Package ‘CardinalWorkflows’

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Type Package
Title Datasets and workflows for the Cardinal mass spectrometry imaging package
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Description Datasets and workflows for Cardinal: DESI and MALDI examples including pig fetus, cardinal painting, and human RCC.
License Artistic-2.0
Depends R (>= 2.10), Cardinal
Suggests BiocStyle
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R topics documented:

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CardinalWorkflows-package

Datasets and workflows for the Cardinal mass spectrometry imaging package

Description

Datasets and workflows for Cardinal: DESI and MALDI examples including pig fetus, cardinal farmhouse painting, and human RCC.
Details

CardinalWorkflows provides datasets and example workflows of mass spectrometry imaging experiments using the Cardinal package for MS imaging analysis.

To view the example workflows, type `browseVignettes("CardinalWorkflows")`.

Author(s)

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See Also

`cardinal`, `pig206`, `rcc`

cardinal-data  

Cardinal Painting

Description

DESI-imaging mass spectra collected from the oil painting of a cardinal.

Usage

```r
data(cardinal)
data(cardinal_analyses)
```

Format

`cardinal` contains the following objects:

- `cardinal` raw dataset
- `cardinal.peaklist` list of detected peaks
- `cardinal.peaks` peak-picked dataset

`cardinal_analyses` contains the following objects:

- `cardinal.sscg` spatial shrunken centroids clustering (Gaussian weights)
- `cardinal.ssca` spatial shrunken centroids clustering (adaptive weights)

Source

Aston Labs (Livia S. Eberlin, Christina Ferreira, and R. Graham Cooks).

Examples

```r
data(cardinal)
data(cardinal_analyses)
```
Description

DESI-imaging mass spectra collected from the cross-section of a whole pig fetus.

Usage

data(pig206)
data(pig206_analyses)

Format

pig206 contains the following objects:

- pig206 raw dataset
- pig206.peaklist list of detected peaks
- pig206.peaks peak-picked dataset

pig206_analyses contains the following objects:

- pig206.pca principal components analysis
- pig206.skmg spatially-aware k-means clustering (Gaussian weights)
- pig206.skma spatially-aware k-means clustering (adaptive weights)
- pig206.sscg spatial shrunken centroids clustering (Gaussian weights)
- pig206.ssca spatial shrunken centroids clustering (adaptive weights)

Source

Aston Labs (Livia S. Eberlin, Christina Ferreira, and R. Graham Cooks).

Examples

data(pig206)
data(pig206_analyses)
Human Renal Cell Carcinoma

Description

Eight matched pairs of human renal cell carcinoma (RCC) labeled as cancer or normal.
Data are DESI-imaging mass spectra with each matched pair as a separate sample on a separate slide.

Usage

data(rcc)
data(rcc_analyses)

Format

rcc contains the following objects:
- rcc raw dataset
- rcc.resample dataset resampled to unit resolution
- rcc.small resampled dataset without background pixels

rcc_analyses contains the following objects:
- rcc.pca principal components analysis
- rcc.cv.pls cross-validated PLS-DA
- rcc.cv.opls cross-validated O-PLS-DA
- rcc.pls PLS-DA on full dataset
- rcc.opls O-PLS-DA on full dataset
- rcc.cv.sscg cross-validated spatial shrunken centroids (Gaussian weights)
- rcc.cv.ssca cross-validated spatial shrunken centroids (adaptive weights)
- rcc.sscg spatial shrunken centroids (Gaussian weights) on full dataset
- rcc.ssca spatial shrunken centroids (adaptive weights) on full dataset

Source

Aston Labs (Livia S. Eberlin and R. Graham Cooks).

References


Examples

data(rcc)
data(rcc_analyses)
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