UniCarb-DR: MIRAGE ベースのグライコミクス MS/MS スペク<u>トルデータ</u>リポジトリ

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Introduction

Recently many public data repositories have been rapidly developed to store datasets submitted by researchers and to promote sharing of such data under the FAIR (Findable, Accessible, Interoperability, and Re-usable) data principles. In the glycosciences, the Minimum Information Required for A Glycomics Experiment (MIRAGE) [1] proposes a set of standard guidelines when reporting qualitative and quantitative results of glycomics experiments including mass spectrometry, glycan arrays, liquid chromatography, etc. There are two major public data repositories, UniCarb-DR [2] and GlycoPOST [3], to allow researchers to submit their mass spectrometry-based experimental results following the MIRAGE guidelines. UniCarb-DR can visualize the MS/MS spectra data submitted by researchers in GlycoWorkbench format (.gwp), and users can browse and search each of the spectra and glycan structures in their web browsers. GlycoPOST, on the other hand, can accept various MS experiment-related resources from researchers including the raw data from mass spectrometers. The researchers can make their data public after an embargo period; it thus allows them to configure their data publication date freely. However, this functionality is not available in UniCarb-DR. In this study, we tried to enhance the integration of these complementary data repositories by unifying the data submission flow and making it easy to cross-reference.



repository workflow combining the advantages of two major data repositories making it easier for users to submit mass spectrometry data. We are planning to release this new functionality on the next UniCarb-DR's release. Both UniCarb-DR and GlycoPOST follow the MIRAGE guidelines, however, UniCarb-DR collects additional HPLC settings information, which GlycoPOST does not support at the time of this writing. Therefore, to integrate the data submission flow of these two data repositories completely, we are planning to update GlycoPOST to support the additional HPLC settings information.

References

1. York, et al. Glycobiology, 24(5):402-406, 2014.

table form.

- 2. Rojas-Macias, et al. Nature communications, 10(1):3275, 2019.
- 3. Watanabe, et al. Nucleic Acids Research, 49(D1):D1523-D1528, 2021.

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