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Addendum[1] to
"The use of stems in the selection of International Nonproprietary names (INN) for pharmaceutical substances" WHO/EMP/RHT/TSN/2013.1

Programme on International Nonproprietary Names (INN)

Technologies Standards and Norms (TSN)
Regulation of Medicines and other health technologies (RHT)

World Health Organization, Geneva

Addendum[1] to "The use of stems in the selection of International Nonproprietary Names (INN) for pharmaceutical substances" - WHO/EMP/RHT/TSN/2013.1

[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"* 2013.

-apt- **aptamers, classical and mirror ones**

(a) avacincaptad pegol (113), egaptivon pegol (111), emapticap pegol (108), lexaptepid pegol (108), olaptesed pegol (109), pegaptanib (88)

(b) -*vaptan* stem: conivaptan (82), lixivaptan (83), mozavaptan (87), nelivaptan (98), relcovaptan (82), ribuvaptan (110), satavaptan (93), tolvaptan (83). aptazapine (50), aptiganel (72), aptocaine (21), captamine (18), captodiame (06), captopril (39), danegaptide (101), daptomycin (58), icrocaptide (89), mercaptamine (01), mercaptomerin (01), mercaptopurine (06), naptumomab estafenatox (96), rotigaptide (94), sodium borocaptate (^{10}B) (62), sodium stibocaptate (17), taplitumomab paptox (84)

(c) pegnivacogin (106)

-cel **cell therapy**

Please refer to the Annex "General policies for cell therapies**".**

adimlecleucel (117), audencel (115), axicabtagene ciloleucel (117), baltaleucel (116), cenplacel (115), darvadstrocel (117), eltrapuldencel (115), emiplacel (117), evagenretcel (116), ilixadencel (116), lifileucel (118), nalotimagene carmaleucel (118), palucorcel (115), rivogenlecleucel (117), spanlecortemlocel (112 amendment in 115), tabelecleucel (117), tisagenlecleucel (117), tonogenconcel (115), vadacabtagene leraleucel (117), vandefitemcel (115)

-cetrapib **cholesteryl ester transfer protein (CETP) inhibitors**

anacetrapib (98), dalcetrapib (96), evacetrapib (105), obicetrapib (115), torcetrapib (87)

-degib **SMO receptor antagonists**

glasdegib (111), patidegib (111), sonidegib (107), taladegib (110), vismodegib (103)

-dotin **synthetic derivatives of dolastatin series**

amadotin: lupartumab amadotin (115)
cemadotin (75)
ixadotin: aprutumab ixadotin (115)
mafodotin: belantamab mafodotin (118), denintuzumab mafodotin (111), depatuxizumab mafodotin (115), vorsetuzumab mafodotin (107)
pelidotin: cofetuzumab pelidotin (117)
soblidotin (84)
tasidotin (93)
vedotin: azintuxizumab vedotin (116), brentuximab vedotin (103), enapotamab vedotin (118), enfortumab vedotin (109), glembatumumab vedotin (113), iladatuzumab vedotin (117), indusatumab vedotin (112), ladiratuzumab vedotin (117), lifastuzumab vedotin (110), losatuxizumab vedotin (116), pinatuzumab vedotin (108), polatuzumab vedotin (108), samrotamab vedotin (118), sirtratumab vedotin (117), sofituzumab vedotin (110), tisotumab vedotin (113), telisotuzumab vedotin (115), vandortuzumab vedotin (113)

-fenacin **muscarinic receptor antagonists**

afacifenacin (101), darifenacin (70), imidafenacin (90), revefenacin (114), solifenacin (85), tarafenacin (100), tofenacin (15), zamifenacin (68)

-fensine **norepinephrine, serotonin, dopamine reuptake inhibitors**

brasofensine (76), diclofensine (44), liafensine (109), nomifensine (24), perafensine (44), tesofensine (89)

-gepant **calcitonin gene-related peptide receptor antagonists**

atogepant (116), olcegepant (86), rimegepant (109), telcagepant (100), ubrogepant (109)

-glurant **metabotropic glutamate receptor antagonists / negative allosteric modulators**

basimglurant (109), decoglurant (109), dipraglurant (102), mavoglurant (104), raseglurant (102), remeglurant (109)

-imod immunomodulators, both stimulant/suppressive and stimulant

-tolimod **toll-like receptors (TLR) agonists**

agatolimod (98), cobitolimod (113), lefitolimod (113), entolimod (108), motolimod (112), rintatolimod (102), telratolimod (118), tilsotolimod (117), vesatolimod (113)

-isant **histamine H_3 receptor antagonists**

bavisant (103), cipralisant (85), enerisant (113), irdabisant (105), pitolisant (100)

-mab monoclonal antibodies

-vet- **veterinary use**

blontuvetmab (114), frunevetmab (116), gilvetmab (116), ranevetmab (115), tamtuvetmab (114)

-nepag **prostaglandins receptors agonists, non-prostanoids**

(a) aganepag (104), evatanepag (101), omidenepag (114), ralinepag (112), simenepag (103), taprenepag (103)

(c) selexipag (102)

-orexant **orexin receptor antagonists**

almorexant (98), filorexant (108), lemborexant (111), nemorexant (118), seltorexant (115), suvorexant (105)

-prazan **proton pump inhibitors, not dependent on acid activation**

abeprazan (118), linaprazan (92), revaprazan (91), soraprazan (88), tegoprazan (113), vonoprazan (106)

-rafenib **Raf (rapidly accelerated fibrosarcoma) kinase inhibitors**

agerafenib (115), belvarafenib (118), dabrafenib (105), encorafenib (109), lifirafenib (117), sorafenib (88), regorafenib (100), vemurafenib (103)

-siban **oxytocin antagonists**

atosiban (60), barusiban (88), cligosiban (118), epelsiban (105), nolasiban (114), retosiban (98)

-siran **small interfering RNA**

asvasiran (111), bamosiran (106), bevasiranib (108), cemdisiran (115), cosdosiran (116), fitusiran (113), givosiran (115), inclisiran (115), patisiran (109), revusiran (111), teprasiran (116), tivanisiran (116), votrisiran (117)

-tansine **maytansinoid derivatives, antineoplastics**

emtansine (such as laprituximab emtansine (114), naratuximab emtansine (114) , trastuzumab emtansine (103))
maitansine (40)
mertansine (such as cantuzumab mertansine (105), lorvotuzumab mertansine (103))
ravtansine (such as anetumab ravtansine (109), cantuzumab ravtansine (105), coltuximab ravtansine (109), indatuximab ravtansine (105))
soravtansine (such as mirvetuximab soravtansine (113))

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

-reotide somatostatin receptor agonists/antagonists

depreotide (80), edotreotide (84), ilatreotide (68), lanreotide (64), lutetium (^{177}Lu) oxodotreotide (116), octreotide (52), pasireotide (90), pentetreotide (66), satoreotide (115), satoreotide tetraxetan (118), satoreotide trizoxetan (114), vapreotide (62), veldoreotide (117)

-ritide natriuretic peptides

anaritide (57), carperitide (65), cenderitide (105), nesiritide (80), ularitide (69) vosoritide (112)

-tinib tyrosine kinase inhibitors

-brutinib agammaglobulinaemia tyrosine kinase (Bruton tyrosine kinase) inhibitors

acalabrutinib (113), evobrutinib (115), fenebrutinib (117), ibrutinib (107), spebrutinib (112), tirabrutinib (115), vecabrutinib (117), zanubrutinib (117)

-citinib Janus kinase inhibitors

baricitinib (107), delgocitinib (117), itacitinib (115), oclacitinib (105), peficitinib (111), solcitinib (112), tofacitinib (105), upadacitinib (115)

-metinib MEK (MAPK[#] kinase) tyrosine kinase inhibitors

binimetinib (109), cobimetinib (107), pexmetinib (110), ralimetinib (109), refametinib (106), selumetinib (100), trametinib (105)

[#] MAPK: mitogen activated protein kinase

-traline serotonin reuptake inhibitors

dasotraline (110), indatraline(54), lometraline (28), sertraline (48), tametraline (46)

-trigine **sodium channel blockers, signal transduction modulators**

elpetrigine (101), lamotrigine (52), palatrigine (58), vixotrigine (116), sipatrigine (74)

-vir antivirals

-asvir **antivirals, hepatitis C Virus (HCV) NS5A inhibitors**

daclatasvir (107), elbasvir (111), ledipasvir (109), odalasvir (111), ombitasvir (109), pibrentasvir (114), ravidasvir (113), ruzasvir (114), samatasvir (110), velpatasvir (112)

-xetan **chelating agents**

cabiotraxetan (103), clivatuzumab tetraxetan (113), epitumomab cituxetan (89), ibritumomab tiuxetan (86), lutetium (^{177}Lu) lilotomab satetraxetan (112), satoreotide tetraxetan (118), satoreotide trizoxetan (114), tetraxetan (92), yttrium (^{90}Y) clivatuzumab tetraxetan (102), yttrium (^{90}Y) tacatuzumab tetraxetan (93)

-zolid **oxazolidinone antibacterials**

cadazolid (104), contezolid (118), delpazolid (116), eperezolid (76), furazolidone (13), linezolid (76), posizolid (88), radezolid (99), sutezolid (106), tedizolid (104), vinzolidine (46)

Modification of stems definitions already existing

-ast	**anti-allergic or anti-inflammatory, not acting as anti-histaminics**
-fibrate	**clofibrate derivatives, peroxisome proliferator activated receptor-α (PPAR-α) agonists**

under	gli	antihyperglycaemics
	-glitazar	**dual peroxisome proliferator activated receptors-α and γ (PPAR- α,γ) agonists**

Annex – General policies for cell therapies

During the 61st INN Consultation in 2015, an INN-USAN-harmonized nomenclature scheme for cell therapies (CT) (shown in Table 1) was formally finalized and approved by the members of the INN Expert Group designated to deal with the selection of international nonproprietary names[1].

Table 1. Nomenclature scheme for cell therapies (CT)

Prefix: random	**Infix1:** manipulation/s[(a)]	**Infix2:** cell type	**Suffix:** *"-cel"*
to contribute to euphonious and distinctive name, e.g.: *al-*; *bet-*; *val-* ...	to specify, if appropriate, which manipulation the cells have undergone, using, when available, existing infixes for manipulation[(b)], e.g.: *-gen-*: transduced (genetic modification) *-fus-* : fusion to a cell	to identify the primary cell type[(c)] using, when available, existing infixes for cell types, e.g.: *-den-* dendritic cells *-mio(b)-* myoblasts *-co(n)-* chondrocytes *-fi(b)-* fibroblasts *-ker(a)-* keratinocytes *-end(o)-* endothelial cells *-leu-* lymphocytes/monocytes/APC (white cells) [(d)] …[(e)]	to name *all* CT, with the *exception* of : - Minimally manipulated hematopoietic elements - Combination products

[(a)] There may be more than one manipulation infix in the same INN.

[(b)] In the case of manipulation such as cell expansion and cell activation (with cytokines/drug, etc.), there is no need for an infix, but this kind of manipulation would be specified in the description.

[(c)] Residual, contamination cells are not named.

[(d)] The cell type infix *–leu-* will be used to describe hematopoietic cell preparations that do not fit a particular or specific cell type. Such cell preparations may be comprised of a mixture of the various blood cell elements, a subset of blood elements such as T- B- or NK-cells, or antigen presenting cells (APCs) that do not fit the definition of dendritic cells fall into this category.

[(e)] **-ubi-** (previous nomenclature scheme: **-cor-**) for *umbilical cord cells*; **-ep(a)-** for *hepatocytes*; **-isle-** for islet cells; **-mestro-** for *mesenchymal stromal cells (msc)*; **-ova-** for *ovary cells*; **-pla(c)-** for *placenta cells*; **-ret-** for *retinal epithelial cells*; **-ren-** for *renal tubular cells*; **-ur-** for *urothelial cells*; **-tem-** for *stem cells*; **-defitem-** for *differentiated stem cells* (not fitting into any existing category); **-tesi-** for *testis cells*; **-tu-** for *tumor cells*.

Note: Information concerning manipulations and/or modifications, and the type of the CT (i.e. allogeneic, autologous and xenogeneic) would be specified in the description of the substance.

[1] INN selected before the adoption of the present nomenclature scheme may follow different rules.