

StrainInfo: your microbiological stepping stone

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Abstract:

StrainInfo is a global catalog of microbial material integrating the catalogs of more than 60 Biological Resource Centers (BRCs). Microbiology traditionally builds upon actual material which can be deposited in Biological Resource Centers. BRCs assign so-called strain numbers to identify the accessioned material and are responsible for long-term preservation and world-wide distribution of the material. As BRCs mutually exchange these cultured microorganisms, a plethora of equivalent strain numbers has come into use. This implies that to find all information on a given strain, all equivalent strain numbers should be used when searching. Moreover, the information is not suited for electronical processing. StrainInfo is envisioned as an open, publicly available platform giving uniform access to microbiological specimen information. It integrates the specimen information with genomic information, taxonomic resources and literature databases. It builds upon the proposed Microbiological Common Language (MCL), aimed at standardizing the electronic exchange of meta-information about microorganisms. It provides mechanisms to the community to curate the vast amount of microbiological information readily available. StrainInfo is accessible through its web application which is based on the concepts of "passport pages" and "browsers". All equivalent strain numbers, together with additional information, are listed on so-called "strain passports". The corresponding "strain browser" enables direct access to the underlying BRC catalogs and features an overlay panel allowing easy browsing to equivalent catalog entries. Taxon, sequence and literature passports and browsers are also available. StrainInfo offers web services for advanced users that want to automate queries or build powerful workflows. Its integrated view allows to handle microbiological information on a new scale and prepares microbiology for an era where new insights can be obtained based on existing information. StrainInfo provides true globally unique identifiers for microbiological material, forming the basis for electronical processing of microbiological information. Integration results are made available in electronically processable MCL files, allowing consumption by new downstream applications.

Key words: Histri, Microbiological Common Language, StrainInfo, strain passport, web services