Package ‘CascadeData’

August 22, 2025

Type Package

Title Experimental Data of Cascade Experiments in Genomics

Version 1.5

Date 2025-08-21

Depends R (>= 2.10)

Suggests testthat (>= 3.0.0)

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Description These experimental expression data (5 leukemic 'CLL' B-lymphocyte of aggressive form from 'GSE39411', <doi:10.1073/pnas.1211130110>), after B-cell receptor stimulation, are used as examples by packages such as the 'Cascade' one, a modeling tool allowing gene selection, reverse engineering, and prediction in cascade networks. Jung, N., Bertrand, F., Bahram, S., Vallat, L., and Maumy-Bertrand, M. (2014) <doi:10.1093/bioinformatics/btt705>.

License GPL (>= 2)

Encoding UTF-8

RoxygenNote 7.3.2

URL https://fbertran.github.io/CascadeData/,
https://github.com/fbertran/CascadeData/

BugReports https://github.com/fbertran/CascadeData/issues/

Config/testthat/edition 3

NeedsCompilation no

Repository CRAN

Date/Publication 2025-08-22 00:10:01 UTC

Contents

`micro_S` *Stimulated dataset*

Description

This is the stimulated data part of the GSE39411 dataset, `https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE39411`. Data were normalized and are ready to use.

Format

A data frame with 54613 probesets measured 6 times throught 4 time points. It features 54613 rows and 24 numeric columns. Columns are named **exactly** as: `N1_S_T60`, `N1_S_T90`, `N1_S_T210`, `N1_S_T390`, `N2_S_T60`, `N2_S_T90`, `N2_S_T210`, `N2_S_T390`, `N3_S_T60`, `N3_S_T90`, `N3_S_T210`, `N3_S_T390`, `N4_S_T60`, `N4_S_T90`, `N4_S_T210`, `N4_S_T390`, `N5_S_T60`, `N5_S_T90`, `N5_S_T210`, `N5_S_T390`, `N6_S_T60`, `N6_S_T90`, `N6_S_T210`, `N6_S_T390`.

The ordering is strict: for each replicate `N1`, `N2`, `N3`, `N4` , `N5`, `N6` the time points are ordered `T60`, `T90`, `T210`, `T390`.

Details

5 leukemic CLL B-lymphocyte of aggressive form were stimulated in vitro with an anti-IgM antibody, activating the B-cell receptor (BCR). We analyzed the gene expression at 4 time points (60, 90, 210 and 390 minutes). Each gene expression measurement is performed both in stimulated cells and in control unstimulated cells. This is the stimulated cells dataset.

Data were collected on HG-U133_Plus_2, Affymetrix Human Genome U133 Plus 2.0 Array.

References

Vallat, L., Kemper, C. A., Jung, N., Maumy-Bertrand, M., Bertrand, F., …, Bahram, S. (2013). Reverse-engineering the genetic circuitry of a cancer cell with predicted intervention in chronic lymphocytic leukemia. Proceedings of the National Academy of Sciences, 110(2), 459-464, doi:10.1073/pnas.1211130110.

Examples

```
data(micro_S)
```

`micro_US` *Unstimulated control dataset*

Description

This is the unstimulated data part of the GSE39411 dataset, `https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE39411`. Data were normalized and are ready to use.

Format

A data frame with 54613 probesets measured 6 times throught 4 time points. It features 54613 rows and 24 numeric columns. Columns are named **exactly** as: `N1_US_T60`, `N1_US_T90`, `N1_US_T210`, `N1_US_T390`, `N2_US_T60`, `N2_US_T90`, `N2_US_T210`, `N2_US_T390`, `N3_US_T60`, `N3_US_T90`, `N3_US_T210`, `N3_US_T390`, `N4_US_T60`, `N4_US_T90`, `N4_US_T210`, `N4_US_T390`, `N5_US_T60`, `N5_US_T90`, `N5_US_T210`, `N5_US_T390`, `N6_US_T60`, `N6_US_T90`, `N6_US_T210`, `N6_US_T390`.

The ordering is strict: for each replicate `N1`, `N2`, `N3`, `N4` , `N5`, `N6` the time points are ordered `T60`, `T90`, `T210`, `T390`.

A data frame with 54613 probesets measured 6 times throught 4 time points.

Details

5 leukemic CLL B-lymphocyte of aggressive form were stimulated in vitro with an anti-IgM antibody, activating the B-cell receptor (BCR). We analyzed the gene expression at 4 time points (60, 90, 210 and 390 minutes). Each gene expression measurement is performed both in stimulated cells and in control unstimulated cells. This is the unstimulated cells dataset.

Data were collected on HG-U133_Plus_2, Affymetrix Human Genome U133 Plus 2.0 Array.

References

Vallat, L., Kemper, C. A., Jung, N., Maumy-Bertrand, M., Bertrand, F., . . . , Bahram, S. (2013). Reverse-engineering the genetic circuitry of a cancer cell with predicted intervention in chronic lymphocytic leukemia. Proceedings of the National Academy of Sciences, 110(2), 459-464, doi:10.1073/pnas.1211130110.

Examples

```
data(micro_US)
```

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