Extending MCL towards the needs of MIRRI

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The actors

Interoperability of information systems of microbial domain Biological Resource Centers (mBRCs) is essential for the Microbial Resource Research Infrastructure (MIRRI) [1]. The Microbiological Common Language (MCL) [2] is used to exchange data between mBRCs and the StrainInfo portal [3].

MCL pitfalls and the objective of this work

MCL does not consider all the information sought by available guidelines (OECD [4], CABRI [5,6], MINE [7,8]). Moreover, it was designed for bacterial, yeast and fungal strains only.

A new version of the MCL, able to fully express contents of mBRCs catalogues, may be a reference format for data exchange in MIRRI.

Comparing standards

MCL and the CABRI guidelines has been compared. All CABRI data fields used by the majority of collections were considered. The comparison was limited to resource types properly described by MCL. Objectives of the comparison were:

i) identifying equivalences and differences,

ii) identifying information for which the MCL language does not provide any tag,

iii) suggesting a list of new MCL tags able to incorporate the full contents of an mBRC catalogue based on the CABRI data sets.

The CABRI data sets for plasmids and phages were compared to MCL tags in order to:

i) identify which among existing MCL tags could be adopted for these resources,

ii) suggest new tags to cover missing data.

Table of results. MCL tags (existing in black and proposed in red), corresponding CABRI fields and the resource types where they can be used. When a MCL field name is empty, its corresponding CABRI tag does not have a direct equivalent in CABRI data sets. See also [9]. Legend: A: archaea, B: bacteria, F: filamentous fungi, Y: yeasts, Pl: plasmids, Ph: phages

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References

1. MIRRI: www.mirri.org


3. StrainInfo: straininfo.net


5. CABRI Guidelines for catalogue production www.cabri.org/guidelines/catalogue/CPdata.html


9. Colobraro DP et al. zenodo.org/record/154637