



**Addendum¹ to
"The use of stems in the selection of International
Nonproprietary Names (INN) for pharmaceutical
substances" WHO/EMP/RHT/TSN/2018.1**

Programme on International Nonproprietary Names (INN)

***Health Products Policy and Standards (HPS)
Access to Medicines and Health Products (MHP)***

World Health Organization, Geneva

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Addendum* to "The use of stems in the selection of International Nonproprietary Names (INN) for pharmaceutical substances" - WHO/EMP/RHT/TSN/2018.1

* This addendum is a cumulative list of all new stems selected by the INN Expert Group since the publication of "*The use of stems in the selection of International Nonproprietary Names (INN) for pharmaceutical substances*" 2018.

-adenant	adenosine receptors antagonists ciforadenant (118), inupadenant (123), preladenant (99), taminadenant (120), tozadenant (106), vipadenant (103)
-bep	engineered or synthetic scaffolds proteins with non-immunoglobulin variable derived binding domains dazodalibep (123), ensovibep (124), izokibep (122), lerodalcibep (123), taldefgrobep alfa (121), tezatabep matraxetan (122), tifalibep (122)
-bresib	inhibitors of the bromodomain and extra-terminal motif (BET) family of bromodomain (BRD) proteins, antineoplastics alobresib (117), birabresib (115), mivebresib (115), molibresib (116), pelabresib (123), trotabresib (125)
-caftor	cystic fibrosis transmembrane regulator (CFTR) protein modulators, correctors, and amplifiers bamocafort (121), deutivacafort (118), dirocaftor (123), elexacafort (121), galicaftor (119), icenticaftor (122), ivacafort (104), lumacafort (105), navocafort (121), nesolicaftor (122), olacafort (119), posenacafort (122), tezacafort (114)
-calcet/-calcet-	calcium-sensing receptors (CaSR) agonists cinacalcet (88), etelcalcetide (112), evocalcet (113), tecalcet (87), upacalcet (118)
-cerfont	corticotropin-releasing factor (CRF) receptor antagonists crinecerfont (120), emicerfont (102), pexacerfont (97), tildacerfont (119), verucerfont (102)
-copan	complement receptor antagonists/ complement inhibitors avacopan (114), danicopan (119), iptacopan (122), nomacopan (119) to be listed under (c) category: pegcetacoplan (120), zilucoplan (118)

-corat	glucocorticoid receptor agonists
	dagrocorat (111), fosdagrocorat (111), mapracorat (102), tomicorat (108), velsecorat (121)
-dil	<i>vasodilators</i>
-sudil	Rho protein kinase inhibitors
	belumosudil (123), cotosudil (123), fasudil (64), netarsudil (113), ripasudil (109), verosudil (112)
-espib	heat shock protein (HSP) 90 inhibitors (other than –mycin)
	icapamespib (123), ganetespib (105), luminespib (108), onalespib (112), pimitespib (121), zelavespib (123)
-estrant	estrogen antagonists, including estrogen receptor down-regulators
	amcnenestrant (122), brilanestrant (115), camizestrant (125), elacestrant (115), fulvestrant (79), giredestrant (122), rintodestrant (123)
-fexor	farnesoid X receptor agonists
	cilofexor (119), nidufexor (118), tropifexor (116), turofexorate isopropyl (103), vonafexor (122)
-fusp	fusion proteins¹
	bintrafusp alfa (121), cinrebafusp alfa (121), clervonafusp alfa (120), dalutrafusp alfa (125), efdamrofusp alfa (125), ensomafusp alfa (125), lepunafusp alfa (125), lorukafusp alfa (120), modakafusp alfa (122), onfekafusp alfa (118), oplunofusp (123), pabinafusp alfa (120), rozibafusp alfa (120), simlukafusp alfa (121), tagraxofusp (118), tebentafusp (118), valanafusp alfa (118)
-golix	gonadotropin releasing hormone (GnRH) antagonists
	elagolix (99), linzagolix (118), opigolix (118), relugolix (107), sufugolix (89)

¹ A fusion protein is defined as a multifunctional protein derived from a single nucleotide sequence which may contain two or more genes or portions of genes with or without amino acid linker sequences. The genes should originally code for separate proteins, with at least two of them endowed with pharmacological action (e.g. action and targeting). “Notes from the fusion protein Working Group”, INN Working Document number 17.414 rev.

<i>-irine</i>	<p>cytotoxic pyrrolbenzodiazepine dimers and analogues</p> <p>camidanlumab tesirine (117), loncastuximab tesirine (117), mipasetamab uzoptirine (123), pivekimab sunirine (125), rolinsatamab talirine (119), rovalpituzumab tesirine (114), serclutamab talirine (120), tamrintamab pamozirine (120), vadastuximab talirine (113)</p>
<i>-ixafor</i>	<p>chemokine CXCR4 antagonists</p> <p>balixafortide (112), burixafor (104), mavorixafor (118), motixafortide (120), plerixafor (93)</p>
<i>-ixibat</i>	<p>ileal bile acid transporter (IBAT) inhibitors, bile acid reabsorption inhibitors</p> <p>barixibat (88), elobixibat (104), linerixibat (118), maralixibat chloride (113), odevixibat (119), volixibat (113)</p>
<i>-leuton</i>	<p>5-lipo-oxygenase inhibitors, anti-inflammatory</p> <p>atreleuton (78), diroleuton (118), epeleuton (118), fenleuton (72), setileuton (101), zileuton (63)</p>
<i>-madlin</i>	<p>E3 ubiquitin-protein ligase Mdm2 (Hdm2) inhibitors</p> <p>alrizomadlin (125), navtemadlin (124), rebemadlin (125), siremadlin (119), sulanemadlin (123)</p> <p>to be listed under category (c): idasanutlin (111), milademetan (117), serdemetan (101)</p>
<i>-meran</i>	<p>messenger RNA (mRNA)</p> <p>abdavomeran (124)*, acavameran (124), autogene cevumeran (122), elasomeran (125)*, enomimeran (123), fazulemeran (125), ganulameran (124)*, gindameran (123), nadorameran (113), ontasameran (123), pidacmeran (124)*, pomulmeran (123), tozinameran (124)*, vibosameran (123), zorecimeran (124)*</p> <p><i>*additional prop.INN Lists 124 and 125 – COVID-19 (special edition)</i></p>
<i>stat</i>	<p>enzyme inhibitors</p>
<i>-becestat</i>	<p>beta secretase inhibitors</p> <p>atabecestat (117), elenbecestat (117), umibecestat (119), lanabecestat (116), verubecestat (112)</p>

-glustat	<p>ceramide glucosyltransferase inhibitors</p> <p>duvoglustat (102), eliglustat (103), miglustat (85), sinbaglustat (121), venglustat (114)</p>
-metostat	<p>histone N-methyltransferase inhibitors</p> <p>lirametostat (123), onametostat (123), pemrametostat (123), pinometostat (112), tazemetostat (112), valemestostat (118)</p>
-stinel	<p>N-methyl-D-aspartate (NMDA) receptor co-agonists</p> <p>apimostinel (115), gavestinel (77), licostinel (77), rapastinel (111), zelquistinel (121)</p>
-tinib	<p>tyrosine kinase inhibitors</p>
-ertinib	<p>epidermal growth factor receptor (EGFR) inhibitors</p> <p>abivertinib (119), befotertinib (123), canertinib (87), epertinib (115), lazertinib (117), mavelertinib (118), mobocertinib (121), olafertinib (121), osimertinib (113), rezivertinib (122), sunvozertinib (125), tuxobertinib (125), xiliertinib (121), zorifertinib (121)</p> <p>(b) category: ulixertinib (113), ravoxertinib (115) (Erk inhibitors)</p> <p>(c) category: afatinib (104), olmutinib (114), erlotinib (85), gefitinib (85), mubritinib (90), nazartinib (114), mubritinib (90), nazartinib (114)</p>
- trectinib	<p>tropomyosin receptor kinase (TRK) inhibitors</p> <p>entrectinib (113), larotrectinib (115), repotrectinib (120), selitrectinib (120), taletrectinib (123)</p>
-tirom(-)	<p>antihyperlipidaemics, thyromimetic derivatives</p> <p>acetiromate (30), axitirome (82), bentiromide (41), eprotirome (99), omzotirome (125), resmetirom (119), sobetirome (100)</p>
-toclax	<p>B-cell lymphoma 2 (Bcl-2) inhibitors, antineoplastics</p> <p>obatoclax (94), lisaftoclax (125), navitoclax (103), imlatoclax (115), pelcitoclax (122), mirzotamab clezutoclax (121), murizatoclax (122), tapotoclax (121), venetoclax (111)</p>
-vivint	<p>Wnt signaling inhibitors</p> <p>cirtuvivint (123), ipivivint (123), lorecivivint (119), tegavivint (118), teplinovivint (123)</p>

Amendments were also made in the following stems' definitions:

-eridine (NEW)

from *analgesics, pethidine derivatives*

to *analgesics, pethidine derivatives and other synthetic small molecule μ -opioid receptor agonists*

kef (NEW)

from *enkephalin agonists*

to *enkephalin, endorphin and dynorphin opioid δ , μ and κ receptor agonists*

-imus

from *immunosuppressants, other than antineoplastics*

to *immunosuppressants, ~~other than antineoplastics~~*

-isant

from *histamine H_3 receptor antagonists*

to *histamine H_3 receptor antagonists, inverse agonists*

under *-tant*

-netant

from *neurokinin NK3 receptor antagonists*

to *neurokinin NK3 and dual NK3-NK1 receptor antagonists*

-pressin

from *vasoconstrictors, vasopressin derivatives*

to ~~vasoconstrictors~~, vasopressin analogues

-pride

from *sulpiride derivatives*

to *sulpiride derivatives and analogues*

-prim

from *antimicrobials, dihydrofolate reductase (DHFR) inhibitors, trimethoprim derivatives*

to *antimicrobials, dihydrofolate reductase (DHFR) inhibitors, trimethoprim analogues*

-renone

from *aldosterone receptor antagonists, spironolactone derivatives*

to *mineralocorticoid receptor (MR, MCR, aldosterone receptor) antagonists*

under *-tide*

-glutide (NEW)

from *glucagon-like peptide (GLP) analogues*

to *glucagon-like peptide (GLP) analogues and agonists*

Amendments were also made in the stem's infix:

-gromab

from *-grosmab*

for the designation of INN for monoclonal antibodies targeting skeletal muscle mass related growth factors and receptors