Package 'MuData'

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Title Serialization for MultiAssayExperiment Objects

Version 1.16.1

Description Save MultiAssayExperiments to h5mu files supported by muon and mudata. Muon is a Python framework for multimodal omics data analysis. It uses an HDF5-based format for data storage.

URL https://github.com/ilia-kats/MuData

BugReports https://github.com/ilia-kats/MuData/issues

Imports methods, stats, MultiAssayExperiment, SingleCellExperiment, SummarizedExperiment, DelayedArray, S4Vectors

Depends Matrix, S4Vectors, rhdf5 (>= 2.45)

Suggests HDF5Array, rmarkdown, knitr, fs, testthat, BiocStyle, covr, SingleCellMultiModal, CiteFuse, scater

VignetteBuilder knitr

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`readH5AD` *Read an .h5ad file and create a* `SingleCellExperiment`.

Description

In file-backed mode, the main `X` matrix is not read into memory, but references the HDF5 file and its required parts are read on demand. This requires the HDF5Array package to be installed.

Usage

```
readH5AD(file, backed = FALSE)
```

Arguments

`file`	Path to the .h5ad file.
`backed`	Whether to use file-backed mode.

Value

A `SingleCellExperiment`.

Examples

```
data(miniACC, package="MultiAssayExperiment")
writeH5AD(miniACC[[1]], "miniacc.h5ad")
sce <- readH5AD("miniacc.h5ad")
```

readH5MU *Read an .h5mu file and create a MultiAssayExperiment.*

Description

In file-backed mode, the main X matrices are not read into memory, but reference the HDF5 file and their required parts are read on demand. This requires the HDF5Array package to be installed.

Usage

```
readH5MU(file, backed = FALSE)
```

Arguments

file	Path to the .h5mu file.
backed	Whether to use file-backed mode.

Value

A MultiAssayExperiment

Examples

```
data(miniACC, package="MultiAssayExperiment")
writeH5MU(miniACC, "miniacc.h5mu")
mae <- readH5MU("miniacc.h5mu")
```

writeH5AD *Save an experiment to an .h5ad file.*

Description

Note that NA values are not supported by HDF5, and therefore by h5ad. The behavior of this function if NAs are present is undefined.

Usage

```
writeH5AD(object, file, overwrite)
```

Arguments

object	The object to save.
file	Name of the file to save to.
overwrite	Currently unused.

Value

NULL, invisibly

Examples

```
data(miniACC, package="MultiAssayExperiment")
writeH5AD(miniACC[[1]], "miniacc.h5ad")
```

---

writeH5MU *Save a* MultiAssayExperiment *to an .h5mu file.*

Description

Note that NA values are not supported by HDF5, and therefore by h5mu. The behavior of this function if NAs are present is undefined.

Usage

```
writeH5MU(object, file, overwrite)
```

Arguments

object	A MultiAssayExperiment.
file	Name of the file to save to.
overwrite	Currently unused.

Value

NULL, invisibly

Examples

```
data(miniACC, package="MultiAssayExperiment")
writeH5MU(miniACC, "miniacc.h5mu")
```

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