

(b) nalidixic acid (13)
-naritide see -tide

-navir see vir

-nermin see -ermin

-nercept see -cept

-nertant see -tant

-netant see -tant

-nicate see nico-

-nicline

nicotinic acetylcholine receptor partial agonists / agonists

USAN

E.1.1.2

(a) altinicline (82), dianicline (93), ispronicline (93), pozanicline (100), rivanicline (93), sofinicline (100), tebanicline (86), varenicline (89)

nic- or nic-

nicotinic acid or nicotinoyl alcohol derivatives

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

N

inomol (23), nicardipine (42), nicanartine (72), nicergoline (26), niceritrol (23), niceverine (15), nictindole (28), nizofenone (44)

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

\[
\text{ni}-: \text{nialamide (10), niaprazine (24), nifenazone (15), niometacin (33), niprofazone (29), nixylic acid (17)}
\]
**-nicate:** antihypercholesterolaemic and/or vasodilating nicotinic acid esters

H.4.0.0
F.2.2.0

(a) ciclonicate (33), derpanicate (58), estrapronicate (34), glunicate (51), hepronicate (22), micinicicate (44), pantenicate (56), sorbinicate (33)

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

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

<table>
<thead>
<tr>
<th>NITROUS OXIDE</th>
<th>OXIDE</th>
<th>NITROUS</th>
<th>OXIDE</th>
<th>NITROUS</th>
<th>OXIDE</th>
<th>NITROUS</th>
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<th>OXIDE</th>
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<tbody>
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<td>CH₃</td>
<td>OH</td>
<td>N</td>
<td>O₂N</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**-nidazole (x) antiprotozoals and radiosensitizers, metronidazole derivatives**

S.3.3.0 (USAN: antiprotozoal substances (metronidazole type))
Y.0.0.0.0

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

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

**-nidine** see -onidine

**nifur- (d) 5-nitrofuran derivatives**

S.2.1.0

(a) nifuradene (16), nifulraldezone (17), nifulralide (34), nifuratel (17), nifuratrone (24), nifurazil (16), nifurethazone (10), nifurfoline (20), nifurimide (18), nifurizone (22), nifurmazole (22), nifurmerone (16), nifuroquine (36), nifuroxazine (14), nifuroxime (11), nifurpinone (20), nifurpirinol (22), nifurprazine (16), nifurquinazol (18), nifursemizone (16), nifursol (20), nifurthiazole (14), nifurtimox (21), nifurtoinol (36), nifurvidine (17), nifurzide (37)

BAN, USAN

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

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

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

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

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

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

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

-nixin anti-inflammatory, anilinonicotinic acid derivatives

A.4.2.0

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

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

(-)nonacog see -cog

-octakin see -kin

(-)octocog see -cog
INN – The use of stems

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

-ol (d)

β-adrenoreceptor antagonists

E.5.2.0 (BAN: beta-adrenoreceptor antagonists)
(USAN: beta-blockers (propranolol type))

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

(a) acebutolol (28), adalrolol (63), adimolol (50), afurolol (40), alpenrolol (19), ancarolol (47),
arolol (56), arotinolol (48), atenolol (33), befunolol (39), betaxolol (40), bevantolol (36),
bisoprolol (48), bometolol (42), bopirolol (42), borprenol (46), bucindolol (43),
bucumolol (35), bufetolol (30), bunitrolol (28), bunolol (22), bupranolol (27), butocrolol (38),
butofilolol (40), carazolol (36), carpindolol (42), cartolol (35), celiprolol (35),
cetamolol (47), cicloprenolol (48), cinamolol (44), cloranolol (41), crinolol (41) (replaced by
pacrinolol (44)), dexnebulolol (98), dexpropranolol (21), diacetolol (41), draquinolol (54),
ecastolol (56), epaanolol (52), ericinolol (50), esatenolol (76), esmolol (50), exaprolol (32),
fallintolol (53), felsestolol (53), flusoxolol (50), idropranolol (31), imidolol (49) (replaced by
adimolol (50)), indenolol (37), indopanolol (48), iprocrolol (39), isoxaprolol (45), landiolol (75),
levobetalolol (61), levobunolol (42), levomoprolol (58), levonebivolol (98),
mesindolol (36), metipranolol (38), metoprolol (30), moprolol (36), nadolol (34), nadoxolol (28),
nafetolol (39), nevibolol (56), nipradilol (50) (previously nipradolol (49)), oxprenolol (20),
pacrinolol (44), pafenalol (46), pamateoolol (36), pargolol (36), penbutolol (25),
peniroolol (36), pindolol (23),opensolol (48), practolol (23), primidolol (42), procinolol (25),
propranolol (15), ridazolol (51), ronactolol (57), soquinolol (43), spirendolol (46), talinolol (28),
tazolol (31), teoprolol (43), tertabolol (48), tienoxolol (56), tilisoolol (57), timolol (29),
tiprenolol (23), tolamolol (29), toliprolol (28), trigevolol (56), xibenolol (48), xipranolol (22)

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

-alol aromatic ring \(-\text{CH-CH}_2-\text{NH-R}\) related to -olols

OH

(USAN: combined alpha and beta blockers)

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

(c) butidrine (16)
### -alone

see pred

### -onakin

see -kin

### -one (d) ketones

(a) 630 (approx. 8.0%) INNs ending in -one in Lists 1-101 of proposed INNs

### -onide steroids for topical use, acetal derivatives

**Q.3.0.0**

<table>
<thead>
<tr>
<th>Compound</th>
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<tbody>
<tr>
<td>acrocinonide (27)</td>
</tr>
<tr>
<td>amcinonide (33)</td>
</tr>
<tr>
<td>budesonide (37)</td>
</tr>
<tr>
<td>ciclesonide (62)</td>
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<tr>
<td>cicortonide (28)</td>
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<tr>
<td>ciprocitonide (38)</td>
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<tr>
<td>desonide (24)</td>
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<tr>
<td>dextrudesonide (80)</td>
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<tr>
<td>drocinonide (29)</td>
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<tr>
<td>flucuronide acetonide (22)</td>
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<tr>
<td>fluconolone acetonide (11)</td>
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<td>flumoxonide (38)</td>
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<td>halcinonide (29)</td>
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<td>itrocinonide (62)</td>
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<tr>
<td>nicocortonide (40)</td>
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<tr>
<td>procinonide (38)</td>
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<tr>
<td>rofleponide (72)</td>
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<tr>
<td>tralonide (27)</td>
</tr>
<tr>
<td>tramcinolone benetonide (36)</td>
</tr>
<tr>
<td>tramcinolone furetonide (36)</td>
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<tr>
<td>tramcinolone hexacetonide (15)</td>
</tr>
<tr>
<td>triclonide (30)</td>
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</tbody>
</table>

### -onidine antihypertensives, clonidine derivatives

**H.3.0.0**

<table>
<thead>
<tr>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>apraclonidine (59)</td>
</tr>
<tr>
<td>benclonidine (42)</td>
</tr>
<tr>
<td>brimonidine (66)</td>
</tr>
<tr>
<td>clonidine (40)</td>
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<tr>
<td>flutonidine (31)</td>
</tr>
<tr>
<td>moxonidine (48)</td>
</tr>
<tr>
<td>piclonidine (44)</td>
</tr>
<tr>
<td>tolondine (28)</td>
</tr>
</tbody>
</table>

**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), piritonidine (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),
cloforex (16), clominorex (14), difemetorex (41), etolorex (20), fenisorex (29), fenproporex
(17), flucetorex (30), fludorex (19), fluminorex (14), formetorex (14), furfenorex (16),
indanorex (30), mfenorex (19), morforex (26), oxifentorex (20), pentorex (16), picilorex
(40), tiflorex (34)

(b)  almorexant (98)

(c)  bupropion (84) (replaces amfebutamone (31)), amfecloral (12), amfepramone (13),
amfetamine (55), amfetaminil (40), benzafetamine (55), brofametamine (55),
chlorpentermine (11), clortermine (22), dexamfetamine (55), dimetamfetamine (38),
etilamfetamine (40), fenbutrazate (12), fenfluramine (14), hexapradol (12),
levamfetamine (12), levmetamfetamine (83), lisdexamfetamine (94), mephentermine
(6), ortetamine (13), phendimetrazine (11), phenmetrazine (6), phentermine (11)

 orphan  narcotic antagonists/agonists, morphinan derivates

A.4.1.0  (USAN: -orphan: narcotic antagonists/agonists (morphinan derivatives))

B.2.0.0  (USAN: -orphan: narcotic antagonists/agonists (morphinan derivatives))

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

B.2.0.0: levallophan (2)

-orphine: acetorphine (17), alletorphine (25), buprenorphine (29), cyprorphine (17),
desomorphine (5), diprenorphine (21), etorphine (17), homprenorphine (25),
methyldesorphine (5), methyldihydromorphine (5), morfiine 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

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

-alox

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

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

\[
\text{carbadox (19), ciadox (44), cinoquidox (40), drazidox (24), mequidox (19), olaquindox (31), temodox (27)}
\]

-pirox antimycotics, pyridone derivatives: USAN

\[
\text{ciclopirox (26), metipirox (26), rilopirox (56)}
\]

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

\[
\text{amlexanox (55), mepixanox (49), sudexanox (44), tixanox (37), traxanox (44)}
\]

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)
**INN – The use of stems**

**BAN, USAN**

### S.5.5.0

- **antibacterials, nalidixic acid derivatives**
  
  (BAN: antibacterial agents of the cinoxacin group)
  (USAN: antibacterial (quinolone derivatives))

![Chemical Structure](image)

(a) cinoxacin (32), droxacin (36), fleroxacin (56), enoxacin (49), garenoxacin (87), irloxacín (53), miloxacin (40), nemonoxacin (96), ozenoxacin (96), rosoxacin (36), tioxacin (34)

- **-floxacin:** alatrofloxacin (75), amifloxacin (51), balofloxacin (71), besifloxacin (98), binfl oxacin (60), cadofloxacin (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), ibafl oxacin (60), levofloxacin (64), levonadifloxacin (95), lomefloxacin (58), marbofloxacin (65), merafloxacin (69), moxifloxacin (78), nadifloxacin (64), norfloxacin (49), ofloxacin (49), olamufloxacin (79), orbifloxacin (68), pazufloxacin (71), pefloxacin (45), pradofloxacin (84), premafloxacin (72), prulifloxacin (72), rufloxacin (57), sarafloxacin (62), sitafloxacin (75), spar floxacin (63), temafloxacin (58), tosufloxacin (60), trovafloxacin (73), ve bufloxacin (69), zabofloxacin (93)

(b) quarfl oxin (98)

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

### E.5.1.0

- **benzodioxane derivatives**
  
  (USAN: -oxan: α-adrenoreceptor antagonists; benzodioxane derivatives)

![Chemical Structure](image)

(a) **α-adrenoreceptor antagonists:** azaloxan (52) (antidepressant), fluparoxan (58) (antidepressant), idazoxan (49) (α2), imiloxan (52) (α2) (antidepressant), piperoxan (1) (sympatholytic), proroxan (39)

**antihypertensives:** flesinoxan (55), guabenxan (32), guanoxan (15)

**tranquillizers:** butamoxane (12), ethomoxane (12), pentamoxane (12)

**muscle relaxant:** ambenoxan (21)

**oxa, axa, ox:** acoxatrine (14) (cardiovascular analeptic), axamozide (53) (neuroleptic), cinepaxadil (50) (coronary vasodilator), dioxadil (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), binospirone (65), capeserod (94), eltoprazine (57),
lecozotan (93), lurtotecan (50), osemozotan (87), quincarbate (31), silibinin (38),
sulamserod (82)

-oanide  see -anide

-oxef  see cef-

-oxepin  see -pine

-oxetine  antidepressants, fluoxetine derivatives

C.3.0.0

(a) anoxetine (58), dapoxetine (65), duloxetine (68), esreboxetine (99), femoxetine (36),
fluoxetine (34), ifoxetine (54), litoxetine (64), nisoxetine (34), omiloxetine (76), paroxetine
(38), reboxetine (54), seproxetine (66), tomoxetine (49)

-oxicam  see -icam

-oxifene  see -ifene

-oxopine  see -pine

-pafant  platelet-activating factor antagonists

I.2.1.0

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

-pamide  diuretics, sulfamoylbenzoic acid derivatives
(could be sulfamoylbenzamide) (19th Report, 1970)

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

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

-pamil  coronary vasodilators, verapamil derivatives

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

(a)  anipamil (49), dagapamil (52), devapamil (53), dexverapamil (65), emopamil (52), falipamil (48), gallopamil (38), lemovopamil (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)
-parin  heparin derivatives including low molecular mass heparins

I.2.0.0  (USAN: heparin derivatives and low molecular weight (or depolymerized) heparins)
(a)  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), tinzaparin sodium (65)

-parinux  synthetic heparinoids

(USAN: antithrombotic indirect selective synthetic factor Xa inhibitors)
(a)  fondaparinux sodium (83) (replaces fondaparinux sodium (79)), idrabiotaparinux sodium (97), idraparinux sodium (84)

-patril/-patrilat  see -tril/-trilat

-pendyl  see -dil

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

S.6.0.0  (USAN: antibacterials, antibiotics (carbapenem derivatives))

(a)  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 (82), tomopenem (95)

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

(USAN: blood substitutes and/or diagnostics (perfluorochemicals))
(a)  perflexane (82), perflisobutane (92), perfluamine (45), perflubrodec (87), perflubron (66), perflubutane (91) perflunafene (45), perflutren (82)

-peridol  see -perone
-peridone  see -perone

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

C.1.0.0
C.2.0.0 (USAN: antianxiety agents/neuroleptics ; 4'-fluoro-4-piperidinobutyrophene 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), zolperone (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),
mezepine (22), nuvenzepine (59), prazepine (15), propizepine (19), tilozepine (40)
tricyclic antiulcer: J.0.0.0: darenzepine (52), pirenzepine (30), siltenzepine (63), telenzepine (50), zolenzepine (48)

tricyclic anticonvulsant: A.3.1.0: carbamazepine (15), eslicarbazepine (91), etazepine (51), licarbazepine (81), oxcarbazepine (41)

hyperthermia: amezepine (42)

-apine psychoactive: C.0.0.0: amoxapine (25), asenapine (87), batelapine (64), clotiapine (16), clozapine (22), esmirtazapine (93), flumezapine (47), fluperlapine (46), loxapine (22), metiapine (23), mirtazapine (61), olanzapine (67), pentiapine (56), perlapihe (23), quetiapine (74), rilapine (52), serazapine (63), tenilapine (52), zicronapine (100)

-cilpine antiepileptic: A.3.1.0: dizocilpine (60)

-oxepin beloxepin (75), cidoxepin (17), doxepin (15), maroxepin (54), metoxepin (33), pinoxepin (18), savoxepin (56), spiroxepin (32)

-oxopine traboxopine (58)

-sopine adosopine (63)

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

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

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

-piprazole see -prazole

-pirone see -spirone

-pxox see -ox/-alox

-pitant see -tant

-plact platelet factor 4 analogues and derivatives

iroplact (74)
-pladib  phospholipase A<sub>2</sub> inhibitors

W.0.0.0
darapladib (94), ecopladib (90), efipladib (92), giripladib (96), goxalapladib (94), rilapladib (94), varespladib (87)

-planin  antibacterials (*Actinoplanes* strains)

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

-plase  see -teplase, -uplase under -ase

-plasmid  see -gene for gene therapy products

-platin  antineoplastic agents, platinum derivatives

L.0.0.0 (USAN: antineoplastics (platinum derivatives))
(a)  carboplatin (48), cisplatin (39), dexamplatin (64), enloplatin (64), eptaplatin (83), iproplatin (51), lobaplatin (65), miboplatin (66), miriplatin (85), nedaplatin (67), ormaplatin (63), oxaliplatin (56), picoplatin (87), satraplatin (80), sebriplatin (68), spiroplatin (48), triplatin tetranitrate (87), zeniplatin (63)

-plerin  see -ermin

-plestim  see -stim and -kin

-plon  imidazopyrimidine or pyrazolopyrimidine derivatives, used as anxiolytics, sedatives, hypnotics

A.2.2.0 (USAN: non-benzodiazepine anxiolytics, sedatives, hypnotics)
C.1.0.0
adipiplon (98), divaplon (61), fasiplon (61), indiplon (86), ocinaplon (72), panadiplon (65), taniplon (61), zaleplon (72)
-poetin  
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)  

-porfin  
benzoporphyrin derivatives  
(USAN)  
(a)  lemuteporfin (91), padeliporfin (96), padoporfin (93), rostaporfin (83), stannsoporfin (79), talaporfin (83), temoporfin (70), verteporfin (71)  

-poride  
Na\(^+\)/H\(^+\) antiport inhibitor  
amiloride (18), cariporide (74), eniporide (79), rimeporide (92), sabiporide (84), zoniporide (85)  

-pramine  
substances of the imipramine group  
C.3.2.0  
(USAN: antidepressants (imipramine type))  
\[
\begin{align*}
\begin{array}{c}
\text{N} \\
\text{N} \\
\text{CH}_3 \\
\text{CH}_3 \\
\end{array}
\end{align*}
\]
(a)  saturated dibenzazepine:  
azipramine (36), carpipramine (16), cianopramine (47), ciclopramine (29), clocapramine (28), clomipramine (17), depramine (31), desipramine (13), imipramine (8), ketimipramine (17), lofepramine (24), lopramine (24) (replaced by lofepramine (34)), metapramine (34), mosapramine (64), quinupramine (32), tampramine (54), tienopramine (38), trimipramine (13), imipraminoxide (36)  
(c)  unsaturated dibenzazepine:  
carbamazepine (15), homopipramol (20), opipramol (15)
-prazole antiulcer, benzimidazole derivatives

J.0.0.0 (USAN: antiulcer agents (benzimidazole derivatives))

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

(a) cinprazole (34), dexlansoprazole (93), disuprazole (56), esaprazole (45), esomeprazole (79), fuprazole (39), ilaprazole (86), lansoprazole (60), leminoprazole (68), levolansoprazole (93), nepaprazole (74), nilprazole (37), omeprazole (46), pantoprazole (62), picoprazole (46), pumaprazole (76), rabeprazole (69), saviprazole (62), tenatoprazole (80), timoprazole (35), ufiprazole (58)

-piprazole psychotropics, phenylpiperazine derivatives (Future use is discouraged due to conflict with the stem -prazole)

C.0.0.0

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

(a) aripiprazole (75), dapiprazole (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)

\[
\text{R} = \text{O} \\
\text{or} \quad \text{HO} \quad \text{H}
\]

(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), meprednisolone (8), methylprednisolone aceponate (52), methylprednisolone sulpetanate (56), oxisopred (29), prednazate (16), prednazoline (22), prednicarbate (44), prednimustine (31), prenisolamate (13), prednisolone (6), prednisolone steaglate (16), prednisone (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)
-betasol: clobetasol (26), doxibetasol (26), ulobetasol (54)

-methasone or -metasone: alclometasone (41), amelometasone (74), beclometasone (17), betamethasone (11), betamethasone acibutate (26), cormetasone (29), desoximetason (20), dexamethasone (8), dexamethasone acefurate (57), dexamethasone cipecilate (94), flumetasone (13), halometasone (41), icometasone enbutate (70), mometasone (56), paramethasone (12)

-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), fluocorticoline (15), fluorometholone (8), fluperolone (13), halocortolone (31), rimexolone (38), triamcinolone (8), triamcinolone benetonic (36), triamcinolone furetonide (36), triamcinolone hexacetonide (15)

clobetasone (26), cloticasone (52), deprodone (20), dichlorisone (10), diflorsone (30), flunisolide (11), fluticasone (52), fluticasone furoate (96), meclorisone (40), timobesone (51)

-olone

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

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

H.4.0.0 antihyperlipidaemic: colestolone (59)

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

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

Q.2.3.0 androgens: androstanolone (4), drostanolone (13), mestanolone (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): formebolone (31), mesabolone (29), metribolone (17), oxabolone cipionate (14), quinbolone (14), roxibolone (40), stenbolene (17), tibolone (22), trenbolone (24)

-prenaline see -terol
-pressin vasoconstrictors, vasopressin derivatives

Q.1.2.0

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

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

-pride (x) sulpiride derivatives

C.0.0.0
J.1.0.0

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

J.1.0.0: alepride (40), bromopride (27), cinitapride (41), cipropride (41), clebopride (32), dofulapride (57), irolapride (55), isosulpride (36), itopride (66), lintopride (65), lirexapride (74), lorapride (44), mezaopride (56), mosapride (66), pancapride (62), raclopride (52), remoxipride (49), renzapride (60), tiaapride (28), ticalopride (83), tinsulpride (44), trazololride (51), tropapride (48), zacopride (55)

K.0.0.0: cloxacepride (42)

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

(b) glimepride (66)

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

J.1.0.0: metoclopramide (17)

-pril (x) angiotensin-converting enzyme inhibitors

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

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

**-prilat (x)**

(USAN: antihypertensives (ACE inhibitors) (diacid analogs of the -pril entity))

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

**-prim antibacterials, trimethoprim derivatives**

S.5.5.0

(USAN)

(a) aditoprim (49), baquiloprim (56), brodimoprim (44), epiroprim (44), iclaprim (88), metioprim (42), ormetoprim (21), tetroxoprim (33), trimethoprim (11), vanerprim (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); -pristone: progesterone receptor antagonists)

(a) aplepristone (70), asoprisnil (88), asoprisnil ecamate (89), lonaprisan (97), mifepristone (54), onapristone (58), toripristone (61), ulipristal (96)

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

**-pristin antibacterials, pristinamycin derivatives**

S.6.0.0

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

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

\[
\text{H}_3\text{C} \quad \text{C} = \text{O} \quad \text{H} \quad \text{H} \\
\text{CH}_3 \quad \text{CH}_3
\]

(a) alminoprofen (40), araprofen (65), atliprofen (74), bakeprofen (61), benoxaprofen (34), bermoprofen (57), bifeprofen (57), carprofen (35), cicloprofen (32), cliprofen (32), dexibuprofen (61), dexindoprofen (49), 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 (44), losmiprofen (61), loxoprofen (50), mabuprofen (64), mexoprofen (33), miroprofen (44), odalprofen (66), pelubiprofen (76), piketoprofen (40), pirprofen (32), pranoprofen (38), suprofen (31), tazaprofen (50), tetriprofen (29), tilmoprofen arbelam (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)

prostaglandins

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

(a) alfadroprost (45), alprostadil (39), ataprost (62), beraprost (59), bimatoprost (85), butaprost (55), carboprost (36), cicaprost (54), ciprostene (51), clinprost (68), cloprostenol (33), cobiprostone (98), delprostenate (42), dimoxaprost (52), dinoprost (26), dinoprostone (26), doxaprost (34), ecraprost (83), eganoprost (84), enisoprost (50), epoprostenol (44), eptaloprost (56), etiprost (46), fenprostalene (42), flunoprostone (53), fluprostanol (33), foxiprost (55), gemeprost (42), iloprost (48) (originally ciloprost (46)), lanproston (72), latanoprost (67), limaprost (56), lubiprostone (89), luprostil (44), meteneprost (45), misoprostol (47), naxaprostene (58), nileprost (45), nocloprost (51), oxoprostol (44), penprostene (37), pimilprost (71), piprost (51), posaraprost (97), prostanalene (34), remiprostil (65), rivenprost (93), rosaprostol (48), sulprostone (37), taprostene (58), tiaprost (41), tafluprost (89), tilsuprost (51), tiprostanide (48), travoprost (80), treprostinil (87), unoprostone (66), vapiprost (58), viprostat (53)

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 (deleted from General Principles in List 28 prop. quin INN)

(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), aminoquinuride (45), benzoxyquine (18), broquinaldol (17), buquineran (40),
buquinolate (16), clamoxyquine (16), cloquique (20), chlorquinaldol (1), cinoquidox
(40), ciproquinate (22), clioquinol (16), cloquinate (11), cloxique (30), debrisoquine
(15), decoquinate (20), diiodohydroxyquinoline (1), esproquine (31), flumequine (34),
guanisoquine (15), hedaquinium chloride (8), intiquinatine (99), iquindamine (34),
isoliquamide (49), leniquinsin (18), mebique (29), nequinate (22), nifuroquine (36),
olaquindox (31), oxamniquine (28), praequinsin (29), pirquinozol (43), proquinolate
(17), quinaldine blue (17), quinacarbide (31), quindecamine (15), quinodox (26),
quinetalate (16), quinfamide (40), quinsocaine (4), quinaprenaline (17), quinuclum
bromide (40), quipazine (17), sitamaquine (80), tilbroquinol (45), tiliquinol (45),
tiquinamide (35), tiquizium bromide (47), toquizine (17), tretoquinol (21), viquidil (25)

(c) broxaldine (12), cinchocaine (1), cinchophen (l), cliimiquinal (33), dehydroemetine (15),
dequalunium chloride (8), dimethyltubocurarinium chloride (1), dimoxylune (1),
drotaverine (17), ethaverine (4), euprocin (22), famotine (23), flucarbril (14), glafenine
(15), laudexium metilsulfate (4), laurolinium acetate (12), memotine (22), metofoline (12),
neocinchophen (l), niceverine (15), nitroxoline (15), noscapine (7), octaverine (18),
oxolinic acid (15), oxydochinophen (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: nootropes (piracetam type))  

![Chemical structure](image)

(a) aloracetam (62), aniracetam (44), brivaracetam (93), cebaracetam (66), coluracetam (86), dimiracetam (68), doliracetam (53), dupracetam (38), etiracetam (40), fasoracetam (78), fonturacetam (101), imuracetam (42), levetiracetam (62), molracetam (55), nebracetam (59), nefiracetam (64), nicoracetam (63), oxiracetam (43), piracetam (22), pramiracetam (46), rolziracetam (54), seletracetam (93)

related: tenilsetam (51)

**-racil**  uracil type antineoplastics  

L.0.0.0

![Chemical structure](image)

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

**-thiouracil**  uracil derivatives used as thyroid antagonists  

M.7.3.0

(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), leuprorelin (47), lutrelin (51), nafarelin (50), peforelin (93), triptorelin (56)

**-morelin**  growth hormone release-stimulating peptides  

(a) anamorelin (97), capromorelin (83), dumorelin (59), examorelin (72), ipamorelin (78), macimorelin (100), pralmorelin (77), rismorelin (74), sermorelin (56), somatorelin (57), tabimorelin (80), tesamorelin (96)
-tirelin  thyrotropin releasing hormone analogues: USAN

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

other: corticorelin (64) (diagnostic agent)

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

-relix  hormone-release inhibiting peptides USAN

(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 USAN

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

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

(b) bromchlorenone (12) (antifungal), menatetre none (28) (antihemorrhagic), teprenone (50),
ubidecarenone (48) (in congestive heart failure)

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

-restat  see -stat
retin  retinol derivatives  

P.1.0.0  (USAN: -retin- or -retin)

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

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

related: benaxibine (50)

drif-  antibiotics, rifamycin derivatives

S.6.4.0

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

-rizine  see -izine

-rolimus  see -imus

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

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

-rsen  antisense oligonucleotides

aganirsen (101), alicaforsen (85), aprinocarsen (89), beclanorsen (01), cenersen (97), custirsen (99), mipomersen (99), oblimersen (87), trabedersen (97)

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

-rubicin  antineoplastic antibiotics, daunorubicin derivatives  
L.5.0.0  (USAN: antineoplastic antibiotics (daunorubicin type))
(a) aclarubicin (44), amrubicin (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), valrubicin (79),
zorubicin (39)

sal salicylic acid derivatives

(USAN: -sal--; -sal; or sal-: anti-inflammatory agents (salicylic acid derivatives))

\[
\begin{align*}
&\text{CO}_2\text{H} \\
&\text{OH}
\end{align*}
\]

(a) sal- analgesic anti-inflammatory A.4.2.0
choline salicylate (15), imidazole salicylate (51), salacetamide (1), salcolex (23), saletamide
(20), salfluverine (29), salicylamide (1), salnacedin (73), salprotoside (31), salsalate (28),
salverine (15)

various
salafibrate (41) (antihyperlipidaemic), salantel (29) (anthelmintic), 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), guacetasal (40),
guaimesal (50), parcetasal (65), pranosal (24), sulprosal (36), tenosal (63)

antithrombotic
flufosal (42)

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

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

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

salazo- phenylazosalicylic 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), balsalazide (48),
ipsalazide (48)

-salan brominated salicylamide derivatives disinfectant S.2.1.0
bensalan (18), dibromsalan (14), flusalan (16), fursalan (18), metabolmsalan (16), tiosalan
(18), tribromsalan (14)

(b) non-salicylic acid derivatives
fosalvudine (95), macrosalb (99mTc) (33), rusalatide (96), trioxysalan (16)
(pigmenting agent)
bronchodilators
levosalbutamol (78), salbutamol (20), salmefamol (23)

(c) analgesic, anti-inflammatory A.4.2.0
aloaxiprin (13), anilamate (13), benorilate (21), brosotamide (29), cresotamide (28),
dibusadol (24), dipycrocely (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)
antitussives 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), rafloxanide (24)
closantel (36), flurantel (25), resorantel (23)
antifungals S.4.0.0: buclosamide (16), exalamide (37), pentalamide (13)

See also Pharm S/Nom 557

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

H.3.0.0 (USAN: -sartan: angiotensin II receptor antagonists)
abitesartan (73), azilsartan (95), azilsartan medoxomil (97), candesartan (71), elisartan (72),
embusartan (78), eprosartan (71), forasartan (74), irbesartan (71), losartan (66), milfasartan
(76), olmesartan (93), olmesartan medoxomil (86), pomisartan (73), pratosartan (85),
ripisartan (73), saprisartan (72), tasosartan (72), telmisartan (70), valsartan (68), zolasartan
(70)

USAN
-semide diuretics, furosemide derivatives

N.1.1.0

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

-sermin see -ermin

-serod serotonin receptor antagonists and partial agonists

J.0.0.0

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

-serpine (d) derivatives of *Rauwolfia* alkaloids

E.5.4.0

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

(c) chloroserpidine (11), deserpidine (6), methoserpidine (11), metoserpate (20), rescimetal (44), rescinnamine (6), syrosingopine (10)

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

(BAN: serotonin receptor antagonists (5HT₃) used as antihypertensives)
(USAN: serotonin 5-HT₃ antagonists)

(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)
**som-**  

**growth hormone derivatives**

Q.0.0.0  
(USAN: growth hormone derivatives)  
(USAN: som- -bove: bovine somatotropin derivatives)  
(USAN: som- -por: porcine somatotropin derivatives)  

(a)  
-bove: bovine type substances: somagrebove (63), somavubove (63), sometribove (54), 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)

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

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**-sopine**  

see -pine

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**-spirone**  
anxiolytics, buspirone derivatives

C.1.0.0

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(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)

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**-stat- or -stat**  
enzyme inhibitors

BAN; USAN

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

- **-elestat**  
elastase inhibitors  
(a)  
depelestat (91), freselestat (89), sivelestat (78)

- **-inostat**  
histone deacetylase inhibitors  
(a)  
belinostat (97), dacinostat (89), entinostat (99), givinostat (101), mocetinostat (101), panobinostat (96), vorinostat (94)
gastrointestinal lipase inhibitors
(a) cetilistat (91), orlistat (66)

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

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

aldose reductase inhibitors
M.5.0.0
(a) alrestatin (37), epalrestat (55), fidarestat (78), imirestat (59), lidorestat (87), minalrestat (76), ponarestat (58), ranirestat (91), risarestat (82), tanomastat (82), tolrestat (51), zenarestat (64), zoparestat (64)

β-glucocerebrosidase inhibitor
apratastat (93): inhibition of TNF-α converting enzyme
azalanstat (73): lanosterol 14α-demethylase inhibitor
begacestat (97): gamma secretase inhibitor
benurestat (31): urease inhibitor
cilastatin (50): renal dehydropeptidase inhibitor
conestat alfa (98): human plasma protease C1 inhibitor
ezatiostat (98): glutathione-S-transferase inhibitor
febuxostat (85): xanthine oxidase and xanthine dehydrogenase inhibitor
imetelestat (101): antineoplastic, telomerase inhibitor
lapaquistat (96): squalene synthase inhibitor
migalastat (95): alpha-galactosidase A enzyme inhibitor
miglustat (85): glucosyltransferase inhibitor
niraxostat (99): xanthine oxidase inhibitor
nystatin (6): antifungal antibiotic
pentostatin (38): vidarabine activity potentiator; inhibitor of enzymatic deaminative metabolism
pepstatin (28): pepsin inhibitor
semgacestat (99): gamma secretase inhibitor
somatostatin (43): growth hormone release inhibiting factor
talabostat (92): antineoplastic
tendamistat (44): amylase inhibitor
tosedostat (99): antineoplastic, aminopeptidase inhibitor
vistatolon (25): antiviral antibiotic
zhinostatin (40): antineoplastic
zhinostatin stilalamer (74)
-vastatin  antihyperlipidaemic substances, HMG CoA reductase inhibitors

H.4.0.0

(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

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

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

-ster-  androgens/anabolic steroids

Q.2.3.1

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

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

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

(b) progestational steroids

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

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

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

-sterol: azacosterol (16) (hypcholesterolemic), dihydrotachysterol (1) (antihypoparathyroid), iodocholesterol (131I) (39)

ster: nisterime (38) (contraceptive agent), stercuronium iodide (21) (neuromuscular blocking agent)
-(a)steride  (USAN: -steride: testosterone reductase inhibitors) - antineoplastic
  bexlosteride (81), dutasteride (78), epristeride (69), finasteride (62), izonsteride (81), lapisteride (85), turosteride (67)

-stigmine (d)  acetylcholinesterase inhibitors
E.1.2.0  (USAN: cholinesterase inhibitors (physostigmine type))
(a)  distigmine bromide (16), eptastigmine (62), ganstigmine (81), neostigmine bromide (4), pyridostigmine bromide (6), quilogostigmine (76), rivastigmine (77), terestigmine (77)
(c)  eseridine (53)

-stim  colony stimulating factors
I.5.0.0  (USAN: conjugates of two different types of colony-stimulating factors)
(a)  ancestim (79) (cell growth factor), garnocestim (85) (immunomodulator), pegacaristim (80) (megakaryocyte growth factor), romiprostim (97) (platelet stimulating factor)
-distim  combination of two different types of colony stimulating factors
  (USAN: conjugates of two different types of colony-stimulating factors)
(a)  leridistim (80), milodistim (74)
-gramostim  granulocyte macrophage colony stimulating factor (GM-CSF) types substances
(a)  ecogramostim (62), molgramostim (64), regramostim (64), sargramostim (66)
-grastim  granulocyte colony stimulating factor (G-CSF) type substances
(a)  filgrastim (64), lenograstim (64), nartogastim (66), pegfilgrastim (85), pegnartogastim (80)
-mostim  macrophage stimulating factors (M-CSF) type substances
(a)  cilmostim (71), lanimostim (91), mirimostim (65)
-plestim  interleukin-3 analogues and derivatives
(a)  daniplestim (76), muplestim (72)
sulfa- anti-infectives, sulfonamides

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

(a) sulfabenz (17), sulfabenzone (27), sulfacarbamide (12), sulfacecol (30), sulfacetamide (1), sulfachloropyridazine (10), sulfachrysoidine (1), sulfactine (23), sulfalomide (17), sulfadiazine (25), sulfaclozone (25), sulfadiazinesodium (1), sulfadiazine (4), sulfadiazine sodium (4), sulfadiazinamide (4), sulfadimethoxine (10), sulfadimidine (1), sulfadoxine (20), sulfathidole (8), sulfafurazone (1), sulfaguanidine (1), sulfaguanidine (4), sulfaguanidine (4), sulfalone (12), sulfaloxic acid (15), sulfamazine (40), sulfamerazine (4), sulfamerazine sodium (4), sulfamethizole (1), sulfamethoxazole (14), sulfamethoxypyridazine (8), sulfamethotiamide (12), sulfamethoxypyrazine (17), sulfamethotiamide (31), sulfamonomethoxine (11), sulfamoxole (12), sulfanilamide (4), sulfanilamide (15), sulfaperin (14), sulfaphenazole (10), sulfaproxylene (4), sulfapyrazole (18), sulfapyridine (1), sulfaquinoxaline (46), sulfasalazine (55), sulfasalazine (10), sulfasalazine (41), sulfasymazine (12), sulfathiazole (4), sulfathiazolamide (1), sulfathiazolamide (4), sulfatolamide (10), sulfatroxazole (29), sulfatroxazole (24)

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

(c) benzylsulfamide (1), glucosulfamide (1), maleylsulfathiazole (1), mesulfamide (41), nitrosulfathiazole (1), phthalylsulfamethizole (6), phthalylsulfathiazole (1), salazodine (22), salazosulfa-dimidine (11), salazosulfamide (1), salazosulfathiazole (1), stearyl sulfamide (1), succinylsulfathiazole (4), sulfisomidine (1), vanylid sulfamide (1), mafenide (1) (sulfonamide, but not sulfanilamide)

-sulfan antineoplastic, alkylating agents, methanesulfonates

L.2.0.0

(a) busulfan (6), improsulfan (35), mannosulfan (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)
(a)  alcaftadine (94), azatadine (18), cyproheptadine (10), desloratadine (80), loratadine (54), napactadine (46), olopatadine (72), rupatadine (74), vapitadine (95)
(b)  amantadine (15), carmataidine (31), rimantadine (17), somatadine (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), vestipitant (91), vofopitant (82)

-dutant  neurokinin NK\(_2\) receptor antagonist

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

-nertant  neurotensin antagonist

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

-netant  neurokinin NK\(_3\) receptor antagonist

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

-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), simotaxel (94), tesetaxel (93)

-tecan  antineoplastics, topoisomerase I inhibitors

L.0.0.0  (USAN: antineoplastics (camptothecine derivatives))
afeletecan (85), atiratecan (101), belotecan (91), cositecan (100), delimotecan (97), diplomotecan (84), elemotecan (92), exatecan (81), exatecan alideximer (89), gimatecan (86), irinotecan (64), lurtotecan (74), mureletecan (85), namitecan (100), pegamotecan (91), rubitecan (82), topectacin (65)
-tepa  antineoplastics, thiotepa derivatives

L.2.0.0

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

-tepine  see -pine

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

-termin  see -ermin

-terol (x)  bronchodilators, phenethyamine derivatives

(Previously -prenaline or -terenol unofficial)

E.4.0.0

(a) 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 (101), picumeterol (64), procaterol (37), reprotoerol (30), rimiterol (26), salmeterol (55), sulfonterol (31), zilpaterol (60), zinterol (38)

-cardiac stimulants:
metaterol (43), prenalterol (38), xamoterol (48); 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), benortherone (15), cyprophythone (16), delantherone (42), inocoterone (54), osaterone (68), topterone (39), zanoterone (67)

(b) oxendolone (42), rosterolone (60)

(c) clomerone (15) (antiestrogen)

-tiazem calcium channel blockers, diltiazem derivatives

F.2.1.0

USAN

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

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

USAN

analgesic: leconotide (86), ziconotide (78)

angiiogenesis inhibitor: cilengitide (81)

angiotensin convers. inhibitor: teprotide (36)

anti-inflammatory: icrocaptide (89)

antiarrythmic: danegaptide (101), rotigaptide (94)

antineuclidant: nemifitide (87)

antidiabetic: albigrutide (97), amlintide (76), davalintide (101), exenatide (89), liraglutide (87), lixisenatide (99), pramlintide (74), seglitide (57), semaglutide (101), taspoglutide (99)

antidiarrhoeal: lagatide (75)

antithrombotic: eptifibatide (78)
antiviral: enfuvirtide (85), tifuvirtide (91)

autoimmune disorders: dirucotide (100)

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

cardiac stimulant: carperitide (65)

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

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), teduglutide (90)

growth stimulant-veterinary: nosiheptide (35)

gut motility increasing: ociltide (52)

hormone analogue: semparatide (80), tridecactide (97)

immunological agents - antineoplastic: almurtide (74), delmitide (92), disomotide (94), edratide (89), goralatide (72), mifamurtide (95), murabutide (49), ovemotide (94), pentigetide (60), pimelautide (53), prezatide copper acetate (67), rolipoltide (94), romurtide (61), tabilautide (60), temurtide (60), tertomotide (98), tigapotide (95), tiplimotide (82)

inhibition of growth hormone release: pasireotide (90)

kallicrein 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)
(b) defibrotide (44) (nucleotide), diamfenetide (28) (fasciolicide), diclometide (19) (behaviour modifier), fludroxy cortide (12), glisentide (58)
(c) angiotensin II (65), angiotensinamide (12)

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

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

(a) bisfentidine (57), cimetidine (33), dalcotidine (76), donetidine (56), ebrotidine (57), etintidine (44), famotidine (48), lafutidine (70), lamtidine (48), lavoltidine (61) (previously loxtidine (48)), lupitidine (53), mifentidine (50), niperotidine (54), nizatidine (48), osutidine (76), oxmetidine (44), pibutidine (78), quisultidine (47) (replaced by quisultazine (51)), ramixotidine (55), ranitidine (41), roxatidine (54), sufotidine (54), tiotidine (44), tvatidine (54), venritidine (67), zaltidine (54)
(b) azacitidine (40) (antineoplastic), benzethidine (9), furethidine (9), guanethidine (11), hexetidine (6), hydroxypethidine (5), pethidine (4), propinetidine (12)
(c) metiamide (30)

-tiline see -triptyline

-tinib tyrosine kinase inhibitors

L.0.0.0

(a) axitinib (94), bafetinib (99), bosutinib (94), canertinib (87), dasatinib (94), dovitinib (97), erlotinib (85), fostamatinib (100), gefitinib (85), imatinib (86), lapatinib (89), lestaurtinib (91), masitinib (96), mubritinib (90), neratinib (97), nilotinib (94), peltinib (93), saracatinib (99), selumetinib (100), sunitinib (93), tandutinib (91), telatinib (99)

-tirelin see -relin
-tizide  diuretics, chlorothiazide derivatives

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

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

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

-tocin  oxytocin derivatives

Q.1.2.0

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

-toin (d)  antiepileptics, hydantoin derivatives

A.3.1.1

(a)  albutoin (13), doxenitoin (31), ethotoin (6), fosphenytoin (62), imepitoin (96), mephenytoin (1), metetoin (12), phenytoin (4)

ropitoin (40) (H.2.0.0.)

(b)  clodantoin (13) (antifungal), nitrofurantoin (11) (antibacterial)

-trakin  see -kin

-trakinra  see -kinra

-tredekin  see -kin
-trexate (x)  folic acid analogues

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

(a) edatrexate (61), ketotrexta (50), methotrexate (10), pralatrexate (92), trimetrexate (46)

(c) aminopterin sodium (04)

-trexed  antineoplastics; thymidilate 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), candidicidin (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)

dexedoctril (73), ecadotril (68), fasidotril (74), racecadoctril (73)

daglurtil (90)
gemopatrilat (84), ilepatril (95), omapatrilat (78), sampatrilat (74)
-triptan  serotonin (5-HT₁) receptor agonists, sumatriptan derivatives
C.0.0.0  (USAN: antimigraine agents (5-HT₁ receptor agonists))
(a)  almotriptan (76), avitriptan (76), donitriptan (82), eletriptan (74), frovatriptan (78), naratriptan (69), oxitriptan (39), rizatriptan (75), sumatriptan (59), zolmitriptan (74)
(c)  alniditan (72)

-triptline  antidepressants, dibenzo[a,d]cyclopeptane or cyclopeptene derivatives
C.3.2.0  (USAN: antidepressants (dibenzo[a,d]cyclopeptane derivatives))
(a)  amitriptyline (11), butriptyline (16), cotriptyline (26), intriptyline (26), nortriptyline (12), octriptyline (33), protriptyline (14), amitriptylinoxide (36), demexiptiline (43), levoprotiline (56), noxiptiline (20), oxaprotiline (45), setiptiline (56)
(b)  oxitriptyline (21) (anticonvulsant)
(c)  hepzidine (15)
see also Pharm S/Nom 970

troban  thromboxane A₂-receptor antagonists; antithrombotic agents
I.2.1.0  (USAN: antithrombotics (thromboxane A₂ 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- ; or –trop-)

(a) parasympatholytic/anticholinergic: E.2.2.0: tertiary amines:
atropine oxyde (12), benzatropine (4), decitropine (18), etybenzatropine (12), eucatropine (1), tropatepine (28), tropicamide (11), tropigline (8), tropodifene (18)
closely related:
esbatropate (65)
quaternary ammonium salts:
atropine methonitrate (4), butropium bromide (30), ciclotropium bromide (50), cimetropium bromide (51), darotropium bromide (99), flutropium bromide (50), homatropine methylbromide (1), ipratropium bromide (28), octatropine methylbromide (10), oxtropium bromide (36), phenac trovipinium chloride (8), ritropirronium bromide (33), sevitropium mesilate (56), sintropium bromide (47), sul troponium (18), tematropium metilsulfate (64), tiotropium bromide (67), tipetropium bromide (42), tropenziline bromide (11), xenypropium bromide (15)
various:
clobenztropine (13) (antihistaminic), cyheptropine (15) (antiarrhythmic), deptropine (12) (antiasthmatic), revatropate (74) (bronchodilator), tropabazate (41) (tranquilizer), 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), varfollitropin alfa (101)
(c) parasympatholytic/anticholinergic, tertiary amines:
poskine (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

S.5.3.0
L.4.0.0

L.4.0.0: broxuridine (30), doxifluridine (44)
related: carmofur (45), clanfenur (58), tegafur (41)

S.5.3.0: fialuridine (68), floxuridine (16), fosfluridine tidoxil (93), idoxuridine (17), navuridine (84), ropidoxuridine (97), trifluridine (37)

-vudine (USAN: -vudine: antineoplastics; antivirals (zidovudine type))

(a) alovudine (68), brivudine (59), cleuvudine (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 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 (x) 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), clofoverine (31), demelverine (17), denaverine (25), dexecoverine (53), dicycloverine (6), dihexyverine (4), dipiproverine (10), diproteverine (51), drotaverine (17),
elziverine (57), ethaverine (4), febuverine (27), fenoverine (28), floverine (28), heptaverine (16), ibuverine (21), idaverine (55), mebeverine (14), milverine (52), mofloverine (28), moxaverine (36), nafiverine (16), niceverine (15), octaverine (18), pargeverine (38), pentoxyverine (6), pramiverine (21), prenoverine (41), propiverine (45), rociverine (33), salfluverine (29), salverine (15), secieverine (38), temiverine (76), zardaverine (59)

Related:
fenpiverinium bromide (26), pinaverium bromide (32)

cinnaververine (10) (anticholinergic, tert. amine), diaveridine (18)

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), fenpyramidol (12), metindizate (16), oxybutynin (13), papaveroline (29), pentapiperide (10), prozapine (14), triclabazole (10), tropenziline bromide (11)

<table>
<thead>
<tr>
<th>vin- and vinca alkaloids</th>
</tr>
</thead>
<tbody>
<tr>
<td>(USAN: vin-; or -vin-)</td>
</tr>
</tbody>
</table>

(a) B.1.0.0 stimulation of cerebrovascular circulation
apovincamine (48), brovincamine (42), vinburnine (45), vincamine (22), vincanol (37), vincaurin (51), vinconate (47), vindeburnol (49), vinnegallate (59), vinpocetin (36), vinpoline (35), vintoperol (61)

(b) L.5.0.0 cytostatic
vinblastine (12), vincristine (13), vindesine (35), vinepidine (50), vinflumine (76), vinformide (38), vinositline (64), vinglycinat (16), vinclucinol (64), vinluer (13), vinorelbine (57), vinrosidine (13), vintriptol (51), vinzolidine (46)

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

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

<table>
<thead>
<tr>
<th>-vircept</th>
<th>see -cept</th>
</tr>
</thead>
</table>

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

(a) alisporivir (100), alvircept sudotox (69), amdoxovir (85), amenamevir (100), amitivir (67), ancriviroc (92), atevirdine (69), balapiravir (100), bevirimat (96), boceprevir (97), cappravirine (83), ciluprevir (90), daphirine (86), delavirdine (71), denotivir (70), efavirenz (78), elvitegravir (97), emivirine (82), enfuvirtide (85), enviradene (49), enviroxime (44),
etravirine (88), favipiravir (98), filibuvir (101), lersivirine (101), litomeglovir (84), loviride (70), maribavir (80), maraviroc (91), nesbuvir (98), nevirapine (66), opaviraline (83), pirodavir (63), raltegravir (97), ribavirin (31), rilpivirine (91), rupintrivir (88), taribavirin (95), talviraline (75), tecovirimat (99), telaprevir (94), tifuvirtide (91), tivirapine (74), tomeglovir (84), trovirdine (73), viroxime (49), zinvironex (44)

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

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

ciclovir bicyclic heterocycle compounds: aciclovir (42), buciclovir (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)

-fovir phosphonic acid derivatives: adefovir (72), alamifovir (89), cidofovir (72), pradefovir (93), tenofovir (82)

gosivir glucoside inhibitors: celgosivir (77)

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

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

-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), fosfonet sodium (35), ketoxal (22), impacarzine (36), inosine (42), lodenosine (75), metisazone (14), moroxydine (22), pleconaril (77), tilorone (24), xenazoic acid (11)

-viroc see -vir

-virsen see -rsen

-virumab see -mab
-vos  see -fos

-vudine  see -uridine

-xaban  blood coagulation factor $X_A$ inhibitors, antithrombotics
(a)  apixaban (93), betrixaban (98), edoxaban (99), eribaxaban (98), fidexaban (91), otamixaban (86), rivaroxaban (90), razaxaban (90), tanexaban (101)

-xanox  see -ox/-alox

-yzine  see -izine

-zafone  alozafone derivatives

C.1.0.0

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

-zepine  see -pine

-zone  see -buzone

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

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.
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 therefor 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.
* In its twentieth report (WHO Technical Report Series, No. 581, 1975), the WHO Expert Committee on Nonproprietary Names for Pharmaceutical Substances reviewed the general principles for devising, and the procedures for selecting, international nonproprietary names (INN) in the light of developments in pharmaceutical compounds in recent years. The most significant change has been the extension to the naming of synthetic chemical substances of the practice previously used for substances originating in or derived from natural products. This practice involves employing a characteristic “stem” indicative of a common property of the members of a group. The reasons for, and the implications of, the change are fully discussed.
ANNEX 3

INN Stems for monoclonal antibodies

The following stem system was adopted by the members of the Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations designated to deal with the selection of nonproprietary names for naming monoclonal antibodies. Please kindly note that this nomenclature scheme is currently under revision.

I. General stem: -mab

II. Sub-stems for source of product:

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

The distinction between chimeric and humanized antibodies is as follows:

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

A **humanized** antibody has segments of foreign-derived amino acids interspersed among variable region segments of human-derived amino acid residues and the humanized heavy-variable and light-variable regions are linked to heavy and light constant regions of human origin.

III. Sub-stems for disease or target class:

<table>
<thead>
<tr>
<th>-ba(c)-</th>
<th>bacterial</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ci(r)-</td>
<td>cardiovascular</td>
</tr>
<tr>
<td>-fung-</td>
<td>fungal</td>
</tr>
<tr>
<td>-le(s)-</td>
<td>inflammatory lesions</td>
</tr>
</tbody>
</table>
-li(m)- immunomodulator
-os- bone
-vi(r)- viral

tumours:

-co(l)- colon
-go(t)- testis
-go(v)- ovary
-ma(r)- mammary
-me(l)- melanoma
-pr(o)- prostate
-tu(m)- miscellaneous

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

IV. Prefix:

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

V. Second word:

If the product is radiolabelled or conjugated to another chemical, such as toxin, identification of this conjugate is accomplished by use of a separate, second word or acceptable chemical designation.

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

VI. -tox and -toxa-

For monoclonals conjugated to a toxin, the suffix –tox can be used in the second word. When the antibody is directed against a toxin, the infix -toxa- can be used in the name.
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. A two-word name approach has been selected:

**Word 1**

<table>
<thead>
<tr>
<th>prefix</th>
<th>infix</th>
<th>suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>random to contribute to euphonious and distinctive name</td>
<td>-emin(o)-</td>
<td>growth factors</td>
</tr>
<tr>
<td></td>
<td>-kin(o)-</td>
<td>interleukins</td>
</tr>
<tr>
<td></td>
<td>-mul-</td>
<td>multiple genes</td>
</tr>
<tr>
<td></td>
<td>-lim(o)-</td>
<td>immunomodulators</td>
</tr>
<tr>
<td></td>
<td>-tusu-</td>
<td>tumour suppression</td>
</tr>
<tr>
<td></td>
<td>etc.</td>
<td>-gene</td>
</tr>
</tbody>
</table>

**Word 2**

<table>
<thead>
<tr>
<th>prefix</th>
<th>infix</th>
<th>suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>-vec</td>
<td>vector component is a virus</td>
<td>-plasmid</td>
</tr>
<tr>
<td>-repvec</td>
<td>replicating viral vector</td>
<td>in case the vector is a plasmid</td>
</tr>
</tbody>
</table>
## 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>50 WHO Chronicle 37: No. 5, suppl. (1983)</td>
<td></td>
</tr>
<tr>
<td>52 WHO Chronicle 38: No. 4, suppl. (1984)</td>
<td></td>
</tr>
</tbody>
</table>

Lists 1-101 of proposed INN are included in *Cumulative List* No. 13, WHO, Geneva, 2009 (available in CD-ROM only)
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 8100 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.

26 October 2009