INN Trends – 2019

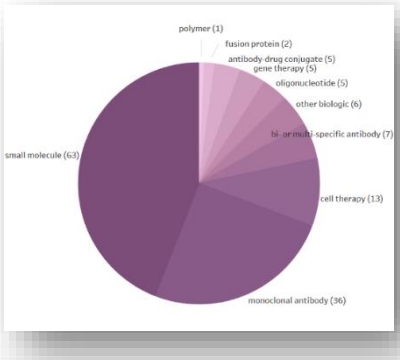
Trends in proposed INN list #121

Biologic therapies and cancer agents abounded among the most recent proposed International Nonproprietary Names (INN) list published by the World Health Organization. Over half (55%) of the 143 products on the list were biologics whereas fifty-four (37%) were labelled antineoplastics on the list.

Names were published to allow interested parties to comment on them before they are officially adopted as INN. pINN List 121 may be found at https://www.who.int/medicines/services/inn/en/. The deadline for comments is December 21.

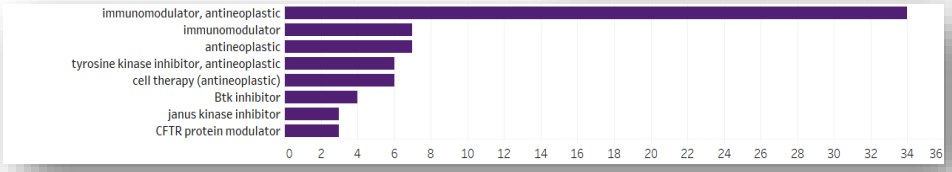
Comments on the names and other INN negotiations will be discussed at the 70th INN consultation to be held April 21-24, 2020. The deadline for submission of New INN Requests is Friday, February 7th, 2020; however, after January 7th, only 30 new requests will be accepted.

The therapeutic **modality**, expected **indications**, and **biologic targets** all contribute to the construction of the INN list. Different classes of biologics follow their own established schema for conveying information on subjects like therapeutic target, modality, identity of gene vectors used, and cell types present or acted upon. Following is a brief overview of the key name trends on the list:



Modalities: Small molecules were the most common modality with 63 names on the list (44%), followed by 36 single-target monoclonal antibodies (25%), 13 cell therapies (9%), and 7 multi-specific antibodies (5%). Together, monoclonal antibodies, multi-specific antibodies and antibody-drug conjugates made up 33% of the list. Six of the thirteen cell therapy products were autologous cells transduced with a gene vector. These names included the second word "autoleucel" or "autotemcel," indicating lymphocytes/monocytes/APCs and stem cells, respectively.

Indications and uses: Action and Use statements describe the expected therapeutic area or activity of products in the proposed list to provide context for third party comments. This is helpful for assessing the likelihood of trademark conflicts or confusion with names already in use.



A glance among those applied to indicates that at least three products shows a high prevalence of anticancer therapies, particularly those that may also have immune applications. The statement "immunomodulator, antineoplastic" is used for many monoclonal antibodies with potential applications in both these therapeutic areas.

The statements also shows three sets of three or more small molecule products with a common target. These are: the Btk inhibitors branebrutinib, elsubrutinib, remibrutinib, and rilzabrutinib; JAK inhibitors brepocitinib, izencitinib, and ritlecitinib; and CFTR modulators bamocaftor, elexacaftor, and navocaftor. The stems "-brutinib" and "-citinib" indicate Btk and JAK inhibitors, respectively. INN has designated "-caftor" as a pre-stem for CFTR modulators **but has not given it formal status** as a stem.

Checkpoints abound: Immune checkpoints were frequent targets of antibodies on the list. Checkpoint agents constituted 41% of the 34 antibodies on the list described as both immunomodulators and antineoplastics.

Target	Names
PD-1	lodapolimab, retifanlimab, sasanlimab, serplulimab
PD-L1	cosibelimab, manelimab, pacmilimab
LAG3	encelimab, fianlimab, mavezelimab
OX40	ivuxolimab
B7-H3	mirzotamab, mirzotamab clezutoclax
TIGIT	vibostolimab

Almost all the antibodies use the target class infix "-li-" before the stem "-mab" to indicate immunomodulatory activity. While they may be used more often in cancer settings, the infix "-li-"conveys that they act on cells of the immune system. Exception is made for mirzotamab and its related antibody-drug conjugate mirzotamab clezutoclax, which use the "-ta-" infix to indicate tumour targeting. While B7-H3 is an immune regulator, it is also widely expressed on a number of tumour types, and here may guide the ADC to deliver its toxic payload. The suffix "-toclax" in the second word of the ADC name suggests activity against BCL-2 family proteins.